Meeting of the Board
25 – 28 March 2026
Songdo, Incheon, Republic of Korea
Provisional agenda item 10

GCF/B.44/02/Add.07
4 March 2026

Consideration of funding proposals – Addendum VII

Funding proposal package for FP291

Summary

This addendum contains the following seven parts:

a) A funding proposal titled "ASCENT-GREEN: Resilient Energy Access for Inclusive Development";
b) No-objection letter issued by the national designated authority(ies) or focal point(s);
c) Environmental and social report(s) disclosure;
d) Secretariat's assessment;
e) Independent Technical Advisory Panel's assessment;
f) Response from the accredited entity to the independent Technical Advisory Panel's assessment; and
g) Gender documentation.

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Funding Proposal

Project/Programme title:	ASCENT-GREEN: Resilient Energy Access for Inclusive Development
Country(ies):	Botswana, Burundi, Comoros, Democratic Republic of Congo, Eritrea, Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Rwanda, Sao Tome and Principe, Somalia, South Africa, South Sudan, Tanzania, Uganda, Zambia and Zimbabwe
Accredited Entity:	World Bank
Date of first submission:	*[2025/06/09]*
Date of current submission	*[2026/03/26]*
Version number	*[V.003]*

GREEN CLIMATE FUND

Contents

Note to Accredited Entities on the use of the funding proposal template

- Accredited Entities should provide summary information in the proposal with cross-reference to annexes such as feasibility studies, gender action plan, term sheet, etc.
- Accredited Entities should ensure that annexes provided are consistent with the details provided in the funding proposal. Updates to the funding proposal and/or annexes must be reflected in all relevant documents.
- The total number of pages for the funding proposal (excluding annexes) **should not exceed 60**. Proposals exceeding the prescribed length will not be assessed within the usual service standard time.
- The recommended font is Arial, size 11.
- Under the GCF Information Disclosure Policy, project and programme funding proposals will be disclosed on the GCF website, simultaneous with the submission to the Board, subject to the redaction of any information that may not be disclosed pursuant to the IDP. Accredited Entities are asked to fill out information on disclosure in section G.4.

Please submit the completed proposal to:

fundingproposal@gcfund.org

Please use the following name convention for the file name:

"FP-[Accredited Entity Short Name]-[Country/Region]-[YYYY/MM/DD]"

Acronyms

AC	alternating current
AE	Accredited Entity
AfDB	African Development Bank
AFE	Eastern and Southern Africa
A-G	ASECNT-GREEN
AMA	Accreditation Master Agreement
ASCENT	Accelerating Sustainable and Clean Energy Access Transformation
ASCENT-GREEN	Accelerating Sustainable and Clean Energy Access Transformation-GREEN
C&I	commercial and industrial
CO_{2eq}	carbon dioxide equivalent
COMESA	Common Market for Eastern and Southern Africa
CRMF	Carbon Risk Mitigation Facility
CTF	Clean Technology Fund
DC	direct current
DFI	development finance institution
d-MRV	digital monitoring, reporting, and verification
DRC	Democratic Republic of Congo
DRE	distributed renewable energy
E&S	Environmental and Social
ESMAP	Energy Sector Management Assistance Program
ESMS	Environmental and Social Management System
FAA	Funded Activity Agreement
FCV	fragility, conflict and violence
FI	financial institution
FM	financial management
FP	funding proposal
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	greenhouse gas
ICS	improved cooking stove
IDA	International Development Association
IFC	International Finance Corporation
IFI	international finance institution
IPCC	Intergovernmental Panel on Climate Change
IPF	Investment Project Financing
GOGLA	Global Association for the Off-grid Solar Industry
LEAF	Leveraging Energy Access Finance
LEAR	Leveraging Energy Access Finance
LPG	liquefied petroleum gas
MIGA	Multilateral Investment Guarantee Agency
MPA	Multiphase Programmatic Approach
MRV	monitoring, reporting, and verification
MSME	micro, small and medium enterprise
mt	metric tonne
MTF	Multi-Tier Framework
MW	megawatt
NAPA	National Adaptation Programme of Action
NDA	National Designated Authority
NDC	Nationally Determined Contribution
OGS	off-grid solar
O&M	operation and maintenance
PayGo	pay-as-you-go
PCG	partial credit guarantee
PFI	participating financial intermediary
PP	procurement plan
PPF	Project Preparation Facility
PUE	productive uses of energy
PV	photovoltaic
RBF	results-based financing
RE	renewable energy
REAF	Regional Energy Access Financing
RIFF	Regional Infrastructure Financing Facility
RSF	Risk Sharing Facility
SDG	Sustainable Development Goal
SHS	solar home system
SME	small and medium enterprise
SSA	Sub-Saharan Africa
TA	technical assistance
TDB	Eastern and Southern African Trade and Development Bank
TDF	Trade and Development Fund
TF	Trust Fund
WBG	World Bank Group
WHO	World Health Organization
WMO	World Meteorological Organization

A. PROJECT/PROGRAMME SUMMARY

A.1. Project or programme	Programme	**A.2. Public or private sector**	Public
A.3. Request for Proposals (RFP)	*If the funding proposal is being submitted in response to a specific GCF Request for Proposals, indicate which RFP it is targeted for. Please note that there is a separate template for the Simplified Approval Process and REDD+.* Not applicable		

A.4. Result area(s)

*Check the applicable GCF result area(s) that the overall proposed project/programme targets below. For each checked result area(s), indicate the estimated percentage of **GCF and Co-financers' contribution** devoted to it. The total of the percentages when summed should be 100% for GCF and Co-financers' contribution respectively.*

	GCF contribution	Co-financers' contribution[1]
Mitigation total	50%	50%
☒ Energy generation and access	50%	50%
☐ Low-emission transport	Enter number %	Enter number %
☐ Buildings, cities, industries and appliances	Enter number %	Enter number %
☐ Forestry and land use	Enter number %	Enter number %
Adaptation total	50%	50%
☒ Most vulnerable people and communities	20%	20%
☒ Health and well-being, and food and water security	30%	30%
☐ Infrastructure and built environment	Enter number %	Enter number %
☐ Ecosystems and ecosystem services	Enter number %	Enter number %

A.5. Expected mitigation outcome *(Core indicator 1: GHG emissions reduced, avoided or removed / sequestered)*	9.44mmtCO_2eq by end implementation (yr7) 12.20 mmtCO_2eq by end lifespan investment (yr20)	**A.6. Expected adaptation outcome** *(Core indicator 2: direct and indirect beneficiaries reached)*	42.6 million total beneficiaries 28.8 million direct beneficiaries 13.8 million indirect beneficiaries	
			4.4% (Direct Benef) 2% (Indirect Benef)	*Indicate % of **direct and indirect** beneficiaries vis-à-vis total population of 21 participating countries*
A.7. Total financing (GCF + co-finance[2])	695 million USD*			
A.8. Total GCF funding requested	250 million USD *For multi-country proposals, please fill out annex 17.*	**A.9. Project size**	Large (Over USD 250 million)	

* Includes GCF, IDA and WB/TF. Other financing consists of USD 521.2 million from the private sector and USD 156 million from other international financial institutions that will be mobilized for a total program cost of USD 1.373.3 billion.

[1] Co-financer's contribution means the financial resources required, whether public finance or private finance, in addition to the GCF contribution (i.e., GCF financial resources requested by the Accredited Entity) to implement the project or programme described in the funding proposal.

[2] Refer to the Policy of Co-financing of the GCF.

A.10. Financial instrument(s) requested for the GCF funding	☒ Grant 200 ☒ Loan 50 ☐ Guarantee 0	☐ Equity Enter number ☐ Results-based payment Enter number	
A.11. Implementation period	7 years	**A.12. Total lifespan**	20 years
A.13. Expected date of AE internal approval	*This is the date that the Accredited Entity obtained/will obtain its own approval to implement the project/ programme, if available.* 11/8/2023	**A.14. ESS category**	*Refer to the AE's safeguard policy and GCF ESS Standards to assess your FP category.* B
A.15. Has this FP been submitted as a CN before?	Yes ☒ No ☐	**A.16. Has Readiness or PPF support been used to prepare this FP?**	Yes ☐ No ☒
A.17. Is this FP included in the entity work programme?	Yes ☒ No ☐	**A.18. Is this FP included in the country programme?**	Yes ☒ No ☐
A.19. Complementarity and coherence	*Does the project/programme complement other climate finance funding (e.g. GEF, AF, CIF, etc.)? If yes, please elaborate in section B.1.* Yes ☒ No ☐		
A.20. Executing Entity information	The Eastern and Southern African Trade and Development Bank (TDB), a regional development financial group, will be the EE for Component 1 (REAF). • Full legal name: Eastern and Southern African Trade and Development Bank • Legal form: TDB is a multilateral financial institution established under an international treaty. • Legal status: TDB is an international organization with legal personality. TDB has a full juridical personality, including the capacity to enter into contracts. It has principal offices in Mauritius and Burundi. TDB has the ability to receive funds directly from the AE and reflow funds to the AE. EEs for the two facilities in Component 2 (De-risking Facilities) are under selection, using similar criteria as those used to select the EE for Component 1. The Common Market for Eastern and Southern Africa (COMESA), a regional intergovernmental institution, will be the EE for Component 3. • Full legal name: Common Market for Eastern and Southern Africa • Legal form: COMESA is an intergovernmental diplomatic organization, established under an international treaty. • Legal status. The organization holds full legal personality and the capacity to enter into contracts, sue and be sued, and undertake legal acts. The main office of COMESA is in Lusaka, Zambia, and it also has offices in Khartoum, Sudan and in Nairobi, Kenya. • COMESA has the ability to receive funds from the AE.		

A.21. Executive summary (max. 750 words, approximately 1.5 pages)

The ASCENT-GREEN Program: Resilient Energy Access for Inclusive Development

WHAT is ASCENT-GREEN?

The ASCENT-GREEN Program aims to support people in the Eastern and Southern Africa (AFE) Region who lack access to modern energy, particularly those living in remote areas and fragile and conflict contexts, to become more resilient in the face of climate change. It supports private sector companies to deliver access to distributed renewable energy (DRE) systems (like solar home systems (SHSs) and renewable energy mini-grids), clean cooking solutions, and productive uses of energy (PUE) equipment, aiming to benefit about 42.6 million people in AFE, including 28.8 million direct beneficiaries and 13.8 million people who will indirectly benefit from the program providing electricity to public facilities like schools and health clinics. The program will avoid 20.3 million tonnes of CO_{2eq} emissions. Of these, 8.1 million tonnes of CO_{2eq} emissions are expected to be traded in carbon markets to strengthen the long-term commercial sustainability of the DRE companies serving the target populations.[3] By delivering DRE systems and clean cooking access, while supporting productive uses of energy, ASCENT-GREEN aims to create powerful synergies that amplify the benefits of each technology and lead to sustainable pathways for expanded energy access, market reforms and income generation. The program aims to deliver triple wins for communities including those in remote and fragility, conflict, and violence (FCV)-affected areas: increasing their climate resilience, contributing to GHG mitigation through expanding renewable energy, and providing energy access and market reforms to jump-start sustainable economic development and deliver jobs, including for women and youth. To this end, ASCENT-GREEN will mobilize US$1.372 billion of catalytic financing (including US$250 million Green Climate Fund [GCF] plus US$445 million World Bank/Trust Fund [TF] co-financing, together with US$521.2 million from the private sector and US$156 million from other international finance institutions [IFIs]) to implement regional financing instruments and capacity building activities).

Addressing gender gaps and empowering women is at the heart of ASCENT-GREEN. Scaling-up clean cooking solutions brings immediate and powerful direct benefits to women and children, including reducing death and illness from indoor air pollution from burning tradition fuels and reducing time spent in gathering fuel and cooking, freeing time for education and income generating activities. With more free time, women will be more able to benefit from DRE-powered equipment like digital devices and productive equipment, a powerful step toward reducing gender gaps. As the access gap for clean cooking is so large, with more than three quarters of people in AFE lacking clean cooking access, the target populations for clean cooking include those in low income urban and peri-urban areas as well as rural areas. The program will also apply ASCENT's Gender Action Plan, so that women and women entrepreneurs will benefit from access to energy through targeted awareness campaigns, and technical assistance to women and women-led SMEs will help them develop stronger proposals to successfully expand their access to the different financing instruments, available under the program. The Intergovernmental Panel on Climate Change (IPCC), in its Fifth Assessment Report, underscores that climate change hazards exacerbate existing gender inequalities and, thereby, contribute to the greater climate change vulnerability of many women. ASCENT-GREEN, directly through its investment activities, and also through its Gender Action Plan, will work to address these climate vulnerabilities (see section G2). As a result, the different activities under the ASCENT-GREEN program are expected to contribute significantly to the empowerment of women in the AFE region and the reduction of the gender gap in the region.

WHY implement ASCENT-GREEN now?

Although energy is critical for sustainable economic development and climate resilience, AFE is the least-electrified region in the world, with half its people lacking access to electricity and more than three quarters lacking access to clean cooking solutions, despite decades of efforts. Most AFE countries also rank high on international indices of climate vulnerability and lack of readiness, and low on indices of human and social development (see Table 1). Lack of energy access is concentrated in rural and remote areas, as well as areas facing FCV situations, where low incomes and high risks create challenging conditions for DRE expansion. As noted above, the clean cooking gap is even larger, affecting people in urban, peri-urban, and rural areas. Despite the potential of DRE systems and clean cooking solutions, particularly their cost-effectiveness for remote populations, progress has been slow, resulting in electrification efforts barely keeping pace with population growth and clean cooking efforts losing the race. Efforts are failing because of persistent affordability, financing, policy/regulatory, and capacity barriers (see Table 5 in section B1.3).

[3] Those CO2 emissions to be traded on the carbon market to support long-term sustainability of DRE companies (including those delivering Clean Cooking and PUE), will not be claimed as results under GCF funding. At least 60 percent of the aggregate GHG ERs generated by the Funded Activity, however, will be attributed to GCF Proceeds and will, therefore, not be allowed to be traded and will be retired for the benefit of the respective Host Countries.

ASCENT-GREEN is part of new and unprecedented electrification efforts to overcome barriers under Mission 300 and the World Bank's ASCENT Multiphase Programmatic Approach (MPA). Mission 300 is a recent African initiative to provide energy access to 300 million people in Sub-Saharan Africa (SSA) by 2030, led by African heads of state and strongly supported by development partners. The ASCENT MPA is the World Bank's main vehicle for delivering under Mission 300 in AFE. ASCENT-GREEN is part of ASCENT's Pillar 3, aiming to scale up DRE systems, clean cooking solutions, and productive uses of energy (PUE).

Scaling up PUE, on an equal footing with DRE systems and clean cooking solutions, is a key innovative feature of ASCENT and ASCENT-GREEN. A key difference between electrification efforts in SSA and other regions is low electricity consumption in SSA, due to the lack of productive use of energy, which limits the economic and climate resilience benefits of energy access to households. PUE is key to improving the livelihoods and climate adaptation of households as well as the success of energy access expansion by: (i) increasing the incomes of households as well as making DRE systems and clean cooking more affordable; (ii) increasing the capacity of communities to adapt to climate change through the use of technologies such as those for communication, information and productive uses; (iii) increasing and diversifying the revenue streams of DRE companies working in remote communities to increase the viability of DRE investments and reduce the need for public subsidies; and (iv) reducing greenhouse gas (GHG) emissions, as DRE systems for PUE will mainly displace diesel in rural areas. ASCENT-GREEN is the first regional program to deliver PUE at scale by addressing the multiple market failures that affect PUE end users, suppliers, financiers, and the multiple government ministries involved in productive activities. Under ASCENT-GREEN, companies will be eligible for debt, equity, and RBF, as well as technical assistance and capacity building for expanding their DRE sales and investments, inclusive of PUE equipment. Note that in order to use energy productively, the users first need to obtain access to energy, thus the simultaneous offer of DRE solutions and PUE is key. ASCENT-GREEN's comprehensive and synergetic approach to scaling up PUE on equal footing with DRE and clean cooking is detailed in Annex 25.

Through its activities, ASCENT-GREEN will comprehensively address the barriers that have prevented the nascent DRE sector from reaching its full potential until now. These include: (i) affordability constraints, as most unelectrified households cannot afford even a basic solar home system on commercial terms, with an additional gap for female-headed households; (ii) financing constraints, as DRE companies are unable to source adequate debt financing and patient capital for growth, with female-led companies having even lower access; (iii) a lack of enabling policy and regulatory frameworks, as governments are slow to enact and inconsistent in maintaining appropriate rules and regulations; and (iv) capacity constraints, which are affecting the pace of progress as DRE companies, financial institutions, and governments are grappling with relatively new DRE technologies and business models.

WHERE will ASCENT-GREEN be implemented and by WHOM?

ASCENT-GREEN is a regional program in AFE, financed by the World Bank and Green Climate Fund (GCF) together with private and public partners, with the World Bank contracting implementation to regional Executing Entities (EEs) like the Common Market for Eastern and Southern Africa (COMESA) and the Eastern and Southern African Trade and Development Bank (TDB), which have close ties to country governments. GCF funds will flow to the 21 countries in AFE that have expressed formally their interest to participate in the ASCENT-GREEN program, from a total of 24 AFE eligible countries (not having yet reached universal access to electricity). These 21 countries have issued no objection letters to the use of GCF funds to support companies wanting to expand their operation in their respective markets along with the IDA funding, as described in the detailed description of the ASCENT-GREEN Components (see section B.3).[4] Under its first two Components, the program provides financing and de-risking through regional executing agencies like TDB to DRE companies and financial institutions in participating countries. This is complemented by activities to support governments and companies to build an enabling environment for DRE led by COMESA under the third Component and technical assistance (TA) for DRE companies, financial institutions, and governments under the first two Components. COMESA will also lead coordination between regional EEs and ASCENT-GREEN participating countries, and with the private sector, to help align the program's regional activities with country priorities, ensure that countries are aware of progress by regional executing agencies, and discuss measures to overcome challenges so that benefits accrue to all participating countries.

ASCENT-GREEN's regional approach is key to increasing the pace of DRE access provision and achieving sustainable cost reduction through economies of scale in AFE. It will reduce market fragmentation, enabling companies to build multi-country portfolios and reduce transaction costs, as well as to access affordable financing to support their long-term growth strategies, thereby reducing financing costs. At the same time, this regional approach will use results-based financing (RBF) to incentivize companies to expand their operations to more remote and challenging geographies and market segments, which would benefit from economies of scale.

[4] Botswana, Burundi, Comoros, Democratic Republic of Congo, Eritrea, Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Rwanda, Sao Tome and Principe, Somalia, South Africa, South Sudan, Tanzania, Uganda, Zambia and Zimbabwe.

Regional TA under the program will support governments and companies to digitize DRE government tenders and RBF processes, as well as the tracking, verifying, and reporting of installations, to improve efficiency. Using well-known regional entities like COMESA and TDB creates confidence in the program, leveraging their capacity in regional operations and building the capacity to sustain the expanded and transformed DRE markets in AFE beyond the close of ASCENT-GREEN.

HOW will ASCENT-GREEN achieve its ambitious results?

ASCENT-GREEN is implemented by regional facilities that work through financing institutions, DRE, clean cooking and PUE companies to reach underserved markets, and through the COMESA Platform which provides technical assistance. It is private sector driven and market-based, rather than directed to governments. Countries opt to be a part of the program to benefit from private sector delivered DRE solutions enabled by ASCENT-GREEN. To align with GCF priority countries, the program will incentivize energy access delivery for small countries, countries with FCV situations, and remote unserved areas of countries with active DRE markets, including through RBF design and TA.

The combined promotion of DRE systems (like solar home systems and renewable energy mini-grids), clean cooking solutions, and productive uses of energy (PUE), including both DRE systems and equipment for income generation, creates powerful synergies that amplify benefits and create opportunities for market transformation. DRE systems improve quality of life and enable the use of modern equipment for an immense range of human and economic activity, from lighting to digital communications and information technologies to productive equipment, like motors and grinders. Clean cooking solutions also have an immediate positive impact on the health of women and children, as well as increasing time for other activities, as mentioned above. In addition, PUE opens up opportunities to diversify and increase income. Together, the impact of access to these technologies can transform lives, communities, and markets.

ASCENT-GREEN aims to address the roots of the slow progress of expansion of these technologies in AFE, namely: lack of affordability by end users, the perception of high risks by entrepreneurs and financiers, and the lack of enabling environments, all of which require concessional financing at this stage of DRE market development. ASCENT-GREEN targets mainly rural, remote, and FCV populations, which typically are in the bottom 40% of the income pyramid. The affordability analysis in Annex 3 shows that even the smallest solar home systems and modest mini-grid electricity use of 6 kilowatt hours (kWh)/month is not affordable for this group. Moreover, there is substantial disparity in wealth levels across clean cooking access tiers. Multi-Tier Framework (MTF)[5] data across seven countries indicate that households in the top 20% income bracket are far more likely to use Tier 4 and Tier 5 clean cooking solutions, while those in the bottom 20% predominantly rely on three-stone fires or traditional stoves (Tiers 0 and 1). More specifically, the Rwanda MTF survey shows that for households not willing to accept the offer of an improved cookstove, affordability is the main challenge. More than three-fourths of such households reported their inability to afford such a cookstove. High fuel costs are a primary reason households set aside clean cooking fuel solutions. While Tier 3+ clean cooking solutions deliver significant health, climate and gender benefits, with resulting high economic benefits (see Annex 3), willingness-to-pay for improved stoves is low relative to their costs due to low affordability, making end-user support essential to realize these benefits. Given these disparities, concessional financing is critical to bridge affordability gaps and unlock private investment, particularly for lower-income households and last-mile contexts. PUE could theoretically be financed on commercial terms, as it generates financial returns, but market failures prevent such investments. Concessional financing can unlock the PUE market, with a powerful demonstration impact, as people see the impact of PUE equipment use.

ASCENT-GREEN's three regional components will support five financing instruments and TA activities that will collectively target barriers to the expansion of DRE, clean cooking solutions, and PUE, as discussed below (see also Table 6).

- **Component 1: The Regional Energy Access Financing (REAF) project provides three financing instruments and capacity building for the DRE sector:** First, affordable lending to DRE, clean cooking, and PUE companies to enable the expansion of their operations,; second regional result-based financing for frontier markets to incentivize DRE and clean cooking companies to expand to unserved populations in remote areas, FCV contexts, and small countries, and to address affordability barriers; third, technical assistance, capacity building, and implementation support to build the capacity of DRE companies, financial institutions

[5] The MTF for cooking takes a multidimensional, tiered approach to measuring household access to cooking solutions across six technical and contextual attributes with detailed indicators and six thresholds of access, ranging from Tier 0 (no access) to Tier 5 (full access). The aggregate MTF tier is the lowest tier rating across the six attributes. Tiers 0–1 (e.g., three-stone or basic biomass stoves) have very high PM2.5 and CO emissions and substantial black carbon, driving household air pollution and cardiopulmonary disease and contributing notably to warming. By contrast, Tier 4–5 solutions (e.g., LPG, electricity, ethanol, biogas, and high-performing pellets stoves) meet stringent emission targets aligned with the WHO guidelines, dramatically reducing indoor PM2.5 exposure and black carbon, and lowering lifecycle greenhouse gas emissions relative to traditional biomass. Tiers 2 and 3 are considered in transition. Moving households up the tiers therefore yields large health gains (less HAP, fewer respiratory and cardiovascular outcomes) and climate benefits (lower CO2e and short-lived climate pollutants).

and executing agencies; and fourth, it also enables capitalization of an equity vehicle, which will offer patient equity to nurture the expansion of DRE companies. This Component is already under implementation by TDB.

- **Component 2: The Regional Energy Access De-Risking Facilities (REAF 2) project includes two de-risking instruments for the DRE sector as well as capacity building support:** The Risk-Sharing Facility (RSF*)* will provide partial credit guarantees to mitigate the risks borne by participating financial institutions when lending to DRE companies, especially in local currencies, and to companies operating in riskier markets, such FCV situations. The Carbon Risk Mitigation Facility (CRMF) will provide de-risking instruments to stabilize carbon markets by offering floor prices, mobilizing both carbon finance and commercial capital that would be de-risked by more secured carbon revenue. Technical assistance under each facility will provide capacity building and implementation support. The project is under preparation and the two EEs are in the process of being selected.
- **Component 3: The Regional Energy Access Acceleration Platform,** executed by the COMESA Secretariat*,* targets building an enabling ecosystem for ASCENT-GREEN. It has a facility to support governments to implement effective DRE policies and regulations, as well as planning and digitization, and another facility to provide TA to DRE companies, especially small and medium-sized enterprises (SMEs), on market intelligence, business development, management, and the steps to financial closure, with a strong emphasis on PUE. It also provides overall program coordination and knowledge exchange across ASCENT-GREEN countries and regional EEs, as well as with DRE companies.

Collectively, these three components will overcome the barriers to DRE market expansion and transformation and provide access to electricity, clean cooking solutions, and PUE for 28.8 million direct and 13.8 million indirect beneficiaries. This includes 11.7 million people benefiting directly from a solar home system or a mini-grid electricity connection, 11.9 million people with clean cooking, and 5.2 million benefiting from productive use equipment based on DRE. An additional 13.8 million indirect beneficiaries include users of 1,302 public facilities electrified under the program (e.g., students at schools and patients in healthcare facilities).

WHEN will the Program be implemented?

The ASCENT-GREEN Program is designed for rapid deployment, leveraging the fully operational IDA-financed ASCENT projects (REAF and the COMESA Platform). Implementation will commence immediately after GCF approval, with GCF financing processed as additional funding to scale existing instruments—specifically RBF, debt financing, equity financing, and technical assistance—within six months. The new REAF 2 project, which will deploy GCF financing for catalytic de-risking instruments including the RSF and the CRMF, will be operational within one year. The program will close after seven years, by which time the expansion of DRE, clean cooking, and productive use markets is expected to be fully sustainable. This sustainability will be supported by a self-sustaining ecosystem, commercially viable financial services, and increased end-user purchasing power. Concessional financing, including RBF, will be gradually phased out over the program's duration as costs decline, carbon revenue rises, and household incomes grow through productive uses of energy.

What are the MITIGATION and ADAPTATION IMPACTS of the Program?

ASCENT-GREEN will contribute to mitigating carbon emissions and improving the resilience of people to climate change in AFE, through increased access to distributed renewable energy solutions (including DRE systems, clean cooking solutions and productive uses equipment powered by DRE). DRE systems will provide modern energy while mitigating GHG emissions by replacing fossil-fueled generators used to provide power as well as kerosene for lighting in off-grid areas. Clean cooking solutions will replace inefficient traditional cooking using fuelwood, charcoal and biomass residues, reducing GHG emissions and environmental degradation and deforestation from fuel collection and charcoal production. Clean cooking will also support the governments of countries like Tanzania, DRC and South Africa to reduce devastating deforestation from fuelwood and charcoal use. DRE solutions will reduce people's climate vulnerability and help them adapt to climate change. DRE systems together with productive use equipment (PUE) will enable people to improve their livelihoods, for example, by powering modern lighting, communication and refrigeration in schools, health facilities and commercial restaurants and shops or irrigation pumping and cold storage facilities for agriculture. DRE systems will also power information and communication technologies (e.g. phones and radios) to provide essential information (e.g. on weather and markets), as well as disaster warnings and guidance on disaster response and relief. Since DRE systems are less vulnerable than centralized grids in disaster situations, they will better maintain essential power and communications. Clean cooking access will reduce vulnerability by improving the health of women and children through decreased indoor air pollution, as well as reducing the time required for cooking and collecting fuel, leaving more time for empowering activities like education and income-generation.

B. PROJECT/PROGRAMME INFORMATION

B.1. Climate context

B1.1 AFE'S Demographic and Economic Context

1. **Home to nearly 749 million people in 2023,[6] the Eastern and Southern Africa (AFE) region is geographically, culturally, and economically diverse**. It comprises 26 countries,[7] stretching from the Red Sea in the North to the Cape of Good Hope in the South, with a population that is expected to grow to 964 million by 2050. Of these, 24 countries, excluding Mauritius and the Seychelles, have not yet reached universal electrification and are therefore eligible under ASCENT. **Agriculture is the largest sector in the AFE, employing nearly half the population; production has recently declined, triggered by drought and climate change.** Agricultural growth is insufficient to match population growth and the demand for food. Internal conflicts, institutional fragility, debt distress, climate change, displacement, and rising inequalities exacerbate the region's vulnerability. However, AFE also has some of the world's richest natural resources. The Democratic Republic of Congo (DRC) produces much of the world's mined cobalt. For countries in Southern Africa, precious metals and minerals are the biggest exports. Many of these minerals will be critical to combat climate change and present a growth opportunity in a low-carbon future.

2. **AFE's steady progress in past decades in ending extreme poverty and boosting shared prosperity has been upended by recent global economic shocks and devastating climate events**. The region's recovery from the COVID-19 pandemic has been disrupted by food shortages, soaring energy prices, and global and regional macroeconomic turbulence. Impacts have been exacerbated by adverse climate events in the region, including the worst drought in the last four decades and the longest-lasting tropical cyclone ever recorded in the Southern Hemisphere. AFE's economic growth was projected to be modest in 2024, reaching only 2.2%. Real income per capita in 2024 was about 2% below its level in 2019. Slow growth, high inflation, and local currency depreciations are compounding the challenges for low-income, remote and climate-vulnerable populations.

3. **The AFE's economic recovery, resilience, and progress towards poverty reduction is held back by lack of energy access**. In 2023, 365 million or 49% of AFE's population lacked access to electricity, creating significant barriers to economic development and sustainability as well as climate resilience (see Table 1). It is estimated that more than one third of all food production in SSA is lost to spoilage on the way to market, in large part due to lack of refrigeration.[8] Fewer than half of critical public institutions, including schools and health facilities, have access to electricity. Moreover, 77% of people in the AFE region lacked access to clean cooking technologies and fuels in 2023. Traditional cooking fuels expose them to severe health risks, which disproportionately affect women and children and contribute to land and forest degradation and climate change.

4. **Lack of access constrains inclusion and social resilience and perpetuates gender inequalities**. With the electricity access deficit concentrated in the two bottom income quintiles, lack of energy access exacerbates inequalities and undermines resilience for the most vulnerable populations, including women. Women in the energy sector play a significant role as users, entrepreneurs, employers, employees, and decision makers; however, they face discrimination and other barriers that limit their contribution to the energy sector. In households, women are the primary users and producers of energy, but the sources of energy for rural households are likely to be unclean biomass and fossil fuels. Women in Africa are likely to need to search for cooking fuels and water, resulting in long hours to complete household and caregiver tasks, which inhibits them from pursuing economic activities. Furthermore, women are underrepresented in the energy sector as entrepreneurs and energy service providers, as well as in employment, especially those areas requiring science, technology, engineering, and mathematics (STEM) backgrounds.

[6] https://data.worldbank.org/indicator/SP.POP.TOTL?locations=ZH

[7] AFE region is made up of the following 26 countries: Angola, Botswana, Burundi, Comoros, Democratic Republic of Congo, Eritrea, Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Sao Tome and Principe, Seychelles, Somalia, South Africa, South Sudan, Sudan, Tanzania, Uganda, Zambia, and Zimbabwe.

[8] Global Center on Adaptation, *State and Trends in Adaptation Report*, 2021

B1.2 The Climate Problem

B1.2.1 AFE countries face high climate vulnerability

5. **The people in the AFE region benefiting from the interventions under ASCENT-GREEN (the program), who are living mainly in unserved communities in sparsely populated areas and in conditions of FCV, are among the most vulnerable** to the effects of world events, which affect their countries' economies through changes in commodity prices, trade wars, and international economic downturns, as well as to climate change, including droughts, floods, heatwaves, and climate-related diseases. Half of the population of the AFE live in countries with FCV situations, as indicated in Table 2.

6. **Many of the AFE countries that are eligible for ASCENT-GREEN have a high level of vulnerability to climate change and low readiness for adaptation, as well as a relatively low level of economic and human development, with contributing factors being low access to electricity and clean cooking.**[9] All AFE countries are eligible to opt into participating in ASCENT-GREEN, except for two countries that have reached 100% electrification**:** Mauritius and the Seychelles. Key characteristics of the eligible countries are presented in Table 1, and can be summarized as follows:

(i) In Notre Dame University's Global Adaptation Index (ND-GAIN), which ranks 187 countries on climate vulnerability and readiness, 13 of the 24 eligible countries are ranked in the bottom 20% of all countries. Botswana, South Africa, and Namibia are in the middle of the rankings, while five countries, Burundi, DRC, Eritrea, and Sudan are ranked among the lowest 10 countries.

(ii) Seventeen (17) of the 24 eligible countries are on the 2024 UN List of Least Developed Countries (there are 44 countries on the list). The income criteria for inclusion is GDP per capita at or below US$1,088; for graduation it is US$1,306 or above.

(iii) The average score of the 24 eligible countries on the UN's Human Development Index for 2022 is 0.563, indicating a medium tier rating (0.55-0.70), while 10 individual countries are rated in the low tier (<0.55). Two countries are in the high tier (0.7–0.79)—South Africa and Botswana—while the other 12 countries are in the medium tier (0.55–0.70).

(iv) Eleven (11) of the 24 eligible countries were on the World Bank's list of countries with Fragile and Conflict-affected Situations in FY25 (July 1, 2024 to June 30, 2025).

(v) Seven (7) of the eligible countries, including small island states, have populations below 5 million—which is a barrier to private sector investment in DRE.

(vi) Energy access is critical for economic growth and climate resilience. In 2023, 365 million people or 49% of the population in the 24 eligible countries did not have access to the socio-economic, mitigation, or adaptation benefits of electricity and 580 million people or 77% did not have access to the benefits of clean cooking. Access to energy is uneven, concentrated in urban and peri-urban areas, while people in rural, remote, and FCV areas not only have low levels of energy access, but also often live below the international poverty threshold of US$2.15 per day.

[9] Common fuels and technologies considered eligible are cookstoves or devices powered by electricity, natural gas stoves, liquified petroleum gas (LPG), biogas, solar, and alcohol fuels. Low-emission biomass stoves using processed biomass (e.g., pellets) that can meet ISO/TR 19867-3 voluntary performance targets tier 4 and above are also considered clean. Improved cooking solutions are those that can meet ISO/TR 19867-3 voluntary performance targets tier 3. Typical improved cooking solution technologies include advanced biomass stoves that can achieve some health and climate benefits. The project will not finance natural gas or LPG production. However, LPG distributors that serve end users, including using the pay-as-you-go model, will be eligible for support when LPG is considered the least-cost solution. Companies that produce and/or distribute cookstoves (cooking devices) that meet ISO/TR 19867-3 voluntary performance targets tier 3 and above are eligible. Electric stoves are eligible. Companies that produce and/or distribute renewable clean cooking fuels such as pellets, briquettes, bio ethanol, and biogas are eligible.

Table 1. Key characteristics of ASCENT-GREEN eligible countries, 2023

ASCENT-GREEN eligible AFE country[1]	Population 2023[2]	ND GAIN rank, 187 countries 2023[4]	UN List of Least Developed Countries[8]	Human Development Index (HDI) 2023[3]	People without electricity 2023[5] (%)	People without electricity 2023	People without clean cooking 2023[6] (%)	People without clean cooking	Fragile and conflict-affected situation FY25[7]
Angola	36,749,906	158	X	0.616	49	17,945,445	50	18,374,953	
Botswana	2,480,244	83		0.731	26	640,856	34	843,283	
Burundi	13,689,450	178	X	0.439	85	11,704,300	100	13,689,450	X
Comoros	850,387	166	X	0.603	10	87,259	90	765,348	X
Dem. Republic of Congo	105,789,731	182	X	0.522	75	79,633,583	95	100,500,244	X
Eritrea	3,470,390	185	X	0.503	49	1,709,686	50	1,735,195	X
Eswatini	1,230,506			0.695	13	164,891	88	1,082,845	
Ethiopia	128,691,692	145	X	0.497	44	56,400,131	93	119,683,274	X
Kenya	55,339,003	150		0.628	24	13,138,184	68	37,630,522	
Lesotho	2,311,472	137	X	0.55	43	995,366	46	1,063,277	
Madagascar	31,195,932	177	X	0.487	59	18,391,299	98	30,572,013	
Malawi	21,104,482	169	X	0.517	84	17,669,934	98	20,682,392	
Mozambique	33,635,160	156	X	0.493	64	21,691,568	93	31,280,699	X
Namibia	2,963,095	107		0.665	38	1,128,422	52	1,540,809	
Rwanda	13,954,471	114	X	0.578	36	5,088,181	91	12,698,569	
Sao Tomé & Principe	230,871	123		0.637	19	43,435	95.	219,327	X
Somalia	18,358,615	164	X	0.404	49	9,015,119	95	17,440,684	X
South Africa	63,212,384	94		0.741	12	7,415,161	10	6,321,238	
South Sudan	11,483,374		X	0.388	91	10,490,001	100	11,483,374	X
Sudan	50,042,791	184	X	0.511	33	16,364,686	29	14,512,409	X
Tanzania	66,617,606	147	X	0.555	52	34,862,880	90	59,955,845	
Uganda	48,656,601	172	X	0.582	48	23,546,203	98	47,683,469	
Zambia	20,723,965	130	X	0.595	49	10,060,384	91	18,858,808	
Zimbabwe	16,340,822	174		0.598	39	6,332,855	69	11,275,167	X
Total or average	749,122,950	131	17 with X	0.563	49	364,519,828	77	579,893,197	11 with X

Notes:

1. Two AFE countries, Mauritius and the Seychelles, are not eligible for ASCENT-GREEN, as they have reached 100% electrification.
2. World Bank data base. See https://data.worldbank.org/indicator/SP.POP.TOTL
3. Human Development Index. See https://hdr.undp.org/data-center/country-insights#/ranks. The Index's value is determined by aggregating many indicators e.g., life expectancy, literacy rate, rural access to electricity, GDP per capita, income inequality, and more. HDI has 4 tiers: very high (0.8–1.0), high (0.7–0.79), medium (0.55–0.70), and low (< 0.55).
4. ND-GAIN. See https://gain.nd.edu/our-work/country-index/rankings/. The ND-GAIN Country Index summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience. The country rankings show relative ratings with Norway ranked no. 1 with a score of 74.7 based on low/medium vulnerability and high readiness while Chad is ranked no. 187 with a score of 27.2 based on high vulnerability and low readiness.
5. World Bank data base. See https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS

6. World Bank data base. See https://data.worldbank.org/indicator/EG.CFT.ACCS.ZS
7. World Bank FY2025 list. See https://thedocs.worldbank.org/en/doc/b3c737c4687db176ec98f5c434d0de91-0090082024/original/FCSListFY25.pdf
8. UN List of LDCs. See https://unctad.org/topic/least-developed-countries/list. The UN list has 44 countries based on income per capita, human health, and education indices and economic and environmental vulnerability indices. Rwanda, Uganda, and Tanzania may be able to graduate from the list in 2027.

B1.2.2 AFE countries have high climate hazards and vulnerability (see Annex 23, section 1 and country Appendices for details)

7. **Africa, despite making very little contribution to global warming, is suffering from high climate risks, with a population highly vulnerable to these impacts.** Out of the 1.2 billion people at high risk from climate-related hazards around the world,[10] 37% are in Africa. Moreover, 40% of the Africa population is highly vulnerable to climate impacts due to high poverty levels and low access to basic services. The AFE region encompasses diverse climatic zones, ranging from equatorial rainforests and highland plateaus to arid and semi-arid regions, and experiences a wide range of climate-related hazards. The major climate impacts that are foreseen to affect countries in the region include flooding, prolonged droughts and water scarcity, extreme heat, landslides, erratic rainfall, flooding, and tropical cyclones. These hazards significantly impact energy infrastructure, livelihoods, and economic stability. Table 2 briefly summarizes the major climate hazards and their impacts for all ASCENT-GREEN eligible countries (see Annex 23, pp. 2–3 for a detailed explanation of the table).

Table 2. Climate hazards in AFE countries[11]

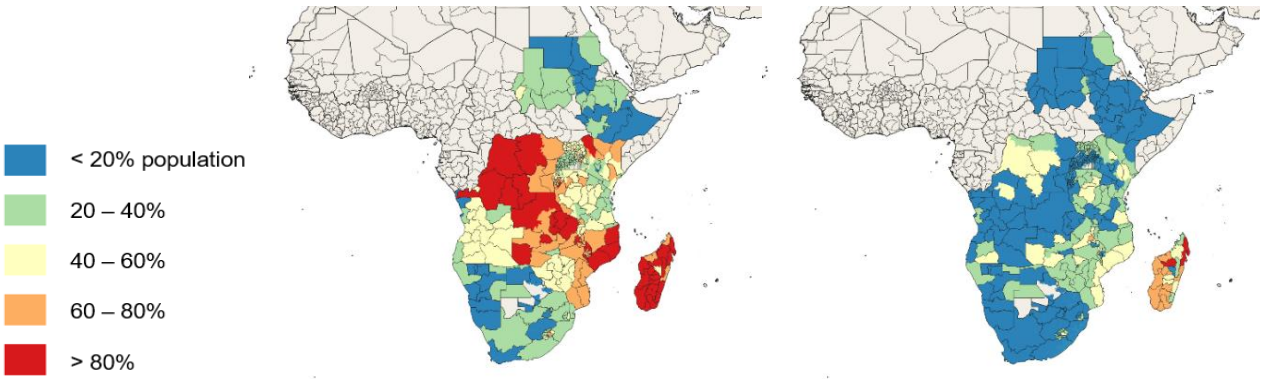
ASCENT-GREEN eligible AFE countries	Major climate risks
Angola	Flooding, water scarcity, wildfires, landslides, extreme heat
Botswana	Flooding, water scarcity, wildfires, earthquakes, extreme heat
Burundi	Flooding, landslides, wildfires, water scarcity, extreme heat
Comoros	Cyclones, flooding, extreme heat, landslides
Democratic Republic of Congo	Flooding, wildfires, extreme heat, landslides
Eritrea	Flooding, landslides, water scarcity, extreme heat, wildfires, earthquakes
Eswatini	Flooding, wildfires, extreme heat, landslides
Ethiopia	Flooding, extreme heat, wildfires, landslides, water scarcity
Kenya	Flooding, wildfires, landslides, extreme heat
Lesotho	Flooding, wildfires, landslides
Madagascar	Flooding, wildfires, cyclones, landslides, extreme heat
Malawi	Flooding, extreme heat, wildfires, earthquakes, landslides, cyclones
Mozambique	Flooding, cyclones, extreme heat, wildfires, earthquakes, water scarcity
Namibia	Flooding, water scarcity, wildfires, extreme heat
Rwanda	Flooding, landslides, wildfires, earthquakes, water scarcity, extreme heat
Sao Tomé and Principe	Flooding, cyclones, landslides, extreme heat
Somalia	Flooding, landslides, extreme heat, wildfires, earthquakes, water scarcity
South Africa	Flooding, wildfires, earthquakes, landslides, water scarcity, extreme heat
South Sudan	Flooding, extreme heat, wildfires, earthquakes
Sudan	Flooding, water scarcity, extreme heat, wildfires, landslides
Tanzania	Flooding, wildfires, landslides, extreme heat, cyclones
Uganda	Flooding, wildfires, landslides, extreme heat, cyclones
Zambia	Wildfires, flooding, extreme heat
Zimbabwe	Flooding, water scarcity, wildfires, cyclones, extreme heat

8. **Throughout the region, climate change is increasing the frequency and intensity of all of these climate shocks, which worsens the situation of already vulnerable communities.** As shown in Figure 1, a significant portion of the population in the region lives below the international poverty threshold of US$2.15 per day, making them particularly vulnerable to climate shocks and extreme weather events. For example, between 2019 and early 2023, AFE was impacted by 20 cyclones, affecting infrastructure and crops and causing

[10] World Bank. 2024. *Rising to the Challenge: Success Stories and Strategies for Achieving Climate Adaptation and Resilience*.
[11] World Bank. 2020. ThinkHazard! GFDRR.

injuries and deaths.[12] Increased water scarcity and changes in climactic patterns also negatively impact the agriculture sector, as 95% of the agriculture in the region is rain-fed. Yet, this is a critical sector for the region, with 59% of all employment in the AFE coming from agriculture,[13] and climate impacts could result in GDP losses of 15% by 2050.[14] With rapid population growth, SSA also faces the largest projected food gap in the world. Estimates show that "without substantial additional investment in irrigation, the share of people at risk of hunger in Africa could increase by 5% by 2030 and by 12% by 2050 due to climate change."[15] In the aftermath of cyclone Freddy in 2023, Malawi and Mozambique saw the prices of food staples such as maize soar by 300%, worsening food and nutrition insecurity levels.[16]

Figure 1. (Left) Share of the population vulnerable (< 2.15 US$/day metric) at the regional level (Right) Share of the population vulnerable (< 2.15 US$/day) and exposed to climate-related hazards



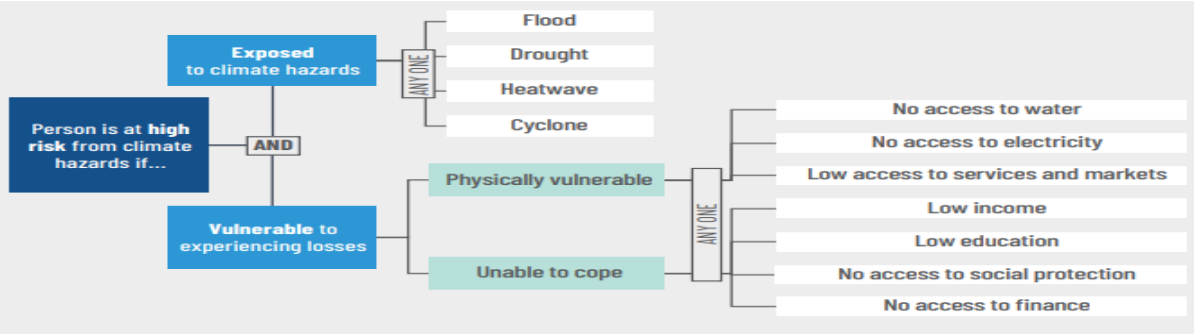
Source: IPCC 2022, *Impacts, Adaptation and Vulnerability, Chapter 9: Africa.* IPCC Sixth Assessment Report.

9. **The impacts of global warming need to be seen together with other human caused trends that will increase Africa's future GHG emissions.** Africa's GHG emissions currently account for only about 4% of the global total, but its rapidly growing population and urbanization are likely to continue to drive increases in modern energy use and GHG emissions, unless low emission pathways are followed. In addition, the use of traditional biomass fuels for cooking accounts for 75% of SSA's energy demand, with damaging health consequences from indoor air pollution, while contributing to land and forest degradation and climate change through GHG emissions. Africa is home to 26 of the 30 countries with the largest projected increase in charcoal and wood fuel demand between 2020 and 2040. The clearing of forest cover for timber and agricultural land is resulting in soil erosion and decreased rainfall and contributing to climate change by removing carbon sinks, among other undesirable consequences.

10. **Vulnerability to climate change in AFE is exacerbated by limited investment in climate change adaptation measures to increase resilience to climate shocks, according to the IPCC.[17]** It is, therefore, critical to develop climate-resilient infrastructure and energy solutions tailored to the realities and risks beneficiaries face in the region. The intersection of extreme weather events, economic vulnerability, and lack of access to energy and basic services creates a compound risk scenario in which climate shocks will reinforce the (already high) vulnerability of communities, as illustrated in Figure 2.

[12] Associated Press. March, 2023. "East Coast African States Ail From Too Much, Too Little Rain." *AP News*, March 10, 2023.
[13] Kwakwa, V., and World Bank. 2022. "Seizing the Agri-Food Opportunity in East and Southern Africa." World Bank Blogs, November 30, 2022.
[14] African Development Bank. 2020. "Climate Change Impacts on Africa's Economic Growth".
[15] ISF Advisers, and HYSTRA. 2024. *Scaling Irrigation for Small-scale Producers: The Role of Private Sector Solutions*. Landscape Report.
[16] World Bank. 2024. *Enhancing Food and Nutrition Security in the Sahel and Horn of Africa*. World Bank Results Brief.
[17] IPCC. 2022, *Impacts, Adaptation and Vulnerability, Chapter 9: Africa.* IPCC Sixth Assessment Report.

Figure 2. Framework for identifying people at high-risk from climate hazards[18]



B1.2.3 DRE solutions represent a triple win by strengthening climate adaptation and mitigation, expanding energy access, and supporting sustainable economic development

Introduction

11. **Communities in low income, sparsely populated areas and in situations of fragility, conflict and violence in the AFE region are among the most vulnerable to the effects of climate change; this is exacerbated by a lack of access to modern energy**. About 375 million people in AFE, or 51% of the population, lacked access to electricity in 2022, while 570 million people, or 78%, lacked access to clean cooking. Scaling up modern energy access to underserved areas in AFE through DRE systems, clean cooking solutions, and productive uses equipment (collectively DRE solutions, see Box 1) has the potential to create synergies that will result in a triple climate win, increasing the climate resilience of people and communities, while supporting a low emissions pathway for countries, and increasing energy access and PUE, which will create opportunities for sustainable economic development. Increased access to DRE solutions will strengthen the resilience of individuals and communities to climate change by improving basic well-being, increasing their ability to respond to shocks, and strengthening adaptive capacity. It will also help countries to meet their Nationally Determined Contribution (NDC) mitigation targets for GHG emissions by replacing fossil fuels and reducing the use of biomass for cooking. Finally, scaling up access to DRE solutions jump-starts economic opportunities, especially for women and youth, as well as contributing to poverty reduction and human development. Increased access to clean cooking will also improve public health by decreasing indoor air pollution, reduce time spent by women in cooking and gathering fuel, and reduce pressure on local resources. Increased access to PUE will help increase the incomes of people and communities and their capacity to pay for DRE solutions.

Box 1. Distributed renewable energy (DRE) terms

DRE solutions: These include a range of technologies and equipment that can bring reliable and sustainable clean energy services to areas that cannot be served economically from an interconnected grid. DRE solutions include DRE systems and clean cooking solutions, as well as productive uses equipment and e-mobility solutions that use power from DRE systems, all of which aim to benefit households, enterprises/productive users, including in agriculture and fisheries sectors, public institutions, and commercial and industrial (C&I) users.

DRE systems: Renewable energy systems not connected to the grid, such as stand-alone solar lanterns, solar home systems (SHS), stand-alone wind systems, small hydro systems, and renewable energy powered mini-grids.

Clean cooking solutions: Technology and fuel combinations that meet the indoor air quality guidelines of the World Health Organization (WHO) for household fuel combustion. Common fuels and technologies considered eligible are cookstoves or devices powered by electricity, natural gas, liquefied petroleum gas (LPG), biogas, solar energy, and alcohol fuels (e.g., ethanol) (see also footnote 8).

Productive uses of energy (PUE): DRE systems used to enable income-generation activities and/or equipment (DC or AC) acquired through the program that is used to generate income that is powered by DRE systems (including SHS and mini-grids).

DRE companies: Companies selling DRE solutions, as defined above, including those that sell DRE systems, clean cooking equipment, and productive uses equipment powered by DRE.

[18] World Bank. 2024. *Rising to the Challenge,* op. cit.

Climate adaptation and DRE solutions in AFE (see Annex 23, section 3 for a more detailed analysis)

12. **DRE systems, clean cooking solutions, and productive uses equipment all provide modern energy services that support the ability of beneficiaries to anticipate, prepare for, withstand, or recover from and adapt to the effects of climate change, and strengthen capacity to build back better.** As discussed below, energy access delivered via DRE solutions enhances climate resilience by: (i) reducing vulnerability by improving basic well-being, (ii) enabling human and economic development, (iii) offering solutions to respond and recover when disasters hit (short onset), and (iv) strengthening the adaptive capacity of local populations to be able to adapt to climate change over time (see Annex 23 on Adaptation and Mitigation Strategies).

13. **Energy access reduces vulnerability.** No one can be resilient to climate change without access to basic infrastructure, social services, and decent housing, or while living in poverty.[19] Energy access extends time for indoor activities, which is otherwise limited to daylight hours. It enables households to have modern lighting and to use small appliances such as fans, which can reduce exposure to heat, and digital communication devices, which provide important information on weather, news, markets, employment, and education opportunities, among other things. Access to energy is, therefore, a prerequisite for reducing the vulnerability of communities to climate impacts. Access to energy also reduces the vulnerabilities faced by marginalized groups, including women and children. Clean cooking access reduces indoor air pollution from burning traditional biomass fuels, which is the second largest cause of premature deaths in SSA, as well as the heavy burden on women and children in terms of time collecting fuelwood and water, leaving more time for education and income-generating activities (see section G2 and Annex 8). A recent study concluded that access to electricity and clean fuels for cooking and technologies will have a significant impact on reducing child, infant, and maternal mortality in SSA.[20] Energy access brings safety benefits to these groups, as improved lighting conditions (at home and in public areas) contribute to safer environments, reducing the risk of violence and accidents.

14. **Energy access enables human and economic development.** Another key element towards greater resilience is access to opportunities for human, economic, and social development.

(i) By powering lighting and equipment in schools, health clinics, and local administrations, energy access through DRE and clean cooking improves livelihoods and the services offered in these critical institutions. In schools, DRE can supply consistent power for lighting, digital learning tools, and extended study hours. In SSA, about 25,000 healthcare facilities lack electricity access, while 70,000 contend with unreliable supply.[21] DRE enables the proper operation of medical equipment, adequate lighting, and the safe refrigeration of vaccines, which are vital for delivering quality healthcare services.[22]

(ii) When combined with adequate financing and programs for productive uses of energy (PUE), energy access helps populations to generate income. Income generation and diversification is, in turn, key to absorbing climate impacts, being able to cope, and preparing for and investing in longer-term climate adaptation strategies. For example, solar energy kits have helped customers to generate over US$9 billion in income between 2010 and 2024.[23] Within the agricultural sector, for example, energy access is a key enabler of agricultural productivity development and food security, as well as income generation and diversification. Studies on the use of Disruptive Agricultural Technologies (DATs) in Africa by small-holder farmers to expand their livelihoods indicate that 75% of the DATs in the region are digital tools, which require reliable electricity to run, and 25% are typically other agricultural tools including solar-based technologies.[24] This points to the central role energy plays in food security and crop productivity. Thanks to solar-powered water pumps, farmers can irrigate crops; through solar-powered refrigerators, they can also preserve food; and with equipment such as mills, they can transform their products. This is critical to decreasing food insecurity and can also lead to new incomes and access to new markets. Irrigation can lead to a significant increase in yield relative to rainfed crops (+50 to 400%),

[19] World Bank. 2024. *Rising to the Challenge,* op. cit.

[20] Byaro, M., Mmbaga, N. Florent, and Mafwolo, G. 2024. "Tackling energy poverty: Do clean fuels for cooking and access to electricity improve or worsen health outcomes in sub-Saharan Africa?" *World Development Sustainability*, Volume 4, June 2024, 100125, https://www.sciencedirect.com/science/article/pii/S2772655X2400003X#abs0001

[21] SEforAll. 2024. *State of the Market Report for Healthcare Facility Electrification*, p. 2. https://www.seforall.org/system/files/2024-03/SOTM_report_26Mar_compressed.pdf

[22] GOGLA. 2025. *Off-Grid Solar: Powering Climate Resilience*. Global Association for the Off-Grid Solar Energy Industry (GOGLA). https://gogla.org/wp-content/uploads/2025/03/Gogla_Off-Grid_Solar-Powering-Climate-Resilience_Report_DEF-1.pdf

[23] Ibid., p. 16.

[24] Kim, J., Shah, P., Gaskell, J.C., Prasann, A., and Luthra, A. 2020. *Scaling Up Disruptive Agricultural Technologies in Africa. International Development in Focus*. Washington, D.C.: World Bank.

farmer incomes (+100 to 350%), and available calories (+25%).[25] It is also important to note that current levels of irrigation in SSA are extremely low, estimated at 4% of cropland, compared to 37% in Asia and 14% in Latin America.[26]

(iii) Households and small businesses cannot explore economic opportunities without access to mobile broadband or the Internet. These are especially powerful tools for women and youth, as they can be accessed in the home. DRE, therefore, helps develop productive uses and small businesses. It plays a crucial role in supporting last-mile access, especially in rural areas.

(iv) Finally, introducing DRE systems unlocks a whole array of employment opportunities on the supply side (in sales, maintenance, and across the supply chain) and on the demand side (through productive uses enabled through access). Power for All found that across Kenya, India, Ethiopia, Nigeria and Uganda the off-grid solar industry employs 83,000 people and supports a further 62,000 people through informal work.[27] This includes jobs in rural areas, including for women and youth.

15. **Energy access helps people cope and recover when disaster hits (rapid onset events).** Access to reliable electricity can provide a safety net in case of climate shocks. The availability of power from DRE significantly affects how households can prepare, respond, and recover, especially in remote and isolated places or in areas affected by conflict. These solutions are also, by nature, less vulnerable to climate impacts, as they can be quickly displaced, deployed, or restored. DRE can help critical institutions such as clinics, water treatment facilities, emergency shelters, and crisis coordination centers to have power and support local communities. Solar lanterns, solar-powered radios, and digital devices are all critical for early warning systems, as well as for gaining access to critical, time-sensitive information, and support after a disaster hits (such as emergency cash transfers). The Early Warning for All initiative[28] aims to ensure universal coverage of early warning systems by the end of 2027 and has identified lack of energy access and connectivity as a vital missing step.

16. **In the long term, energy access helps strengthen the adaptive capacity of local populations to climate change over time (gradual changes).** DRE also helps in building adaptive capacity at the systemic level, which leads to long-term resilience. In *agriculture,* for example, most farmers in AFE are reliant on low-productivity, rain-fed farming. With climate change, droughts are becoming more frequent. Climate-smart irrigation systems powered by DRE and taking into account competing uses and the sustainable use of hydrological resources can help to mitigate the impacts of increased precipitation variability and increase crop productivity. As noted earlier, several studies have documented the central role that energy plays in food security and crop productivity. Access to energy is critical as temperatures become unbearable for the normal functioning of key institutions, such as *schools and hospitals*. Recently, South Sudan had to close all schools for the second time, for two weeks, due to an extreme heat wave, as temperatures exceeded 42°C (107.6°F). Energy access also plays a key role in *community-based adaptation projects*. Access to electricity supports community centers to facilitate knowledge dissemination, including capacity building and training on both the use of energy technologies in climate emergencies and disaster management. At the individual household or institution level, DRE can also power fans and air conditioners, which can increase productivity and improve critical comfort as temperatures rise.

17. **To serve their purpose effectively in a time of climate change, DRE solutions themselves must be designed to be resilient, so they can continue delivering services even in the face of natural hazards (e.g., floods, landslides, cyclones, storms) and other stressors**. Disruption of power has cascading and multiple effects and increases the exposure of beneficiaries to climate shocks, while decreasing their well-being, productivity, and even possibly leading to higher mortality and morbidity (due to interrupted access to healthcare and shelters). Unreliable electricity forces households to rely on expensive, polluting generators, which provide nearly 9% of SSA's electricity and cost US$28–50 billion annually in fuel, plus 10–20% in maintenance.

18. **Less complex technical specifications, design, and reparability make DRE typically more resilient**. While DRE solutions are generally less vulnerable than grid networks to disasters, they are not exempt from damage. For example, storms, cyclones, and floods can wipe out solar farms or installations and mini-grid components, and sandstorms and heatwaves can reduce the efficiency of solar panels. DRE systems can be made resilient by integrating resilience into project design, which allows investments to deliver lasting benefits.[29] See Annex 23, Table 4 for a list of mitigation measures against the main hazards identified in ASCENT-GREEN countries, which

[25] ISF and HYSTRA. 2025. *Scaling Irrigation for Small-scale producers: the Role of the Private Sector*, p. 10. https://isfadvisors.co/scaling-irrigation-for-small-scaleproducers/#:~:text=ISF%20Advisors%20and%20Hystra%20recently%20announced%20a,studies%20of%20six%20private%20sector%20solution%20providers

[26] German Development Institute (DIE). 2017. *Unlocking the Irrigation Potential in Sub-Saharan Africa: Are Public-Private Partnerships the Way Forward?* DIE.

[27] Power for All. 2022. *Analysis of data from the Power for All, Powering Jobs Census 2022: The Energy Access Workforce*. San Francisco: Power for All.

[28] Supported by the United Nations Office for Disaster Risk Reduction, World Meteorological Organization, International Telecommunication Union, and International Federation of Red Cross and Red Crescent Societies.

[29] Nicolas, C.M., Ramstein, C.S.M., and Schweikert, A.E. 2022. *Powering through the Storm: Climate Resilience for Energy Systems*. World Bank, Live Wire 2022/124. Washington, D.C.: World Bank Group.

DRE systems can incorporate to reduce disruptions, deal with infrastructure damage, and increase efficiency, as well as recommendations on making the supporting structures more resilient.

19. **The country-specific World Bank projects under the ASCENT MPA (see section B1.3) are operationalizing the inclusion of such resilience measures.** A recent energy expansion project in Tanzania[30] included flood measures for the household grid connections and rehabilitated and expanded distribution infrastructure. At the regional level, the ASCENT COMESA Regional Energy Access Acceleration Platform will provide technical support so that natural and climate hazards are adequately identified in ASCENT activities as well as in policy frameworks and standards. Learning the lessons of past energy access projects, particularly the example of the Regional Off-Grid Electricity Access Project (ROGEAP) in West Africa, ASCENT-GREEN will support efforts for these elements to be translated into quality standards for DRE equipment.

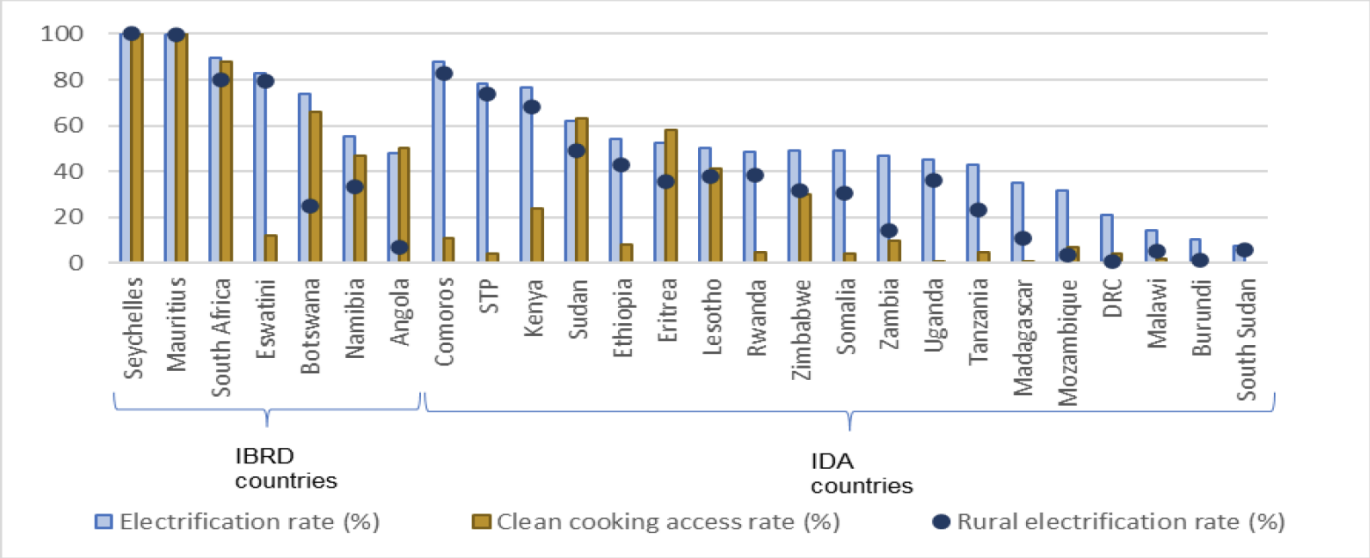
Climate mitigation and DRE solutions in AFE (see Annex 23, section 2 for details)

20. **While climate hazards and vulnerability are often discussed in the context of adaptation, mitigation plays a crucial role in reducing long-term risks.** By simultaneously reducing GHG emissions (mitigation) and strengthening the capacity to cope with climate impacts (adaptation), countries can better protect vulnerable communities and support sustainable development.

21. **Africa contributes only about 4% of the world's GHG emissions, because of both low access and use of modern energy**.[31] The energy sector is the largest source of emissions in Africa, excluding land use, land use change, and forestry, making up about 55% of the total in 2019, followed by agriculture.[32] Burning fossil fuels for power generation accounts for the major part of these emissions. However, the electricity consumption per capita in Africa is low, 82 per cent below the world average.[33] In the AFE region alone, 365 million people or 49% of the population lacked electricity access in 2023. Modern energy access is highly uneven across AFE countries (see Figure 3). While electrification in Mauritius and the Seychelles has reached 100%, it remains less than 20% in Malawi, Burundi, and South Sudan. On the other hand, Kenya and Rwanda have the fastest increasing electrification rates in Africa, although they still have significant populations without access to electricity (24% and 36%, respectively) and need to maintain the pace to meet universal electricity access targets by 2030. Progress in these countries was achieved by accelerating both grid and off-gird electrification, delivering reforms to improve the viability of power utilities while opening space for private sector-driven DRE, and setting up pro-poor financing mechanisms to bridge the consumer affordability gap, including through RBF. The countries with the largest electricity access deficit (number of people) are the Democratic Republic of Congo (80 million), Ethiopia (56 million), Tanzania (35 million), and Uganda (24 million). Finally, lack of clean cooking is endemic across AFE. Only 5 of the 26 countries in AFE have a clean cooking access rate above 60% (Seychelles, Mauritius, South Africa, Botswana, and Sudan), while 15 have access rates below 20%.[34]

[30] Ibid.
[31] Ritchie, H., Rosado, P., and Roser, M. 2023. "CO2 and Greenhouse Gas Emissions." Our World in Data. https://ourworldindata.org/co2-and-greenhouse-gas-emissions
[32] Climate Analytics. 2022. *National 1.5°C compatible emissions pathways and consistent power sector benchmarks in Africa*. Climate Analytics. https://climateanalytics.org/publications/national-15c-compatible-emissions-pathways-and-consistent-power-sector-benchmarks-in-africa
[33] https://www.iea.org/regions/africa/electricity
[34] See SDG7 data (trackingsdg7.esmap.org) for more information on each country's energy access situation.

Figure 3. Electricity and clean cooking access rates vary in AFE countries[35]



22. **While the current lack of energy access constrains climate adaptation and economic and social development, economic growth, urbanization, and population growth together with increased access will drive increases in energy and electricity use in the future**. Population growth in Africa is outpacing that of the rest of the world. In 1950, Africa's population was estimated by the Population Division of the UN to be 227.5 million, accounting for just 5% of the global population. By 2050, this is forecast to rise to 2.5 billion, or 25% of the global population. While population growth in other regions has slowed, Africa's has increased by 2.4 per cent per year for the past 30 years.[36] Africa is also projected to have the fastest urban growth rate in the world: by 2050, Africa's cities will be home to an additional 950 million people. Much of this growth is taking place in small and medium-sized towns.[37]

23. **Therefore, to prevent GHG emissions from growing dramatically in tandem with electricity use, it is essential that electricity provision follows a low emissions pathway.** Such a pathway would couple low-carbon electricity generation to supply areas that can be reached by the national grid with clean and reliable DRE systems, where these are cost-effective, as demonstrated in the highly effective off-grid electrification programs in Kenya and Rwanda**.** Geo-spatial analysis conducted by the Energy Sector Management Assistance Program (ESMAP) has shown that about half of the population currently lacking electricity in AFE can be supplied most cost-effectively through such distributed renewable energy technologies.

24. **As noted earlier, in addition to the lack of electricity access, 580 million people or 78% of the population of the 24 eligible countries in AFE lack access to clean cooking and, instead, depend on polluting fuels like wood, charcoal, and kerosene for cooking, lighting, and heating their homes** (see Table 1 and Figure 3). This puts immense pressure on already scarce forest and biomass resources. In Africa, wood fuel collection and charcoal production are the primary drivers of forest degradation. The use of wood fuel for cooking accounts for 75% of SSA's energy demands. Africa is also home to 26 of the 30 countries with the largest projected increase in charcoal and wood fuel demand between 2020 and 2040. Cooking with traditional fuels also has serious negative consequences for the health of families, especially women and children, due to indoor air pollution. In 2019, air pollution was the second-leading cause of premature death across Africa, after HIV/AIDS, contributing to 1.1 million deaths, with some 63% of those linked to indoor air pollution from burning solid fuels for household cooking and heating.[38] Clean cooking solutions save women and children time, freeing time for study, work, and social activities. Clean cooking solutions is a powerful tool for change that empowers women and can decrease indoor air pollution, improve public health, reduce local pollution and GHG emissions, and reduce pressure on local resources.

[35] Figure is taken from World Bank. 2023. *Accelerating Sustainable & Clean Energy Access Transformation Program using the Multi-Phase Approach, Project Appraisal Document.* Washington, D.C.: World Bank, p. 9.

[36] Rowe, M. 2024. "What does rapid population growth mean for the world's poorest continent?" Geographical, March 14 2024. https://geographical.co.uk/news/dossier-what-does-rapid-population-growth-mean-for-the-worlds-poorest-continent

[37] OECD and SWAC. 2020. *Africa's Urbanization Dynamics 2020*. West African Studies, OECD Publishing, Paris. https://www.oecd.org/en/publications/africa-s-urbanisation-dynamics-2020_b6bccb81-en.html#:~:text=Africa is projected

[38] Clean Cooking Alliance and ICLEI. *The future of Africa's sustainable cities: Why clean cooking matters.* https://cleancooking.org/wp-content/uploads/2023/11/CCA_The-Future-of-Africas-Sustainable-Cities.pdf

25. **The promotion of distributed renewable energy systems and clean cooking solutions is supported under the Nationally Determined Contribution (NDC) and National Adaptation Programme of Action (NAPA) commitments of eligible AFE countries** (see Table 3). All AFE countries have signed the Paris Agreement and submitted ambitious NDCs. Most countries have submitted two targets: an unconditional target that was to be met by their own resources (2–15% by 2030) and a conditional target subject to financial support from the international community (13–68% by 2030). ASCENT-GREEN's objectives are directly aligned with national climate priorities including National Adaptation Plans, National Climate Change Action Plans, and NDCs, which all give priority to renewable energy development, including DRE for electrification and clean cooking.

Table 3. Climate commitments of ASCENT-GREEN eligible AFE countries

AFE countries	Alignment with NDC	Alignment with NAPA	Emissions $MtCO_2eq$	Emission reduction compared to business-as-usual (BAU) by 2030 (unless otherwise indicated)
Angola	DRE: Installation of small-scale solar panels, including solar villages	Clean Cooking: Promotion of alternative renewable energies to avoid deforestation	99.99 (2015)	Unconditional: 15.4 MtCO2eq by 2025 (14% reduction) Conditional: 26.5 MtCO2e in 2025 (24% reduction)
Botswana	DRE: Diversification of national energy mix by promoting RE including biogas domestic plan, PV small scale and solar water pumps; biogas domestic plants also used for clean cooking (but no direct mention in NDC)	No NAPA submitted	53.52 (2021)	Unconditional: 1.13 $MtCO_2e$ (5% reduction) Conditional: 4.13 $MtCO_2eq$ (15% reduction)
Burundi	DRE: Increasing installed solar PV capacity (including off-grid for institutional buildings and mini-grid installation) Clean cooking: Promotion of biodigesters in schools and boarding schools; support production+ diffusion of improved cookstoves	DRE and clean cooking: Identification and dissemination of improved techniques of wood use and new renewable energies	5.49 (2015)	Unconditional: 0.209 $MtCO_2eq$ (3.04% reduction) Conditional: 0.86439 $MtCO_2eq$ (12.61% reduction)
Comoros	DRE: Promotion of RE (no specific mention of DRE) Clean cooking: Reduction of use of firewood by households	No mention of DRE and clean cooking	0.68 (2021)	Unconditional: 0.014 $MtCO_2eq$ (1.11% reduction) Conditional: 0.29 $MtCO_2eq$ (23 % reduction)
Democratic Republic of the Congo	DRE: Promotion of economic models for DRE Clean cooking: Elaboration and implementation of a clean cooking strategy	No mention of DRE and clean cooking	688.06 (2021)	Unconditional: 2% reduction Conditional: 21% reduction
Eritrea	DRE: Promotion of renewable energy sources (including biogas at big farms, small isolated solar grid, solar mini-grid) Clean cooking: Diffusion of improved cooking stoves (ICS) and LPG stoves to replace wood stoves	Clean cooking: Promotion of wood energy substitutes and wood consumption efficiency with cleaner fuels and stoves	6.69 (2021)	Unconditional: 0.982 $MtCO_2eq$ (12% reduction) Conditional: 3.157 $MtCO_2eq$ (38.5% reduction)
Eswatini	DRE: Increasing the share of renewables in the energy mix to 50% (includes solar water heaters and solar electricity) Clean cooking: Achieving 100% of clean modern energy for cooking	No NAPA submitted	3.24 (2018)	Unconditional: 0.5 $MtCO_2eq$ (5% reduction) Conditional: 1.04 $MtCO_2eq$ (14% reduction)
Ethiopia	DRE: Increasing the number of households using RE off-grid for lighting Clean cooking: Reducing residential biomass use by promoting ICS solar water heaters, electric stoves and biofuels	Clean cooking: Development of projects promoting the use of alternative and or non-wood energy sources	302.63 (2020)	Unconditional: 56.2 $MtCO_2eq$ (14% reduction) Conditional: 277.7 $MtCO_2eq$ (68.8% reduction)
Kenya	DRE and clean cooking: Promotion of clean, efficient and sustainable energy technologies	No NAPA submitted	93.7 (2015)	45.76 $MtCO_2eq$ (32% reduction)
Lesotho	DRE: Diffusion of solar LED lamps, biogas systems and solar home systems Clean cooking: Diffusion of clean cooking technologies	DRE and clean cooking: Promotion of the use of renewable energy technologies for heating and cooking	4.01 (2021)	Unconditional: 0.72 $MtCO_2eq$ (10% reduction) Conditional: 1.8 $MtCO_2eq$ (25% reduction)

Madagascar	DRE: Promotion of low carbon lighting technologies and development of mini-grid hydro systems Clean cooking: Promotion of low carbon cooking technologies, including fiscal incentives for butane gas	No mention in NAPA	40.21 (2021)	18.83 $MtCO_2eq$ (28% reduction)
Malawi	DRE: Development of off-grid small scale solar PV systems Clean cooking: Promotion of the use of ICS for cooking	Clean cooking: Dissemination of low-cost institutional ICS	9.33 (2017)	Unconditional: 2.1 $MtCO_2eq$ (6% reduction) by 2040 Conditional: 15.6 $MtCO_2eq$ (45% reduction) by 2040
Mozambique	DRE: Promotion of energy distribution micro-grids Clean cooking: Promotion of LPG use for cooking	DRE: Installation of small-scale sustainable irrigation systems, and explore the use of renewable energy to power the agricultural system	130.81 (2021)	40 $MtCO_2eq$ (27% reduction) between 2020 and 2025
Namibia	DRE: Promotion of the use of solar powered appliance (lighting, water heating, solar pumps) DRE and clean cooking: Increasing substitution of fuelwood for electricity from renewable sources.	No NAPA submitted	24.12 (2021)	7.67 $MtCO_2eq$ (8.47% reduction) Unconditional: 10% of total cost for both mitigation and adaptation = US$1.5 billion Conditional: 90% of total cost = US$13.5 billion
Rwanda	DRE: Developing solar pumping systems for irrigation, solar water heaters, solar lighting, solar mini-grids, off-grid and rooftop solar PV Clean cooking: Promotion of modern and efficient cookstoves	Clean cooking: Developing alternative sources of energy to firewood	5.33 (2015)	Unconditional: 1.9 $MtCO_2eq$ (16% reduction) Conditional: 4.6 $MtCO_2eq$ (38% reduction)
Sao Tomé and Principe	DRE: Increasing the share of renewables integrated into the national grid (no direct mention of DRE, but allows integration of DRE)	DRE: Introduction of renewable energy such as biomass, solar, wind, reducing consumption of fossil fuel Clean cooking: Promotion of ICS to contain forest degradation	0.4 (2021)	0.109 $MtCO_2eq$ (27% reduction)
Somalia	DRE: Promotion of clean energy including people centered decentralized solutions Clean cooking: Promotion of efficient cooking	Clean cooking: Protection of forests through charcoal reduction by developing alternative energy plan, encouraging the use of fuel-efficient cooking stoves and banning exports of charcoal	43.62 (2021)	32.40 $MtCO_2eq$ (30% reduction)
South Africa	DRE: Supporting the development of renewable energy (no direct mention)	DRE: Reduce dependence on a centralized system and increase distributed generation, especially in rural areas	598.38 (2021)	30% reduction with fixed amount of emissions reduction levels: 398–510 $MtCO_2eq$ by 2025 350–420 $MtCO_2eq$ by 2030
South Sudan	DRE: Usage of decentralized renewable electricity solutions Clean cooking: Development of highly efficient cookstoves and promotion of the use of alternative fuels	DRE: Promotion of RE	70.61 (2021)	109.87 $MtCO_2eq$
Sudan	DRE: Promotion of stand-alone and mini-grid solutions for the residential sector Clean cooking: Substitution of solid biomass for cooking with LPG and ICS	DRE and clean cooking: Use of renewable energy and ICS	128.14 (2021)	27.1 $MtCO_2eq$ (39% reduction)
Tanzania	DRE: Promotion of clean technologies for power generation and climate smart electrification (renewable micro and mini-grid) Clean cooking: Expansion of the use of natural gas for clean cooking	DRE: Promotion of alternative sources of energy for domestic and industrial use Clean cooking: Promotion of appropriate and efficient technologies to reduce use of wood	158.82 (2021)	65–76 $MtCO_2eq$ (30–35% reduction)
Uganda	DRE: Promotion renewable off-grid solutions	Clean cooking: Growing trees for fuel wood outside of protected areas	53.61 (2021)	36.7 $MtCO_2eq$ (24.7% reduction) Unconditional: 11.74 $MtCO_2eq$ (5.9% reduction)

	Clean cooking: Promote energy efficient fuelwood and charcoal stoves and clean fuel switch			Conditional: 37.44 $MtCO_2eq$ (18.8 % reduction)
Zambia	DRE and clean cooking: Development of renewable energy and improved energy efficiency	Clean cooking: Promotion of alternative sources of energy to prevent deforestation	91.19 (2021)	Unconditional: 20 MtCO2eq (25% reduction) Conditional: 38 MtCO2eq (47% reduction)
Zimbabwe	DRE: Expansion of microgrids	No NAPA submitted	35.84 (2017)	Conditional: 45.24 MtCO2eq (40% reduction)

Sources: Nationally Determined Contributions, National Adaptation Programmes of Action, and Climate Watch (https://www.climatewatchdata.org) for current emissions when not mentioned in NDC

Energy access and productive uses of energy, economic development and DRE solutions in AFE

26. **Modern energy access needs are tightly woven together with economic development, climate mitigation, and adaptation needs in AFE.** Access to reliable and clean modern energy is essential for socio-economic development and sustainability as well as for climate resilience. As noted above, more than half of the population did not have access to electricity in 2022 and almost 78% cooked with traditional biomass fuels, which contribute significantly to GHG emissions, local pollution, and indoor air pollution, damaging health as well as leading to land degradation. Accelerating access to affordable clean electricity and clean cooking in AFE is first of all a prerequisite for achieving economic growth, poverty reduction, and gender equality (as discussed above in the section on Climate adaptation and DRE solutions in AFE). It is also necessary to address people's vulnerability to climate change through better adaptation and greater resilience, and to embark on a low-carbon path of development (as discussed in the previous section on Climate mitigation and DRE solutions in AFE).[39] Expanding PUE plays a critical role in this effort by: (i) increasing and diversifying people's incomes, making them more resilient to challenges of all types; (ii) making climate-vulnerable populations more resilient by offering opportunities for addressing specific climate risk, e.g., via water pumping and cooling technologies; and (iii) making DRE business models more sustainable by increasing people's incomes and reducing reliance on public financing.

27. **DRE systems have a strong potential to fill the modern energy access gap and deliver PUE; they are shown by geo-spatial modeling to be the least-cost technology for half of all unelectrified households in AFE. DRE, PUE, and clean cooking access create synergistic effects that can transform DRE markets, as well as people's lives**. DRE technologies and business models provide opportunities for acceleration and inclusion that were not available a decade ago.[40] Technology developments resulting in falling costs for solar energy and battery storage, smart digital applications, and energy-efficient appliances/equipment, including those for PUE, have made modular DRE an increasingly attractive complement to centralized grid systems, giving rise to innovative, private sector-driven business models. This has revolutionized energy access in SSA, where traditional grid expansion is not economically viable in many sparsely populated areas and FCV contexts. Cost-competitive, consumer-centered models and consumer financing options, such as pay-as-you-go (PAYG), which originated in Kenya, allow users to pay for systems/services in small amounts over time. These rapid innovations in technologies and business models are now also reaching productive users of energy (including for agriculture) and social infrastructure (e.g., schools and health clinics). Clean cooking is gaining momentum, driven by fast-paced innovation, increasing political commitment, and synergies with the electricity sector. Innovations, including electric cooking with energy-efficient stoves and appliances (e-Cooking), application of PAYG models, and the opportunity to leverage carbon and impact-financing to pay for public goods, are making clean cooking solutions affordable to ever wider segments of the African population.

28. **The market assessment for ASCENT-GREEN identified 365 DRE companies (including PUE and clean cooking) already serving the AFE region (see Table 4), but their presence is uneven across three groups of countries.** Only a handful of these companies (average 4 per country) operate in small countries, which also tend to have the least favorable enabling environments. They are also under-represented in FCV countries (average 18 per country), despite the fact that FCV countries have the largest unelectrified population in the AFE region. They are most active in non-FCV countries with a population above five million, which are defined as active markets (average 35 per country) and also have the most advanced enabling environments (see section B3 and Annex 2, Feasibility & Market Study). While DRE companies exist in the AFE region, overall, the DRE sector remains nascent. There are only some very limited segments of the DRE sector that are commercially viable, which essentially include C&I segment and off-grid solar in urban areas, catering to higher income quintile households. These are not market segments targeted in ASCENT-GREEN. DRE companies focusing on new connections, which are in rural areas and FCV contexts primarily, are struggling with commercial viability, and nearly none of them have reached profitability. Clean cooking and PUE companies are in an even earlier stage and also still on the pathway to profitability. Reducing the

[39] Davide, M. et. al. Building a Framework to Understand the Energy Needs of Adaptation. 2019. https://www.mdpi.com/2071-1050/11/15/4085
[40] World Bank. 2023. *Accelerating Sustainable & Clean Energy,* op. cit., p. 10.

costs, providing more affordable financing and growing population incomes and diversifying company revenues (PUE, carbon revenues etc.) – as proposed to be driven by ASCENT-GREEN – are essential for reaching commercial viability in this market segments.

Table 4. 365 DRE companies are operating in the AFE region

Number of large DRE and crossover[1, a] companies	Number of medium-sized[2, a] DRE companies	Number of small or startup[3, a] DRE companies
Total: 114	**Total: 55**	**Total: 196**
SHS: 27	SHS: 13	SHS: 54
MG: 36	MG: 21	MG: 45
PUE: 24	PUE: 12	PUE: 32
CC: 23	CC: 10	CC: 31
Other [4]: 44	Other [4]: 17	Other [4]: 31

Source: Market Assessment (Annex 2)

Note: SHS – solar home system; MG – mini-grid; PUE – productive uses of energy; CC – clean cooking

a. Companies operate across multiple countries and product lines.

1. Large = US$10 million+ revenue or 250+ employees; Crossover = large companies active in adjacent industries (e.g., telecom, commercial and industrial [C&I], agriculture machinery, etc.) that can pivot to or scale up investment in energy access
2. Medium-sized = US$2–US$10 million revenue or 50–250 employees
3. Small or startup = < US$2millon revenue or 50 employees, includes ASCENT-eligible DRE tech, like e-mobility and C&I for energy access

29. **Increased access to productive uses of energy (PUE) based on DRE systems and equipment supported by the program can make a vital contribution to sustainable economic development and climate resilience in off-grid areas, creating powerful synergies with increased access to DRE systems and clean cooking solutions.** Productive use of energy (PUE, also referred to as productive use of renewable energy or PURE) is defined here as the use of electricity from renewable sources in any income-generating activity that produces goods and/or services, thus contributing to economic growth and to the improved economics of energy systems. PUE generates revenue for users, contributing to socio-economic development, as well as climate resilience, adaptation, and mitigation goals. Over time, PUE is linked to productivity and income growth, the emergence of new enterprises, and increases in household purchases of time- and drudgery-saving appliances, all of which boost quality of life, creating a virtuous cycle. Two examples of this for DRE systems are: (i) sales of solar energy kits from members of the Global Association for the Off-grid Solar Industry (GOGLA) helped customers to generate over US$9 billion in additional income between 2010 and 2024, by providing power for local businesses, mobile charging stations, and agricultural activities; and (ii) a study of 1,200 solar water pump customers across East and Southern Africa found that 90% reported increased income due to ownership of the product, with 47% seeing a significant increase and 43% a slight increase.[41] Agriculture and food PUE is a key focus area, given that this sector employs more than half of SSA's workforce. Alongside accelerating productivity, income generation, food security, and resilience, PUE has the potential to unlock significant reductions in pre- and post-harvest losses, food loss, and waste. Africa suffers from some of the highest levels of food loss and waste in the world, leading to a dramatic loss in revenue potential and nutritional value, while leading to high GHG and global warming potential (GWP) emissions from rotten produce. In addition to agriculture, strong opportunities exist to support productive uses in SMEs (in tourism, restaurants, small shops, workshops, and services, such as tailors, barbers/hair salons etc.) and linkages with the digital sector, enabling remote jobs as well as enhancing income generation opportunities with access to information. PUE also stimulates electricity demand, improving the viability of DRE business models. Over the long-term, increased electricity demand will reduce dependence on public subsidies and can lead to tariff reductions. While the productive DRE sector is in the very early stages, such companies are now emerging in all types of the market, with 24 large, 12 medium-sized, and 32 small productive use companies operating in the AFE region.

B1.3 Mission 300, ASCENT and ASCENT-GREEN: Game changing solutions to expand DRE in AFE

30. **ASCENT-GREEN will benefit from being part of Mission 300 and the ASCENT Multi-phase Programmatic Approach (MPA). Mission 300** is a high profile African initiative to provide energy access to 300 million people in SSA by 2030, led by heads of state and supported by the World Bank Group, African Development Bank (AfDB), and other partners. The **ASCENT MPA** is the World Bank's primary vehicle for delivering on its commitments under Mission 300 in AFE.

[41] GOGLA. 2025. *Off-Grid Solar: Powering Climate Resilience*, op. cit., pp. 16–17.

Mission 300

31. **Mission 300 is an African-owned initiative endorsed by 30 heads of state or governments at the Africa Energy Summit in Dar es Salaam, Tanzania in January 2025, hosted by the Republic of Tanzania and the African Union and others, which aims to connect 300 million people to electricity in SSA by 2030.**[42] As part of Misson 300, governments are preparing ***National Energy Compacts*** that acknowledge the essential role of policy reform and set measurable and time-bound targets for action in five areas: (i) expanding cost-efficient power generation; (ii) boosting regional power integration for cross-border trade; (iii) scaling up last-mile electrification with DRE solutions; (iv) unlocking private investment through supportive regulatory frameworks; and (v) strengthening utilities with transparent financial management and cost recovery. Five AFE countries, the Democratic Republic of Congo, Madagascar, Malawi, Tanzania, and Zambia, presented compacts at the Summit and nine additional countries, Botswana, Burundi, Comoros, Ethiopia, Kenya, Lesotho, Mozambique, Sao Tome and Principe, and Zimbabwe, have launched their compacts since then.[43] Additional compacts are under development with the expectation of all ASCENT countries owning a compact.

ASCENT MPA

32. **The World Bank's primary vehicle for delivering on the M300 target in the AFE region is the Accelerating Sustainable and Clean Energy Transformation Multiphase Programmatic Approach (ASCENT MPA).**[44] Approved in November 2023, ASCENT aims for an unprecedented increase in the pace, scale, and impact of energy access efforts in AFE. ASCENT's objective is to increase electricity access to 100 million people across AFE by 2030.[45] In parallel, ASCENT exploits synergies with the clean cooking sector to provide clean cooking access to at least 20 million people and with the PUE sector to benefit 10 million people. It is a US$15 billion program, with US$5 billion of IDA funding and an additional US$10 billion to be mobilized from public, private, climate fund, and other partners, as well as participating governments.

33. **ASCENT is delivered through a set of phased, interconnected regional and country projects organized under three pillars**: Pillar 1: regional and national platforms to accelerate energy access and create an enabling environment (developing policies, strategies and projects; building capacities of governments, DRE companies, financing institutions, and key stakeholders; and promoting knowledge exchange); Pillar 2: expanding grid electrification**;** and Pillar 3: scaling up DRE and clean cooking solutions**.** ASCENT is implemented through a combination of (i) ASCENT country operations,[46] which can support countries in all three pillars, based on national priorities and contexts, and regional interventions, which focus primarily on Pillar 3. These regional interventions consist of the COMESA Regional Energy Acceleration Platform (P180547), which is focused on technical assistance, capacity building, knowledge exchange, and coordination, and two ASCENT REAF regional projects, starting with the Regional Energy Access Facility Platform (REAF, P181328), which is under implementation by TDB, a regional development finance group, and a GCF regional direct accredited entity, which finances a scale up of DRE and clean cooking markets.

34. **ASCENT-participating countries draw on ASCENT's menu of options under Pillars 1, 2, and 3 to design country-specific ASCENT projects that will contribute to MPA objectives including the expansion and transformation of markets for DRE systems, clean cooking, and productive uses, where applicable**. A number of countries have prioritized DRE interventions in their ASCENT country projects, including to date Eswatini, Malawi, Mozambique, Rwanda, Sao Tome and Principe, Somalia, Tanzania, and Zambia. The expectation is that these ASCENT country projects will set up country-specific financing mechanisms that will be complemented and accelerated by ASCENT-GREEN; for example, at time of writing, only Mozambique and Rwanda ASCENT projects integrate support for PUE. These national facilities will grow in size and scope as countries gain more experience with DRE, as additional countries join ASCENT, and as the regional RBF under ASCENT-GREEN demonstrates results, especially in the PUE area. These facilities are, therefore, expected to play an important role in scaling up the progress that will be achieved via regional RBF, and also in enhancing long-term sustainability, as they will be able to leverage government mechanisms, such as social protection programs, to deliver universal energy access, including to the poorest and most vulnerable households (see ASCENT Project Appraisal Documents for each country project).

[42] See https://mission300africa.org/energysummit/.

[43] These compacts can be found at https://mission300africa.org/energysummit/compacts/.

[44] World Bank. 2023. *Eastern and Southern Africa: ASCENT Project Appraisal Document*. Washington, D.C.: World Bank. https://documents1.worldbank.org/curated/en/099113023180038846/pdf/BOSIB02ca62b030d109c720b59a2fa65b89.pdf

[45] The World Bank Group M300 target for the AFE region is 150 million people, of which 50 million are to be reached through ongoing operations, while all new operations are to be delivered under ASCENT to provide additional access for 100 million people.

[46] Countries with ASCENT Projects include approved projects in Burundi, Eswatini, Ethiopia, Malawi, Mozambique, Rwanda, Sao Tome and Principe, Somalia, Sudan, Tanzania, and Zambia and, in the pipeline, expected to be approved in calendar year 2027: Botswana, Comoros, DRC, Kenya, Lesotho, Madagascar, Namibia, South Sudan, and Uganda

35. **The ASCENT Program delivers transformative change, from the incremental energy access efforts of the past to a large scale, regional effort**. ASCENT is unique in a number of areas: (i) scale: the program represents the largest ever approved World Bank commitment to energy access (US$5 billion IDA); (ii) comprehensiveness*:* ASCENT delivers a parallel acceleration of grid electrification via utilities and DRE + clean cooking expansion + PUE by the private sector, to comprehensively address a set of interconnected barriers (see Table 5 for a description of the barriers); (iii) aligning country and regional efforts: every country can design specific operations, while leveraging regional economies of scale via the harmonization and standardization of approaches via regional interventions; (iv) partnerships: ASCENT offers a platform for participation in financing and knowledge exchange, including with the International Finance Corporation (IFC), Multilateral Investment Guarantee Agency (MIGA), and other Global Practices within the World Bank Group (WBG); (v) private sector mobilization: ASCENT seeks to setup several regional facilities to address gaps in the DRE financing infrastructure and mobilize the private sector; and (vi) maximum use of technological advances: geo-spatial modeling improves planning in on- and off-grid electrification, while the falling cost of solar technology and battery storage, increased energy efficiency, and smart digital applications, together with innovative private-sector models for marketing DRE, result in modular DRE options—digital monitoring, reporting and verification (MRV) platforms, supported by ASCENT, revolutionize subsidy delivery, as well as monitoring and evaluation.

The ASCENT-GREEN Program

36. **The ASCENT-GREEN Program is part of Pillar 3 of ASCENT, utilizing GCF and World Bank financing to scale up access to DRE, clean cooking solutions, and PUE for communities in AFE that lack access to energy, particularly those living in sparsely populated areas or in conditions of FCV in AFE, acting as an accelerator of DRE, clean cooking, and PUE efforts in the AFE region.** The program is a partnership between the World Bank and GCF that builds on strengths and complementarities, which includes: (i) World Bank support to the ASCENT Regional Financial Facilities and the ASCENT COMESA Regional Energy Acceleration Platform activities for DRE, under the ASCENT MPA;[47] and (ii) GCF support to expand access to sustainable, affordable, resilient, and reliable renewable energy, in the context of its strategic plan for 2024–2027. GCF concessional financing is key to ensuring that: (i) DRE, clean cooking, and PUE solutions are affordable for underserved and unserved populations to start their economic transformation, which, in turn, over time will increase their capacity for climate change and ability to afford DRE solutions; (ii) DRE companies can access affordable financing to expand their operations to serve these customers, which will lead to economies of scale and cost reductions, and (iii) the associated climate mitigation, adaptation, and economic benefits are realized. GCF financing of US$250 million will be complemented by US$454 in co-financing from the World Bank and US$832 million in financing, from other financial institutions and the private sector for a total program cost of US$1.536 billion.

37. **Accelerating access to DRE systems, clean cooking technologies, and PUE together under ASCENT-GREEN will have powerful synergistic impacts that can amplify benefits and lead to a sustainable pathway to economic development and climate resilience, as well as reducing the gender gap in AFE by empowering women when giving them greater access to energy, more financing options and broadening economic opportunities through internships program in the energy sector.** Access to DRE systems creates opportunities for the use of a wide range of modern equipment for modern lighting, communication, learning, climate adaptation, and production. Access to clean cooking improves the health of women and children and frees up their time for studying, income generation, and socializing, helping to overcome the gender gap (see section G2). Finally, access to productive equipment based on DRE systems helps to diversify and increase household incomes, contributing to sustainable economic progress and the sustainability of energy access. However, the adoption of PUE based on DRE systems and productive uses equipment does not happen automatically when access to modern energy arrives; PUE needs to be promoted and stimulated through cross-sectoral activities, as planned in ASCENT-GREEN.

38. **Decisive action is needed to simultaneously address a set of inter-related barriers that have prevented DRE solutions from expanding to meet needs until now**. The business-as-usual scenario will result in the continued growth of the DRE industry, but will fall short of realizing DRE's transformational potential to close the energy access gap, especially in underserved and unserved areas, which often have challenging conditions associated with remoteness and fragility. Furthermore, business-as-usual will not result in a significant scaling up of productive uses. Analysis of the DRE sector and consultations by the World Bank and IFC with DRE companies and other stakeholders indicate that delivering on DRE's full potential, including PUE, requires addressing a set of barriers including affordability constraints, financing constraints, lack of a supportive policy and regulatory frameworks, and the capacity constraints of key stakeholders. Table 5 describes these barriers and how they will be addressed by ASCENT and ASCENT-GREEN. Annex 25 provides further refining of these barriers specifically for PUE. With respect to clean cooking, while recent political commitments and funding pledges for clean

[47] As noted above, the ASCENT MPA also includes country-specific projects that support DRE expansion that are coordinated with, but are not included in, the ASCENT-GREEN Program, which takes a regional approach.

cooking have increased, financing levels still fall well short of what is required for universal access. For example, the IEA[48] estimates that achieving universal access to clean cooking in Africa requires about US$37 billion by 2040 (over US$2 billion per year), yet total investment in 2023 was only around US$675 million (including modest concessional flows of $US155 million)—well under one-third of the annual need—underscoring a persistent structural gap that market-based investment alone is not closing. Carbon markets have become an important source of financing for the clean cooking sector, with the revenues generated for the sector quadrupling between 2020 and 2024 but still amounting only to US$ 107 million in 2024. Furthermore, recently several factors have contributed to uncertainty, including concerns about carbon credit integrity, which has led to the decline, as well as high volatility, of carbon prices, and resulting challenges to utilize carbon credits as a predictable revenue. Furthermore, carbon credits have been heavily concentrated in a small number of countries and companies. Concessional finance is therefore essential to reduce the cost of capital, de-risk projects, and crowd in private investment at scale—particularly for last-mile contexts—so that clean cooking and DRE solutions can expand sustainably and equitably.

Table 5. Key barriers to scaling up DRE and how they are addressed by ASCENT-GREEN, ASCENT, and Mission 300

Key issues	Challenges	Actions under ASCENT-GREEN	Complementary actions under Mission 300 and ASCENT
1. Customer affordability	❖ **Low income**. The unelectrified population mainly consists of people living in poverty, under US$2.15 a day; climate change is increasing their vulnerabilities. ❖ **High costs**. The unelectrified population is increasingly remote and/or living in FCV contexts, resulting in a high cost of service. ❖ **Lack of income opportunities**. Even with electricity access, newly electrified users may lack the means to exploit productive opportunities. ❖ **Fragmentation and inconsistent end-user subsidies (e.g., RBF), and lack of scale + predictability of carbon revenue** result in high transaction costs, uncertainties and misaligned incentives for DRE companies to reach the target population. ❖ **Social infrastructure.** There is a lack of budget and consistent arrangements for operation and maintenance (O&M) for DRE-electrified schools, health clinics, and other social infrastructure.	✓ Scale-up regional RBF, to address the initial affordability gap of target populations. ✓ Use regional RBF to incentivize DRE companies to expand to underserved populations, including FCV, via multi-country portfolios to build scale and speed, reduce costs, and provide predictability to support long-term growth strategies of DRE companies. ✓ Use regional RBF to aggregate demand from smaller markets to support cost reduction via economies of scale. ✓ Use regional RBF to fill the gaps in national RBFs to support additionality and deliver catalytic effects on national markets. ✓ Prioritize PUE, focusing on sustainable business models, to improve the livelihoods of target population, increase their purchasing power, and improve the sustainability of DRE business models, while building the capacities of all PUE stakeholders and leveraging multi-sectoral partnerships built under M300 to support the PUE agenda. ✓ De-risk carbon revenue to gradually increase the volume and improve the pricing of revenue generated from carbon markets as RBF gets phased out. ✓ Develop an end-to-end digital MRV, for efficient implementation of RBF and the generation of carbon revenue under COMESA and a de-risking facility for carbon price volatility. ✓ Demonstrate sustainable business models for social infrastructure, leveraging long-term service contracts with predictable revenue and risk mitigation.	✓ Design and deliver 'energy for economic transformation' stream under Mission 300, including partnerships and new approaches for productive use and social infrastructure. ✓ Set up a Center of Excellence on Productive Use of Energy to support the delivery of ASCENT and other M300 PUE interventions. ✓ Build multi-sector and multi-stakeholder partnerships for scaling up productive use, encompassing in particular agriculture, water, health, education, SME, and finance sectors. ✓ Align other sectors' interventions with Mission 300 agenda and leverage their expertise and implementation mechanisms, e.g., to support demand-side PUE interventions. ✓ Scale-up national RBF and harmonize it around best practices, leveraging and continuing the momentum created by the regional RBF under ASCENT-GREEN. ✓ Reduce risks related to the volatility of carbon prices to enable them to be used as a stable source of revenue, reducing the costs for end users, especially for PUE and clean cooking.
2. Access to capital for growth	❖ **Mismatch between financing available and DRE companies' needs.** While financing for DRE has increased, it is concentrated in US$ denominated senior debt of short to medium tenor, while	✓ ASCENT-GREEN will set up financial instruments addressing the need for flexible growth capital as well as responding to DRE companies' current needs for concessional financing, while increasing flows of commercial capital as the sector matures. Instruments will be technology and	✓ Set up the Permanent Equity Vehicle as a leading multi-funder vehicle to deliver patient equity for DRE with IFC, MIGA, TDB, AfDB, Rockefeller Foundation, and other partners.

[48] Source: IEA. 2025. *Universal Access to Clean Cooking in Africa: Progress Update and Roadmap for Implementation*

	companies require less risk-averse capital, in particular patient equity, long-term and reasonably priced local currency debt. The market also favors larger and more established companies. Hence, the new generation of growth-oriented, innovative SMEs are unable to access capital. ❖ **Poorly designed grants undermine sustainability.** While grants are needed to bridge the affordability gap, to incentivize expansion to underserved areas, and to support the incubation of new, small, local companies, they are often defined too narrowly. In the absence of growth capital in terms of equity and affordable debt, companies are 'chasing' all available grants, which distracts them from pursuing long-term growth strategies and undermines the sustainability of their business models.	business model agnostic to avoid 'selecting winners' and support ongoing and further innovations, scaling up what works. ✓ **Equity:** Enable a multi-stakeholder patient equity vehicle by providing concessional financing meeting the need for patient equity (10+ years), while crowding in commercial investors as the companies grow. ✓ **Debt:** Enable long-term term debt via TDB and TDF, especially for SMEs, with blended-finance terms for high impact nascent sectors such as PUE and social infrastructure, as well as targeting growth-oriented innovative SMEs that cannot access credit on fully commercial terms. Leverage TDB to on-lend to local financial institutions and build their capacity. Provide risk mitigation, with a focus on enabling local currency lending from financial institutions (with the potential for direct financing from GCF in the future). ✓ **Regional RBF**: While the main aim of RBF is to cover the affordability gap, the regional design reflects the goal of supporting DRE companies in their long-term growth strategies, within the eligibility criteria (e.g., which FCV country/ underserved regions to expand to, in what time-frame etc.). Build RBF designs that incentivize sustainable business models. RBF will also include catalytic grants to support the development of local SMEs and start-ups and encourage further innovation, complemented by TA.	✓ Set up country specific financing vehicles under ASCENT country projects where appropriate (e.g., to overcome currency conversion issues etc.). ✓ Improve coordination among development partners, reduce fragmentation of efforts and inconsistent approaches. ✓ Mobilize new financiers, complementing and potentially scaling up financing mechanisms established by ASCENT-GREEN. ✓ Mobilize private sector financiers and build awareness of DRE investment opportunities.
3. Policy and enabling environment	❖ **Challenging environments**: Costly bureaucratic processes; unfriendly and unpredictable policies and regulations in some countries (suboptimal planning regulatory bottlenecks, inadequate quality assurance, high customs duties etc.); lack of alignment of frameworks around best practices, inconsistent application, shifting priorities	ASCENT-GREEN will leverage COMESA's convening power and TA resources under ASCENT COMESA to: (i) harmonize DRE policy and regulatory frameworks around best practices; and (ii) provide TA to governments to implement policies and regulations, especially for small and FCV countries. This includes especially: ✓ Development of national electrification, clean cooking and PUE strategies and plans ✓ Adoption of end-to-end digital platforms, including digital MRV ✓ Enabling policy, regulatory, and quality assurance frameworks ✓ Streamlining and reduction of customs duties/taxation on DRE ✓ Filling data gaps, e.g., through GIS, market assessments and household surveys	✓ Leverage National Energy Compacts under M300 to drive government commitments and incentivize the implementation of policy and regulatory reforms benefiting DRE. ✓ Build broad-based partnerships ensuring a coordinated approach by development partners. ✓ Provide support, through ASCENT, to country operations to address country-specific barriers in close coordination with COMESA.
4. Pace of delivery of DRE solutions due to capacity constraints of multiple stakeholders	❖ **Patchwork of programs**: Each country has different rules and procedures, often with multiple uncoordinated donor programs in one country; gaps between program funding ❖ **Costly Planning:** Costly and time-consuming site selection and market entry ❖ **Delays in financial closure** by DRE companies due to lack of	✓ Design the regional RBF to be focused on covering gaps in national RBF programs and building best practices to integrate in national RBF programs, leading to the harmonization of national RBF programs around best practices. ✓ Digitize RBF/tenders. ✓ Develop framework contracts with key platforms for digital planning, management of processes and digital MRV by COMESA.	✓ Close monitoring of targets and actions in National Energy Compacts and access to decision-makers at the highest level to overcome potential delays ✓ Standardization of ASCENT country project design ✓ ASCENT country project delivery scheduled to avoid gaps in funding ✓ Better alignment of donor activities

	familiarity with funders' requirements, and funders' lack of familiarity the DRE sector ❖ **Capacity constraints** across stakeholders and lack of skilled workforce ❖ **Lack of market intelligence for PUE**, including assessing 'real demand', and identifying scalable and business models	✓ Provision of TA by COMESA to governments, focused on both policy aspects and on ASCENT implementation aspects. ✓ Provision of TA by COMESA to DRE companies, focused on accelerating time to financial closure. ✓ Support TA/capacity building efforts of local financial institutions to develop viable portfolios of DRE lending/investments with a potential second phase of direct support from GCF. ✓ Ensure comprehensive demand and supply side interventions for PUE. ✓ Provide skill development programs partnering with academic/training institutions, industry associations and others under COMESA. ✓ Conduct comprehensive regional market assessments with a focus on PUE identifying addressable demand and scalable business models by COMESA. ✓ Knowledge exchange and coordination by COMESA.	✓ Additional funding and provision of TA sourced via partners ✓ Knowledge exchange by other partners ✓ Setting up of a Center of Excellence on Productive Use of Energy to fill in data, knowledge and capacity gaps for mainstreaming PUE in M300, in collaboration with M300 partners

39. **ASCENT-GREEN will address the above inter-linked barriers comprehensively and simultaneously, leveraging additional tools available under the overall ASCENT and Mission 300.** The barriers will be addressed through a combined effect of activities under ASCENT's three components, as summarized in Table 5 and illustrated in a few successful examples in Box 2. In addition, Annex 25 provides a detailed description of ASCENT-GREEN's comprehensive approach to address supply-, demand- and ecosystem barriers and market failures affecting PUE acceleration, in the context of its synergetic provision with DRE and clean cooking.

- Customer affordability barriers will be addressed by: (i) scaling up RBF in the short term; (ii) while in the medium term leveraging more predictable carbon revenue; (iii) scaling up PUE to grow the disposable income of target populations, while diversifying DRE companies' revenue, promoting sustainability; and (iv) reducing costs by delivering economies of scale + reducing transaction and financing costs.
- Financing constraints experienced by DRE companies will be alleviated by: (i) using concessional financing to build the 'fit-for-purpose' financing instruments that the DRE sector requires at this stage of development, namely, patient equity to achieve sustainable growth, affordable debt with longer tenors, preferably in local currency, and flexible, demand-driven RBF to help DRE companies to expand to their next frontiers, while (ii) crowding in commercial capital in the medium to long term. Concessional capital will be used for mobilizing commercial capital through blending and de-risking, especially for SMEs, until the increased flows of more affordable commercial capital, complemented by increasing ability to generate carbon revenue, are able to replace concessional financing. Dedicated efforts will be made to support SMEs through TA and the menu of financing instruments offered under the program.
- Building a consistent and harmonized policy and regulatory environment across AFE countries will be addressed by providing technical assistance, capacity building, and convening for planning, policies, and regulations, including their regional harmonization around best practices and data, as well as the digitization of energy access processes to drive the efficiency and transparency of implementation under the COMESA Platform, as well as coordination and knowledge exchange. This will be further aided by high-level policy dialogue and support under Mission 300, especially under the National Energy Compacts, in which governments (heads-of-state) commit to implementing policy and reform measures to scale up DRE and clean cooking access. Mission 300 and the Compacts will also help mobilize additional public and private financing, beyond that identified in ASCENT-GREEN.
- Capacity constraints and resulting implementation delays will be addressed by the capacity-building activities of each ASCENT-GREEN component targeting governments, DRE companies, especially SMEs, and financial institutions, while seeking beneficiary feedback from end-users. They will also be aided by introducing a regional approach that will help reduce fragmentation across multiple country donor interventions. The digitization of government tenders, RBF processes, and monitoring, reporting, and verification have proven to significantly accelerate grant awards.

40. **The nature of these barriers and their interlinkages require comprehensive support that addresses them barriers in a coherent manner.** The World Bank is uniquely positioned to lead this effort, being the largest financier of energy access in the region, with decades of experience in the DRE sector and the region, ability to leverage the synergies with individual ASCENT country operations, supported by the World Bank, the World Bank's policy dialogue with countries under Mission 300, and the ability to draw on expertise within the WBG, including IFC and MIGA. Specifically, ASCENT-GREEN serves as a critical accelerator of energy access in the region, to deliver cost

reductions, aggregation and economies of scale that are not possible to achieve through country-specific interventions only.

Box 2. Examples of how complementary instruments and actions work together to achieve results

The identification of barriers in Table 5 and the proposed multifaceted response of ASCENT-GREEN draws on World Bank's experience with implementing DRE and clean cooking interventions in the AFE region and globally, including the current World Bank-funded projects in 12 AFE countries, which integrate RBF and other financing and TA support for DRE and clean cooking interventions. This experience has shown that market barriers tend to be inter-linked and successful interventions have integrated multiple instruments to drive progress – as detailed out in Uganda and Rwanda case studies below. Similar approaches have now been rolled out in other AFE countries with promising results, including in low electricity access countries, such as Malawi and Madagascar, where World Bank-financed off-grid funds providing RBF and working capital have succeeded in generating active off-grid solar markets. These experiences also have shown positive results of bundling DRE with clean cooking access, and more recently PUE to maximize synergies and impacts.

Despite these positive examples, the pace of energy access expansion at the regional level has not been sufficient to overtake population growth, calling for further acceleration, particularly for areas that require regional aggregation to achieve economies of scale and risk diversification.

Case Study: Uganda Electricity Access Scale-up Project (EASP)

- Policy alignment: EASP supports Uganda's 2030 electrification goals, with off-grid solutions expected to deliver roughly half of new connections, guiding market focus and public–private collaboration.
- RBF: Targeted RBF grants reduce end-user prices and reward verified deliveries in off-grid solar, clean cooking, and PUE products. By October 2025, about US$40 million RBF has been committed and over 358,000 off-grid solar, 143,000 clean cooking, and 2,000 PUE products were sold.
- Credit Support Facility (CSF): Lines of Credits (LoCs) and Partial Credit Guarantees (PCGs) unlock commercial lending and consumer finance. About US$27 million LoCs have been approved, supporting 8,114 DRE solutions. Three PCGs with a total exposure of US$3.2 million has been issued to PFIs. For example, A US$1.5m PCGs enabled I&M Bank to extend a UGX 20bn LoC to Star DTV—capital that helped deliver ~60,000 off-grid solar connections.
- How PCGs complement RBF and LoCs: PCGs reduce default risk and unlock bank lending from LoCs; DRE companies use this working capital to fulfill orders and expand last-mile reach; RBF then pays for verified outcomes—creating a finance–results flywheel that accelerates scalable, affordable DRE access.
- Digital MRV—Prospect platform: The Prospect provides real-time digital monitoring, reporting, and verification of deliveries, speeding payment cycles and strengthening accountability.
- Inclusion and last-mile finance: PAYGO via mobile money and tiered PFIs (banks, MFIs, SACCOs) improve affordability and reach; agent networks grew to ~3,300 with rising female participation—supporting jobs and equitable access.
- Technical assistance facility: Dedicated TA builds capacity of the implementing agency, DRE companies, and PFIs, enhances DRE companies' bankability, and strengthens PFIs' lending appetite in DRE, reinforcing the finance – results loop.

Case Study: Rwanda Energy Access and Quality Improvement Project (EAQIP)

- Policy alignment: EAQIP supports Rwanda's national clean cooking and energy access goals under the 2030 strategy, ensuring public policy anchors private market development.
- RBF: A US$20 million clean cooking subcomponent—cofinanced by the Clean Cooking Fund and IDA—operates alongside an off-grid solar subcomponent. Both deploy results-based financing (RBF) to crowd in private capital and pay against pre-defined performance triggers.
- Pro-poor subsidy design: Subsidies are calibrated to maintain affordability for low-income households while sustaining private participation. The RBF window (US$17 million) initially supports Tier 2 technologies and transitions to Tier 3 as higher-performing products become available and affordable.
- Technical standards and capacity: US$3 million in technical assistance strengthens local stove producers and the Rwanda Standards Board for product certification and standards-setting—de-risking the market and improving quality.
- Carbon finance integration: In 2022, US$10.8 million in additional finance enabled monetization of emissions reductions via Ci-Dev. Carbon revenues will replenish the RBF, turning it into a revolving fund to sustain market growth.
- Market outcomes: Since RBF operations began in 2021, 20 firms have supplied improved stoves, electric cookers, and LPG systems to over 460,000 households (≈14% of Rwandan families). Sector sales rose from Rwf 5.9 billion (2020) to Rwf 24.7 billion (2024), a >4x increase. The scheme has created or sustained 757 jobs including 181 jobs for women.
- Inclusion and safeguards: EAQIP integrates market development, gender inclusion, and robust environmental and social safeguards to ensure equitable and resilient outcomes.

41. **ASCENT-GREEN is a proposed strategic partnership between the World Bank and GCF in the context of the larger ASCENT and M300 efforts.** It creatively and comprehensively combines the comparative strengths of the World Bank and GCF, leveraging the different nature of instruments that each institution has to create a comprehensive package that addresses identified barriers, with GCF funding playing a catalytic role in enabling the proposed interventions and impacts.

B1.4 Complementarity of ASCENT-GREEN and Other Regional Climate-Funded Programs

42. **As explained above, ASCENT-GREEN is implemented within the framework of the African-led Mission 300, and as part of the WBG's ambitious ASCENT Program**. Other climate-funded programs aim to contribute to increasing DRE markets in some countries in the AFE region, such as the African Development Bank's Leveraging Energy Access Finance (LEAF Program), which was approved by the GCF in 2018, and Acumen's Hardest-to-Reach Program, which was approved by the GCF in 2023. ASCENT-GREEN builds on these earlier experiences and complements them in a number of areas:

(i) *Highest level commitment:* ASCENT-GREEN builds on the commitments made by more than 30 African heads of state and governments at the Mission 300 Energy Summit in Tanzania in January 2024 and on the National Energy Compacts, including compacts from 14 AFE countries already launched and under implementation.[49]

(ii) *Experience:* It also builds on more than 20 years of WBG experience in promoting DRE systems through national projects in many of the countries, including currently active World Bank-financed national RBF interventions in 12 AFE countries,[50] as well its engagement with GOGLA in promoting off-grid solar technologies as the manager of the Lighting Africa and Lighting Global programs, which were instrumental in defining standards and testing procedures that are now accepted internationally for these systems, and the extensive knowledge products, networks, and convenings on DRE carried out by ESMAP.[51]

(iii) *Technological scope***:** ASCENT-GREEN aims not only to increase people's access to electricity from DRE systems, as do the LEAF and Hardest-to-Reach Programs, but also to provide clean cooking solutions that will help to narrow the gender gap by improving women's health and reducing the time they spend on gathering fuel and cooking, as well as to assist households, micro, small and medium enterprise (MSMEs), and farmers to obtain DRE-powered productive uses equipment to improve their livelihoods, increasing the program's potential impact on incomes, sustainable development, and climate resilience. Providing the three technologies together in one program can create powerful synergies, amplifying the impacts of each technology.

(iv) *Geographical scope:* ASCENT-GREEN is the widest in scope of the three programs; it includes 21 of the 24 AFE countries that have not reached universal access, of which Kenya and Ethiopia are also included in the 6 countries covered by LEAF and Burundi**,** Lesotho, Malawi, Somalia, Uganda, and Zambia are also included in the 16 countries covered by Hardest-to-Reach. Given the large unserved market for electricity in these countries, the fact that the other programs do not include clean cooking or productive uses, and the fact that ASCENT-GREEN takes a regional approach rather than allocating funding to countries, means that the programs are complementary rather than competitive.

(v) *Scale:* ASCENT-GREEN aims to mobilize catalytic financing to scale up DRE markets in AFE. It will leverage the proposed WBG financing of US$454 million and the proposed GCF financing of US$250 million, aiming to mobilize resources of around US$156 million from other development partners and an additional US$521 million from the private sector for a total of US$1.372 billion. This compares to total LEAF financing of US$1.2 billion and US$250 million for Hardest-to-Reach.

(vi) *Comprehensiveness:* ASCENT-GREEN delivers a comprehensive approach for the accelerated growth of DRE markets that addresses directly more barriers than the other programs. While all three programs aim to increase affordable debt financing and provide TA to strengthen the capacity of DRE companies and financial institutions to deal with the sector, and both Hardest-to-Reach and ASCENT-GREEN provide equity financing, ASCENT-GREEN also provides results-based grant financing to cover the affordability gap of DRE and clean cooking consumers. Furthermore, ASCENT-GREEN benefits from close linkages to M300 National Compacts as well as the COMESA Platform to create policy support and an enabling environment for DRE electrification, clean cooking, and productive

[49] https://mission300africa.org/energysummit/compacts/

[50] Burundi, DRC, Ethiopia, Kenya, Madagascar, Malawi, Mozambique, Rwanda, Sudan, Tanzania, Uganda, and Zambia

[51] Including, inter alia, ESMAP's Clean Cooking Fund, Mini Grids for Half a Billion and Off-Grid Solar Market Trend report series, Accelerating Productive Use of Energy handbook, Mini Grid annual learning events co-organized with the African Mini Grid Developer Association (AMDA), the biennial Global Off-Grid Solar Forum and Expo co-organized with GOGLA, and End-User Subsidy Lab etc. (see www.esmap.org)

uses including digitization, upstream electrification project development, and policy advisory support to governments aiming at 30 new projects and 15 countries implementing updated strategies including DRE.[52]

(vii) *Leveraging private sector to reach vulnerable populations:* ASCENT-GREEN uses concessional financing to reduce the costs of DRE products and services to make them affordable to the defined target population, who are primarily unserved households and MSMEs in remote rural areas and FCV, while also making the investments viable for private sector participation. By delivering economies of scale, reducing the costs of financing, improving the enabling environment, improving household incomes and DRE company revenues with PUE and through generating more viable and sustainable carbon revenues ASCENT-GREEN aims to drive the DRE sector towards commercial viability, reducing the need for concessional finance in the future.

43. **In addition, as mentioned, ASCENT-GREEN complements country-specific initiatives, including those financed by ASCENT country operations as well as other partners, leveraging complementarities and synergies with such operations, filling in gaps, and serving as an accelerator of country progress.** To illustrate using an example: ASCENT-GREEN is collaborating with the Belgian agency for international cooperation, ENABEL, which is also in the process of requesting GCF resources to support a large-scale mini-grid program in Mozambique implemented by the Mozambican rural energy fund FUNAE. ASCENT-GREEN will complement the FUNAE mini-grid program by providing RBF for other technologies not covered, such as stand-alone systems for households, public institutions, and productive uses, as well as by supporting the Government of Mozambique in finetuning the policy and regulatory environment, improving planning capacity, adopting digital platforms and leveraging regional best practices to further facilitate mini-grid and other DRE expansion. Furthermore, to complement the grants available under FUNAE, the mini-grid companies that are expected to participate in the FUNAE/ENABEL program may participate in the ASCENT-GREEN equity and debt, and de-risking facilities. This will result in a synergetic collaboration allowing both programs to advance at a faster pace than either could on its own.

44. **With respect to clean cooking, ASCENT-GREEN complements regional initiatives (e.g., EnDev/GIZ, MECS, and the Modern Cooking Facility for Africa) by providing a standardized, cross-country regional financing toolbox tailored to frontier markets**. It integrates five complementary facilities with embedded cross-country learning to reduce transaction costs and harmonize good practices. Through blended de-risking—especially a carbon risk mitigation facility—ASCENT-GREEN crowds in private capital and addresses carbon revenue volatility. Technologically, it prioritizes Tier 3+ solutions aligned with the MECS framework, differentiating from programs focused mainly on Tier 1–2 (e.g., EnDev/GIZ). It also coordinates with MCFA's grant-based competitions by channeling concessional debt and blended instruments to later-stage scale-up. Crucially, ASCENT-GREEN bundles clean cooking with off-grid electrification and productive use of energy to leverage supply- and demand-side synergies: enterprises benefit from more diversified portfolios and lower investment risk, while households realize compounded health, gender, and climate benefits as well as increased opportunities for productive activities.

B.2. (a) Theory of change narrative and diagram (maximum 1500 words, approximately three pages plus diagram)

45. **This section has two parts: (i) the story of the ASCENT-GREEN program; and (ii) its theory of change.** The first part explains the story of ASCENT-GREEN, the What, Why and for Whom, Where and by Whom, How, and When of the Program. The second part explains the Theory of Change that underlies the Program, including a narrative and diagram.

B.2 (a1) The ASCENT-GREEN Story

WHAT?

46. **The ASCENT-GREEN Program aims to support people in the AFE region who lack access to modern energy, particularly those living in remote areas and FCV contexts, to become more resilient in the face of climate change**. It supports private sector companies to deliver access to DRE systems like solar home systems and renewable energy mini-grids, clean cooking solutions, and PUE equipment, aiming to reach 42.6 million beneficiaries in AFE, including about 328.8million direct beneficiaries in homes, farms and businesses and 13.8 million indirect beneficiaries of providing electricity to 1302 public facilities like schools and health clinics while avoiding 20.33million tonnes of CO_{2eq} emissions. Of these, 8.1 million tonnes are expected to be traded on the carbon market, to strengthen the long-term commercial sustainability of the DRE companies serving the target populations.[53] At least 60 percent of the aggregate GHG ERs generated

[52] See World Bank. 2023. *Eastern and Southern Africa: ASCENT Project Appraisal Document,* op. cit., Annex 2 COMESA Regional Energy Access Acceleration Program, p. 43

[53] Those CO2 emissions to be traded on the carbon market to support long-term sustainability of DRE companies (including those delivering clean cooking and PUE) will not be claimed as results under GCF funding.

by the Funded Activity, however, will be attributed to GCF Proceeds and will, therefore, not be allowed to be traded and will be retired for the benefit of the respective Host Countries. Annex 22 outlines a methodology for the determination of the volume of GHG ERs that is directly attributable to GCF Proceeds, the share that can be converted into offset credits, and approaches for avoiding market distortions, double-counting, and ensuring transparent reporting. By delivering DRE and clean cooking access to vulnerable populations in AFE, while supporting productive uses equipment powered by DRE, ASCENT-GREEN aims to create synergies that will magnify impacts and help transform markets, leading to a sustainable pathway to: (i) expand energy access to jump-start sustainable economic development and deliver jobs, including for women and youth; (ii) increase the climate resilience of remote and vulnerable populations through greater adaptive capacity; and (iii) contribute to climate mitigation by expanding renewable energy and displacing/avoiding fossil fuels. To this end, ASCENT-GREEN will mobilize US$1.372 billion in catalytic financing (including US$250 million GCF plus US$445 million World Bank/TF co-financing, together with US$521.2 million from the private sector and US$156 million from other IFIs to implement financing instruments and capacity building.

47. **ASCENT-GREEN benefits from being part of unprecedented electrification efforts under the World Bank's ASCENT MPA and Mission 300.** Mission 300 is an African initiative to provide electricity access to 300 million people in SSA by 2030, led by African heads of state and supported by the World Bank Group, African Development Bank, and other partners. Mission 300 has built strong momentum for the energy access agenda, including commitments at the head-of-state level for DRE under National Energy Compacts with targets and specific policy and reform actions. The ASCENT MPA is the World Bank's primary vehicle for delivering on its commitments under Mission 300 in AFE. ASCENT-GREEN is part of the third pillar of ASCENT, aiming to scale up DRE and clean cooking solutions (see section B1.3).

48. **The program has a strong and direct impact on reducing gender gaps and empowering women in AFE.** One of the three core elements of ASCENT-GREEN is the scaling-up of clean cooking solutions at a regional scale; this brings immediate direct benefits to women and children, including reducing death and illness from indoor air pollution caused by burning traditional fuels for cooking, and reducing the time spent in gathering fuels and cooking, thus freeing their time for education, skill development, and income generating activities. The internship program developed by COMESA will support the creation of new job opportunities for women in the energy sector. ASCENT-GREEN will also apply ASCENT's Gender Action Plan so that women and women entrepreneurs will benefit from increased access to energy under program activities through awareness creation activities, targeted technical assistance to help women develop stronger proposal and expand their chances to access the different financing instruments available under the Program, and in the case of RBF specific targets will be set so that the share of women in supported DRE and clean cooking companies will increase (see section G2 and Annex 8). All of these activities to be implemented under the ASCENT-GREEN program aim to contribute to the sustainable empowerment of women in AFE.

WHY and for WHOM?

49. **While energy is critical for sustainable economic development and climate resilience, AFE remains the least-electrified region in the world with half its people lacking access to electricity and more than three quarters also lacking access to clean cooking solutions after decades of efforts**. Despite the potential of DRE and clean cooking solutions, and their cost-effectiveness for remote populations, progress has been slow, resulting in electrification efforts barely keeping pace with population growth and clean cooking efforts losing the race. Efforts are failing because of persistent affordability, financing, policy/regulatory, and capacity barriers (see Table 5 in section B1.3 for details).

50. **Through its activities to expand access to DRE systems, clean cooking solutions, and PUE, ASCENT-GREEN will synergistically address the barriers that prevent the nascent DRE sector from reaching its full potential**. These barriers include: (i) *affordability constraints*, as most unelectrified households cannot afford even a basic solar home system on commercial terms, with a larger gap for female-headed households; (ii) *financing constraints*, as DRE companies are unable to source adequate debt financing and patient capital for growth, as their risk/return profile does not match investors' expectations, with female-owned/led companies having even lower access to finance; (iii) *a lack of enabling policy and regulatory frameworks*, as governments are slow to enact and inconsistent in maintaining appropriate rules and regulations; and (iv) *capacity constraints*, as key stakeholders (DRE companies, financial institutions, and governments) are grappling with relatively new DRE technologies and business models.

51. **Scaling up productive uses of energy, (PUE, based on use of DRE systems and/or productive equipment for income generation) on an equal basis with electricity and clean cooking access is a key innovative feature at the heart of ASCENT-GREEN.** A key difference between electrification efforts in SSA and other regions is persistently low electricity consumption, even years after electrification,[54] due

[54] See, for example, Blimpo, M.P., and Cosgrove-Davies, M. 2019. *Electricity Access in Sub-Saharan Africa: Uptake, Reliability, and Complementary Factors for Economic Impact.* Africa Development Forum series. Washington, DC: World Bank.

to the lack of PUE, which undermines the economic benefits to households from energy access and the sustainability of energy access expansion. PUE is a pathway to economic growth and climate resilience, as well as key to the acceleration and sustainability of energy access expansion efforts by: (i) increasing household incomes and, thereby, the affordability of DRE and clean cooking solutions; (ii) increasing and diversifying the revenue streams of DRE companies working in remote communities; (iii) increasing climate resilience through clean power for information, communication and productive uses technologies; and (iv) expanding carbon mitigation benefits, as DRE systems displace diesel, the most common fuel for productive use in rural areas. While there have been small-scale PUE activities in AFE, ASCENT-GREEN is the first large-scale regional program aiming to address multiple market failures at the user, service provider, financier, and government levels. These include: (i) the low affordability of DRE-based PUE in light of high upfront costs and end users' lack of access to finance; (ii) lack of end-user-experience, resulting in elevated perceived risks by users about taking a loan to pay for unfamiliar PUE technologies; (iii) the high risk perception of financiers, who are unwilling to extend credit to PUE suppliers or end users due to lack of familiarity and track record; (iv) the need for PUE companies to use scarce capital to finance end-users to pay over time (e.g., through PAYG or leasing) instead of investing in their company's growth; and (v) lack of coordination by governments due to lack of PUE strategies and policies, resulting in fragmented efforts across multiple sectors (e.g., energy, agriculture, water) and stakeholders (e.g., development partners).

52. **Therefore, beyond being a game changer in the acceleration of energy access, ASCENT-GREEN will also catalyze economic uplift for the most climate vulnerable by reducing their energy costs and empowering them to use energy for income-generating activities via PUE, which will help lift them out of poverty, strengthening their climate resilience**. This is how ASCENT-GREEN differs from the past DRE expansion efforts. The "usual" DRE interventions focus on the supply side of energy services, but do not provide any additional support for these energy services to be translated to activities that strengthen livelihoods and climate resilience. Based on available evidence, as a result, productive uses emerge only sporadically and slowly. A more comprehensive and synergetic provision of DRE and PUE results in a faster uptake of PUE, user income growth, climate adaptation opportunities, and sustainability of DRE business models. While PUE interventions have become more common in recent years, most have stayed at a pilot/small-scale level. ASCENT-GREEN is the first regional program aiming to deliver PUE at scale at the regional level, fully integrated with DRE and clean cooking interventions. The synergetic provision of DRE, clean cooking and PUE will enhance impacts on demand and supply side. Annex 25 further elaborates on this approach.

WHERE and by WHOM?

53. **ASCENT-GREEN is a regional program in AFE, financed by the World Bank and GCF, together with private and public partners, with the World Bank as the GCF Accredited Entity contracting execution to regional EEs such as the COMESA Secretariat and the TDB, which have close ties to country governments.** GCF funds will flow to the 21 countries in AFE that have expressed formally their interest in participation in the ASCENT-GREEN program, from a total of 24 AFE eligible countries (those not having yet reached universal access to electricity). These 21 countries have issued no objection letters to the use of GCF funds to support companies wanting to expand their operation in their respective markets along with the IDA funding, as described in the detailed description of the ASCENT-GREEN Components (see section B.3).[55]

54. **ASCENT-GREEN's regional approach is key to increasing the pace of DRE access provision and achieving sustainable cost reduction through economies of scale in AFE**. It will reduce market fragmentation, enabling companies to build multi-country portfolios, reduce transaction costs, and access affordable financing to support their long term growth strategies, thereby reducing financing costs. At the same time, it will use RBF to incentivize companies to expand their operations to more remote and challenging geographies and market segments, thereby enabling smaller countries, FCV countries, and last mile areas of countries with active markets to benefit from these economies of scale. Regional TA under the program will support governments and companies to digitize DRE government tenders and RBF processes, as well as the tracking, verifying, and reporting of installations, to improve sector efficiency. This technical assistance will also support the Government efforts to develop an enabling environment, following the Governments commitments to time-bound, specific reform actions to encourage private sector investments in DRE and clean cooking sectors, which are included in the National Energy Compacts under Mission 300. Implementation of these actions, for which technical assistance will be available from ASCENT-GREEN, will significantly enhance the enabling environment in ASCENT-GREEN countries, and ultimately will lead to increased investments and reduced costs of DRE and clean cooking expansion. A number of compacts also include specific measures related to PUE, such as development of multi-sectoral PUE strategies, quality assurance frameworks and favorable taxation regimes. Using well-regarded regional actors like COMESA and TDB for the execution of activities helps to create confidence in the program, leveraging their experience in regional AFE operations and close links to AFE governments and building the capacity to sustain the expanded and transformed DRE

[55] Botswana, Burundi, Comoros, Democratic Republic of Congo, Eritrea, Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Rwanda, Sao Tome and Principe, Somalia, South Africa, South Sudan, Tanzania, Uganda, Zambia and Zimbabwe.

markets in AFE beyond the close of ASCENT-GREEN.

HOW?

55. **ASCENT-GREEN's simultaneous promotion of DRE systems, clean cooking solutions and productive uses of energy technologies can create powerful synergies that amplify the benefits of each technology**. DRE systems like solar home systems and renewable energy mini-grids can power an enormous range of modern technologies for human and economic development, from lights to fans to digital communication devices and powerful motors. As mentioned previously, clean cooking solutions improve health and free up time, particularly for women and children. Productive equipment based on DRE can diversify and increase incomes and strengthen adaptive capacity, while contributing to the sustainability of energy access. Together, these technologies can have a powerful impact on household and community sustainable economic development and climate resilience.

56. **ASCENT-GREEN aims to address the roots of the slow progress of DRE system, clean cooking, and PUE expansion in AFE lack of affordability by end users, perceptions of high risk by entrepreneurs and financiers, and the lack of enabling policy and regulatory environments, all of which require concessional financing at this stage of DRE market development.** ASCENT-GREEN targets mainly rural, remote, and FCV populations, which typically rank in the bottom 40% of the income pyramid. The affordability analysis in the appendix to Annex 3 shows that even the smallest solar home systems and modest mini-grid electricity use of 6 kWh/month is not affordable for this target group. PUE could theoretically be financed on commercial terms, as it generates financial returns, but, as mentioned above, market failures prevent such investments. Concessional financing can unlock the PUE market, with a powerful impact on the sustainability of DRE energy access expansion efforts. With respect to clean cooking, there is a substantial disparity in wealth levels across clean cooking access tiers: Multi-Tier Framework (MTF) data across seven countries indicate that households in the top 20% income bracket are far more likely to use Tier 4 and Tier 5 clean cooking solutions, while those in the bottom 20% predominantly rely on three-stone fires or traditional stoves (Tiers 0 and 1). More specifically, Rwanda MTF survey shows that for households not willing to accept the offer of an improved cookstove, affordability is the main challenge. More than three-fourths of such households reported their inability to afford such a cookstove. High fuel costs are a primary reason households set aside clean cooking fuel solutions. While Tier 3+ clean cooking solutions deliver significant health, climate and gender benefits, resulting high economic benefits (see Annex 3), willingness-to-pay for improved stoves is low relative to their costs due to low affordability, making end-user support essential to realize these benefits. Given these disparities, concessional financing becomes even more critical to bridge affordability gaps and unlock private investment, particularly for lower-income households and last-mile contexts.

57. **ASCENT-GREEN's three components will support the regional financing facilities and technical assistance activities described below**, which will synergistically target barriers to expansion and the transformation of markets for DRE, clean cooking solutions, and PUE. These activities are summarized in Table 6 and described in detail in section B.3.

- **Component 1: The Regional Energy Access Financing (REAF) Project provides three financing instruments and capacity building for the DRE sector.** This component will provide ***affordable, long-term lending*** to DRE, clean cooking, and PUE companies to enable the expansion of their operations, particularly for high potential, growth-oriented SMEs, innovative PUE business models, and the sustainable electrification of schools, health facilities, and other public facilities, through direct lending to DRE companies or on-lending through participating financial institutions (PFIs). It will also provide ***regional RBF*** to incentivize DRE, PUE, and clean cooking companies to expand to unserved populations in remote rural areas, FCV contexts, and small countries, and to address affordability barriers. It will enable capitalization of Zafiri equity financing vehicle that will provide ***patient equity financing*** to nurture the sustainable growth of DRE companies, developed in collaboration with IFC. In addition, ***technical assistance, capacity building, and implementation support*** will be given to the various stakeholders to build the capacity of DRE companies to grow their operations, financial institutions to operate in the DRE sector, and EEs to succeed in their mandates. This Component is executed by TDB, a leading African regional development bank.
- **Component 2: The Regional Energy Access De-Risking Facilities (REAF 2) Project includes two de-risking instruments for the DRE sector, as well as capacity building support**. The first facility is the ***Risk-Sharing Facility (RSF)***, which will provide partial credit guarantees to mitigate the risks of PFIs lending to DRE companies, especially in local currencies, and to help companies operate in riskier markets, such as FCV situations, under ASCENT-GREEN. The second is the ***Carbon Risk Mitigation Facility (CRMF***, which will provide de-risking instruments to stabilize carbon markets by offering floor prices, mobilizing carbon finance and commercial capital, which would be de-risked by more secured carbon revenue. Technical assistance facilities will provide ***TA, capacity building, and implementation support***. The two EEs for this Component are under selection.
- **Component 3: The Regional Energy Access Acceleration Platform**, executed by the COMESA Secretariat, ***provides an enabling ecosystem for ASCENT-GREEN***. It has a ***TA facility to support governments*** to implement effective DRE policies and regulations,

planning and digitization, and another ***TA facility for DRE companies*** on market intelligence, business development, management, and the steps to financial closure, with a strong emphasis on PUE. It also leads the ASCENT-GREEN ***Gender Action Plan*** and provides overall ***program coordination and knowledge exchange*** across ASCENT-GREEN countries, regional EEs, and DRE companies.

58. **Collectively, these three components will result in the provision of access to electricity, clean cooking solutions, and PUE for 28.8 million direct and 13.8 million indirect beneficiaries.** This outcome will include 11.7 million people directly benefiting from a solar home system or a mini-grid electricity connection, 11.9 million people with clean cooking access, and 5.2 million benefiting from productive use equipment based on DRE. An additional 13.8 million indirect beneficiaries are the users of 1,302 public facilities electrified under the program (e.g., students at schools and patients in healthcare facilities) (see section D6, Table 11 for the indicative estimates of beneficiaries by technology and component).

Table 6. How ASCENT-GREEN activities address barriers to scaling up DRE, clean cooking, and PUE in AFE

Barrier	How the barrier is addressed	Component/sub-component addressing the barrier	Leading collectively to ASCENT-GREEN's outcomes
Affordability constraints	Scale up RBF and carbon revenue Integrate PUE at scale, regional approach reduces cost	*RBF:* C1, REAF, Sub-component 1.2: RBF *Carbon revenue*: C2, REAF 2, CRMF Sub-component 2.2: Carbon floor price guarantee *PUE and cost reductions*: All components	**Accelerated market expansion** into remote rural areas, FCV contexts, and small countries **Cost reduction via economies of scale** under the regional approach **Affordability and sustainability** by scaling up PUE to drive resilience + long-term sustainability of DRE access efforts **Crowding-in commercial capital**, including local financial institutions via de-risking, blending, and improving commercial viability of DRE business models. ⇨ Synergies among DRE system, clean cooking, and PUE lead to market transformation: increased **SCALE, SPEED, INCLUSIVITY AND SUSTAINABILITY** of DRE energy access expansion efforts for climate adaptation and mitigation in AFE
Financing constraints	Deliver fit for purpose instruments that DRE companies, especially SMEs, need to grow: - patient equity - affordable debt in local currency and longer tenor - flexible, demand-driven RBF and catalytic grants	*Equity:* C1 REAF, Sub-component 1.4 *Debt:* C1 REAF, Sub-component 1.1 Lending *RBF:* C1 REAF, Sub-component 1.2 *All above*: C3: COMESA TA supports DRE companies with financial closure All ASCENT-GREEN activities work to ease financing barriers for companies and mobilize commercial capital	
Policy and enabling environment constraints	TA, capacity building, and convening under ASCENT COMESA to improve and harmonize countries policy and regulatory environments for DRE, clean cooking, and PUE *Aided by high-level policy dialogue and National Energy Compacts under Mission 300*	C3: ASCENT COMESA has established Government Advisory Facility specifically to address this barrier.	
Capacity and implementation delays constraints	Capacity building to DRE companies, especially SMEs, financial institutions and governments Digitization of government tenders, RBF process, and MRV Skill development programs and linkages to DRE companies (e.g., internships), especially for women and youth	C1 REAF, Sub-component 1.3: TA to financial institutions and DRE companies C2 REAF 2, Activities 2.1.2 and 2.2.2: TA and institutional strengthening to financial institutions and carbon market stakeholders C3: ASCENT COMESA TA to DRE companies and governments C3: ASCENT COMESA's comprehensive digitization strategy C3: ASCENT COMESA skill development activities	

59. **GCF financing contributes to financing ASCENT-GREEN activities and achieving these results, as discussed below by sub-component** (see section B3 for further details).

- **Results-based financing (RBF).** The GCF grant will be used jointly with the existing ESMAP grant to provide RBF and catalytic grants to DRE companies, assuring a significant share of these grants for DRE-powered productive use equipment. The grants will be awarded through phased calls for proposals to drive market expansion into target areas, aiming to achieve a fair distribution of results and financing across ASCENT-GREEN participating countries. RBF values will be set and adjusted over time for different technologies and market conditions and are expected to decline over time (see Annex 3). ASCENT-GREEN's regional RBF will: (i) incentivize multi-country portfolios that build economies of scale; and (ii) prioritize support for segments not covered through national RBF facilities, including for small and local companies. Payment will be made against the verification of results by an independent verification agent, facilitated by the use of digital monitoring, reporting, and verification (d-MRV) platforms. Information on impacts, including related to the usage, productivity, and income-generation gains of PUE, will be sought through beneficiary surveys.
- **Lending**. A GCF concessional loan will be used jointly with IDA concessional and non-concessional credit (without subordination) to lend to DRE companies that are not yet at a market stage that can absorb fully commercial lending terms. The concessional lending will target SMEs and innovative start-ups, especially those in less mature DRE market segments, such as those for PUE and the electrification of schools, health facilities, and other public institutions. Loans can be made directly or via on-lending through local financial institutions. The lending will be on-demand and subject to fulfilling TDB and TDF eligibility and credit criteria. It is expected that some of the companies benefiting from RBF will also benefit through lending. Results will be monitored via the d-MRV platform and beneficiary surveys.
- **Equity financing**. A GCF grant will be used to catalyze and enable TDB to unlock US$55 million of investment with equal shares of junior and senior equity in Zafiri, a new equity vehicle. Without GCF, TDB would be only willing to invest US$20 million in Zarifi due to concerns on its balance sheet risk exposure. The GCF grant enables TDB to become a major shareholder with a board seat and stronger governance influence to guide the vehicle to reach target beneficiaries in underserved/FCV geographies.
- **Risk-sharing Facility (RSF**). The GCF reimbursable grant will be used together with an IDA guarantee to capitalize the RSF for commercial lending. The Executing Entity (EE) will enter into partial credit guarantee agreements with eligible PFIs, which will extend loans to DRE companies, increasing commercial lending, which will be especially important for small companies and PUE. Reflows of the GCF funding will be based on any remaining funding in the facility after all backed PCG obligations expire.
- **Carbon Risk Mitigation Facility (CRMF)**. The CRMF will be capitalized and backed by blending a US$5 million TF grant and a US$25 million contingent IDA credit. The EE will enter into agreements with DRE companies to acquire verified emission reductions at a guaranteed floor price, providing additional revenue to DRE companies while protecting them from price volatility. This will again be especially important for small companies and those engaged in PUE.
- **Technical assistance.** The GCF grant will be used to finance TA under Component 3 by COMESA, as well as TA sub-components under Component 1 and 2, that will focus on filling the key TA and capacity building gaps of governments, DRE companies, financing institutions, and end users, complementing available IDA, ESMAP, and other financing. The content of this TA will cover both the overall aspects of the Program, under Component 3, as well as specific TA focused on deepening knowledge of the different financing instruments under each of Component 1 and 2. The focus will be on: (i) helping countries improve their DRE enabling environments, especially for new market segments such as PUE; (ii) helping companies to reach financial closure faster, especially for SMEs and women entrepreneurs, emerging segments, such as PUE and the electrification of public institutions, (iii) support local and regional PFIs interested in lending to DRE companies and expand their knowledge of, and familiarity with the DRE market, and (iii) building skills to benefit from jobs in the emerging DRE industries and via PUE, especially for women and youth.

WHEN?

60. **ASCENT-GREEN will be completed in seven years. All of the facilities are critical for achieving DRE results, their timing will be coordinated for maximum impact**. First, RBF and debt financing by TDB and TDF will jumpstart the market. As the GCF funding is used to complement and scale up funding to facilities that are already operating under the IDA-financed REAF Project, implementation is expected to start in Year 1, shortly after GCF Board approval. Second, equity financing by Zafiri will become available by Year 2 of the program to further enable the growth of companies. Zafiri has already appointed an Investment Manager and is expected to be operational by the time of GCF Board approval. Third, as companies grow, increased volumes of debt financing will be needed. The RSF will provide partial credit guarantees to support building PFI experience with DRE lending, in particular for the less mature PUE segment, to accommodate the expected DRE market growth. RSF is expected to be approved by the World Bank Board in Year 1 and to be operational in Year 2.

Finally, the sustainability of DRE expansion efforts will be greatly enhanced through inflows of carbon revenue. Thus, upon approval of GCF TA funding, a carbon risk mitigation facility will be set up to become operational at the latest in Year 3 of ASCENT-GREEN. All these efforts will be supported from Year 1 through the ASCENT Regional Energy Access Acceleration Platform (ASCENT COMESA), which is already operational and will be scaled up with GCF resources. The use of existing and validated implementation mechanisms through trusted EEs, such as the COMESA Secretariat and TDB, will support agile and speedy implementation.

MITIGATION and ADAPTATION IMPACTS?

61. **ASCENT-GREEN will contribute to both the mitigation of carbon emissions and the improved resilience of people to climate change in AFE through increased access of households, farms, businesses and public institutions to DRE solutions (including DRE systems, clean cooking solutions and productive uses equipment powered by DRE).**

- **DRE systems will provide access to modern energy while mitigating CO_2 emissions in AFE**. They will replace the fossil-fueled generators used to provide power as well as the burning of kerosene for lighting in off-grid areas. Clean cooking solutions will replace traditional cooking methods using fuelwood, charcoal and biomass residues, reducing GHG emissions from inefficient combustion (especially methane and black carbon) and decreasing tree cutting and removal of vegetation that contribute to environmental degradation and deforestation. The program thus supports the efforts of countries like Tanzania, DRC and South Africa to reduce the devastating deforestation caused by fuelwood and charcoal use. The program is estimated to reduce carbon emissions by 12.2. $MtCO_2eq$ by the end of the 20 year life of the investment (excluding the 8.1 $MtCO_2eq$ expected to be traded). See section B1 and Annex 23 for more detail and Annex 22 for emission reduction calculations.
- **DRE solutions will help increase the resilience and capacity of people to adapt to climate change in several ways.** DRE systems together with productive uses equipment (PUE) will enable people to improve their livelihoods, for example, by powering modern lighting, internet connectivity and refrigeration in schools, health facilities and commercial uses like restaurants and shops or energizing irrigation pumping and cold storage facilities for agricultural production. DRE systems will also power information and communication technologies (e.g. digital phones and radios) that provide essential information 9e.g. on weather and markets) as well as disaster warnings and guidance on disaster response and relief. Since DRE systems are less vulnerable than centralized grids in disaster situations, they will better maintain essential power and communication. The Program will seek to increase the climate resilience of DRE systems supported. Finally, increased clean cooking access will reduce vulnerability by improving the health of women and children through decreased indoor air pollution from burning traditional biomass fuels, the second largest cause of premature deaths in sub-Saharan Africa, as well as reduce the time required for cooking and the heavy burden of collecting fuel, leaving more time for empowering activities such as education and income-generation (see sections B1.2.3, G2, and Annex 23 section 3 for details). Indicators of improved climate resilience are included in section E5; a summary is provided in Table 5 of Annex 23.

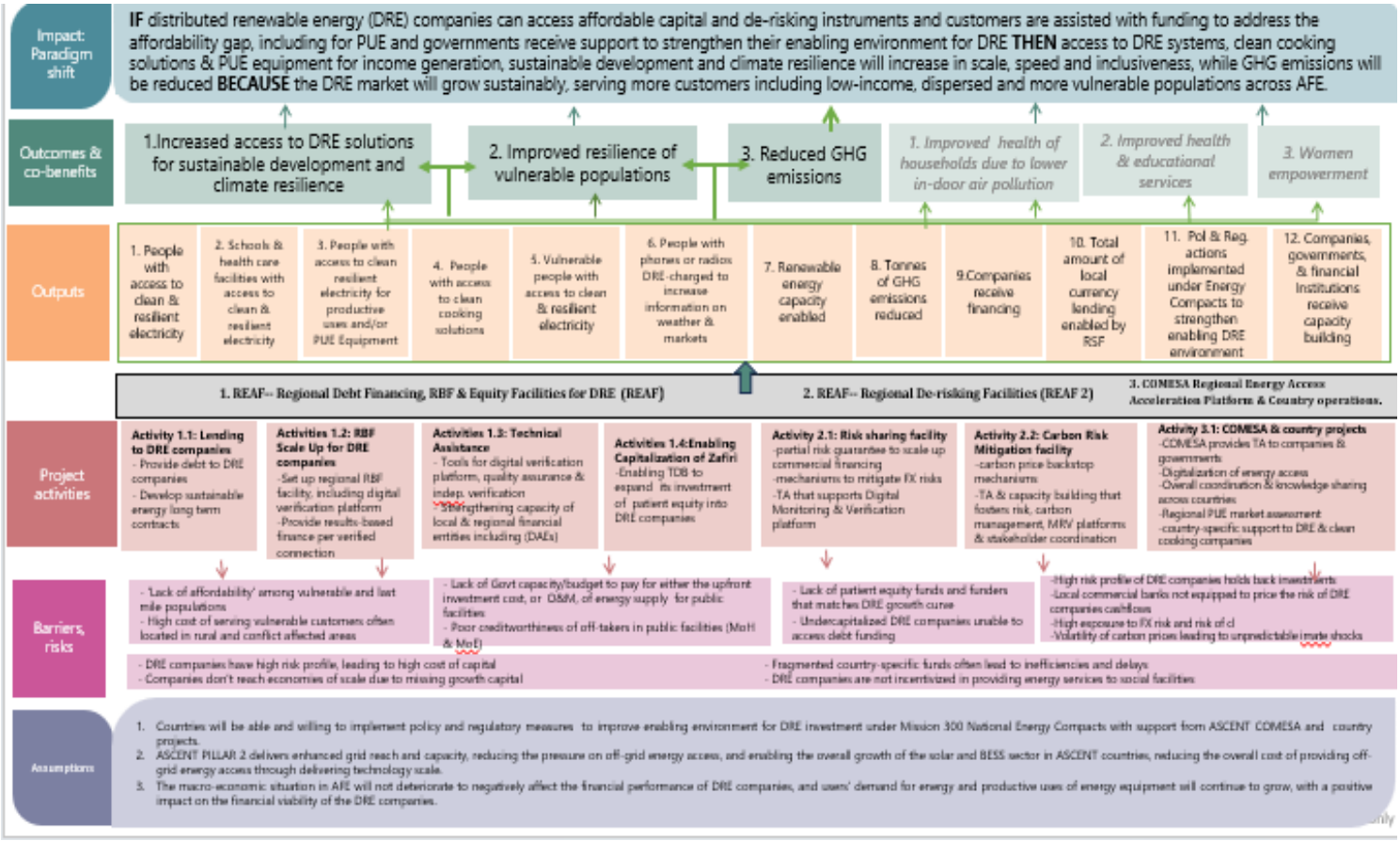
B.2 (a2) Theory of Change Narrative and Diagram

62. **ASCENT-GREEN's impact through the achievement of its development and climate objectives in AFE is summarized in the impact statement of its paradigm shift**: **IF** DRE companies can access affordable capital and de-risking instruments and customers are assisted with funding to address the affordability gap, including for PUE, and governments receive support to strengthen their enabling environment for DRE, **THEN** access to DRE systems, clean cooking solutions, and PUE equipment for income generation, sustainable development, and climate resilience will increase in scale, speed, and inclusiveness, while GHG emissions will be reduced, **BECAUSE** the DRE market will grow sustainably, serving more customers including low income, dispersed, and more vulnerable populations across AFE (see Figure 4).

63. **Increased access to DRE solutions for sustainable development and climate resilience (Outcome 1) results from the synergistic effects of the expansion and transformation of markets for DRE systems, clean cooking, and DRE systems combined with PUE equipment**, as measured by the number of direct beneficiaries including: (i) people with access to clean and resilient electricity (Output 1); (ii) people with access to clean and resilient electricity for productive uses and/or PUE equipment (Output 3); (iii) people with access to clean cooking solutions (Output 4), as well as the indirect beneficiaries of: (iv) schools, healthcare facilities, and other public facilities with access to clean and resilient electricity (Output 2). Further outputs include: (v) people with access to phones or radios charged with DRE for information on weather and markets (Output 6, these are a subset of Output 1); and (vi) renewable energy capacity enabled (Output 7). The environmental, social, and gender benefits of improved health of households due to lower indoor air pollution (Co-benefit 1) is due to a reduction in pollution in the homes of people with access to clean cooking (Output 4). Secondly, the social co-benefit of improved healthcare and educational services (Co-benefit 2) results from the benefits to people from the public facilities with access to clean and resilient electricity (Output 2). Lastly gender empowerment (Co-benefit 3 results from the benefit from various outputs

including women provided with increased access to energy, increase in women's employment in supported DRE and Clean cooking companies, female owned SMEs with access to clean energy and/or productive uses equipment through the program, internships provided to female graduates of universities and technical institutes with DRE and clean cooking companies (output14-17). This increase in energy access occurs because of the expansion and transformation of the DRE solutions market enabled by the combined ASCENT-GREEN intermediate outputs: (i) companies receive financing (Output 9); (ii) total amount of local currency lending enabled by Risk Sharing Facility (Output 10); and (iii) governments receive technical assistance to develop an enabling environment where DRE companies can thrive, while companies, financial institutions, and also governments benefit from capacity building activities to make the best use of the financing instruments made available under the program and/or ensure that they are used to achieve their intended objectives (Output 12).

Figure 4. Theory of Change for the ASCENT-GREEN Program



64. **Improved resilience of vulnerable populations (Outcome 2) is measured as a subset of Outcome 1, beneficiaries of access to DRE systems, clean cooking solutions, and PUE equipment that live in fragile, conflict and violence (FCV) affected countries (Output 5).** This is calculated as the number of direct beneficiaries, consisting of people with access to clean and resilient electricity who are in FCV countries (a subset of Output 1), plus people with access to clean cooking solutions in FCV countries (a subset of Output 4), and people with access to electricity for productive uses or PUE equipment in FCV countries (a subset of Output 3), as well as people benefiting indirectly from schools, healthcare facilities, and other public facilities with access to clean and resilient electricity in FCV countries (a subset of Output 2).

65. **GHG emissions reduced (Outcome 3) are measured as CO2eq emission reductions over the 20-year life of the program (Output 8).** These GHG emission reductions are achieved thanks to the same outputs that result in the achievement of the first outcome of increased access to DRE solutions (Outputs 1–7), as DRE solutions will mainly replace the use of fossil fuels and traditional fuels, and these solutions will reach customers thanks to the outputs of more affordable debt and equity finance and de-risking instruments for DRE, as well as the capacity building of companies, governments, and financial institutions (Outputs 9–10).

66. **Sustainability of these three outcomes and the three identified co-benefits from the expansion of DRE markets (inclusive of clean cooking and of PUE) builds on the technical assistance to government in participant countries to create or strengthen an enabling environment for the companies interested in expanding their markets in the AFE participating countries** (Output 11). Sustainability of these outcomes is further enhanced by technical assistance activities to strengthen and develop the institutional capacity of all stakeholders, namely companies, governments and financial intermediaries benefiting from the program so that the results can be sustained beyond the completion of the program (Output 12).

67. **The ability of ASCENT-GREEN activities to achieve the intended outcomes rests on several key assumptions.** For the overall ASCENT Program including ASCENT-GREEN, it is assumed that: (i) countries will be able and willing to implement policy and regulatory measures to improve the enabling environment for DRE investments under the Mission 300 National Energy Compacts, with support from ASCENT COMESA and country projects; (ii) ASCENT Pillar 2 delivers enhanced grid reach and capacity, enabling the growth of grid-connected solar generation and BESS (batteries for energy storage) sectors in ASCENT countries, thereby reducing the cost of off-grid energy access solar and battery technologies through increased scale; and (iii) the macro-economic situation in AFE countries will not deteriorate to negatively affect the financial performance of DRE companies, and users demand for energy and productive use equipment will continue, with a positive impact on the financial viability of DRE companies.

B.2. (b) Outcome mapping to GCF result areas and co-benefit categorization

Outcome number	GCF Mitigation Results Area (MRA 1–4)				GCF Adaptation Results Area (ARA 1–4)			
	MRA 1 Energy generation and access	**MRA 2** Low-emission transport	**MRA 3** Building, cities, industries, appliances	**MRA 4** Forestry and land use	**ARA 1** Most vulnerable people and communities[56]	**ARA 2** Health, well-being, food and water security	**ARA 3** Infrastructure and built environment	**ARA 4** Ecosystems and ecosystem services
Outcome 1: Increased access to DRE solutions for sustainable development and climate resilience	☐	☐	☐	☐	☐	☒	☐	☐
Outcome 2: Improved resilience of vulnerable populations	☐	☐	☐	☐	☒	☐	☐	☐
Outcome 3: Reduced GHG emissions	☒	☐	☐	☐	☐	☐	☐	☐

[56] Estimated as the number of beneficiaries in countries listed in the 2025 WB list of countries in situation of fragility, conflict or violence affected (FCV) situations.

Co-benefit number	Co-benefit					
	Environmental	Social	Economic	Gender	Adaptation	Mitigation
Co-benefit 1: Improved health of households due to lower indoor air pollution	☒	☒	☐	☒	☐	☐
Co-benefit 2: Improved health and educational services	☐	☐	☐	☐	☒	☐
Co-benefit 3: Women Empowerment	☐	☐	☐	☒	☐	☐

B.3. Project/programme description (max. 2500 words, approximately 5 pages)

68. **The ASCENT-GREEN Program aims to support people in the AFE region who lack access to modern energy, particularly those living in remote areas and FCV contexts, to become more resilient in the face of climate change**. By supporting the private sector to accelerate delivery of DRE systems, clean cooking solutions, and DRE-powered productive equipment to vulnerable populations in AFE, ASCENT-GREEN aims to create powerful synergistic impacts that can magnify the benefits of each technology, help transform DRE markets, and support a sustainable pathway to: (i) increase the climate resilience of remote and vulnerable populations through greater adaptive capacity; (ii) contribute to climate mitigation by expanding renewable energy and displacing/avoiding fossil fuels; and (iii) expand energy access to jump-start sustainable economic development and deliver jobs, including for women and youth.

69. **ASCENT-GREEN will contribute to the mitigation of carbon emissions and the improved resilience of people to climate change in AFE through increased access to distributed renewable energy solutions (including DRE systems, clean cooking solutions and productive uses equipment powered by DRE).** DRE systems will provide access to modern energy while helping to mitigate GHG emissions by replacing the fossil-fueled generators used to provide power as well as kerosene for lighting in off-grid areas. Clean cooking solutions will replace inefficient traditional cooking using fuelwood, charcoal and biomass residues, reducing GHG emissions as well as environmental degradation and deforestation from fuel collection and charcoal production. Increased access to DRE solutions will help to increase the capacity of local communities to adapt to climate change in several ways. DRE systems will power information and communication technologies (e.g. phones and radios) to provide information on weather and markets to support and adapt productive activities, as well as providing disaster warnings and information on disaster response and relief. DRE systems together with productive equipment will enable people to adapt and improve their livelihoods, for example, through modern lighting, internet connectivity and refrigeration in schools, health facilities and commercial restaurants and shops or irrigation pumping and cold storage facilities for agriculture. Since DRE systems are less vulnerable than centralized grids in disaster situations, they will better maintain essential power and communications. Finally, increased clean cooking will improve the health of women and children by reducing indoor air pollution, as well as the time for cooking and collecting fuel, leaving more time for education and income-generation (see sections B1, G2, and Annex 23 for details. Table 5 of Annex 23 has a summary of the program's climate resilience indicators.)

70. **ASCENT-GREEN's target populations are low-income, vulnerable populations that have severe affordability constraints on accessing energy on commercial terms**, **making concessional financing essential to make energy available to them**. The affordability analysis shows that fewer than 1% of the unelectrified population in the target countries in the lowest two income quintiles can afford a solar home system (SHS) or a mini-grid-connection on commercial terms, while 22% may be able to afford it at stretch. Therefore, they cannot access modern energy for electricity, clean cooking, and productive use without concessional financing, including RBF, to close the affordability gap (see Appendix 2 to Annex 3). Over time, however, household affordability and willingness to pay can be augmented by additional income from productive use. In the business-as-usual scenario, about 7% of SHS and less than 10% of mini-grid users

currently use electricity for income-generating activities.[57] ASCENT-GREEN aims at doubling the percentage of PUE users and increasing the amount of income generated by a deliberate focus on catalyzing productive use. This will be done by providing financing for PUE, building sustainable supply chains and quality assurance frameworks for PUE equipment, developing PUE strategies and enabling policy and regulatory frameworks and providing technical assistance to a range of stakeholders, including governments, PUE companies, financiers and users, leveraging cross-sectoral approaches where appropriate. This comprehensive pathway to supporting PUE is further elaborated in Annex 25. ASCENT-GREEN will track the number of PUE beneficiaries supported by the Program, as well as the share of DRE users that use electricity productively (for income generating activities) targeting 15 percent of SHS users and 20 percent of mini grid users, which is about double the current baseline. This increase and the resulting grwoth in mini grid electricity consumption is modelled in Annex 3.

71. **Therefore, promotion of productive uses (PUE, including DRE systems and equipment used to generate income) is an essential feature of ASCENT-GREEN that will be integrated into all of its components on an equal basis with DRE systems and clean cooking solutions, as a win-win-win solution, increasing people's livelihoods and climate resilience and the sustainability of energy access efforts while reducing emissions.** (Companies will be eligible to seek debt, equity, and RBF financing as well as technical assistance under the program to expand their sales of all three types of DRE solutions. By increasing and diversifying household incomes, PUE will help the target populations to become more resilient and adapt to climate change. This includes improved communication and information (e.g., through DRE charged phones and radios), economic diversification (e.g., new craft or food products, additional processing of products, and new micro, small and medium enterprises (MSMEs) and small and medium enterprises (SMEs) in villages), as well as increased agricultural production, productivity, and reduced food spoilage thanks to technologies such as solar irrigation, cooling, milling, and food processing, all of which support economic development efforts. By focusing on renewable energy-powered solutions, the PUE technologies under ASCENT-GREEN will also deliver climate mitigation benefits by eliminating diesel and other fossil-fuel alternatives. Finally, PUE is also an essential element of achieving the sustainability of energy access expansion efforts. It will increase and diversify the revenue streams of DRE companies; over time it will lead to increased incomes and ability to pay for the target populations, thereby reducing and ultimately eliminating the need for subsidies. By integrating DRE, clean cooking and PUE on an equal basis, ASCENT-GREEN will create synergies on both the demand and supply side that will enhance the impact that each technology could have on its own. See Annex 25 for more details.

72. **ASCENT-GREEN also targets directly closing energy-related gender gaps and empowering women in AFE.** The program's support for access to clean cooking as one of three key technologies to be supported will have powerful and immediate benefits for women including improving the health of women and children and freeing time for education, skill development, and income generation, all of which help to reduce the gender gap and give women tools that empower them to take advantage of the opportunities made available under the program. ASCENT-GREEN will also apply ASCENT's Gender Action Plan to further close energy access-related gender gaps through awareness creation activities and RBF, as well as employing interventions to empower women to make meaningful contributions to the AFE energy sector, including an internship program being developed by COMESA for women university and technical institute graduates with DRE companies (see section G2).

73. **ASCENT-GREEN leverages a regional approach to deliver a paradigm-shifting acceleration of energy access expansion efforts, while allowing contextualization to country priorities, policy and regulatory frameworks, and market conditions**. It aims to deliver ***economies of scale and greater efficiency*** in the deployment of public resources by encouraging cross-border expansion and multi-country portfolios and setting up regional 'one-stop-shops' in well-established and tested regional organizations, complementing and expanding on existing and planned country programs. This regional approach is expected to reduce the costs and increase the pace of DRE expansion. The costs are expected to fall by 10 to 25% by 2030, depending on technology, driven by economies of scale from larger markets, the learning curves of DRE companies (e.g., more efficient and aggregated procurement), and a reduction in transaction costs (see Annex 3 for further details, methodology, and sources for these estimates). Further cost reductions are foreseen due to reduced financial costs by offering a suite of financing instruments, including grants, debt, and equity on affordable terms. ASCENT-GREEN leverages market incentives to accelerate energy access expansion regionally, meeting the market where it is today, but growing it via geographic expansion toward less served (small and FCV) countries, and more remote and vulnerable communities.

74. **ASCENT-GREEN leverages concessional financing to expand the boundaries of existing markets towards unserved, climate**

[57] 60 Decibels. 2022. Off-Grid Energy Benchmarks, estimates 7% based on user surveys; 60 Decibels. 2024. Why Off-grid Energy Matters, increases the share to 12% accounting also for sales of stand-alone PUEs, such as solar water pumps; ESMAP data collected for the publication ESMAP. 2022. *Mini Grids for Half a Billion People*, shows that most mini-grids had only 5–10% PUE users. The latest data from the World Bank DRE hub in Nairobi, however, estimates that best-in-class mini-grid developers that proactively support PUE are reaching 15%.

vulnerable populations. ASCENT-GREEN is pursuing an approach that uses concessional financing to reduce the costs of DRE products and services to make them affordable to the defined target population, who are primarily unserved households and MSMEs in remote rural areas and FCV, while also making the investments viable for private sector participation. By growing the market across the region, delivering economies of scale, reducing the costs of financing and improving the enabling environment, the program will result in the overall sustainable reduction of costs over time. Using concessional financing to jump-start the current nascent market for PUE and generating more viable and sustainable carbon revenues, ASCENT-GREEN will also improve revenues of DRE companies over time, reducing their dependence on concessional financing – thus contributing to sustainable market growth as opposed to a market distortion. The key is that concessional financing is used to grow the market and private sector investment, rather than replacing private sector investments.

75. **ASCENT-GREEN aligns with the varied country priorities and conditions of participating countries, keeping an eye on the fair distribution of benefits across countries.** This will be achieved using several strategies, which have been developed collaboratively with countries through an extensive country engagement process (see section D5). This includes the following elements.

- Technology and business model neutral approach**.** ASCENT-GREEN presents a menu of options from which countries can draw based on their priorities and gaps in their national programs (e.g., one country may prioritize mini-grids, while another may emphasize clean cooking etc.). This is reflected in the country consultation documentation and can be revisited during implementation if priorities shift. The implementation modalities (e.g., RBF, credit, de-risking, equity funding, TA) accommodate various business models (e.g., pay-as-you-go, energy-as-a-service, leasing, etc.) with further support for technology and business model innovation provided via catalytic grants as well as TA. This flexibility is especially important for emerging technologies, such as PUE, where business models are still evolving, and there is a need to accommodate differences across agriculture value chains and organizational structures (e.g., cooperatives versus individual farmers). This flexibility also accommodates different policy and regulatory regimes (e.g., licensing versus concessions for mini-grids). At the same time, the policy and regulatory TA provided within Component 3 under COMESA aims to lead to the harmonization of policy and regulatory frameworks around best practices, to facilitate the cross-country expansion of DRE companies, reducing transaction costs and enabling economies of scale
- Engaging participating countries during implementation. While implementation will be centralized in regional EEs, the countries will have a seat at the table in the following ways: (i) countries will set their priorities as indicated above, based on their existing strategies, National Energy Compacts, and gaps in country programs; (ii) countries will provide inputs for refinements of eligibility criteria and targeting approaches to ensure that the concessional financing benefits the target populations, in particularly unserved vulnerable populations in remote rural areas and FCV contexts; (iii) they will receive on-demand TA from COMESA; (iv) companies and financial institutions from the countries will have equal access to financing from the regional facilities and can be on-boarded any time during implementation; (v) countries will participate in the ASCENT-GREEN coordination mechanism to discuss progress achieved regionally and in each country, re-confirm or re-adjust priorities, and seek corrective measures if required; and (vi) the EEs are regional organizations, which were established by AFE countries to enhance regional collaboration and integration, with countries represented in their governance structures.
- Building awareness and readiness for investments. Acknowledging that market conditions and stages vary across countries, significant support will be provided to strengthen readiness for investments for both countries and companies under the COMESA TA facility, especially in small and FCV countries, which have less active markets and tend to have more policy and regulatory bottlenecks. Thus, the sequencing of support across different components may vary. While all facilities will be open to companies in all countries, companies in countries with more mature markets will likely benefit sooner from the financing facilities, while stronger TA support may be required initially in countries with nascent and emerging markets, with financing rising over time. The financing opportunities will be transparently communicated in all countries with TA available to companies under the COMESA facility to increase their readiness.
- Ring-fenced RBF resources for small and FCV countries. Considering that RBF is the main ASCENT-GREEN instrument used for shaping geographic expansion, and keeping in mind the above variance in country readiness, the RBF allocation will have 'ring-fenced' resources for small and FCV countries, so that they can build their markets over time. In addition, RBF allocation of resources will strive to achieve a fair distribution across countries, while maintaining incentives for rapid implementation (see Sub-component 1.2).
- Integrating support for smaller/local companies. All ASCENT-GREEN instruments will be open to both large and small companies. While the intended economies of scale will be achieved mostly by larger companies, smaller and local companies will play a critical role in reaching target populations and will be actively supported. ASCENT-GREEN will support their growth in their core markets, where country-based funding is not available, as well as their cross-border expansion. Smaller local companies will benefit from catalytic grants and TA support, which will target business improvements, technology upgrades, market expansion, and faster

progress towards financial closure, along with targeted SME lending by TDF to prepare them for funding from local commercial banks in the next stage. Furthermore, RBF modalities will be adjusted as required to fit smaller companies' needs.

- Additionality to and synergies with existing country and other development partners funded programs. Market analytics and the national country consultation workshops have mapped existing and planned financing facilities and identified funding gaps and potential overlaps. While access to equity and de-risking is rarely available for DRE companies at the country level, and access to credit is severely constrained, there is a potential overlap between the existing country RBF and the regional RBF in ASCENT-GREEN. The menu approach of ASCENT-GREEN RBF, however, is designed to be additional, with priorities set by countries in areas not sufficiently covered by national facilities. Demonstrating the inability to cover the proposed investment from a national RBF will be a part of the application process. In addition, potential 'double-dipping' from national and regional RBF programs will be managed through the use of the digital MRV platform, which will flag potential overlaps. At the same time, significant synergies with national programs will be pursued. For example, COMESA TA to companies will not only support companies seeking access to regional financing facilities (RBF, lending, equity, and de-risking for local commercial lending, and carbon finance), but also those seeking national RBF. Similarly, the equity and debt financing will be applicable for both companies that seek regional RBF as well as those benefiting from national RBF facilities. Specifically, with respect to clean cooking, ASCENT-GREEN's interventions complement World Bank Clean Cooking Fund operations and national programs by adding a standardized, cross-country, regional financing toolbox calibrated for frontier markets. It integrates five complementary financing facilities while embedding cross-country learning to reduce transaction costs and harmonize good practices. Blended de-risking instruments—especially a carbon risk mitigation facility—will crowd in private capital and address carbon revenue volatility, while the technological approach prioritizes Tier 3+ clean cooking solutions delivering significant health, climate and gender impacts, aligned with the Modern Energy Cooking Services (MECS) framework, in contrast to programs focused mainly on Tier 1–2 (e.g., EnDev/GIZ). Furthermore, ASCENT-GREEN purposefully bundles clean cooking with off-grid electrification and PUE to leverage supply- and demand-side synergies. At the enterprise level, this enables more diversified portfolios and reduced investment risk; at the user and household level, combined access delivers higher health, gender, and climate benefits and multiplies impacts—e.g., time savings and health gains for women free up resources that can shift to income-generating activities—thereby accelerating scale and outcomes consistent with GCF-2 priorities.

76. **A unique feature of ASCENT-GREEN is, therefore, its ability to leverage the existing market and pushing its boundaries to unserved areas and beneficiaries, delivering economies of scale and cost reduction via the regional approach, while still being able to contextualize solutions to country needs and priorities, in line with national strategies and plans.**

Eligibility Criteria

77. **The ASCENT-GREEN Program eligibility criteria are defined as follows.**

- **Country eligibility**: ASCENT-GREEN activities will be implemented in or benefit twenty-one (21) countries in the AFE Region. Country eligibility for GCF Funded Activities will be limited to Host Countries that have provided National Designated Authority (NDA) endorsements submitted with this Funding Proposal (Annex 1). Activities financed by IDA will be implemented in or benefit IDA-eligible countries.[58]
- **Impact Potential – Climate Adaption**: Each ASCENT-GREEN Project will support people in the Eastern and Southern Africa Region who lack access to modern energy, particularly those living in remote areas and fragile and conflict contexts, to become more resilient to climate change by supporting private-sector DRE companies to provide access to distributed renewable energy systems, clean cooking solutions and PUE equipment.
- **Impact Potential – Climate Mitigation:** Each ASCENT-GREEN Project will support, either directly through the provision of financing, or indirectly through the provision of technical assistance, installation of DRE systems, clean cooking solutions and/or PUE by DRE companies that will directly reduce carbon emissions by displacing fossil fuels or the use of traditional biomass resources.
- **Private Capital Mobilization:** Each ASCENT-GREEN Project will contribute to the mobilization of private capital to finance the expansion of DRE systems, clean cooking solutions and productive uses equipment, especially for populations living in remote areas, FCV contexts and small countries.
- **Paradigm Shift Potential:** Each ASCENT-GREEN Project will contribute to driving a paradigm shift toward increased scale, pace, inclusivity and sustainability of energy access expansion efforts in AFE. This entails: (a) accelerated market expansion into remote

[58] The ASCENT-GREEN host countries include: Botswana, Burundi, Comoros, Democratic Republic of Congo, Eritrea, Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Rwanda, São Tome and Principe, Somalia, South Africa, South Sudan, Tanzania, Uganda, Zambia and Zimbabwe.

rural areas, FCV contexts and small countries; (b) cost reduction via economies of scale under the regional approach; (c) scaling up PUE to improve affordability and long-term sustainability of DRE access; and (d) crowding in commercial capital, including local financial institutions, via derisking. Such mobilization is enabled by addressing clearly identified market failures including limited local-currency lending capacity, high perceived risks in FCV and frontier markets, carbon price volatility, and early-stage PUE business models through targeted, time-bound concessional instruments designed to crowd in commercial lenders and investors rather than displacing them. Mobilization efforts will prioritize local financial institutions and be anchored in risk-tiering and minimum leverage expectations to support sustainable market development. Collectively, these interventions aim to transition DRE and clean cooking markets from reliance on concessional finance toward commercially viable, locally financed ecosystems over time, ensuring that GCF support is catalytic and does not create structural market distortions.

- **Sustainable Development Potential**: Each ASCENT-GREEN Projects will contribute to strengthening sustainable development in the AFE Region by supporting the expansion and scaling-up of access to DRE systems, clean cooking solutions, and PUE equipment.
- **Country Ownership**: ASCENT-GREEN Projects' efforts to mitigate GHG emissions and support adaptation through promotion of DRE systems, clean cooking solutions, and PUE equipment are fully aligned with the AFE countries' national climate strategies, which recognize the important role that the energy sector plays in climate change by emphasizing their commitments to shift to renewable energy and improve energy efficiency. The Projects' design is based on discussions with Governments, including National Designated Authorities and line ministries, and consultations with other national and regional stakeholders, such as civil society representatives and COMESA, ensuring that the needs of countries are prioritized. Each ASCENT-GREEN's Project design also benefits from extensive private-sector consultations held with local and regional DRE, clean cooking companies and PFIs to ensure that the design of each of the Components/Projects reflects the reality of the DRE markets in the region and effectively address the barriers to effectively support the expansion of DRE in the AFE region.
- **The Executing Entity (EE)** for each of the ASCENT-GREEN Projects is selected based on its demonstrated capacity to finance projects in infrastructure, in particular in energy; its strong presence in AFE and a proven record as a well-managed, competent, and financially stable regional institution with close ties to AFE governments. This will foster the ownership of the program at the local and regional levels and will contribute to the long-term sustainability of results. In relation to Sub-Components 2.1 and 2.2, the EEs for the Risk Sharing Facility (RSF) and the Carbon Risk Mitigation Facility (CRMF) will be selected based on institutional eligibility and a proven regional track record, including being reputable African financial institutions experienced in deploying risk-mitigation and blended finance instruments relevant for DRE solutions; demonstrated capacity and technical expertise confirmed through formal financial management/financial intermediary assessments; strong financial strength with sound capitalization, liquidity, and robust risk management systems suited to guarantees and risk-sharing operations; the ability to mobilize private capital and collaborate effectively with local and regional financial institutions; robust Environmental and Social Management Systems aligned with the Environmental and Social Sustainability Framework (Annex 6), strong integrity and compliance frameworks, and alignment with Paris Agreement objectives. These criteria mirror those already applied to the Component 1 EE and will be used to confirm operational readiness of one or two EEs to administer the RSF and CRMF.
- **Recipient's Needs:** Each ASCENT-GREEN Project will contribute to meeting the need for access to modern energy in AFE by supporting private-sector DRE companies to deliver access to DRE systems for renewable electricity, clean cooking and PUE equipment, particularly those living in remote areas and fragile and conflict contexts.
- **Gender: Each** ASCENT-GREEN Project will contribute to the implementation of the regional Gender Action Plan developed under the ASCENT Program to build capacity for gender integration in the energy sector in the AFE region, including development of a regional Women's Leadership Institute and STEM Skills Accelerator Institute, which will enable women's employment in the DRE sector.
- **ASCENT-GREEN climate-vulnerability, productive-use, and market-additionality eligibility criteria** are applicable for all ASCENT-GREEN financing facilities: (i) new electricity connections[59] via DRE and clean cooking access in rural areas and FCV countries; (ii) nascent high-impact access for sectors including PUE, electrification of public facilities (e.g., schools and health facilities); and (iii) provision of Tier 3+ clean cooking solutions are eligible. More mature market segments, including off-grid solar and low-tier such as tier 2 improved cookstoves in non-FCV urban and peri-urban areas and C&I market segments will not be eligible for RBF (Sub-component 1.2), and will only be eligible for GCF-financed activities under Sub-components 1.1, 1.4 and 2.1 to the extent that these are directly linked to the provision of the first-time DRE/clean cooking access and/or are required for building diversified portfolios to secure financial viability at the level of a DRE company, a PFI or a facility to reach the intended beneficiaries. In addition, for Sub-component 1.4, other market segments such as Battery Energy Storage Systems ("BESS") and small-scale

[59] The terms "new connections" and "first-time access" are used interchangeably here to reflect the focus on expanding energy access to those users who did not have such access previously.

Independent Power Producers ("IPPs") to facilitate access, and innovative solutions to sustain on-grid distribution utilities (including grid-edge innovations and smart metering) that align with Mission 300 and can deliver substantial benefits across environmental, economic, and social dimensions are also eligible, as established under the Zafiri Investment Guidelines.

- All ASCENT-GREEN Projects will be required to build diversified portfolios across countries and technologies, with incentives for SMEs, PUE, and FCV-affected countries and beneficiaries where feasible.

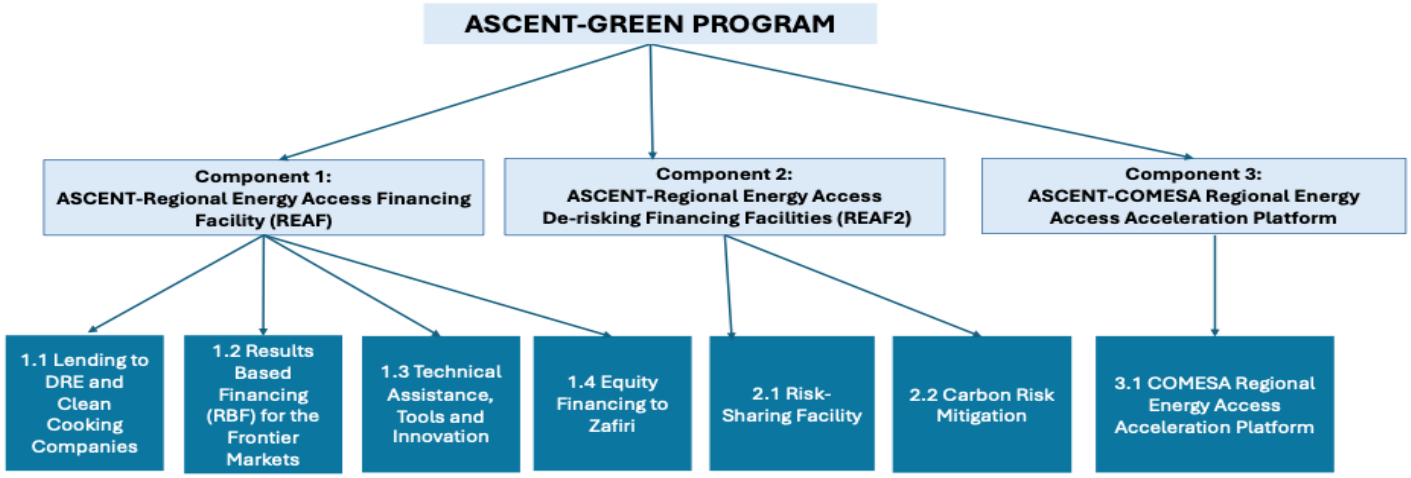
78. **Detailed processes and guidelines to implement eligibility criteria described above, including evaluation processes, will be included in the respective Operation Manuals** of each EE prior to program implementation, ensuring transparency and consistency of implementation. Furthermore, RBF will include additional geographic, technology and beneficiary targeting and restrictions as per consultations with countries in order to reflect country priorities and avoid duplication with national RBF programs, which will be reviewed ahead of each RBF financing round. At least 50 percent of GCF financing for RBF will be used in FCV countries. Concessionality will be passed first of all to end users via RBF, which will result in reduced consumer prices/tariffs and additionally through the increased availability of equity, debt, de-risking and TA, which will lead to reduced costs and increased capital flows to target segments and beneficiaries. The proof that this concessionality has been passed to end users will be that the target beneficiaries (who currently have affordability constraints, as documented in Annex 3, Appendix 2) have been reached with DRE, PUE and clean cooking access.

79. **ASCENT-GREEN will support DRE companies that are legally operating in eligible countries as defined above with track records in delivering energy services with eligible DRE solutions (as defined in Box 1).** In the respective Operations Manuals, each facility defines detailed screening, due diligence and evaluation processes and criteria (e.g., years of experience, financial management requirements, Environmental and Social [E&S] requirements, financial performance, etc.). When referring to DRE companies in this proposal, it is understood that these are companies delivering DRE technology as defined above, therefore, including those delivering PUE and clean cooking. These are most likely to be for-profit enterprises, but depending on the country's context, DRE companies may also include other commercially-oriented organizations with sustainable business models to deliver DRE solutions. For all facilities, DRE companies will be required to present business plans demonstrating how they will reach target beneficiaries (ex-ante) and report on beneficiaries (ex-post), including beneficiary type, location and other information required for ASCENT-GREEN reporting, including gender disaggregated data, as per their contractual obligations with each ASCENT-GREEN facility, which can be subject to verification by the facility (with mandatory independent verification for RBF). Digital MRV will be used to the extent possible. Beneficiary surveys will complement this data and capture emerging impacts.

80. **The ASCENT-GREEN Program is implemented through three components (which will be processed as separate Projects), as shown in Figure 5 and described in detail below**. Component 1, the Regional Energy Access Financing Facility Platform (REAF), will expand the existing REAF facility, financed by IDA and ESMAP and executed by TDB. REAF will have four activities: 1.1 Lending to DRE and clean cooking companies to finance their growth and transformation; 1.2 Results-based financing (RBF) for frontier markets to increase the affordability of DRE solutions in target markets; 1.3 Technical assistance, tools, and innovations for DRE and clean cooking to build the capacity of the EE (TDB), DRE companies, and participating financial institutions; and 1.4 Enable capitalization of Zafiri, which will enable TDB to become a major shareholder in Zafiri, a Mission 300 DRE permanent capital vehicle, which would then provide patient equity to the DRE sector. Component 2, the Regional Energy Access De-risking Financing Facilities (REAF 2), introduces two new risk mitigation facilities**:** 2.1 the Risk Sharing Facility (RSF) to crowd in local lending to DRE companies through partial credit guarantees; and 2.2 the Carbon Risk Mitigation Facility (CRMF) to increase the availability of carbon financing to the DRE sector by addressing carbon pricing risks. Component 3, the COMESA Regional Energy Access Acceleration Platform**,** will provide TA and capacity building for both governments and DRE companies, helping to build an enabling environment at the policy, regulatory, and operational level for the expansion and transformation of DRE markets in AFE, and providing a coordination mechanism for ASCENT-GREEN. All three components taken together are essential to realize the increase in access to DRE solutions sought under the program, as described in the Theory of Change in Sections B2a and B2b, thereby achieving both mitigation and adaptation outcomes.

81. **Although each facility will be operated independently, a coordinated approach will be pursued, facilitated by the coordination mechanism under Component 3**. As each facility aims at filling key funding gaps, they will in some cases be financing separate beneficiaries and in other cases the same beneficiaries – especially in more challenging markets, such as FCV-affected areas, where other sources of finance are not yet available. The overlap in financing for the same beneficiaries is modelled in Annex 3, and the resulting number of beneficiaries is therefore discounted for this overlap. Thus, the interaction across facilities may be simultaneous (e.g. when more than one facility is contributing to providing electricity access for the same beneficiary) or sequential (e.g. a company may first expand into a new geography using RBF and then access equity to support its growth, allowing it to reach a higher number of beneficiaries).

Figure 5.ASCENT-GREEN Program components and sub-components



82. **Component 1: ASCENT-Regional Energy Access Financing Facility Platform Project (REAF)** *(Indicative financing: Total GCF and co-financing is US$539 million, of which GCF US$195 million, IDA US$295 million, ESMAP TF US$24, and CTF US$25 million. Other financing amounts to US$ 156 million from other IFIs (including IFC) and to US$ 392 million from the private sector.*

The World Bank ASCENT REAF Project was approved in November 2023, with an initial total budget of US$294 million of IDA and TF funding. REAF was restructured in June 2025 with an additional financing of US$55 million IDA, CTF, and ESMAP TF funding to include an equity financing to Zafiri sub-component. GCF funding of US$195 million, once approved, will be processed as additional financing to the approved REAF project.

83. **REAF's objective is to increase access to sustainable and clean energy in AFE, by *addressing* key barriers that are constraining DRE acceleration in the region (see Table 5, section B1.3)**, in particular those related to affordability, lack of 'fit for purpose' financing instruments and lack of capacity of key stakeholders. The three original sub-components are: (i) lending to DRE and clean cooking companies to cover current market gaps, seek engagement of the region's commercial banks, and mobilize additional capital; (ii) results-based financing (RBF) for frontier markets to provide per unit and catalytic grants for DRE, clean cooking, and PUE equipment to activate nascent markets; and (iii) technical assistance, institutional strengthening, tools, and innovations for DRE and clean cooking to address capacity limitations of key stakeholders, develop tools and financial innovation, and cover project management expenses. The project was restructured in June 2025 to add (iv) equity financing, as the fourth sub-component.[60] DRE systems, clean cooking and PUE are integrated in all four activities, as noted in the sub-component descriptions below.

84. **REAF is implemented by the Eastern and Southern African Trade and Development Bank (TDB), a leading African regional development bank, which successfully implemented an earlier Bank-financed project covering the off-grid solar sector**. To implement REAF, TDB is also engaging its not-for-profit subsidiary, the Trade and Development Fund (TDF), which focuses on the impact-oriented financing of SMEs and channels grants. The REAF's Operations Manual describes all eligibility criteria, due diligence and approval processes for all its windows (see Annex 21). TDB's Environmental and Social Management System (ESMS) is applied to all transactions.

85. **REAF is a product of a partnership that has been established between TDB and the World Bank Group under Mission 300**. As a leading African development bank, TDB plays a critical role in delivering innovative financial solutions under the Mission 300 umbrella. The DRE sector, however, is still relatively new to TDB, and the partnership with the World Bank Group allows TDB to acquire the expertise needed to become also the leading DRE financier in the region. ASCENT-GREEN, therefore, also delivers a strong capacity building component, which – in addition to the DRE aspects - will strengthen TDB's expertise in equity financing, as well as its capacity to source funds directly from GCF in the future.

[60] See Annex 18 for: (i) original Project Appraisal Document of the REAF Project approved by the World Bank Board in 2023 (Annex 6 of the ASCENT MPA Project Appraisal Document) and (ii) Project Paper approved to restructure the REAF Project in 2025 to add an equity sub-component.

86. **Sub-component 1.1: Lending to DRE and Clean Cooking Companies** *(Indicative Financing: Total GCF and co-financing is US$310 million, of which GCF loan US$50 million and IDA loan US$260 million. Other financing consists of US$ 86 million from other IFIs and US$246 million from the private sector.)*

87. **This sub-component will expand access to electricity, clean cooking and PUE through the provision of a credit line** to TDB for (i) direct lending to eligible private/commercial enterprises legally operating in ASCENT-GREEN participating countries,; and, (ii) provision of a credit line by TDB for retail lending to eligible participating financial institutions (PFIs) in ASCENT-GREEN participating countries[61] for on-lending to eligible private/commercial enterprises to finance eligible DRE, clean cooking and PUE products and services.

88. **It aims to enable these companies to provide sustainable energy to households, productive users and public social services institutions, driving economies of scale via multi-country portfolios and supporting expansion to new markets, including FCV areas**. Eligible borrowers will be private/commercial enterprises with a track record of delivering DRE services, legally operating in ASCENT-GREEN program eligible countries with economically and financially viable sub-projects with positive returns on investment. The sub-projects will also be screened for climate resilience with the aim of supporting climate resilient designs. This sub-component will support DRE companies, either through direct lending or through on-lending via eligible PFIs which will help develop regional and national financial sector expertise in DRE markets.

- TDB will lend directly to DRE companies, following its established processes for screening and due diligence, outlined in the Operating Manual. For larger transactions, TDB is expected to seek co-financing from other commercially-minded financiers. For smaller loans (<US$10 million) to SMEs, TDB may lend via its subsidiary, TDF, which specializes in SME financing. Both IDA and GCF funding will be used for this lending modality)
- TDB will lend to PFIs, which will on-lend to DRE companies. In this case, TDB will act as an apex financial intermediary. Eligible PFIs will include commercial banks, specialized financial institutions, including fintech lenders, and micro-finance institutions, to maximize outreach. The PFIs will follow the same eligibility criteria for DRE technologies and companies as those under TDB's own lending. TDB will follow its established due diligence system for carrying out due diligence on PFIs and will propose selected PFIs to the World Bank for no objection, as per the Operations Manual. PFIs in this case are considered as intermediary beneficiaries of the program. (Only IDA funding will be used for this modality. No GCF proceeds will be used for lending to PFIs.)

89. **Lending (and on-lending) terms will reflect the financing needs of different technologies and business models**. These will vary from short-term inventory finance and medium-term receivable financing for off-grid solar and clean cooking companies, to long-term debt financing for mini-grids and public social services institutions (up to 18 years), filling financing gaps in the market. Overall, the lending will reflect terms for similar TDB lending to avoid market distortion, except for high impact, early-stage sectors, such as PUE and the electrification of public social services institutions, which will benefit from concessional financing from GCF. Concessional financing will also be used for blended finance to increase SME lending, following TDF established processes, including risk assessment. Focusing on impact-oriented development financing and not falling under country financial regulations, TDB and TDF can structure innovative financing that local commercial banks are unable to offer, allowing SMEs to grow to the level where they become viable borrowers for commercial banks. TDB and TDF will also use their networks to promote syndication/co-financing with on-lending to local development financial institutions (FIs) and commercial banks, especially those already active in ASCENT country operations,[62] to promote coordination and to expedite the transition of DRE SME financing to local FIs. Longer-term tenors will increase the financial viability of DRE investments (especially for mini-grids) as well as the affordability for final users. For both company and PFI lending, TDB will follow its risk management approach, which covers portfolio risk, currency risk, maturity mismatch risk, environmental and social risk, and concentration of exposure risk. This will include macroeconomic considerations in countries where sub-projects are located. In addition, climate resilience aspects will also be evaluated. While the lending facility will not have specific allocations per technology, company size, and geography, prioritization criteria will aim at developing a diverse portfolio across technologies, company sizes, and ASCENT-GREEN participating countries. In addition, no single DRE company should receive more than 20% of the total GCF Loan proceeds.

90. **GCF financing via a concessional loan of US$50 million will be used for impact-oriented lending supporting income generation and climate resilience.** This will include: (i) companies operating in FCV and remote rural areas, (ii) for local and female owned/led SMEs, (iii) and more nascent DRE sectors. Concessional financing will only be utilized for those market segments that are not yet capable of accessing commercial capital to avoid market distortions. Specifically, 80% of GCF Proceeds for concessional loans must be deployed: (i) in FCV and remote rural markets, and/or (ii) locally-owned, and female-owned/led SMEs, and/or (iii) nascent high-impact DRE sectors,

[61] As defined above in the country eligibility criteria.

[62] Such as UECCC in Uganda and Zanaco in Zambia.

including PUE, electrification of public institutions, e.g. under sustainable business models, such as "energy-as-a-service"[63], and Tier 3+ clean cooking. No reallocations toward mature SHS retail or commercially viable urban markets will be permitted. Furthermore, concessional financing will be blended with non-concessional financing so that to arrive at the minimum concessionality needed to make investments viable. Therefore, the GCF loan will be blended as needed with less concessional IDA credit to achieve the terms required for these emerging DRE segments. The majority of IDA financing (US$250 million from IDA Scale-Up Window) is provided on non-concessional terms (SOFR[64]+ fixed spread), while only US$15 million is provided on concessional terms for Sub-component 1.1 (Regional IDA). TDB and TDF's experience over the first year of implementation of ASCENT REAF has shown that the current ASCENT REAF terms are viable for larger companies in established DRE segments, such as SHS, clean cooking, and mini-grids, but they are not affordable for smaller companies and for more nascent DRE segments, such as PUE and the electrification of public social services institutions through innovative business models, such as energy-as-a-service. It is estimated that these market segments could absorb about US$100–150 million but will require blending with concessional financing. The available IDA concessional regional credit and the requested GCF loan would, therefore, be blended with non-concessional IDA Scale-up Window (SUW) resources to achieve the desirable lending terms for more nascent market segments. The blending will be done on equal terms without subordination. The objective of the GCF concessional loan is to reduce the cost of financing for the more nascent and impact-oriented DRE market segments, as defined above. . The concessional debt will be provided to DRE companies to reduce their financing costs, which will then be reflected in the reduced costs of DRE, clean cooking and PUE products and services that DRE companies offer to the final users – households, productive users and public institutions. iven the nascent nature of these sub-sectors, requiring concessional resources, GCF proceeds will be used for direct lending to DRE companies by TDB or TDF. TDB and TDF will apply their investment processes, which will document that the proposed transactions would not be viable under standard terms using IDA funding (e.g., due to mismatch of risks and returns) and the rationale for using GCF proceeds to enable such transactions. GCF resources (even if blended with IDA) will only be used in GCF-eligible (host) countries. Use of funds, as well as beneficiaries, will be reported per country. GCF proceeds will not be used for on-lending via PFIs.

91. **Financial and climate additionality:** The credit line via TDB is the largest DRE debt facility implemented directly by an African financial institution, dedicated to DRE-based energy access and prioritizing new connections. Other debt facilities are mostly set up as funds, and managed by contracted fund managers, which is not conducive to building long-term capacities and sustainability; they typically contain a large share of more commercial C&I investments, which are not included in this sub-component. It allows a one-stop shop approach for larger companies to build multi-country portfolios via TDB, a boutique approach to SME financing tailored to specific DRE SME needs via TDF, and opportunities to start engaging local commercial banks as PFIs via on-lending and capacity building. The concessional loan from GCF allows TDB and TDF to extend the reach towards climate-vulnerable communities in rural areas and FCV countries, increase SME lending, and increase the share of lending to high-impact nascent sectors supporting adaptation objectives, namely PUE, sustainable electrification of public institutions, such as schools and health clinics, and high-tier clean cooking solutions, including e-cooking.

92. **Sub-component 1.2: Results-Based Financing (RBF) for Frontier Markets** *(Indicative financing: Total GCF and co-financing is US$142 million, of which GCF grant US$130 million and WB TF grant US12 million. Other financing is US$47 million from private sector.)*[65]

93. **This sub-component will finance acceleration of DRE and clean cooking expansion at the regional level through a results-based financing facility, and the provision of result-based financing (RBF) and catalytic grants** to eligible private-sector and commercial enterprises ("Beneficiaries") engaged in DRE, clean cooking and PUE to finance sub-projects in unserved and underserved geographic areas in participating countries.

94. **It will finance a regional RBF facility, which is already established by TDF,** which was set up as an innovation with initial ESMAP grant financing of US$12 million, with an intention to grow the facility over time. The GCF would finance its scale up with US$130 million. TDB will implement this sub-component via its not-for-profit subsidiary TDF. RBF will be implemented via digital MRV platform, and results validated via Independent Verification Agent. The use of d-MRV and IVA will also facilitate verification that companies are not "double-dipping" to multiple RBFs (e.g. regional and national RBF) for the same beneficiaries. To qualify for the regional RBF, DRE companies will need to demonstrate that a corresponding national RBF is not available. All due diligence and grant award processes to

[64] SOFR: Secured Overnight Financing Rates

[65] Private sector funding will only materialize as connections/sales are realized. The RBF funds only a percentage of the total connection/unit costs (typically 30–70%, depending on technologies and market conditions), with the remainder of the cost to be mobilized by the DRE companies. The pre-qualification process will determine if companies have sufficient financial strength to carry out the connections/units, as in their business plans, but private sector financing will be confirmed only as connections/units are in place and verified.

comply with the ASCENT-GREEN eligibility criteria (defined above in the earlier section of B.3), verification protocols and other relevant procedural aspects will be established in the Operations Manual (due before the Project effectiveness and periodically updated during implementation).

95. **RBF will be used to support DRE systems like off-grid solar stand-alone systems and mini-grid connections, productive use equipment, and clean cooking stoves and fuels** for households, rural businesses, farmers, and public social services institutions to support economic and social development, as well as climate adaptation for target populations (through access to information and communication technologies, improved livelihoods through productive activities and improved health and reduced cooking/fuel collection time of families) and mitigation of GHG emissions. A significant share of the RBF financing will be dedicated to DRE-powered productive uses equipment, reflecting the importance of PUE to the success of energy access acceleration and expansion. Eligible DRE companies will need to demonstrate prior experience with DRE systems, clean cooking solutions, and DRE-powered productive uses equipment to pre-qualify for RBF and catalytic grants.

96. **The RBF will partially offset the initial costs[66] and risks associated with companies expanding their operations and setting up sales and service infrastructure in new regions, while bridging the affordability gap of end users**, thereby incentivizing the private sector to expand to underserved areas, whilst keeping end user prices affordable. The key focus will be on: (i) accelerating the pace of DRE expansion by building multi-country portfolios that can deliver economies of scale; and (ii) incentivizing DRE companies to expand from existing markets into more remote areas, FCV contexts, and small countries, with geographic targeting, which will aim at ensuring that all ASCENT-GREEN participating countries are able to benefit from RBF to accelerate the pace of DRE deployment.

97. **RBF under this sub-component is designed as a non-distortionary financing mechanism, incentivizing sustainable business models.** RBF will be available for all DRE technologies, business models and companies that fulfill eligibility criteria. It will explicitly target frontier and low-income markets in particularly remote rural areas and FCV contexts that are not covered by the private sector alone, nor by national RBF programs, with the processes for defining geographic targets in each RBF round established in the Operating Manual, and periodically adjusted to avoid market distortions in compliance with ASCENT-GREEN eligibility criteria. Within this framework, the geographic targets will be further finetuned for each call for proposals as per consultation with the governments of the participating countries. It will only cover a portion of the per-unit costs, with the remainder to be mobilized by the DRE company, which incentivizes efficiency. Furthermore, as noted below, RBF design will include "sustainability features", which will be applied on top of the payment per connection against additional targets such as sustainable operation, after-sale services, collection rate for PAYGo and achievement of gender-specific targets.

98. **RBF is needed to cover the initial affordability gap and is expected to be phased out by the end of the program.** RBF is essential in the current market context to enable target populations to access electricity, clean cooking, and PUE. RBF will be disbursed to DRE companies, which will use it to provide more affordable DRE, clean cooking and PUE products and services to end beneficiaries – households, enterprises, farmers and public institutions in target geographic areas. Without RBF, fewer than 22% of the target population in the bottom two income quintiles could afford an entry level SHS (even with PayGo) or a minimum of mini-grid electricity consumption, but with an RBF that cuts the cost by one-third, this figure increases to 68% (see the affordability analysis in Annex 3). RBF amounts will be differentiated by technology, system sizes, and country context, as well as over time. Thus, RBF will be frontloaded to cover the current gap and progressively phased down through the iterative mechanism described below, as: (i) costs are reduced via economies of scale and lower financing and transaction costs; (ii) carbon revenue is generated at higher value and volume; (iii) household willingness and capacity to pay increased through rising income from productive use activities; and (iv) company revenue is diversified through the increased share of MSMEs in the customer base (see Annex 3 for the affordability analysis, proposed RBF values, and modelling of RBF phase-out). RBF is also critical to enable PUE at this stage of PUE market development and given the profile of the affordability-constrained target population, as well as the risks associated with the nascent character of PUE technologies and business models. Therefore, while PUE equipment costs could be fully repaid from PUE revenue, this is not happening because: (i) users cannot pay upfront capital costs; (ii) both users and financial institutions are risk-averse in light of what they perceive as untested technologies, resulting in credit being unavailable or unaffordable; and (iii) companies offering PUE face their own financial constraints, which makes it difficult to offer PayGo or other consumer financing. Therefore, RBF is used to temporarily overcome these initial constraints and catalyze the markets and will be phased out by the end of the Program. This initial boost to PUE provided by RBF, however, will be critical especially for the lower-income population segments and FCV contexts, targeted by ASCENT-GREEN.

[66] RBF will be set on a per unit basis, as a nominal value covering on average approximately 40 percent of unit costs (unit defined as a connection/DRE system/cookstove/PUE equipment) with variation across technologies, system sizes, country and user contexts and over time with a declining trend. For PUE, RBF will be set as a percentage of total costs (40 %) of the PUE equipment costs, reflecting a variety of PUE equipment sizes and prices.

99. **RBF grants will be disbursed as installment payments based on the achievement of pre-agreed milestones (e.g., connections/sales of equipment and sustainability targets as pertinent to supported technologies and business models, including satisfactory operations and after-sales service support, and collection rate for PAYGo business models**. Performance-based catalytic grants will be offered to support companies entering new markets, to pilot promising innovations, in particular for PUE, and to help (smaller) companies to grow, including for improving their business practices, technology upgrades, and geographic expansion, as well as for business model innovation. They will be disbursed against specific pre-agreed business plan milestones. The RBF and catalytic grants will also include gender targeting, such as additional incentive provided for companies succeeding in increasing female employment and, as relevant, reaching female beneficiaries, such as female-owned and led SMEs. The achievement of these targets will be based on gender-disaggregated data verified via independent verification. The initial RBF level is set based on real-life experience in various RBF facilities implemented in the region and validated via an affordability analysis. RBF will be then implemented in multiple rounds (see Figure 6 below), which will follow the market, allowing downward adjustment of RBF amounts as the market grows and economies of scale are realized (e.g. oversubscription in one round would signal that the RBF amount should be reduced).

100. **Regional RBF has been set up to complement national RBF programs,[67]** aiming to: (i) drive economies of scale; (ii) increase the pace of DRE expansion; and (iii) fill in gaps across technologies, geographic areas and time-frames that are not covered by country RBF programs (e.g., very few country RBF programs include PUE, some countries lack capacity to run their own RBF programs, small countries lack the market size to run cost-effective RBF programs, some geographic areas, such as border areas, are not covered by national RBF, and there is often a need to cover a gap between one RBF project ending and another starting in order to avoid losing momentum). By aggregating demand from frontier markets via a competent regional fund manager, the facility will attract interest from more, and larger/experienced companies and investors, and drive innovation.

101. **The regional approach, however, contains safeguards so that all participating countries benefit from RBF and its design is attuned to accommodating varied priorities, market conditions, and policy and regulatory requirements.** Countries will be able to set their priorities based on their national strategies, plans, and compacts, as well as to guide complementarity with national programs, with additionality to national programs being assessed by TDF as a part of the application process. RBF amounts will be customized to different country circumstances, acknowledging in particular higher costs in small and FCV countries (see Annex 3, Affordability Appendix for further details and practical illustrations of how RBF amounts will be set for varied technologies and country settings and the deployment curves with declining values over time).[68] Thus, although for practical reasons the economic and financial analysis in Annex 3 assumes average amounts, the actual amounts will differ across technologies, system sizes, and countries.[69] The initial amounts are set based on the World Bank's experience with the RBF programs in place in 12 AFE countries and the ongoing regional RBF pilot being implemented by TDF and available market assessments, and confirmed via the affordability appendix in Annex 3, while also accounting for initial cost of expanding to new geographies. As modelled in Annex 3, RBF is expected to be frontloaded reflecting the higher values needed to incentivize expansion to unserved regions and to overcome the initial affordability constraints, but reduced and phased out over time, as a result of economies of scale, increased purchasing power of the target population and revenue from PUE, and an increase in the mobilization of carbon revenue. The actual values per country and technology will be set through an iterative mechanism following the market response, as RBF will be implemented in multiple rounds, during which the RBF amounts will be adjusted and other corrective actions identified and discussed with countries for corresponding actions (see Figure 6). This predictable, iterative process will provide opportunities for governments to provide their inputs and, together with TDF, seek actions that can accelerate processes in addition to adjusting RBF values—e.g., raising awareness among local companies, providing catalytic grants and/or TA to local companies and/or accelerating improvements in the policy and regulatory frameworks with support from Component 3.

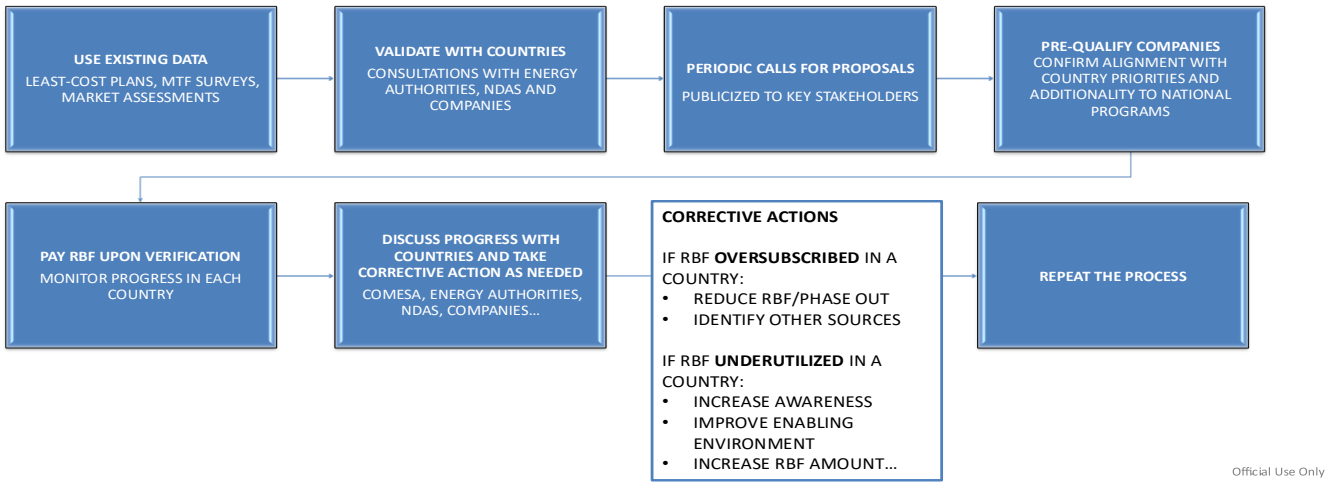
102. **One unique feature of ASCENT-GREEN's regional RBF approach is, therefore, its ability to deliver economies of scale in a non-distortionary way that pushes the frontiers of the existing markets, while responding to the unique context of each country.**

[67] The World Bank and other IFIs are also financing RBF at the national level, including World Bank-funded operations in 12 AFE countries that are participating in ASCENT-GREEN. TDF will ensure that RBF provided under ASCENT-GREEN is additional and non-distortive to the national RBF facilities. DRE companies sourcing financing from other ASCENT-GREEN activities and components (debt under Sub-component 1.1, equity under Sub-component 1.4 and/or benefiting from de-risking under Component 2) are also likely to access some of the existing national RBF facilities, which is reflected in Other Financing (IFI and private financing) mobilized, and included in Economic and Financial model.

[68] The average amounts reflect averages across technologies, system sizes, country categories and are also the average of RBF over time – thus the initial amounts will be higher than the stated averages, as indicated in the deployment curves in Annex 3, Appendix 2.

[69] This is especially important for PUE, for which various technologies will be considered, from more costly cooling and agro-processing equipment to less costly small SME appliances. The range is $65 for a blender for restaurants to over $4,000 for larger commercial milling machines, with an estimated weighted average at $556 considered in the economic and financial analysis.

Figure 6. Iterative process for setting and implementing RBF incentive grants



103. **TDF will follow and periodically update the methodology for geographic targeting of RBF incentives** so that:

- REAF's RBF is additional to and does not distort current market efforts. This will be achieved by setting up geographic eligibility targets comprised of small and FCV countries and underserved rural areas of other countries with active DRE markets, and nascent DRE sectors (PUE, high-tier clean cooking and electrification of public institutions) following the Eligibility Criteria described above. The geographic eligibility targets will be set in the Operations Manual and periodically adjusted to reflect unserved and underserved areas to avoid market distortion. In addition, as noted above, at the outset of every call for proposals, TDF will discuss needs and priorities with the participating governments, which may further narrow down the eligibility targets in individual rounds, including to avoid overlaps with existing national RBF facilities.
- The demand-driven approach of the RBF facility is nuanced with the understanding that cost of expanding to and operating is not uniform across countries. Recognizing that these costs can be disproportionately higher in specific context, the program regroup countries in three distinct categories, which secures funding availability for small and FCV countries. RBF therefore is allocated across three distinct categories of countries: (i) small countries;[70] (ii) FCV countries;[71] and (iii) other countries with active DRE markets[72] (see Table 7).
- So thatvery ASCENT-GREEN participating country benefits from RBF, a minimum of US$2 million will be made available for each country, which is expected to mobilize an additional US$4–6 million from the private sector. So that there are enough resources for all countries, a maximum allocation will be initially set at US$10 million, expected to leverage US$20 to 30 million from the private sector. At least US$90 million of RBF will be applied in a manner that maximizes equitable distribution across countries, with a target amount to be deployed in each country set proportionally to their unelectrified population within the US$2 and 10 million range. The remaining RBF amount will be on a first come first serve basis to incentivize fast performers, while respecting the minimum allocations for FCV and small countries. Thus, this premium RBF amount is expected to especially reward faster-moving FCV countries.

104. **RBF will support large and small, international and local companies**. While the regional character aimed at building multi-country portfolios may appeal more to larger international companies, RBF will also be used to fill financing gaps in the country programs, which will also benefit smaller and local companies. Smaller companies will in particular benefit from catalytic grant support, which will

[70] While a number of these small countries have above-average electrification rates, their progress has typically been achieved through grid electrification, while the remaining unelectrified population requires DRE solutions. Given the small size of their markets, these countries have not been able to attract the private sector for DRE electrification, with the remaining unelectrified population belonging to the poorest population strata.

[71] This category also includes the majority of the least-electrified countries, such as Burundi, DRC and South Sudan, where the lack of electricity access is both a symptom of fragility (high costs of doing business and high risk which deter investment) and one of its causes due to the persistent lack of opportunities for socio-economic development.

[72] This category includes a range of countries from below-average electrification rates (e.g. Malawi and Madagascar) to above-electrification rates (e.g. Kenya and South Africa) but with the common characteristic of an active DRE market, which ASCENT-GREEN aims to leverage and incentivize for market expansion into unserved geographic areas in these countries, which typically are more remote rural areas.

target their business improvements, technology upgrades, and geographic expansion. RBF modalities may be adjusted to fit smaller companies' needs, e.g., enabling partial advance/milestone payments under RBF to help with cash flow management.

Table 7. Allocation of GCF RBF facility resources for groups of countries

	Category 1 – Small countries	Category 2 – FCV countries	Category 3 – Active markets	Total
ASCENT-GREEN prospective countries	Botswana, Comoros, Eritrea, Eswatini, Lesotho, Sao Tome and Principe	Burundi, Democratic Republic of Congo, Ethiopia, Mozambique, Somalia, South Sudan, Zimbabwe	Kenya, Madagascar, Malawi, Rwanda, South Africa, Uganda, Tanzania, Zambia	
Population without electricity access	3.7 million	195.2 million	81.42 million	329.1 million
Population without clean cooking access	6.5 million	305.1 million	142.9 million	546.7 million
Share of unelectrified population of ASCENT-GREEN	1%	59%	40%	100%
Policy/regulatory environment (RISE score)*				
Electricity	35/100	52/100	77/100	
Clean cooking	13/100	30/100	41/100	
Number of active DRE companies	Average 4 per country	Average 32 per country	Average 84 per country	
Number of ASCENT-GREEN participating countries	6	7	8	21
Proposed share of ASCENT-GREEN RBF financing (GCF+WB/ESMAP)	8–10% US$12–14 million of which GCF minimum US$12 million	46–50% US$65–71 million of which GCF minimum US$65 million	39–43% US$55–61 million of which GCF maximum US$53 million	100% US$142 million

* Regulatory Indicators for Sustainable Energy (RISE) measure national policy and regulatory frameworks for sustainable energy. The above scores reflect the average scores across country groups for RISE indicators for electricity and clean cooking access, see rise.esmap.org.

105. **GCF financing in the form of a US$130 million grant will enable:** (i) the ESMAP-financed regional RBF pilot to be converted into a full-scale fund with targeted RBF incentives, significantly increasing its impact and the number of beneficiaries supported; (ii) the scaling up of PUE by prioritizing it with specific RBF incentives; (iii) the introduction of RBF for connections for public social service institutions; (iv) the strengthening of the geographic targeting mechanism, resulting in the prioritization of small and FCV countries and remote areas; and (v) multi-country portfolios resulting in economies of scale and cost reduction.

106. **Financial and climate additionality:** Regional RBF is designed as an accelerator that complements and flexibly fills gaps in national RBFs, as these often change over time. By filling these gaps, it allows DRE companies to develop multi-country portfolios, promoting economies of scale, and allow local companies to access support through catalytic grants to support their growth and access to RBF in case not available in the country. By focusing on filling these gaps, the regional RBF is by definition additional. It is targeted to reach climate vulnerable communities through eligibility criteria and geographic targeting, with independent verification carried out with help of d-MRV platform to verify type and location of beneficiaries, providing evidence that climate-vulnerable population, in particular those living in remote rural areas and FCV countries are being reached. There is no similar regional RBF program currently in the region. A grant from GCF enables the scale up of the regional RBF, which has been set up with ESMAP funding- this allows companies to expand to unserved regions and closes the current affordability gap of the target population.

107. **Sub-component 1.3: Technical Assistance, Tools and Innovations for DRE and Clean Cooking** *(Indicative financing: Total GCF and co-financing is US$27 million, of which GCF grant US$10 million, IDA loan US$10 million, TF grant US$7 million[73].)* This sub-component aims to build the capacity of key stakeholders, including TDB, TDF, the region's commercial banks and other financial institutions, and

[73] The TA activities will be primarily financed through GCF and ESMAP grants. IDA concessional credit allocated for this component (US10 million) will be primarily used for developing and piloting financial and business model innovations (point iv above), which are expected to deliver at least modest financial returns.

DRE companies to play their roles in ASCENT-REAF and to encourage innovations in DRE, clean cooking and PUE market segments. The main focus of REAF's TA is the region's financial institutions, including TDB and TDF. This sub-component will finance TA: (i) to TDB and TDF to carry out due diligence on DRE and clean cooking subprojects, including technical, financial, fiduciary and E&S aspects, climate resilience, and PUE and to build a pipeline of viable subprojects and to strengthen their capacity to supervise PFIs ; (ii) to participating DRE companies to enhance compliance with due diligence requirements; (iii) to PFIs to strengthen their capacity to select, finance and manage DRE subprojects in compliance with applicable requirements, and to support their potential applications for direct support from GCF, leveraging TDB's FI Academy, which provides capacity building to FIs in AFE; (iv) to TDB and TDF to develop and pilot financial and business model innovations including development and support for sustainable business models for the electrification of public social services institutions and for development of approaches for local currency lending and foreign exchange risk mitigation approaches and instruments; (v) for the acquisition of tools supporting due diligence and monitoring, including digital planning and management, as well as MRV platforms; (vi) for contracting RBF implementation support and independent verification; (vii) for strengthening TDB's capacity on gender and the gender action plan; (viii) for the application of quality standards; (ix) capacity building for aspects related to TDB's shareholder role in Zafiri, and (x) for project management, operating costs, and institutional strengthening for TDB and TDF. While DRE companies are eligible for this TA, it is only in the narrow focus of TDB and TDF pipeline. DRE companies are not intended to be its main beneficiaries, as a specific TA facility for DRE companies (including PUE and clean cooking) has been set up under Component 3 by the COMESA Secretariat (see Component 3 description below).

108. **GCF grant funding for TA and project management within REAF will be used to reinforce the focus and financing for**: (i) TA to PFIs, including those that could become GCF-accredited and benefit from direct support from GCF in the future, following in the steps of TDB, which is a GCF regional direct accredited entity (in close synergy with REAF 2's TA sub-component); (ii) increasing understanding of and building the pipeline for PUE by TDB, TDF, and PFIs and helping DRE companies to integrate PUE in their business plans; and (iii) supporting TDB and TDF in developing delivery models for supporting public social service institutions.

109. **Financial and climate additionality**: The technical assistance is a critical piece for strengthening TDB and TDF understanding of DRE market segments, for initial pipeline development and raising awareness among DRE companies and PFIs, with the goal of making TDB the leading DRE financier in the region, and sharing its expertise with other PFIs in the region, allowing ASCENT-GREEN to reach its intended climate vulnerable beneficiaries, and building sustainable structures for DRE financing in the AFE region beyond ASCENT-GREEN.

110. **Sub-component 1.4: Enable Capitalization of Zafiri** *(Indicative financing: Total GCF and co-financing is US$60 million, of which GCF grant US$5 million, IDA loan US$25 million, ESMAP TF grant US$5 million, and CTF loan US$25 million. Other financing consists of US$70 million from other IFIs (including IFC), and US$99 million from the private sector.)*

111. **This sub-component addresses the lack of access to patient equity by DRE companies, which was identified in the market assessment to be a key barrier to growth of DRE companies and the DRE sector** (especially nascent sub-sectors, such as mini-grids, PUE, and clean cooking). It will provide funding to TDB to become a major shareholder and provide equity investment to Zafiri (a Permanent Capital Vehicle that was created under Mission 300) for investing in eligible DRE, clean cooking, and PUE Companies, to catalyze financing for underserved DRE segments in Eastern and Southern Africa, including:

(a) establishment and provision of Equity Investment to Zafiri for investing in Eligible DRE Companies, to catalyze financing for underserved DRE segments (financed by IDA, CTF, and ESMAP), and

(b) Enabling TDB to become a major shareholder in Zafiri, supporting Zafiri's investment in eligible DRE, clean cooking, and PUE companies (financed by GCF).

112. **By enabling TDB to become a major (anchor) shareholder in Zafiri, this Component aims to unlock equity investments in the impact-oriented DRE sectors, including new DRE electricity connections, clean cooking and PUE** (Box 3) in line with ASCENT-GREEN eligibility criteria included in the earlier part of this section (B.3). This sub-component will provide a mix of concessional financing (concessional loans and grants) to TDB to enable its active participation in Zafiri as a major shareholder, capitalizing Zafiri with concessional resources that will enable it to reach ASCENT-GREEN's intended beneficiaries and integrating the voice of African governments in Zafiri's governance structure.

113. **Based on the market sounding, the first phase of Zafiri requires US$300 million, with initial funding provided by DFIs, philanthropic entities and TDB**. Progressively, Zafiri aims to attract private sector capital, intending to grow to US$1 billion. This sub-component aims to enable a catalytic contribution from TDB to Zafiri in the amount of about US$55 million, which is required to secure Zafiri's first phase's financial closure (US$300 million). TDB's intended participation in Zafiri will deliver the required concessionality to deliver on Zafiri's impact ambition, while securing TDB's role as a major shareholder with a seat at the Board that will allow it to safeguard the impact orientation of Zafiri in line with the goals and needs of African governments. This, in turn, will enable Zafiri to provide equity

to DRE companies in geographic and market segments prioritized by ASCENT-GREEN. Zafiri's design has been carried out jointly with IFC and MIGA, leveraging their unique financing instruments, and capitalizing on the knowledge and partnership advantages of the World Bank/IDA, IFC, and MIGA. The design of this equity facility also integrates lessons from GCF-financed Acumen's Hardest to Reach Fund, while driving it to a larger scale. See Box 3 for the Zafiri design description.

Box 3. Overview of Zafiri

At the Mission 300 Africa Energy Summit on January 28, 2025, the World Bank Group and the African Development Bank Group (AfDB) launched Zafiri, a permanent capital vehicle (PCV) that supports private sector-led DRE solutions in Africa. Zafiri, as the PCV fills a critical gap that existing equity funds have not addressed: providing risk-tolerant, blended, and sector-specific patient capital to DRE companies in Africa, with strong safeguards, inclusion mandates, and a catalytic approach to private capital mobilization. Its creation is based on extensive market analysis and stakeholder consultation and is essential for achieving Mission 300's development and climate objectives. The IFC, AfDB, Nordic Development Fund (NDF), TDB Group, and the Rockefeller Foundation are anchor investors in Zafiri and will mobilize funding from other strategic investors of US$300 million in Phase I. Zafiri will invest equity to support DRE companies in SSA in the following subsectors: (i) renewable mini- and metro-grids; (ii) solar home systems; (iii) renewable impact-driven generation for commercial and industrial (C&I) clients; and (iv) other solutions such as clean cooking, battery energy storage systems, and small-scale independent power producers (IPPs) to facilitate access, PUE, and innovative solutions to sustain on-grid distribution utilities (including grid-edge innovations).

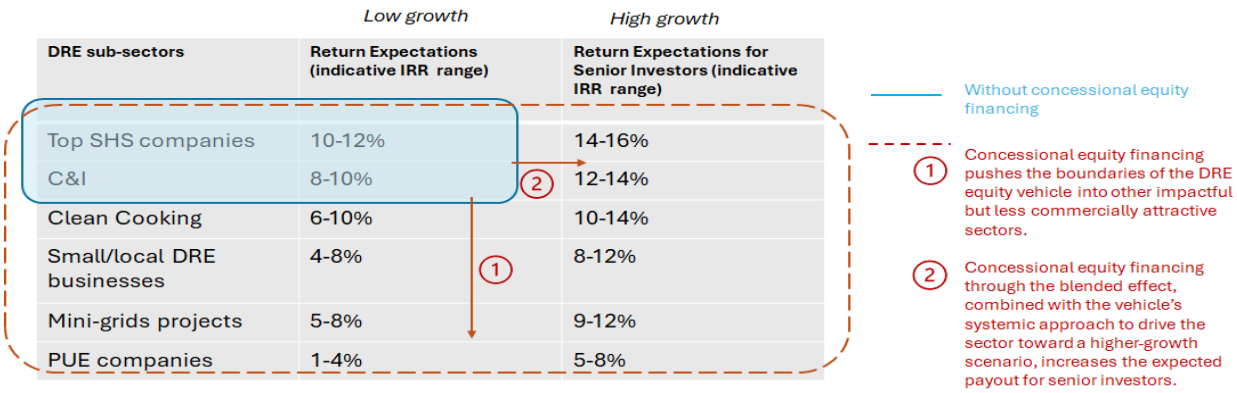
Zafiri will be managed by an investment manager with substantial experience in the region and sector. A board will oversee its operations. In October 2025, Inspired Evolution was competitively selected and officially appointed as the investment manager by the founding partners include the IFC, AfDB, the Rockefeller Foundation, TDB Group, and the Nordic Development Fund. Zafiri Investment Company ("Zafiri") is a limited company, to be established under the Mauritius Companies Act 2001, and will operate under the laws of Mauritius.

The Phase 1 US$300 million in capitalization is structured as 50% Class A junior equity shares and 50% Class B senior equity shares. Zafiri is also expected to have a technical assistance facility of up to US$15 million. Phase 2 would see Zafiri raising an additional US$300 million from commercial investors to scale up to US$600 million, with subsequent organic asset growth expected to raise Zafiri's Net Asset Value to ~US$1 billion. MIGA is to provide de-risking solutions, including political risk insurance, on a portfolio basis for Zafiri's assets. The first close for Zafiri is targeted for the first half of 2026and Zafiri's operations are expected to formally commence in early 2026.

114. **The proposed financing structure will allow TDB to provide both senior and junior equity in equal shares, which in turn will enable participation of other investors. In particular, by absorbing a higher rate of potential write-offs and tolerating businesses with lower profitability, the junior equity contribution from TDB to Zafiri under this sub-component supports investments in lower-return, but higher-impact, DRE segments** such as small and local solar home systems companies, mini-grids, nascent PUE solutions, and clean cooking, as shown in Figure 7. Concessional finance will help lower vulnerability to climate risks by providing resilient solutions to climate vulnerable populations targeted by ASCENT-GREEN, shielding them from power outages, with lengthy and costly fuel supply, and supporting PUE that will contribute to their climate resilience and adaptation. The climate vulnerable population, particularly those living without energy access in remote rural areas and in FCV contexts, are directly affected by the lack of patient equity in the region. Without access to equity, DRE companies have limited ability to expand, as they are overleveraged, unable to source additional debt, even if provided on affordable terms, which also makes it difficult for them to fully leverage the available RBF. The available equity financiers are commercially oriented and hesitant to finance expansion to riskier markets, reinforcing the DRE sector's orientation to non-FCV urban and peri-urban areas, and limiting innovations in new DRE market segments, such as PUE, which are essential for climate adaptation.

115. **Furthermore, through the blended effect and combined with the ecosystem approach of ASCENT and Mission 300, concessional equity financing will drive the DRE sector toward a** higher-**growth scenario, increase the expected payout for senior investors, and eventually attract commercial investments**. Zafiri will prioritize underserved regions based on the investors' funding requirements, while also balancing financial returns.

Figure 7. Illustrative impact of concessional equity funding



* Top SHS companies refers to the top 3-4 off-grid solar companies that are approaching commercial viability. While these companies have started to attract commercial investors, these investors typically limit these companies' expansion to their current less risky core markets, which are typically non-FCV urban and peri-urban markets. Zafiri may invest in expansion in these companies to more marginal geographic areas in rural areas and FCV, which have lower return expectations and would not attract commercial equity investors.

116. **TDB's innovative use of IDA and CTF concessional credit and ESMAP grant, combined with the catalytic GCF grant is intended to enable TDB's participation in Zafiri as a major shareholder, contributing to Zarifi's junior and senior equity tranches and underscoring TDB's commitment to scalable, sustainable energy solutions, as a critical partner in Mission 300**. By integrating equity with ASCENT's debt/RBF operations, TDB bridges financing gaps across the project's lifecycle, de-risks investments, and accelerates energy access—a cornerstone of Africa's trade and industrialization. This blended approach not only aligns with TDB's strategic priorities but also positions it as a pioneer in leveraging concessionality to maximize development impact, while safeguarding financial stability.

117. **GCF funding for this sub-component in the form of a US$5 million non-reimbursable grant will play a critical catalytic role** in enabling the full scale of TDB's participation in Zafiri. The grant will protect TDB's balance sheet by capitalizing a contingency loss reserve to absorb losses arising from TDB's equity investments in Zafiri during the anticipated exit period (around year 15). If no losses are incurred or not in the full amount of the grant, the unused proceeds of the grant, together with any accrued interest, will be transferred to TDF, TDB Group's nonprofit arm, to support climate aligned investments consistent with ASCENT-GREEN's objectives and eligibility criteria. The GCF grant itself is a non-reimbursable, catalytic instrument that will function as a capped, exposure-specific capital preservation loss buffer linked solely to TDB's approved equity investment in Zafiri under ASCENT-GREEN. The grant is intended to mitigate defined downside capital impairment and does not constitute equity investment by GCF, balance sheet support to TDB, or underwriting of TDB liabilities. For the avoidance of doubt, the grant does not support, guarantee, enhance, or otherwise facilitate repayment of any debt obligation of TDB, including any IDA-provided financing.

118. **This mechanism is expected to enable TDB to invest the full amount of US$55 million in both junior and senior equity in Zafiri**, which will further crowd in other development finance institutions (DFIs) and commercial investors in equity financing in DRE. Any interest accrued on the GCF grant proceeds shall be applied for the same purposes as the GCF Grant proceeds originally disbursed by the Accredited Entity to TDB.

119. **TDB's source of financing for its equity contribution is debt financing**. IDA processed a concessional loan package to TDB, which will reduce TDB's borrowing costs in line with Zafiri's patient and impact-oriented nature, but will still expose TDB's balance sheet to the loan-to-equity conversion risk. As a credit-rated institution that plays an important development financing role in the region through its lending to governments, other financial institutions and the private sector, TDB has developed prudent investment and risk policies that would not allow it to invest in Zafiri based on borrowing from IDA only, given the risk and return profile of the not-yet-commercial DRE sectors that Zafiri's equity investments aims to unlock. The scenario analysis indicates that without the GCF catalytic grant, TDB is willing to invest only US$20 million in Zafiri considering its conversion risk and including the US$5 million ESMAP grant. TDB would incur financial losses on its own balance sheet if the Zafiri Vehicle IRR falls to -2.35% or below. Under this scenario, TDB remains a minor shareholder with limited governance influence and limited capacity to shape Zafiri's investments towards beneficiaries in underserved/FCV/rural segments and resulting in uncertainties on the timing or amount of Zafiri's capitalization. With the GCF grant, TDB equity increases to US$55 million and TDB becomes an anchor r shareholder with a board seat and stronger governance influence, improved ability to reach target beneficiaries in underserved/FCV geographies, and Zafiri first phase capitalization on track for 2026. Under this scenario, the

financial analysis indicates that if the Zafiri Vehicle IRR falls to -1.59% or below, TDB would incur financial losses on its own balance sheet. If TDB is asked to invest US$55 million without the GCF catalytic grant, TDB could incur financial losses on its own balance sheet if the Zafiri Vehicle IRR falls to -1.39% or below.

120. **Therefore, the GCF's contribution of the non-reimbursable grant would complement the already approved US$5 million grant from ESMAP, enabling TDB's participation in Zafiri at the full amount needed to achieve the closure of Zafiri's first phase under its impact-**oriented **mandate**. The grant is purely catalytic, its impacts being realized through mobilization of financing at scale, including private sector mobilization, strengthened governance of Zafiri via TDB participation, and strong signaling and demonstration effects of a commitment from one of Africa's leading regional financial institutions. Given this catalytic nature, the grant is the most agile and least-cost instrument that can be mobilized for the intended purpose, compared for example to a guarantee or a reimbursable grant, which would require a complex structuring given the uncertainties of investing in not-yet-commercial DRE markets, and would further delay Zafiri, and could expose GCF to the equity investment risks.[74] With a non-reimbursable catalytic grant, limited to US$5 million, GCF will be able to play the required catalytic role, without being exposed to any equity or foreign exchange risks associated with TDB's investments in Zafiri.

121. **The catalytic nature of the GCF non-reimbursable grant would not only result in mobilizing financing to enable the closure of Zafiri's first phase of US$300 million, but above all its intended private sector mobilization** as a part of the permanent vehicle structure, aimed at reaching the full capitalization of US$1 billion, primarily via private sector investments. This will be enabled not only by Zafiri's equity investments in the DRE companies but also by its active role as a shareholder, helping DRE companies to pursue sustainable growth strategies that would make them attractive to the private sector investors beyond the current top 3-4 companies and C&I sector that have been able to attract some private sector equity investors so far.

122. **The World Bank as an AE would provide the grant to TDB based on its commitment to invest the intended US$55 million in Zafiri.** ASCENT-GREEN's eligibility criteria (see earlier in this section) will be operationalized in the Operations Manual of TDB, with at least 50 percent of GCF-enabled TDB financing/capitalization in Zafiri to be used for equity financing in (i) DRE companies that deliver new electricity connections, and clean cooking access and have specific expansion plans, which are included in the equity raise, in rural areas and/or in FCV countries and/or green-field mini grids, and/or (ii) for more nascent sectors, including PUE, electrification of public institutions and higher tier clean cooking solutions. Concessionality will be passed on via the fund's mandate and blended-finance terms (equal share of senior and junior equity) to target high-impact, lower commercial viability investments, and through structured features contemplated in the waterfall and potential loss capping concepts TDB will have a reporting obligation to the World Bank, including on beneficiaries of Zafiri's investments and other information required for complying with ASCENT-GREEN's M&E and reporting arrangements stipulated in Annex 11. Performance risk will be managed through governance (TDB will sit on Zafiri's Board together with other anchor investors such as IFC and AfDB that have significant experience in equity financing), professional fund management (Inspired Evolution has been competitive selected and is incentivized to achieve both financial and impact targets), environmental and social/fiduciary controls, and clearly defined investment guidelines negotiated with partners, to achieve the vehicle's objectives. Before REAF project completion, the World Bank will contractually require TDB to provide and adopt an action plan to set forth TDB's systems and mechanisms for monitoring the utilization of the GCF Grant proceeds allocated to Sub-Component 1.4 for losses from Zafiri and the transfer of unused GCF Grant proceeds to TDF.

123. **Financial and climate additionality:** Lack of access to patient equity is considered among the top barriers constraining the development of DRE markets in SSA, especially for smaller companies[75] given that the sector is not yet able to deliver returns required by

[74] Based on the current assessment, without GCF funding, TDB may only invest US$10 million junior and US$10 million senior equity shares to limit its risk exposure, jeopardizing or risking delays in the capitalization and operationalization of Zafiri, limiting its share of investments to impact-oriented DRE sectors, and not allowing TDB to reach major shareholder status in Zafiri, with a seat at the Board.

[75] For example: WBG/GOGLA's Off-grid Solar Market Trend Report of 2024 concludes: "More specifically, equity financing is essential to fund growth, product development, and market expansion, particularly for smaller players. However, excluding a single equity investment into Sun King in 2022, debt has comprised 75% of investments into off-grid solar from 2021 to 2023 leading to the market becoming overleveraged compared to historical levels. Many companies interviewed, particularly smaller ones, noted they couldn't access equity or take on more debt to grow. Equity investors typically expect higher returns and often require a clear path to profitability. This creates a barrier for many off-grid solar companies that operate in markets with longer payback periods, high customer acquisition costs, and fluctuating demand." Similarly, a recent report from Africa Mini Grid Association concludes: "There is a role for all types of financing throughout the trajectory of company growth. However, in the current market there is a shortage of long-term patient growth capital, particularly in the form of equity and equity-like instruments. This type of patient and flexible capital is required to grow companies by enabling them to establish strong corporate teams, which are critical for improving and expanding operations in line with the highest

commercial investors. The existing equity funds are either too small in size or require commercial returns which the development impact-oriented DRE segments are not yet able to deliver. The concessional capital, including the GCF grant, are enabling TDB's participation in Zafiri as an anchor stakeholder integrating the voice of African governments, reinforcing Zafiri's orientation towards not yet commercially viable market segments serving climate vulnerable populations, including those targeted by ASCENT-GREEN, such as companies operating in FCV and rural areas, smaller and local solar home systems companies, mini-grids, nascent PUE solutions, and clean cooking, as shown in Figure 7.

124. **Component 2: ASCENT-Regional Energy Access De-risking Financing Facilities (REAF 2) Project for DRE** *(Indicative financing: Total GCF and co-financing is US$105 million, of which GCF US$50 million, IDA US$50 million, and TF US$5 million. Other financing is US$129.2 million from the private sector.)*

The World Bank ASCENT REAF 2's de-risking facilities are at the concept stage. The project is expected to be approved in 2026, with an initial budget of US$105 million of IDA, TF, and GCF funding, aiming to mobilize additional resources from development partners and the private sector.

125. **REAF 2 will be developed to de-risk private sector investment in the DRE, clean cooking, and PUE sectors, by addressing the real and perceived financial risks that are holding back investment in sector companies, as identified in the market assessment** (see Table 5 in section B1.3). REAF 2 will provide financing to: (i) set up and implement a Risk-Sharing Facility (RSF) to crowd in commercial lending, particularly local currency lending to the DRE and clean cooking sector; and (ii) set up a Carbon Risk Mitigation facility (CRMF) to address carbon pricing risks. Implementing entities for the de-risking facilities are under selection. The GCF will co-finance each of the two activities of the project, as described below.

126. **Sub-component 2.1: Risk-Sharing Facility** *(Indicative financing: Total GCF and cofinancing is US$70 million, of which GCF US$45 million and WB US$25 million. Other financing consists of US$123.6 million from the private sector.)*

127. This sub-component aims to enable and incentivize financiers, especially local commercial banks, to lend to DRE companies in order to create sustainable financing mechanisms for reaching climate vulnerable populations in AFE, in particularly those living in rural areas and FCV contexts. The perceived risks of serving these low-income households are deterring commercial investors, including local commercial banks. Most of the debt financing flowing into the sector is in hard currency, leading to a mismatch with local currency revenue, and high-risk exposure of companies to currency exchange rate fluctuations. Despite the growth of the DRE sector and the scale reached by some large companies, local currency lending by local banks has been limited to date. Lack of access to local currency financing is resulting in unhealthy foreign exchange exposure of DRE companies, which is often passed on to end users, which makes DRE energy services prohibitively expensive for many of ASCENT-GREEN's target climate vulnerable populations, requiring high RBF to bridge the affordability gap. Even though concessional capital will be needed upfront to set up a risk-sharing mechanism that would encouraging local commercial banks to lend in local currency at affordable terms, over time the increased local currency lending would result in the reduced need for concessional capital and is a critical element of ASCENT-GREEN's approach of declining RBF as presented under Sub-component 1.2., and the overall ASCENT-GREEN exit strategy.

128. **This sub-component will, therefore tackle the challenges that DRE companies, in particular smaller and local ones, face in securing local currency debt financing from commercial lenders**, which include: (i) commercial lenders' unfamiliarity with DRE sub-sectors and limited capacity to assess credit risks due to DRE's nascent nature and complex business models; (ii) commercial lenders' perception of low deal volume and high risks in the DRE sector; (iii) DRE companies' lack of the collateral often required by commercial lenders; (iv) the lack of a profitable track record and low capability to prepare business plans of early-stage companies and companies operating in FCV contexts. The proposed RSF includes two parts:

129. **2.1 (a) RSF Capitalization and Backstop** will fund and guarantee a regional risk-sharing facility ("RSF") that will issue guarantees to eligible PFIs to expand commercial lending to DRE, clean cooking, and PUE companies. Under this activity, a GCF reimbursable grant and WB guarantee will be used to capitalize and backstop the RSF which will enable the regional EE to provide partial credit guarantees (PCGs) to eligible PFIs to expand commercial lending to DRE companies with focus to serve underserved, climate-vulnerable, or FCV markets, as defined in ASCENT-GREEN's eligibility criteria (as defined earlier in this section), leveraging the WBG's new unified Guarantee Platform and guarantee product enhancements. PFIs, backed by PCGs, will mainly offer local currency loans and focus on smaller, local DRE companies that are not typically supported by TDB/TDF or to scale up companies that TDF financed to the next level, providing a sustainable source of finance which local companies can access and expand at the grassroots level. This segmentation prevents

environmental and social standards. Lack of this type of financing therefore inhibits developers from reaching scale." The situation is even more dire for more nascent sectors, such as PUE.

competition between channels, ensures each facility serves distinct market segments, and maximizes overall market development outcomes, with RSF in particularly critical for building sustainable financing solutions post ASCENT-GREEN. Proposed financing will be channeled through a combination of a GCF reimbursable grant, which serves as second-loss cushion (following the first loss pool of the facility income with PCGs fees and interest income) and provides seed capital, and a World Bank payment guarantee, to provide additional risk-absorbing capital on a contingent basis. The guarantee provided by the Bank would be reimbursable, so that any guarantee payouts would create a loan-like, long-term reimbursement obligation for the EE embedded in the Guarantee Agreement.

130. **Claims to the RSF will be paid according to the following waterfall structure**: (i) First, out of the net cash accruals , retained earnings, and reserves of the RSF, in accordance with the RSF's approved financial management, provisioning and capital preservation policies; (ii) next, out of the GCF Reimbursable Grant funding in accordance with the RSF risk-sharing and capital preservation framework; and (iii) finally, out of any payment made by IDA under the IDA guarantee following a claim by the Executing Entity on the IDA guarantee in accordance with the IDA guarantee terms. This proposed waterfall structure is specific to projects in host countries that are IDA-eligible. Further, of the GCF Reimbursable Grant funding of USD 40 million, at least USD 30 million will be earmarked to support DRE, clean cooking, and PUE projects in host countries that are IDA-eligible. For DRE, clean cooking, and PUE projects located in host countries that are not IDA-eligible, claims to the RSF would be paid according to the following waterfall structure: (i) First, out of the net cash accruals earned by the RSF from projects in host countries that are not IDA-eligible; (ii) next, out of the GCF Reimbursable Grant funding that is not earmarked for IDA-eligible countries.

131. **The GCF reimbursable grant thus plays a catalytic role in enabling PFI lending to DRE companies in local currency in terms that will allow them to provide affordable services to the climate vulnerable populations targeted by ASCENT-GREEN**, while the World Bank guarantee complements GCF reimbursable grant in building market confidence and attracting a wider range of PFIs to participate in the RSF facility. RSF will follow ASCENT-GREEN eligibility criteria, with at least 60 percent of RSF Guarantee commitments to be issued for FCV, rural or underserved markets/DRE segments. To manage risk exposure, the GCF reimbursable grant will be capped at a maximum leverage of 3x the total lending enabled, and no less than 20% of the grant is expected to be repaid to the GCF. Potential eligible PFIs will include all lenders licensed in the relevant jurisdiction, such as commercial banks, leasing companies, and debt funds operating in the DRE sector, although a particular emphasis will be on local commercial banks as per the reasons provided above. Preference will be given to lenders that can use the RSF's credit risk mitigation support to provide local currency loans on attractive terms to DRE borrowers. The design was informed by a preliminary market sounding with commercial lenders, DFIs, and DRE companies operating in the region. They were contacted to assess the potential demand for debt finance, gauge the awareness of and demand for risk mitigation instruments, and solicit feedback on how to structure marketable and effective RSF instruments. The preliminary market sounding suggests using a Partial Credit Guarantee (PCG) as the risk-sharing instrument for eligible PFIs. The risk coverage under the PCG would likely vary, with higher coverage offered in markets with a higher risk profile (e.g., FCV countries).

132. **The detailed RSF design parameters will be included in the RSF Operations Guidelines,** which will be completed prior to the Board approval and will include key design aspects of the RSF, including but not limited to the RSF eligibility criteria and market limitations, the RSF guarantee fee structure (ensuring that concessional benefits are passed through to end-borrowers and do not accrue as excess returns to PFIs), coverage level, loss allocation and the related waterfall mechanism, portfolio allocation floors, exposure and concentration limits by sector or country, and the claims process and recoveries, consistent with key terms included in Annex 14. As is standard practice in similar RSFs, such Guidelines may be updated during implementation to reflect changes in market conditions, provided that they remain in alignment with the overall development objective, implementation governance arrangements, and Key Terms and Conditions, in accordance with the approval mechanism to be set out in the RSF Operational Guidelines. The implementation procedures and processes of eligibility criteria and Operating Guidelines will be detailed out in the EE's Operations Manual. To explicitly guard against mission drift, the RSF will incorporate a formal, time-bound parameter review and reset mechanism, in addition to established floors, caps, and OM controls. Key parameters— such as eligible technologies and sectors, target borrower segments (including FCV and rural), risk-sharing ratios (first-loss and pari passu), guarantee fee ranges, tenor limits, and currency/hedging policies— will be reviewed at defined intervals (e.g., annually during the first two years and biennially thereafter) against adaptation and inclusion objectives, market conditions, and portfolio performance.

133. **Any material adjustments will be documented with transparent stakeholder consultation and disclosure**. This mechanism ensures the RSF remains tightly aligned with its climate adaptation and affordability goals, maintains guardrails on concessionality, and allows calibrated flexibility to respond to evolving market and climate risks. The EE will have a reporting obligation to the World Bank, and will cause PFIs to provide information on DRE companies supported and their final beneficiaries, as well as other information required for complying with ASCENT-GREEN's M&E and reporting arrangements stipulated in Annex 11. The specific annual reporting related to RSF (until the end of the RSF tenor) will include market allocation of RSF Guarantees, details of RSF guarantee pricing including rationale, loss events, claim submissions and rejections, utilization information on various loss layers, recoveries, and other compliance with agreed

mechanisms and terms and conditions in the RSF Operational Guidelines.

134. **2.1 (b) Technical Assistance and Institutional Strengthening** will finance: (i) provision of technical assistance to PFIs including: (a) capacity-building activities for PFIs and DRE companies to manage and implement projects effectively, including strengthening their Environmental and Social Management Systems ("ESMS"), gender and climate actions on mitigation and resilience considering local climate vulnerabilities and technical standards; (b) digital monitoring, verification, and reporting ("D-MRV") systems to enhance impact monitoring and feedback collecting for adjustment and improvement; and (c) risk management tools (e.g., foreign currency management, payment collection systems) to monitor and support DRE companies' financial performance; (ii) institutional strengthening and implementation support, including provision of technical assistance, capacity building and institutional strengthening activities to increase the Executing Entity's capacity to implement REAF 2 and enhance policy coordination for an enabling environment for the DRE sector, including, inter alia, capacity building to carry out due diligence on technical and financial assessments, ESMS, gender action plan, climate mitigation and resilience, and monitoring and evaluation, and carrying out market studies related to DRE sector risk assessment and management to deepen sector knowledge and propose policy advice.

135. **GCF financing for this sub-component consisting of a US$40 million reimbursable grant and a US$5 million grant will**: (i) capitalize the second-loss pool to provide PCGs to enable PFIs to expand commercial lending to DRE companies; (ii) provide TA to regional and local financial intermediaries to strengthen their capacity to assess and manage DRE company risks, with potential subsequent direct support by the GCF to these financial intermediaries under separate projects; and (iii) provide TA to support due diligence and monitoring processes, including digital planning, management, and MRV platforms. The flow of GCF reimbursable grant proceeds will end at the regional EE level, except when a PFI makes a valid claim under the relevant PCG Agreement, in which case funds would flow to the PFI according to the agreed waterfall. The RSF will integrate lessons from the AfDB LEAF Facility, while increasing the scale. The rationale for the selection of the reimbursable grant as the most suitable instrument to finance and backstop the RSF is explained in Section B5 Justification for GCF funding request in paras 180-183.

136. **Financial and climate additionality:** To unlock the full DRE potential, private and commercial financing must be significantly expanded and made accessible across a broader range of technologies, geographies, business models, and company types. While segments serving commercial and industrial (C&I) customers have attracted some private investments, other segments remain underfunded, particularly development impact-oriented DRE sectors serving climate vulnerable populations in rural areas and FCV contexts. Local commercial banks have yet to play a meaningful role in these sub-sectors.[76] Unlocking commercial bank lending would also unlock local currency financing, which has been identified as one of the top constraints to DRE development, in both market reports[77] and ASCENT-GREEN consultations. Most available debt is in hard currency, creating a mismatch with local-currency revenues and exposing companies to exchange-rate volatility. RSF targets the core hurdles DRE firms face in securing local-currency debt from commercial lenders, such as: (i) lenders' limited familiarity with DRE sub-sectors and constrained capacity to assess credit risk given the sector's nascent status and complex business models; and (ii) a perception of high risk that drives demands for onerous collateral requirements. There is no similar initiative available in the region, with comparable size, geographic reach and scope focused on development impact-oriented DRE sectors, serving climate vulnerable populations in the region. This activity is essential for long-term sustainability of ASCENT-GREEN, which requires developing a larger and more diverse set of financiers across countries with the ability to deliver local currency financing. This is particularly important for local SMEs that otherwise struggle to raise financing through international financiers, and can be especially impactful for PUE financing, supporting ASCENT-GREEN's adaptation ambition.

137. **Sub-component 2.2: Carbon Risk Mitigation Facility (CRMF)** *(Indicative financing: Total GCF and co-financing is US$35 million, of which GCF US$5* million*, IDA loan US$25 million, TF grant US$5 million. Other financing consists of US$5.6 million from the private sector)* This sub-component aims to: (i) stabilize the carbon market by providing a floor price guarantee for carbon credits generated in the DRE sector; (ii) reduce carbon transaction costs and increase market efficiency by aggregating demand and attracting institutional buyers; and (iii) support a more conducive environment for carbon market participation through policy coordination and harmonization (see Box 4). The facility will build on the World Bank's ongoing efforts to support carbon market development in the region and contribute to the ASCENT carbon market ecosystem. The CRMF will also help crowd in more investors in the sector, including local commercial banks, by enabling a predictable flow of revenue, which will improve the financial viability of DRE, clean cooking, and PUE investments and reduce the risks for lenders, thereby contributing to bringing the sector close to commercial viability. The proposed CRMF includes the following two subcomponents.

[76] Based on reporting from over 500 DRE companies operating in SSA, only 9 percent of their financing have been sourced from commercial banks (ASCENT-GREEN market assessment, WB DRE hub database).

[77] See for example WBG/GOGLA: Off-grid Solar Market Trends Report, 2024 and AMDA: Benchmarking Africa's Minigrids Report, 2025

138. **2.2 (a): Carbon Revenue Stabilization Mechanism will fund a risk mitigation facility for purchase of verified emission reductions (VERs), with a guaranteed floor price** and selling such VERs to institutional buyers or holding them to stabilize prices. No GCF Proceeds will be used for this activity. The floor price guarantee will be triggered if participating DRE companies elect to sell VERs at the floor price; conversely, companies may choose not to trigger the guarantee if they secure buyers willing to pay above the floor. This design ensures that DRE projects receive a minimum revenue stream when market prices fall, reducing revenue volatility and increasing market liquidity, while preserving upside when higher-price buyers are available. It will also attract private investors and project developers by de-risking carbon credit sales. The executing entity will sell VERs to institutional buyers or hold them to stabilize prices by leveraging the WB loan financing's long tenor. Bulk purchasing of VERs can reduce fragmentation and enhance bargaining power with buyers. The facility will focus on credits generated from WB-supported DRE investments to enhance integrity and efficiency via robust MRV and high-quality methodologies as well as harmonized due diligence. The guaranteed floor price discovery will be achieved through the off-taker prices. By leveraging the World Bank Group's ongoing carbon market support efforts and initiatives, the CRMF is expected to engage with the off-takers first on the terms and conditions before issuing the carbon floor price guarantee to DRE companies to ensure cost recovery. Proceeds from the sale of VERs are expected to be used to pay back the IDA credit if withdrawn, cover the CRMF's operating costs, and/or replenish the facility

139. **2.2 (b): Technical Assistance, Institutional Strengthening, and Implementation Support** will finance provision of technical assistance, institutional strengthening and implementation support, including: (i) providing tools and advisory services to streamline carbon credit issuance, pricing, and contracting, and aggregating demand from institutional buyers to create liquidity; (ii) building the EE's capacity on carbon market policies and regulations, risk management, carbon assets management, a D-MRV platform and stakeholder coordination; and (iii) supporting national governments in establishing clear and consistent carbon market regulations through the provision of guidance on regulatory requirements for local issuance of carbon credits, ensuring alignment with international standards, and facilitating the implementation of Article 6 mechanisms under the Paris Agreement, which will build on the upstream support provided by COMESA under Component 3 and leveraging existing World Bank Group policy programs, partnerships, and initiatives to support national governments in establishing clear and consistent carbon market regulations including guidance on regulatory requirements for the local insurance of carbon credits to align with international standards and implement Article 6 mechanisms under the Paris Agreement. Specifically, this sub-component will support actions to fill any remaining gaps to facilitate downstream carbon transactions.

140. **Financial and climate additionality** Sub-component 2.2 will deliver financial and climate additionality by stabilizing downstream carbon transactions for DRE, clean cooking, and PUE projects through a carbon floor price guarantee. In markets where price volatility—driven by concerns over credit integrity—has limited the sector's ability to attract carbon finance, the facility anchors predictable carbon-linked cash flows and focuses on credits generated from WB-supported DRE investments to enhance integrity via robust MRV and high-quality methodologies. Its primary value is to crowd in significantly more carbon finance as an increasingly important revenue source that can be used to support end-user affordability. By providing guaranteed carbon revenue, the facility also helps mobilize upfront debt financing, extending tenors and reducing collateral requirements, especially for local SMEs. The facility leverages the World Bank Group's upstream policy, regulatory, and capacity support for carbon market development in the region to facilitate downstream transactions. Its design is innovative and scalable—using standardized guarantee terms, portfolio aggregation, and targeted capacity-building to enable replication across ASCENT-GREEN countries and accelerate deployment of resilient, low-carbon DRE technologies in rural and FCV contexts.

Box 4. Key features of the Carbon Risk Mitigation Facility (CRMF)

The core feature of the CRMF risk mitigation approach is the floor price guarantee, **which commits CRMF to purchasing a predefined volume of carbon credits at specific prices for a fixed duration.** This mechanism provides certainty and stability to project developers, significantly enhancing the bankability of carbon projects by ensuring a guaranteed market for credits. A minimum price floor strengthens developers' ability to secure upfront investments, addressing a key challenge in carbon financing. The floor price guarantee is designed to evolve over time. Initially, CRMF will set a higher price floor to incentivize early participation and de-risk project development. Over time, as projects mature and gain credibility through successful credit issuance, auditing, and monitoring, the floor price will gradually decline. Beyond providing downside protection for developers, the floor price also guarantees benefits to funders by reducing uncertainty regarding price and quality risks. Over time, developers that establish a solid track record of successful issuing can diversify their off-take options, attracting buyers beyond the CRMF and improving liquidity. The design of this feature will build on lessons from previous carbon market stabilization efforts, including the World Bank's Ci-Dev and SCALE programs. Additionally, the facility will draw on the experience of price stabilization mechanisms used in renewable energy markets, such as Contract for Difference (CFD) schemes.

While the floor price guarantee is a cornerstone of the CRMF's price stabilization strategy, alternative risk mitigation mechanisms will also be explored to provide additional layers of protection. For example, CRMF is expected to partner with MIGA to complement carbon project risk mitigation with protection against political risks related to carbon credit regulation. The objective is to strike a balance between maximizing impact and minimizing transaction costs, with ongoing consideration of whether to adopt a universal pricing approach or a project-specific model tailored to the economics of each business and its crediting potential.

When considering a project for an offtake agreement and price flooring, the CRMF will conduct due diligence so that the carbon project complies with integrity standards and has a high likelihood of issuing sufficient volumes of high-quality credits. This due diligence process will not only guide the CRMF's investment decisions but will also serve as a resource for other investors involved in the project, such as pre-financing institutions or lenders like TDB. Additionally, where necessary, the CRMF will assist companies in the issuance process itself, ensuring that they meet market requirements and achieve credit certification. By leveraging this analysis, CRMF will support a broader ecosystem of financiers and help strengthen the financial structuring of DRE and clean cooking projects.

The second feature of the CRMF is its demand aggregation approach, which aims to complement existing marketplaces and brokers by leveraging the World Bank's brand, integrity requirements, and extensive network to identify relevant purchasers and act as a trusted third party. A tailored approach will be taken for companies participating in the ASCENT program, distinguishing between large companies and smaller energy access businesses (for instance, large corporations typically seek large multi-year commitments, while smaller enterprises have lower volume needs). CRMF will help consolidate carbon credits from its portfolio companies, as much as possible, to fulfill buyer demand and prevent market distortion or misaligned incentives for issuing businesses, in collaboration with the complementing marketplaces and brokers. The sale of these credits will help recover the capital of CRMF, improving its overall financial sustainability.

In addition, the technical assistance sub-component of the CRMF will address regulatory uncertainties and strengthen carbon market frameworks in project host countries. The CRMF will leverage existing World Bank Group policy programs, partnerships, and initiatives to support national governments in establishing clear and consistent carbon market regulations. These includes providing guidance on regulatory requirements for local issuance of carbon credits, ensuring alignment with international standards, and facilitating the implementation of Article 6 mechanisms under the Paris Agreement. By leveraging the existing and complementary products, instruments, and partnerships of the World Bank Group, the CRMF will help governments clarify the taxation treatment of carbon credits and streamline the process for obtaining letters of approval. It will also support the establishment of clear guidelines for corresponding adjustments under NDCs, ensuring regulatory alignment and reducing uncertainty for project developers and investors. These interventions will have a significant impact on reducing regulatory risk and improving the attractiveness of DRE and clean cooking carbon projects.

141. **GCF financing in the form of a grant to the CRMF will be used exclusively for Activity 2.2 (b) on technical assistance, institutional strengthening, and implementation support.** The GCF funding supported activities will leverage and enhance the upstream carbon market related activities under Component 3 to support the soft infrastructure (e.g., policies, regulations, and implementation capacities of key stakeholders) and hard infrastructure (e.g., D-MRV platform) to develop the ASCENT carbon market ecosystem. The recipients of TA support include the regional EE, national governments, and possibly other key stakeholders such as FIs, regulators, standard agencies, and carbon verifiers.

142. **Component 3: COMESA Regional Energy Access Acceleration Platform**[78] *(Indicative financing: Total US$51 million, of which GCF grant US$5 million and* IDA *grants US$46 million).*

The World Bank approved the ASCENT MPA on November 30, 2023, including the Regional Energy Access Acceleration Platform with IDA grant financing of US$50 million to be implemented by COMESA. Component 3 will provide additional financing of GCF US$5

[78] See Annex 18 for Project Appraisal Document of the COMESA Platform approved in 2023 (Annex 1 of the ASCENT MPA PAD).

million to the COMESA Platform for activities aiming to strengthen the enabling environment for private sector DRE companies, and facilitate strong country engagement throughout the implementation of the program.

143. **Component 3 provides GCF financing to support the COMESA Secretariat to provide TA to governments and DRE companies that addresses the policy, regulatory and capacity barriers identified in section B1.3 (see Table 5) and supports strong country engagement throughout the implementation of the program.** Of highest relevance to ASCENT-GREEN is COMESA's targeted support to countries to improve their policy and regulatory environments for DRE, clean cooking, and PUE, and harmonizing them around best practices. This includes:

- Supporting implementation of key reform measures. The critical reforms are being identified and prioritized through the National Energy Compacts under Mission 300, with 14 compacts in AFE already completed and launched and others in preparation.[79] The COMESA Platform under Component 3 will help countries (primarily under Activity 3.1 (c) below) to implement the key actions that countries have prioritized in their National Energy Compacts, such as development and updating of national electrification, clean cooking and PUE strategies, improving regulatory frameworks and capacity for mini-grids, reducing high customs duties and taxes on DRE, clean cooking, and PUE products, and improving quality assurance frameworks, including standards and their implementation and enforcement, especially in new segments, such as PUE, as well as for environmental and social aspects, including e-waste.
- Enabling aggregation benefits from the regional approach, starting with developing a regional d-MRV platform and incentivizing and supporting countries in developing national d-MRV platforms, linking them with the regional one, and supporting development of aggregation strategies for procurement.
- Supporting DRE companies to grow their markets and expand to new ones, with particular emphasis on reaching financial closure faster, with targeted support to smaller and local companies that are interested in participating in ASCENT-GREEN, increasing their readiness for financing, including in business development, technologies, financing and environmental and social (including e-waste) aspects, building awareness of ASCENT-GREEN financing opportunities and collecting feedback via beneficiary surveys.
- Closing data, knowledge and skills gaps, including through the ongoing regional PUE market assessment, disseminating knowledge, including through knowledge exchange events benefiting participating countries, and hosting the ASCENT-GREEN coordination mechanism, as well as building skills in collaboration with the region's academic institutions and partners, including facilitating internships and placements of graduation in collaboration with industry associations and other partners, with a particular focus on female graduates.

144. **This component aims to create an enabling environment for the acceleration of** electrification **and DRE solutions (inclusive of PUE equipment and clean cooking) in the AFE region to be implemented via five activities**, as described below, that support the acceleration of DRE-based private sector energy access provision.

a. **D-MRV Platforms for Energy Access and Climate Finance.** Provision of technical assistance and capacity building in ASCENT-GREEN participating countries to facilitate the adoption of digital monitoring and verification (D-MRV) platform and other digital technology, including: (i) implementing a regional D-MRV platform; (ii) establishing a mechanism for carbon credits transactions[80]; (iii) facilitating adoption and operationalization of D-MRV platforms at the country level; (iv) developing dashboards for tracking progress under ASCENT, data visualization, and information dissemination; and (v) supporting Participating Countries to meet other digitization needs, such as adoption of specialized digital platforms for planning and development of mini grids and other distributed renewables and clean cooking technologies.

b. **Project Preparation Facility.** Establishing and operationalizing a project preparation facility to support Participating Countries and eligible private sector firms to develop bankable, investment-ready projects through a demand-driven approach, in particular: (i) provision of technical assistance and capacity building to Participating Countries national agencies (such as energy ministries, rural electrification agencies, public utilities, etc.), including: (a) designing and implementing energy access projects; and (b) providing access to specific, just-in-time support for project design from a roster of experts; (ii) provision of technical advisory services to facilitate cross-border energy solutions on-grid renewable energy and decentralized renewable energy, including: (a) identifying and prioritizing potential areas for cross-border electrification using geospatial mapping; (b) conducting awareness raising campaigns to

[79] All completed compacts are included at https://www.worldbank.org/en/programs/energizing-africa/national-energy-compacts, including each country reform commitments and their timelines.

[80] The focus of this activity is primarily on helping ASCENT countries to set up their d-MRV platforms and on related TA to Governments to leverage the platforms for monetizing carbon credits, and building enabling environments. Activity 2.2 (b) above builds on this upstream support to provide downstream support on carbon transactions, associated with the provision of floor price guarantees.

engage Participating Countries governments and key stakeholders; (c) provision of technical assistance to Participating Countries governments in negotiation and structuring of cross-border energy investments; and (d) facilitating technical studies; (iii) provision of technical advisory services to strengthen private sector DRE clean cooking companies, and PUE companies, including: (a) providing market intelligence on DRE, PUE, and clean cooking markets and market assessments on specific DRE and clean cooking technologies to eligible private sector firms/companies; and (b) provision of business development grants ("Grants") from COMESA Secretariat to eligible private-sector DRE, PUE, and clean cooking companies, DRE financiers, industry associations and not-for-profit entities supporting DRE sector ("Beneficiaries") to finance eligible DRE, PUE, and clean cooking business development activities ("Sub-Projects") , including building the capacity of said Beneficiaries for technical, financial, economic, social, legal, regulatory, environmental, and social safeguards, institutional, governance, transaction structuring and business management; and (iv) support for building sustainable business models and supply chains, including for setting up maintenance and after-sale services systems, and for integrating resilience considerations in the technical designs and business models.

c. **Advisory Support to Participating Country Governments.** Strengthening the policy and regulatory environment of Participating Countries for energy access, including: (i) preparing, updating and operationalizing national electrification and clean cooking strategies, and geospatial electrification plans and clean cooking action plans; (ii) preparation of regional and country-specific energy access investment prospectuses and roadmaps, associated convening and roadshows for mobilization of financing; (iii) adoption of best practices in energy policies and regulations; (iv) harmonization of technical and quality standards for grid equipment, mini grids, off-grid, and clean cooking; and (v) identification of other barriers and facilitation of their removal.

d. **Knowledge exchange, skill development and consumer engagement and ASCENT-GREEN coordination mechanism,** including inter alia , provision of technical assistance to: (i) improve energy data availability and quality across the region, including building data, knowledge and skills for energy access planners, funders and providers and their current and prospective employees and energy access consumers in the Participating Countries and facilitating sharing of knowledge and experiences of energy access interventions; (ii) strengthen COMESA's' gender agenda, including audits of gender policies on energy access in COMESA's member countries and in Participating Countries, to harmonize the policies that will accelerate closing of gender gaps related to energy access, and promotion of women's participation in the energy sector as entrepreneurs, champions, and role models; (iii) strengthen monitoring and evaluation of gender commitments and documentation of good practices; (iv) support COMESA's role of a convener and facilitator of knowledge exchange; (v) develop skills in the DRE sector; and (vi) establish and implement a coordination mechanism for ASCENT-GREEN. to promote the close coordination of the EEs of the regional financing facilities REAF and REAF 2, with participating country governments, which will include quarterly or semi-annual virtual meetings and annual in-person meetings during ASCENT week, as well as periodic consultations/coordination with DRE companies.

e. **Project management and capacity building** by strengthening the capacity of COMESA's Project Implementation Unit ("PIU") for Project management and implementation, including monitoring and evaluation of the activities under the regional platform, and supporting the management of DRE, PUE, environmental and social, and gender aspects of the Project

145. **GCF financing in the form of a US$5 million grant to the COMESA Platform will be used to support all of its essential activities to create an enabling environment for DRE solution expansion and transformation, as described above.** These include digitization for improving data for planning, monitoring, reporting, and verification; TA to governments to design and implement supportive policy and regulatory measures; support to private sector companies to develop investment ready projects; building skills for the DRE sector, especially for women and youth and advancing the gender agenda through the harmonization of gender policies; monitoring results and impacts, including through beneficiary feedback; and carrying out knowledge exchange and strong coordination of ASCENT-GREEN activities with national activities to promote country ownership.

146. **Component 3 TA activities will be implemented throughout the program, although their relevance will differ across time.** In the early years of the program, the main focus will be on the Advisory Support Facility to work with the Governments to improve policy and regulatory framework, which will help attract private sector, reduce costs of market entry or market expansion and accelerate implementation. The early implementation focus will also be on building and improving digital platforms and other tools that will increase efficiency and transparency of energy access efforts (with the ultimate goal of also leveraging these platforms for monetizing carbon). In parallel, a TA facility for the private sector will be launched and maintained throughout the ASCENT-GREEN in order to continue improving capacity of existing and new DRE companies. The focus will be especially on accelerating the process to financial closure, with a particular focus on helping the second generation, smaller and local companies to grow and access adequate sources of financing. In parallel, a skill component will be initiated to reflect the need of DRE companies to access skilled labor, as the sector grows. The gender stream will be

implemented throughout as it will cut through all activities. Similarly, coordination and knowledge sharing will be applied throughout the program. The activities are designed to be flexible, so that they can adapt to the market needs.

B.4. Implementation arrangements (max. 1500 words, approximately 3 pages plus diagrams)

147. **This section provides an overview of the implementation arrangements for ASCENT-GREEN.** The detailed structure, financing flows, and step-by-step contractual arrangements for each financing facility among the GCF, World Bank, regional EEs, DRE companies, and end users are described in Annex 24.

148. **Following GCF Board approval, the World Bank and the GCF will, based on the Accreditation Master Agreement (AMA), enter into a Funded Activity Agreement (FAA) for the provision of the funds under all GCF instruments supporting the Program**. The World Bank will be solely responsible for the management and administration of GCF resources and will carry out such management and administration in accordance with its policies, procedures, and practices, and the relevant provisions of the FAA and AMA. The World Bank will apply its own fiduciary principles and standards relating to any integrity checks, anti-corruption, countering of financing of terrorism, fraud, financial sanctions, embargoes, and anti-money laundering. Following the approval of projects, the World Bank will sign agreements with the EEs and other agreements, as applicable. These transactions will make available World Bank finance as well as GCF finance for investments in line with the provisions of the FAA and all the requirements and procedures described below.

149. **The World Bank will be responsible for providing the necessary program governance, oversight, and quality assurance, including for environmental and social management aspects, in accordance with its policies, procedures, and any specific requirements in the AMA and FAA**. The World Bank, as a GCF-accredited entity (AE), will sign a subsidiary agreement with each EE that will implement the activities under GCF-financed components of the Program and the Project Agreement with the Project Implementation Entity (PIE).; these agreements are expected to be signed within the periods indicated in Table 8. The World Bank will use its operation systems and established processes to supervise the projects and complete the approval of those under preparation that would meet the eligibility criteria, as presented in this Funding Proposal. The World Bank will also facilitate reporting to the GCF in an integrated way as well as learning across projects.

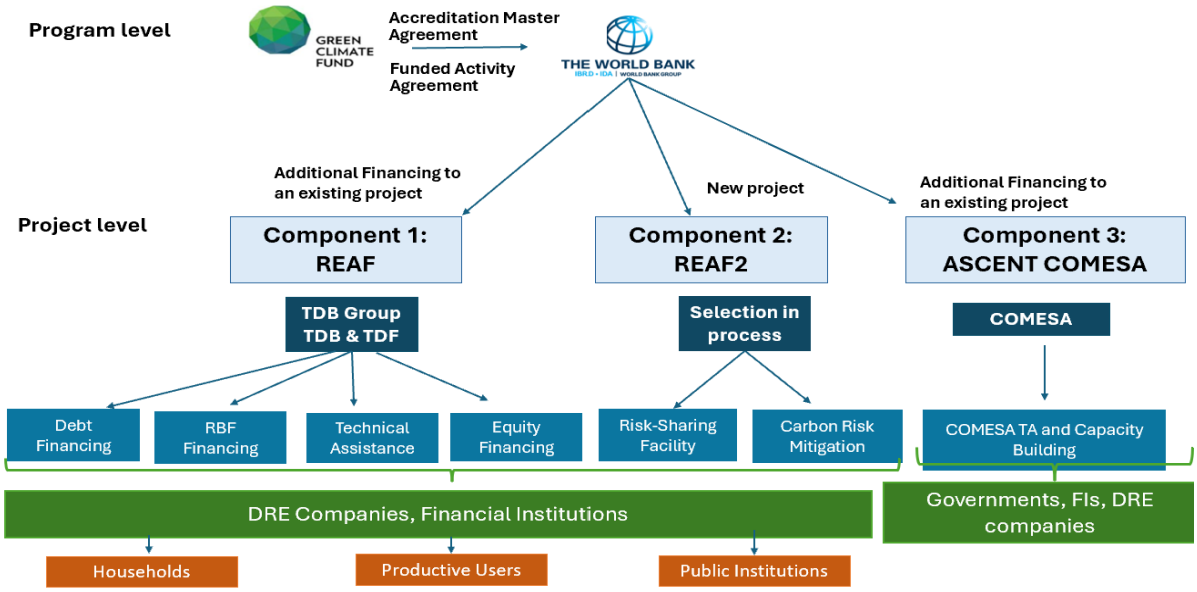
Table 8. Expected date of signature of agreements with EEs and PIEs after the FAA effectiveness

Sub-component number and name	Subsidiary agreement signed between World Bank and EE within:	Project agreement signed between the World Bank and PIE within:
1.1 Lending to DRE/clean cooking companies	6 months (TDB)	9 months (TDF)
1.2 Results-based financing for frontier markets	6 months (TDB)	9 months (TDF)
1.3 TA, tools and innovation	6 months (TDB)	n.a.
1.4 Enable capitalization of Zafiri	6 months (TDB)	n.a.
2.1 Risk Sharing Facility (RSF)	12 months (EE)	n.a.
2.2 Carbon Risk Mitigation Facility (CRMF)	18 months (EE)	n.a.
3. COMESA Platform	6 months (COMESA)	n.a.

150. **Figure 8 illustrates the overall institutional arrangement of the World Bank and GCF, and the three components of ASCENT-GREEN.** The following section briefly describes the implementation arrangements of each component, including the contractual arrangements, financing instruments, and flow of funds (details are contained in Annex 24). Component 1 will be implemented by TDB as the Executing Entity and TDF as the Project Implementation Entity. The Executing Entity/ies for Component 2 is under selection. Component 3 will be implemented by COMESA Secretariat. COMESA and TDB/TDF will operate also in their non-member countries, covering all 21 countries participating in ASCENT-GREEN. COMESA will establish MOUs with the non-member countries.

151. **Coordination across EEs and with countries.** All EEs will participate in the ASCENT-GREEN coordination mechanism, which will be implemented by the COMESA Secretariat under Component 3.

Figure 7. Institutional arrangements of ASCENT-GREEN



Component 1: ASCENT – Regional Energy Access Financing Platform (REAF) Project

152. **Executing Entity***:* The Executing Entity for Component 1 is **the Eastern and Southern African Development Bank (TDB), a leading African regional development bank that is majority-owned by AFE governments and is a GCF regional direct accredited entity.** TDB is a multilateral financial institution established under an international treaty. It has full juridical personality including full capacity to enter into contracts. It is majority-owned by Governments, with a broad coverage of the AFE region and principal offices in Mauritius and Burundi. TDB finances its operation via capital contributions from its members, borrowing on international markets and/or credits/grants from IFIs, as well as via internal resource mobilization. TDB has ability to directly receive funds from the AE and reflow funds to the AE, as TDB is already an active borrower from the World Bank. TDB is currently administering three regional operations financed by IDA credit, for which TDB is also the borrower. TDF, a not-for-profit subsidiary of TDB will act as the Project Implementing Entity (PIE) for Sub-component 1.1 and 1.2.

153. **The World Bank, as the AE, will enter into the following agreements with TDB as the EE**:

- World Bank (IDA Credit), ESMAP and/or other trust fund administered by the AE (Grant), and CTF (Loan) financing agreements;
- A loan agreement for the GCF Loan proceeds allocated to Sub-Component 1.1
- A non-reimbursable grant agreements for the GCF Grant proceeds allocated to Sub-Components 1.2, 1.3, and 1.4

154. **TDB will sign an agreement with TDF to cascade EE obligations to TDF**. In addition, the World Bank as the Accredited Entity will sign a Project Agreement with TDF under Sub-components 1.1 and 1.2.

155. **TDB operates according to commercial principles.** Under ASCENT-GREEN, TDB is to finance DRE companies or financial institutions operating legally in ASCENT-GREEN participating countries. To enhance SME-finance and other impact-oriented financing, TDB will use its Trade and Development Fund (TDF), a wholly owned subsidiary and a not-for-profit organization. TDF will provide RBF to DRE companies and will lend to DRE SMEs and nascent impact-oriented sectors such as PUE and electrification of public social infrastructure institutions (for loans under US$10 million). TDB will sign an agreement with TDF governing its activities under the program.

156. **TDB was selected for REAF** in line with the eligibility criteria described above in section B.3 that included: (i) geographic coverage of the AFE region; (ii) its status as a regional organization that is majority Government-owned, set up by Governments to enhance regional integration and cooperation, with close links to AFE governments that are majority shareholders in TDB; (iii) previous success in implementing a Bank-financed projects, including for financing in the off-grid solar sector (Regional Infrastructure Financing Facility [RIFF]); (iv) ability to offer longer-tenor debt; (v) extensive network of regional and local commercial banks, which will be leveraged through co- and on-lending; and (vi) strong reputation as a well-managed, competent, and financially stable regional financial institution that is willing

and able to pursue impact-oriented financing and, therefore, is closely aligned with ASCENT-GREEN's vision.

157. **GCF financing will expand ASCENT REAF**, which was approved in November 2023 with original financing of US$294 million for lending, RBF, and TA for DRE and additional financing approved in June 2025 of US$55 million of IDA, CTF, and ESMAP financing to enable equity financing to the DRE sector. Following the signature of the FAA, the proposed GCF funding is expected to be processed by the World Bank through additional financing within six months. The detailed financing flows and the step-by-step contractual arrangements for each sub-component under Component 1 are described in Annex 24.

158. **The Component will be implemented in line with the eligibility criteria included in Section B.3, with specific ring-fencing of GCF use of proceeds as applicable and described in component description in B.3.** Loans under Sub-component 1.1 will be made to: (i) eligible private sector and commercial enterprises engaged in DRE, inclusive of PUE and clean cooking [DRE companies]) (under both GCF and IDA financing) and (ii) PFIs for lending to eligible DRE companies (under IDA financing only) , both of which legally operate in eligible countries that have opted into the program. Only economically and financially viable subprojects will be supported, although GCF concessional financing will be applied for lending to climate vulnerable populations, SMEs and nascent DRE sectors that would not be viable under the standard commercial terms. Under Sub-component 1.2, per unit RBF and catalytic grants will be provided to eligible DRE companies operating legally in ASCENT-GREEN participating countries for eligible beneficiaries defined via geographic targeting of the RBF. Companies will need to demonstrate prior experience in the DRE, PUE, and/or clean cooking sectors, following the process described in B3. Under Sub-component 1.3, TDB will implement technical assistance activities benefiting TDB, TDF, other financial institutions and DRE companies, in close coordination with other TA activities under the Funded Activity.

159. **For Sub-component 1.4, the GCF Grant funds will be used to capitalize a contingency loss reserve to absorb eligible realized equity investment losses** (up to the Grant cap) which enables TDB to support its anchor participation in Zafiri's initial capitalization phase and facilitate its equity commitment to Zafiri which has been established as a Permanent Capital Vehicle (PCV). Inspired Evolution has been competitively selected and appointed as the Investment Manager (IM). The IM will manage Zafiri equity investments on behalf of Zafiri. The IM will identify, evaluate, and invest in high-impact DRE projects, prioritizing underserved regions based on the investors' funding requirements while also balancing financial returns. TDB will sign an Investment Management Agreement, a Shareholder Agreement, and a Subscription Agreement with Zafiri. The GCF Grant proceeds will enable TDB to be a major shareholder and actively participate in Zafiri's governance, representing AFE government ownership, and providing strategic guidance to Zafiri. Zafiri structures investments using a hybrid senior-junior equity model, where senior equity ensures stable returns for risk-averse investors, while junior equity absorbs first losses to attract private capital, with TDB contributing to both junior and senior equity in equal share, aligned with Zafiri's capital structure. TDB will pass-through of concessionality for GCF-enabled TDB financing/capitalization in Zafiri as defined in Component description in B.3. TDB will set up governance structures for the use of the grant, and commit to the eventual transfer of unused grant proceeds (if not absorbed by eligible realized equity investment losses) to TDF to be used for investments aligned with ASCENT-GREEN and its eligibility criteria,[81]

160. **Project management team.** TDB will establish a coordination team that will include, at a minimum, a program/project manager, a DRE specialist, two environmental and social specialists, a financial management specialist, a procurement specialist, and a gender and inclusion specialist, while expanding their investment officers for both TDB and TDF. For Sub-component 1.4, TDB will dedicate a team specializing in asset management to manage the equity financing component

161. **Supervision and reporting requirements.** The implementation of REAF will follow the procedures in the Operations Manual (see Annex 21), including processes for meeting the eligibility criteria, screening, and due diligence and other processes and thresholds for World Bank no objections. World Bank no objection will be required for all pipeline additions. TDB will share quarterly reports on pipelines and semi-annual progress reports, including results and key portfolio information, as established in the Operations Manual. TDB will be responsible for result monitoring, reporting, and evaluation, including semi-annual progress reports, which will consolidate progress for all components, drawing on the report from Zafiri's investment manager for Sub-component 1.4. TDB will report on all its result indicators. TDB has adopted a d-MRV platform, which will be used for all components, facilitating TDB's reporting, as well as its monitoring and evaluation, and drawing on the d-MRV platform to be adopted by Zafiri. Beneficiary feedback will be sought via periodic surveys, as a part of citizen engagement. The feedback will be used to seek improvement in the design and implementation of TDB, TDF, and Zafiri interventions. Interim financial reports (IFRs) will be prepared biannually, and annual financial statements will be audited by external auditors selected under terms of reference acceptable to the World Bank. A mid-term review will be carried out mid-way through the project, but the project will also adopt an adaptative mechanism to introduce modifications, as needed, to reflect changing conditions and lessons learned.

[81] As per detailed terms in Annex 14

162. **Capacity assessments of TDB as an EE of REAF.** A Financial Management (FM) Assessment (capacity assessment) and a Financial Intermediary (FI) Assessment of TDB have been carried out, in accordance with the World Bank policy (see Appendix of Project Paper for Additional Financing REAF in Annex 18). The assessments were carried out to determine that TDB has acceptable FM arrangements, so that: (i) funds for the project will be used for the purposes intended in an efficient and economical manner in accordance with the World Bank Articles of Agreement; (ii) the project's financial reports will be prepared in an accurate, reliable, and timely manner, and (iii) the project's assets and resources will be safeguarded. Critical aspects of the assessments include (but are not limited to):

- *Supervision and operational efficiency*: TDB has a well-staffed accounting department as well as comprehensive financial policies as well as a procedures manual that is being implemented.
- *Robust pipeline:* TDB has the capacity to leverage the robust FM capacity already developed in the implementation of a previous WB project—the RIFF Project.
- *Environmental and Social Management System (ESMS):* TDB has a well-established ESMS that includes a clearly defined E&S Policy and institutional commitments to integrate E&S sustainability into all its operations. The ESMS effectively addresses E&S procedures for direct lending, and TDB is proactively enhancing it to include comprehensive guidelines for lending through PFIs and equity financing through Zafiri, thus creating a more robust framework.
- *Risk management*: TDB has a highly developed independent risk management system and an active risk management approach, which covers portfolio risk, currency risk, maturity mismatch risk, environmental and social risk, and concentration of exposure risk. To date there has been no significant negative impact.

The FM and FI assessments confirm that TDB has the capacity to effectively implement REAF. They also show that the overall FM arrangements satisfy the Bank's requirements (under Bank Directive: Investment Project Financing and Financial Management Manual for World Bank Investment Project Financing Operations issued September 7, 2021).

Component 2: REAF 2 Project

163. **Executing Entity**: **REAF 2 includes two facilities: Risk Sharing Facility (RSF) and Carbon Risk Mitigation Facility (CRMF).** Both facilities are under advanced concept design. Potential EEs have been identified, in line with the selection criteria included under Eligibility Criteria in Section B.3. but the selection process has not yet been concluded. The two facilities may be implemented by one or two EEs depending on the final assessment. The EE(s) will be responsible for the administration of funds and execution of the facilities, leveraging expertise in risk mitigation and credit enhancement, technical capacity, and regional network. The availability of GCF concessional financing will be catalytic for mobilizing the EE(s) to offer affordable derisking instruments.

164. **The World Bank as the AE will enter into the following agreements with the Executing Entities**:

- World Bank (IDA Credit) and ESMAP or other Trust Fund administered by the Accredited Entity (Grant) financing agreements and a World Bank (IDA Guarantee) guarantee agreement
- A reimbursable grant agreement for the GCF Reimbursable Grant proceeds allocated to Sub-component 2.1(a)
- A non-reimbursable grant agreement for the GCF Grant proceeds allocated to Subcomponents 2.1(b) and 2.2(b)

165. **REAF 2 will be processed as a new project** co-financed by GCF, IDA, and TFs. It is expected to be processed within 12-18 months after the signature of the FAA. Following the signature of the FAA with GCF, the World Bank will sign agreements with EE(s) for the implementation of Activities 2.1 Risk Sharing Facility (RSF) and 2.2 Carbon Risk Mitigation Facility (CRMF). The detailed financing flows and the step-by-step contractual arrangements for each sub-component under Component 2 are described in Annex 24.

166. **For the provision of RSF Guarantees, the Executing Entity for Sub-Component 2.1 will sign RSF guarantee agreements with eligible PFIs who will be providing loans for DRE projects (RSF Guarantee Agreements).** In the event of a default on such an underlying loan, the affected PFI could call on the corresponding RSF Guarantee, making a payment demand to the Executing Entity under the corresponding RSF Guarantee Agreement, with such payment demand to be implemented by the Executing Entity in accordance with the loss waterfall described in Section B.3 Component description. For the provision of technical assistance to PFIs, institutional strengthening, and implementation support, the Executing Entity for Sub-Component 2.1 will manage all activities, building its own capacity as well as that of the PFIs.

167. **For the carbon price floor guarantee, the Executing Entity for Sub-Component 2.2 will sign emission reduction purchase agreements (ERPAs) with DRE companies to acquire verified emission reductions (VERs) at a guaranteed floor price**. This would commit CRMF to purchasing a predefined volume of carbon credits at specific prices for a fixed duration, insulating DRE projects from market volatility. The Executing Entity for Sub-Component 2.2 will sell VERs to institutional buyers or hold them to stabilize prices. For the

provision of technical assistance, the Executing Entity for Sub-Component 2.2 will manage all activities.

168. **Eligibility criteria:** Both Sub-components will follow ASCENT—GREEN eligibility criteria described in section B.3, with further targeting as described in Section B.3 Component description**.** For Sub-component 2.1: RSF, the partial credit guarantee will be available to eligible PFIs for lending to eligible DRE companies, both legally operating in ASCENT-GREEN countries. Only economically and financially viable subprojects will be supported. Support to PFIs providing financing for expanding DRE systems, clean cooking, and PUE in FCV and small countries will be incentivized and prioritized. For Sub-component 2.2: CRMF will support eligible DRE companies operating legally in ASCENT-GREEN countries and already participating in ASCENT projects that comply with the WB's requirements. In addition, when considering a project for an offtake agreement and price flooring, the CRMF will conduct extensive due diligence to ensure that the carbon project complies with integrity standards and has a high likelihood of issuing sufficient volumes of high-quality credits. he processes for implementing eligibility criteria and other key implementation processes and procedures will be detailed in the respective Operations Manuals. In addition, RSF Operating Guidelines will be developed prior to the Board approval to include higher-level design parameters, as detailed out in Section B.2 Component description and Annex 14.

169. **Supervision and reporting requirements.** Implementation of the REAF 2 project will follow the procedures established in the Operations Manuals of each of the two facilities, including all eligibility criteria, screening and due diligence processes, and thresholds for World Bank no objections. The EE(s) will share quarterly reports on pipeline and semi-annual progress reports, including results and key portfolio information. They will be responsible for result monitoring, reporting, and evaluation, including semi-annual progress reports. They are expected to adopt a d-MRV platform. Beneficiary feedback will be sought via periodic surveys, as a part of citizen engagement. The feedback will be used to seek improvement in the design and implementation of REAF 2 Activities. Interim financial reports (IFRs) will be prepared biannually, and annual financial statements will be audited by external auditors selected under terms of reference acceptable to the World Bank. A mid-term review will be carried out mid-way through the REAF 2 project, but the project will also adopt an adaptative mechanism to introduce modifications, as needed, to reflect changing conditions and lessons learned. Specific reporting requirement for RSF are captured in Section B.3.

170. **Capacity assessments of the EE(s) of REAF 2, including FM and FI assessment, similar to those carried out for TDB**, will be carried out once the EE(s) for the two facilities are selected. They will be conducted in accordance with World Bank policies to confirm that the EE(s) in REAF 2 will have sufficient capacity and technical expertise to implement the project.

171. **Risk management.** REAF 2 will apply a comprehensive risk management approach to both its activities.

172. **For Sub-component 2.1, the RSF would be structured with optimal risk-sharing and adequate risk mitigation measures** to address moral hazard concerns and promote prudent management of financial risk exposure, potentially leading to lower default rates of the underlying loans as well as lower payouts for the RSF. Based on the lessons learned from the Bank's review of ongoing and planned RSFs,[82] the RSF would explore incorporating the following risk management features:

- Risk-based pricing of partial credit guarantees to cover a portion of default losses in addition to meeting the financing and operational expenses of the RSF
- Robust eligibility criteria for the sub-loans and sub-projects to be supported, including a requirement to submit due diligence documentation
- Exposure limits in terms of single country/segment/borrower limits
- Third-party verification agency to validate the claim prior to the RSF taking further action
- A requirement for the PFI to show evidence of prudent loan workout steps after the claim is made, and sharing of recovery proceeds
- Mechanisms to temporarily halt the issuance of new guarantees should the guarantee calls exceed expectations (issuance could

[82] The World Bank has conducted a review of the past and ongoing projects that involve partial credit guarantees (PCGs) and surveyed lender practices when they have partial guarantee cover and found that the terms of the PCGs offered to the lenders, and the selection criteria that lenders have to meet to participate in the Project, effectively eliminate any moral hazard issue for the lenders. The reasons why moral hazard is not an issue in practice are as follows. Partial credit guarantees typically cover up to a maximum of about 75% of the principal outstanding on loans on a *pari passu* basis. Typically, accrued interest is not covered, or the cover is very limited. The lenders, thus, cover at least 25% of the principal and most or all the accrued interest. Considering that the profit margins on such lending are quite thin and limited by market competition, this amount of exposure is sufficient for the lenders to do their normal, prudent due diligence and supervision on borrowers. The selection criteria for the commercial lenders requires that the lenders comply with all regulatory requirements and have a satisfactory financial position, track record, good governance and E&S capability. The legal and regulatory frameworks require lenders to carry out their normal due diligence and loan supervision regardless of whether the loan is covered by a partial guarantee or not. Lenders often view the PCGs as part of the loan collateral they require and do not change their policies or practices because part of the collateral is in the form of a guarantee.

resume after corrective actions are taken)

- An objective of the RSF would be to encourage collateral-free lending for the target borrowers. However, based on market soundings, in case this is not possible due to high perceived credit risk, the PFI would be required to secure the right to assign to the RSF the portion of the collateral that will cover the RSF exposure at the time of guarantee approval.
- DRE sector market sounding indicates that PFIs would not be interested in a guarantee product requiring PFIs to take the first loss; PFIs request first-loss coverage from the RSF or, at minimum, pari passu coverage of at least 50%.
- The RSF's design parameters (e.g., risk-sharing ratios, fee ranges, tenor limits, eligibility criteria) should remain adaptable and be periodically reviewed and updated to reflect evolving market conditions—particularly in cases of low market uptake or increased risk exposure—to protect the facility's viability while maintaining climate and inclusion objectives.
- Periodic monitoring and reporting requirements on the financial performance of the RSF, performance of the underlying loans, potential defaults estimated over the next 12 months etc.
- A requirement that the underlying loans be downgraded prior to a claim on the RSF-guarantees issued by the RSF (a portion of the claim could be released upon initiation of recovery proceedings, and the remaining portion of could be released upon completion of recovery proceedings)

173. **For Sub-component 2.2, the CRMF would incorporate the following risk mitigating measures**:

- The risk of extended transaction timelines could impact the fundraising success of project developers. To mitigate this, the CRMF will streamline due diligence processes, establish clear timelines, and maintain continuous communication with developers to promote timely progress tracking.
- To reduce reputational risk linked to association with projects or off-takers engaged in unethical practices or greenwashing, the CRMF will conduct rigorous due diligence on project partners and off-takers, applying strict selection criteria to maintain credibility. The continuous monitoring of project performance will support adherence to ethical standards. The CRMF will focus on monetization of ERs generated through the ASCENT MPA program and World Bank financed energy access project to streamline due diligence.
- A lack of pipeline volume or limited eligible projects could reduce the effectiveness of the CRMF. To address this, the CRMF will apply clear and realistic eligibility criteria and conduct extensive outreach to attract diverse projects. Flexible financing structures and price floor mechanisms will be used to enhance participation and scalability.
- There is a risk of excluding smaller-scale projects or favoring large developers, potentially creating perceptions of bias. The CRMF will implement aggregation strategies to include smaller projects, ensuring equitable access to financing and broad sectoral impact.
- The financial sustainability of the CRMF depends on the ability to sell carbon credits at a competitive price above the floor price. To mitigate this risk, the CRMF will conduct comprehensive financial planning and pricing/flooring assessments to define the optimal floor price in a way that does not hinder the resale prospect. It is assumed that buyers are willing to pay more for the additional comfort and vetting that the CRMF brings to the process and the credits.

Component 3: COMESA Regional Energy Access Acceleration Platform

174. **Executing entity (EE)*:* : The** Executing **Entity for this Component is the Common Market for Eastern and Southern Africa, through its Secretariat ("COMESA").** The World Bank, as the AE, will enter into the following agreements with COMESA, as the EE: (a) World Bank (IDA Grant) financing Agreement; and (ii) a non-reimbursable Grant Agreement for the GCF Grant proceeds allocated to Component 3.

175. **COMESA is a regional organization** established in 1994. COMESA is an intergovernmental diplomatic organization, established under an international treaty. The organization holds full legal personality and capacity to enter into contracts, sue and be sued, and undertake legal acts. The main office of COMESA is in Lusaka, Zambia, and it also has offices in Khartoum, Sudan and in Nairobi, Kenya. COMESA has the ability to receive funds from the AE. Through its energy program, COMESA supports its member countries in: (i) the harmonization of energy policy and regulatory frameworks; (ii) regionwide energy planning; and (ii) the facilitation of trade in energy services through regional energy trade and development of a wider DRE market.

176. **Component 3 consists of ASCENT COMESA Regional Energy Access Acceleration Platform (ASCENT COMESA)**, which was approved in November 2023 with a total financing of US$50 million in the form of an IDA grant. Following the signature of the FAA, the proposed US$5 million GCF grant is expected to be processed by the World Bank through additional financing within six months. The detailed financing flows are described in Annex 24. With respect to the sub-grants or technical assistance/capacity building under the Project Preparation Facility (see description in B.3), each sub-grant agreement will be signed between COMESA Secretariat and the Beneficiary.

177. **Capacity assessments of COMESA as an EE of REAF.** A Financial Management (FM) Assessment (capacity assessment) of COMESA have been carried out, in accordance with the World Bank policy (see Appendix of COMESA project description in Annex 18). The assessments were carried out to determine that COMESA has acceptable FM arrangements, so that: (i) funds for the project will be used for the purposes intended in an efficient and economical manner in accordance with the World Bank Articles of Agreement; (ii) the project's financial reports will be prepared in an accurate, reliable, and timely manner, and (iii) the project's assets and resources will be safeguarded. The assessment covered budgeting, flow of funds, accounting, internal control, financial reporting, and auditing arrangements.

178. **Under Component 3, the ASCENT-GREEN Program will establish a Country Coordination Mechanism, implemented by the COMESA Secretariat, which will promote close coordination and collaboration between regional EEs and participating countries.** The coordination will include energy sector institutions, as well as NDAs in ASCENT-GREEN participating countries, and will include quarterly virtual meetings and annual in-person meetings during ASCENT week, which is a learning event organized every year by the COMESA Secretariat to gather all ASCENT country and regional project implementation units/entities for knowledge sharing and the exchange of experience and lessons. During the quarterly meetings, the REAF and REAF 2 executing agencies will present progress on implementing their activities, discuss how the activities have benefited participating countries, challenges encountered, and possible solutions to such challenges, and, finally, agree on the actions to be taken either by the countries or the regional EEs so that the benefits of ASCENT-GREEN are shared across all participating countries. The coordination mechanism will also be used to facilitate coordination and synergies across ASCENT-GREEN facilities. The annual event (ASCENT week) will allow deep-dives into progress, challenges, and lessons to further finetune REAF and REAF 2 approaches and instruments. The coordination mechanism will also include a periodic consultation/coordination with the DRE companies and other stakeholders, as required.

B.5. Justification for GCF funding request (max. 1000 words, approximately 2 pages)

Rationale for GCF support

179. **ASCENT-GREEN is a unique GCF climate action Program designed and implemented within the broader ASCENT and Mission 300 architecture**. ASCENT-GREEN uses GCF financing to catalyze IDA resources that are being made available under this broader energy access umbrella to mobilize the private sector to deliver on its specific climate and development outcomes, which go beyond ASCENT's energy access objective.Its goal is to support the AFE population that currently lacks energy access, particularly those living in remote areas and fragile and conflict contexts, to become more resilient in face of climate change, with energy access conceived as a tool for these outcomes, rather than the end goal. This will be done by supporting a synergetic provision of DRE, clean cooking and productive use of energy by DRE companies and building sustainable DRE markets that reach unserved climate-vulenrable populations, especially those living in FCV countries and remote rural areas and provide them with means for increased resilience, income generation and climate adaptation.

180. **As indicated by the ASCENT-GREEN market assessment (Annex 2), DRE systems are the least-cost electrification solution for the target communities in remote and FCV-afflicted areas**. The private sector has demonstrated the ability to reach such populations, but the pace of expansion has been slow, resulting in electrification barely keeping pace with population growth. The ASCENT-GREEN market assessment identified 365 DRE companies in the region, including 102 companies that deliver mini-grids, 94 companies that deliver solar home systems, 64 companies that deliver clean cooking solutions, and 68 companies that deliver PUE. More than half of these companies, however, are small and over three-quarters are in the early stages, facing significant barriers to growth due to the affordability gap of the target population, lack of adequate financing, residual policy and regulatory barriers (especially in small countries), high risks (especially in FCV countries), as well as capacity constraints across all stakeholders. Given these challenges, commercial investors, including local commercial banks, have shied away from investing in the DRE sector. As per the ASCENT-GREEN market assessment, less than 10% of financing mobilized by DRE companies operating in SSA has originated from commercial banks, with the vast **majority** coming directly from DFIs or specialized funds supported by DFIs (see Annex 2 for further information).

181. **Low affordability of the target populations is one of the critical factors for this slow pace of progress.** As demonstrated in the affordability analysis in Annex 3, ASCENT-GREEN target population is currently unable to access DRE, clean cooking and PUE services at commercial terms as even basic electricity consumption, delivered at market terms, is currently affordable to less than 22 percent of the target population (see Annex 3 – affordability analysis). ASCENT-GREEN will address the affordability issue and extend the existing markets towards more risky and vulnerable beneficiaries in remote areas and FCV, while also accelerating new market segments, in particular PUE and sustainable electrification of public social institutions.

182. **To reach the target populations while bringing the DRE sector to commercial viability, costs must be reduced, revenue**

increased, and risks mitigated. This can only be done through a large-scale, ecosystem approach, which is the approach taken by ASCENT-GREEN under the Mission 300 umbrella. This approach results in the sustainable reduction of costs through (i) economies of scale and the reduction of transaction and financing costs; (ii) increased revenue via support to PUE and increased carbon revenue; and (iii) reduced real and perceived risks through a combination of policy dialogue and TA to governments to improve policy and regulatory environments, guarantees, and risk mitigation instruments to reduce the entry barriers of commercial investors and local financial institutions; and (iv) provision of technical assistance to all key stakeholders, including helping local financial institutions to understand the DRE sector and how to assess and address the risks.

183. **The intended acceleration, scale, inclusivity, and sustainability of DRE-based energy access expansion efforts cannot be achieved without an injection of concessional financing**. Even with the above-noted purposeful efforts to drive the DRE sector towards commercial viability, the viability gap can be reduced only gradually over time. PUE, in particular, is among the most nascent of the DRE technologies/sectors and, therefore, faces accentuated barriers to its expansion, with an added complexity of its multi-sectoral character. Concessional financing will be used to overcome the key barriers to sustainable DRE growth, as follows.

- *Affordability*: Close the current affordability gap for both energy access and PUE to bring the sector to scale and help target communities to start generating income from PUE to improve their livelihoods and resilience.
- *Access to the right type of finance*: Provide patient capital and de-risking that would allow companies to pursue their growth strategies across multiple geographies, and access affordable debt financing at longer-term tenors and in local currencies.
- *Market fragmentation*: Achieve economies of scale and reduce transaction costs by pursuing a regional approach.
- *Capacity and enabling environment:* Accelerate energy access efforts by building the capacity of key stakeholders including governments, DRE companies, and financial institutions.

184. **In parallel, ASCENT-GREEN Component 3 and World Bank policy dialogue under Mission 300 will continue improving the policy and regulatory environment**, working towards the harmonization of policy and regulatory frameworks by adopting best practices. Improved enabling environment will ease doing business in the participating countries and reduce risks, leading to increased financing flows at more affordable terms. By leveraging World Bank policy dialogue with the Governments, including under Mission 300 National Energy Compacts, ASCENT-GREEN has a unique opportunity to complement concessional financing with lasting policy and regulatory reforms that would help reduce costs and risks of doing business and attracting commercial finance at more affordable terms, and thereby also contribute to reducing the need for concessional finance in the future.

185. **ASCENT-GREEN is pursuing an approach, which uses concessional financing to reduce the costs of DRE products and services in order to make them affordable to the defined target population, who are primarily unserved households and MSMEs in remote rural areas and FCV, while also making the investments viable for private sector participation with a built-in exit strategy for concessional financing.** By growing the market across the region, delivering economies of scale, reducing the costs of financing, and improving policy and regulatory environments, ASCENT-GREEN will result in the overall sustainable reduction of costs over time. By using concessional financing to jump-start the current nascent market for PUE and generating more viable and sustainable carbon revenues, ASCENT-GREEN also grows revenues of DRE companies over time, reducing their dependence on concessional financing – thus contributing to sustainable market growth as opposed to market distortion. The key is that concessional financing is used here to grow the market and private sector investment, rather than replacing private sector investments. Furthermore, as shown in Figure 9, concessionality will be passed to end users by bringing down the costs to affordable levels. PUE is a critical element in this strategy. Without scaling up PUE, DRE expansion efforts are unlikely to be sustainable. At the same time, however, as depicted in Annex 25, PUE is facing a number of barriers and market failures associated with the nascent character of the PUE market that require concessional financing. As the market matures, ASCENT-GREEN will be able to reduce and eventually phase out concessional financing, as described in the Exit Strategy in Section B.6.

Additionality of GCF financing

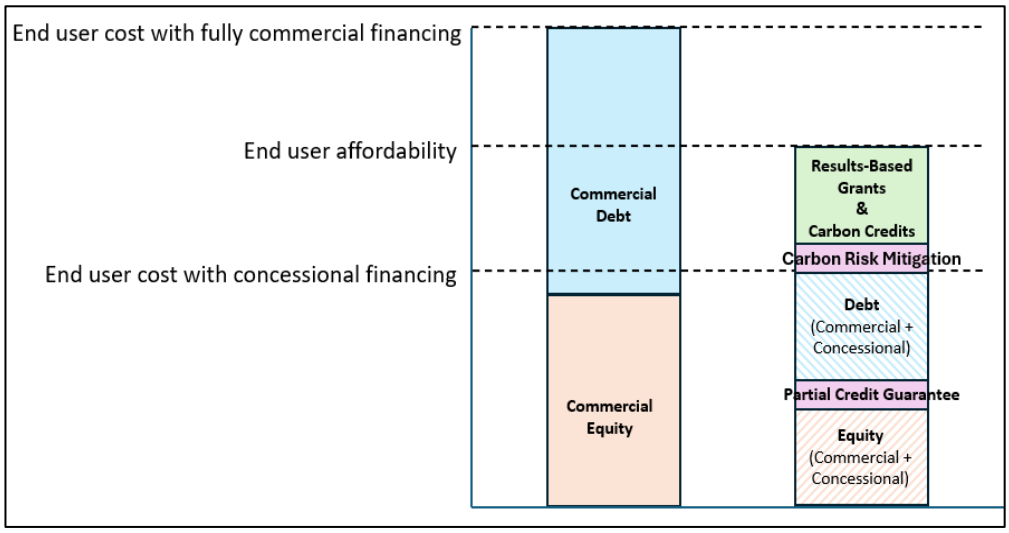
186. **ASCENT-GREEN with GCF funds aims to achieve a paradigm shift whereby access to DRE, clean cooking and productive use equipment for income generation, sustainable development and climate resilience will increase in scale, speed and inclusiveness, while GHG emissions will be reduced.** While the scale, speed and inclusiveness can also increase with IDA funding alone, NOT the extent that it would constitute a paradigm shift. Only with GCF financing is ASCENT-GREEN able to create a comprehensive toolbox that addresses the intertwined market failures/barriers, resulting in a materially different portfolio composition, that is able to attract private sector investments. Only then it leads to the creation and growth of sustainable DRE markets that can reach those currently left behind, in particular in FCV countries and remote rural areas, as reflected in the Theory of Change. This additionality and catalytic impact of GCF resources is reflected in the high incrementality of climate and development results achieved by ASCENT-GREEN, compared to what could

be achieved with IDA alone. As currently approved, ASCENT regional facilities will reach 9.6 million direct beneficiaries, and no indirect beneficiaries as electrification of schools and health clinics is not included. With GCF, ASCENT-GREEN will be able to reach 23.1 million direct and 13.8 milion indirect beneficiaries while reorienting investments towards more vulnerable population and simultaneously attract much larger volumes of private sector financing.. The significant incremental value of GCF is realized through GCF enabling and catalytic role in each of ASCENT-GREEN financing facilities (as described below), as well as through the comprehensive way how these facilities together address the identified financing, risk perception, affordability, policy and capacity barriers – leveraging synergies in delivery, aggregation and economies of scale benefits, so that overall results are more than a sum of individual parts. This is also reflected in high economic value added comparing with and without GCF scenario, as noted in Section D.6.

Rationale for GCF financing instruments

187. **The range of financing instruments requested from GCF by ASCENT-GREEN is based on careful consideration of the design for REAF and REAF 2 activities, aiming to achieve ASCENT-GREEN objectives while minimizing concessionality and market distortions**. As shown in Figure 9, ASCENT-GREEN uses a blended financing approach to bring down DRE solution costs to affordable levels. GCF provides catalytic and de-risk capital to reduce financing costs and improve customer affordability. Figure 8. ASCENT-GREEN uses the blended financing approach to bring down the costs to affordable levels.

Figure 9. ASCENT-GREEN uses a blended financing approach to bring down the costs to affordable levels



188. **More specifically, the catalytic impact of GCF concessional instruments is reflected in each financing facility**:

- **RBF Facility (sub-component 1.2).** GCF US$130 million RBF grant financing is enabling ASCENT-GREEN to jump-start its penetration into frontier markets – primarily more remote rural areas and FCV. RBF incentivizes and derisks DRE companies to enter new areas, while also helping close affordability gaps for target populations. For example, it reduces an average mini grid tariff by more than half to about 30 kWh under the ASCENT-GREEN approach. It greatly increases capacity to pay for an entry level solar home system from an estimated fewer than 22 percent of the target (bottom two income quintile) population under the market price to over 70 percent in the same target group (as modelled in the Economic and Financial Analysis – EFA in Annex 3 and its Appendix 3). Similarly, it unlocks the initial adoption barrier for PUE appliances (degrees of price reduction depend on type of appliance and consumers). This boost is essential in these early stages of the market. As market failures are addressed, costs decline and income increases, RBF can be progressively phased out. Without GCF RBF grant financing, the RBF facility remains at a pilot level, and as a result, ASCENT would lack a catalyst for jump-starting access expansion in frontier markets and segments, including PUE. The FIRR of 10.6% and a negative NPV, as modelled in the EFA without GCF financing, does not make it possible for the DRE companies to expand to new markets, and would reinforce their concentration on less remote and more affluent (e.g., urban/peri-urban non-FCV) customers.
- **Debt facility (sub-component 1.1).** GCF enables TDB to provide affordable debt financing to market segments that are pre-commercial due to their nascent character, high risk and/or low affordability of end consumers targeted by ASCENT-GREEN. GCF

allows TDB to blend GCF concessional loan of US$50 million with less concessional but larger IDA resources (US$260 million) to allow TDB and TDF to lend for ring-fenced uses (SMEs, PUE and other high-risk/high-impact market segments, remote and FCV end uses), leveraging GCF concessionality, while delivering scale through IDA funding, allowing TDB to price loans more affordably for the nascent market segments. Without GCF financing, TDB will focus its existing credit line on more mature market segments as higher lending costs would not support expansion to the intended frontier markets and segments.

- **Enabling capitalization of Zafiri (under sub-component 1.4).** There is critical need for patient equity for scaling up the private sector DRE access to enable the growth of DRE companies. Without GCF, due to TDB's risk tolerance enforced by its governance structures, TDB would only be able to mobilize USD20M from its balance sheet for Zafiri, which would not allow it to reach a major shareholder status able to influence Zafiri's decisions. With GCF's USD5M grant capitalization of TDB's ring-fenced loss reserve account, TDB is able to mobilize USD55M from its balance sheet, enabling it to become a major stakeholder with a Board seat in Zafiri that allows it to cascade to Zafiri ASCENT-GREEN's focus on first-time energy and PUE access, including for vulnerable populations in rural areas and FCV. The US$5 million grant is the least-cost option to achieve the full capitalization of Zafiri.
- **Risk-Sharing Facility (RSF, Sub-component 2.1):** To attract private sector players into frontier markets requires availability of comprehensive risk mitigation instruments, in particular to attract local commercial banks that can offer local currency lending, who, however, up to now have stayed at the sideline for the DRE sector due to their high risk perception of the DRE, clean cooking and PUE sectors. RSF is not financially viable without GCF financing, as evidenced by negative NPV as per the economic and financial model. GCF capitalization of RSF with US$40 million of reimbursable grant allows RSF to achieve a positive NPV, while mobilizing US$124 million of private sector capital with a strong multiplier effect, primarily via catalyzing local currency lending by commercial banks that are active in AFE countries.
- **Carbon credit mitigation facility (CRMF, Sub-component 2.2):** Mobilizing financing from carbon offsets, including Article 6, is an essential part of ASCENT-GREEN sustainability and exit strategy. The extent to which carbon credits can be realized today for DRE, clean cooking and PUE investments is limited by the volatility of the carbon credit prices, a risk that CRMF aims to address, which would increase the ability of investors to rely on this currently high-risk revenue stream, and therefore mobilize additional financing. Without GCF TA grant, however, the World Bank is unable to set up and operationalize such a facility, and build the capacity of the key stakeholders, which is necessary for successful implementation, as the World Bank can only mobilize credit resources for the Executing Entity. The GCF's USD5M Technical Assistance grant would enable operationalization of the CRMF, leading to - on a highly conservative basis, (at least) $21.5 million of revenue for the CRMF vehicle while underwriting credits associated with (conservatively) 2.8 million tons of CO2 emission reductions.
- **Regional Energy Access Acceleration Platform (Component 3).** While the majority of funding under Component 3 for COMESA TA facility is provided by IDA, GCF US$5 grant financing has a catalytic impact in orienting COMESA resources towards the critical TA and capacity gaps and transformational opportunities identified under ASCENT-GREEN, such as rolling out of digital MRV platforms, comprehensive policy and market building for PUE and more strategic and coherent implementation of ASCENT-GREEN gender action plan.

189. **The rationale for concessional finance to reach target beneficiaries and make ASCENT-GREEN investments viable is demonstrated in the Economic and Financial model in Annex 3**. While alternative financing sources were considered, none were found viable at the required scale and flexibility. Philanthropic capital is insufficient, and other concessional donor funding is often limited and country specific. Other development finance institutions (DFIs) and multilateral banks face high-cost or operational constraints similar to IDA. Therefore, the GCF is the optimal partner for IDA in ASCENT-GREEN. Critically, GCF financing will serve as the foundational catalyst for the entire program. Its commitment is essential to de-risk the sector and demonstrate viability, thereby attracting parallel and co-financing from other DFIs and development partners required to achieve a transformative impact in the DRE sector across the region. The GCF's leadership is the key to unlocking this broader coalition for change**.**

B.6. Exit strategy (max. 500 words, approximately 1 page)

190. **The overarching objective of ASCENT-GREEN is to catalyze self-sustaining markets for DRE, clean cooking, and PUE across the AFE region.** By program completion, these expanded and transformed markets will operate on a commercial basis, eliminating the need for continued GCF intervention and enabling the World Bank's exit as the Accredited Entity. Sustainability is embedded at three interconnected levels: (i) the program level, where a resilient DRE ecosystem thrives; (ii) the facility level, where financial services achieve commercial viability; and (iii) the end-user level, where beneficiaries and DRE companies ensure long-term operational continuity.

Sustainability and exit strategy at the program level

191. **By the end of the ASCENT-GREEN Program, the following outcomes will ensure sustainability and facilitate a smooth exit:**

- **Accelerated and sustainable market growth:** The pace of DRE deployment is projected to double as companies finance growth through ASCENT-GREEN's blended financing instruments. Smaller and FCV-affected countries will see the most significant acceleration, benefiting from regional scale and de-risking instruments, while mature markets will extend services to last-mile populations.
- **Enhanced economic and climate resilience and affordability of DRE solutions:** By systematically scaling up PUE, the program will increase household incomes and create jobs, thereby improving the affordability and long-term viability of DRE solutions. This rural economic transformation, supported by digital access and electrified public services, will bolster climate resilience, adaptation, and food security.
- **Reduced viability gap and subsidy dependence:** The cost of energy access will decrease due to economies of scale, patient capital, and an improved policy environment. Simultaneously, revenue for DRE companies will increase through diversified income streams (PUE, public infrastructure, carbon finance). This narrowing viability gap will significantly reduce the need for future subsidies, limiting them to the poorest segments, which can be supported through government social safety nets.
- **Transition to commercial finance:** The program's US$250 million in GCF concessional financing and US$445 million in IDA/TF is expected to mobilize approximately US$521 million in commercial capital. By exit:
  - The Zafiri equity vehicle will be capitalized to attract commercial investors for future funding rounds.
  - Commercial banks will possess the experience and confidence to finance DRE without IDA guarantees.
  - The regional Results-Based Financing facility will be phased out as costs fall, affordability rises, and carbon revenue is generated.
- **Positive environmental externalities:** The program will deliver lasting GHG reductions and local environmental benefits through clean energy access and reduced non-renewable biomass use. Advisory support will ensure the climate resilience of all financed infrastructure.

Sustainability and exit strategy at the facility level (REAF & REAF 2)

192. **Each financial facility under ASCENT-GREEN is designed with a clear path to commercial sustainability or a defined endpoint.**

Component 1: REAF

193. **Sub-component 1.1: Lending to DRE and clean cooking companies**. The blended GCF/IDA loan will be fully disbursed by program closure. Any undisbursed funds will be returned to the respective institutions. With a matured market and proven lending experience, TDB and PFIs are expected to continue financing the DRE sector using their own resources. TDB will fulfill all repayment obligations to IDA and GCF as per the financing agreements.

194. **Sub-component 1.2: Results-based financing**. RBF will be frontloaded to bridge the near-term viability gap and then progressively phased down through the iterative mechanism described below and modeled in the economic and financial analysis, as: (i) unit costs fall with economies of scale and declining financing and transaction costs; (ii) carbon revenues increase in both value and volume; (iii) households' willingness and ability to pay rises with income growth from PUE activities; and (iv) company revenues become more resilient and diversified as MSMEs represent a larger share of the customer base. At closure, TDF will discontinue the IDA/GCF-funded RBF, and any unused grant funds will be returned. Residual affordability support for the poorest will be transitioned to government-led RBF or social safety net programs.

195. **Sub-component 1.4: Enable capitalization of Zafiri** . The GCF grant will enable TDB to triple its investment in both senior and junior equity with equal shares in Zafiri which will further mobilize commercial investment over time. The fund's 8–10 year holding period extends beyond the program. Upon exit from investments, proceeds will be distributed per the agreed waterfall. As Zafiri's portfolio matures and demonstrates performance, the sustained growth of DRE companies is expected to attract additional commercial capital for subsequent fundraising rounds.

Component 2: REAF 2

196. **Sub-component 2.1: Risk-Sharing Facility (RSF***).* This facility, funded by a GCF reimbursable grant and an IDA guarantee, will build the capacity of PFIs to lend to the DRE sector. As the market matures and credit risks become better understood, the need for partial credit guarantees (PCGs) will diminish. At the program's close, the EE will cease issuing new guarantees. It will reimburse the GCF grant once the coverage period for all issued PCGs expires. The EE may subsequently launch a new, commercially sustained guarantee program for specific high-risk segments.

197. **Sub-component 2.2: Carbon Risk Mitigation Facility (CRMF).** The Carbon Floor Price Guarantee is funded by IDA and a Trust Fund grant, not GCF. GCF is solely financing the associated TA, which will build the EE's capacity in carbon markets, MRV, and risk management. By program conclusion, the EE will be equipped to operate the CRMF independently, using its own resources and potentially new de-risking instruments, positioning itself as a regional leader in carbon transactions. Earnings from CRMF operations will service the IDA loan.

198. **The GCF-financed TA under REAF and REAF 2 will further enhance sustainability** by building EEs, PFIs, and DRE companies' long-term capacities.

Component 3: ASCENT COMESA Platform

199. **This component is critical for long-term sustainabilit**y. It will strengthen the DRE ecosystem through improved policy, planning, digital tools, and stakeholder capacity. Individual country operations, continuing separately from ASCENT-GREEN, will foster government ownership, enabling them to assume responsibility for any residual concessional financing needs, such as targeted RBF or end user subsidies for the most vulnerable, potentially leveraging social safety net mechanisms.

Sustainability and exit strategy at the end-user level

200. **The program ensures lasting impact for end-users through robust technical, economic, and operational measures**:

- **Technical sustainability:** Only proven technologies meeting international quality standards will be financed. A quality assurance program for PUE will be established under Component 3.
- **Economic and financial sustainability:** Interventions are based on least-cost principles and sustainable business models with proven capacity for operation and maintenance (O&M). Grants and RBF will lower upfront costs, while operating expenses will be covered by affordable financing, sustained by increased user income from PUE.
- **Environmental and social sustainability:** All investments will comply with World Bank Environmental and Social Standards. The program will actively narrow the gender gap in energy through its Gender Action Plan.
- **Customer-centric operational sustainability:** DRE companies will be contractually obligated to provide O&M and after-sales service. This will be enforced through:
  - A grievance redress mechanism (GRM) at COMESA, TDB, and the REAF 2 EE, with dedicated staff for complaint resolution
  - Independent monitoring by COMESA via sample surveys
  - Performance-linked incentives, under which companies with poor service records become ineligible for further RBF

201. **Comprehensive awareness campaigns will be carried out** to ensure users understand DRE opportunities, system operation, and their rights to after-sales service, with focus on PUE through Mission 300 partnerships.

C. FINANCING INFORMATION

C.1. Total financing

(a) Requested GCF funding (i + ii + iii + iv + v + vi + vii)	Total amount	Currency
	250	million USD ($)

GCF financial instrument	Amount	Tenor	Grace period	Pricing
(i) Senior loans	50	Enter years	Enter years	Enter %
(ii) Subordinated Loans	0	Enter years	Enter years	Enter %
(iii) Equity	0			Enter % equity return
(iv) Guarantees	0	Enter years		
(v) Reimbursable grants	40			
(vi) Grants	160			
(vii) Results-based payments	0			

(b) Co-financing information[83]	Total amount	Currency
	445	million USD ($)

Name of institution	Financial instrument	Amount	Currency	Tenor & grace	Pricing	Seniority
Trust Fund	Grant	29	million USD ($)	Enter years Enter years	Enter%	Options
IDA/IBRD	Grant	46	million USD ($)	Enter years Enter years	Enter%	Options
IDA/IBRD*	Senior Loans	345	million USD ($)	Enter years Enter years	Enter%	Options
IDA/IBRD	Guarantees	25	million USD ($)	Enter years Enter years	Enter%	Options

*Includes CTF US$25 million	Amount	Currency
(c) Total financing (c) = (a)+(b)	695	million USD ($)

(d) Other financing arrangements and contributions (max. 250 words, approximately 0.5 page)	The ASCENT-GREEN Program will act as a catalyzer by mobilizing resources from other public and private financing sources in addition to the World Bank/TF/CTF and the GCF funding. With the resources from the WB and GCF, ASCENT-GREEN is expected to leverage US$156 million in financing from other IFIs and US$521 million from the private sector to meet the total program cost of US$1.372 billion.

[83] Co-financing includes WB resources and TF grants.

C.2. Financing by component (see also Table 9 below)

Component	Sub-component/ activity	Indicative cost million USD ($)	GCF financing		Co-financing		
			Amount million USD ($)	Financial instrument	Amount million USD ($)	Financial instrument	Name of institution
1. ASCENT REAF: Regional Energy Access Facility Platform for DRE	1.1: Lending to DRE + clean cooking companies	310	50	Senior Loan	260	Senior Loan	IDA
	1.2: RBF for frontier markets	142	130	Grants	12	Grants	ESMAP TF
	1.3: TA, tools + innovation	27	10	Grants	10	Senior Loan	IDA
					7	Grants	ESMAP TF
	1.4: Enable capitalization of Zafiri	60	5	Grants	25	Senior Loan	IDA
					25	Senior Loan	CTF
					5	Grants	ESMAP TF
	Total	**539**	**195**		**344**		
2. ASCENT-REAF 2: Regional Energy Access De-risking Financing Facilities for DRE	2.1 (a): RSF capitalization and backstop	70	40	Reimbursable grants	25	Guarantees	IDA
	2.1 (b) RSF-TA, Inst. Streng.		5	Grants			
	2.2 (a): CRMF carbon floor price guarantee	35			25	Senior Loan	IDA
					5	Grants	TF
	2.2 (b): CRMF-TA, institutional strengthen-ing		5	Grants			
	Total	**105**	**50**		**55**		
3. COMESA Regional Platform-TA for DRE		51	5	Grant	46	Grant	IDA
			5		**46**		
Indicative total cost (USD)		**695**	**250**		**445**		

Table 9: Financing of the ASCENT-GREEN Program by component and source (US$ millions)

Component/Sub-component	Total Cost	GCF	WB Co-financing			Other Financing	
			IDA	TF	CTF	Other IFIs	Private
Component 1: ASCENT Regional Energy Access Financial (REAF) Facility for DRE							
1.1 Lending to DRE and clean cooking companies	**642**	50	260	0	0	86	246
1.2. Results-based financing for the frontier markets	**189**	130	0	12	0	0	47
1.3 Technical Assistance, tools, and innovations	**27**	10	10	7	0	0	0
1.4 Enable capitalization of Zafiri	**229**	5	25	5	25	70	99
Sub-total Component 1	**1,087**	**195**	**295**	**24**	**25**	**156**	**392**
Component 2: ASCENT Regional Energy Access Financial (REAF-2) Facility for DRE							
2.1 Risk Sharing Facility (RSF)	**194**	45	25	0	0	0	124
2.1 (a) RSF capitalization and backstop	189	40	25	0	0	0	124
2.1 (b) TA, Inst. strengthening, Imp. support	5	5	0	0	0	0	0
2.2 Carbon Risk Mitigation Facility (CRMF)	**41**	**5**	**25**	**5**	**0**	0	6
2.2 (a) Carbon Floor Price Guarantee	36	0	25	5	0	0	6
2.2 (b) TA, Inst. Strengthening, Imp. support	5	5	0	0	0	0	0
Sub-total Component 2	**234**	**50**	**50**	**5**	**0**	**0**	**129**
Component 3: COMESA Regional Energy Access Acceleration Platform							
3.1 COMESA Regional Energy Access Acceleration Platform	**51**	5	46	0	0	0	0
Sub-total Component 3	**51**	5	46	0	0	0	0
Total Indicative Cost ASCENT-GREEN Program	**1,372**	**250**	**391**	**29**	**25**	**156**	**521**

C.3 Capacity building and technology development/transfer (max. 250 words, approximately 0.5 page)

C.3.1 Does GCF funding finance capacity building activities?	Yes ☒ No ☐
C.3.2. Does GCF funding finance technology development/transfer?	Yes ☐ No ☒

202. **Providing technical assistance and building the capacity of the various stakeholders is an integral part of ASCENT-GREEN, so that the program will succeed in expanding access to DRE solutions for sustainable development, climate resilience, and the reduction of GHG emissions.** A robust set of capacity building activities is critical to achieve the results sought under the program and to support their sustainability. This requires strengthening the capacity of governments to create an enabling environment for the expansion of the market for DRE solutions, of EEs to carry out program activities, of DRE, clean cooking, and PUE companies to carry out marketing, financial, technical, and commercial business activities, of financial institutions to lend and provide equity to the sector, and of other stakeholders to contribute to the continued upward trajectory of the scaling-up of private sector DRE companies, as well as the next generation of companies with growth potential. TA is also essential to the success of the innovative aspects of the program including the promotion of muti-sectoral PUE activities, as well as the inclusion of women and youth as beneficiaries of the program and **as** active participants in DRE businesses.

203. **To this end, ASCENT-GREEN's technical assistance, capacity building, and institutional strengthening activities, amounting**

to US$78 million, are included in each of its components and will be closely coordinated to create synergy. These activities will also be implemented in alignment with ASCENT's Gender Action Plan, which will use TA activities to help increase women's benefits from and participation in program activities and in the DRE sector as a whole, whether as members of a household, productive users, beneficiaries of the electrification of public facilities like schools and healthcare facilities, or owners or employees of DRE companies or financial institutions participating in the program. To maximize their impact and help achieve the development objective, the TA activities of ASCENT-GREEN, presented in detail in section B3, focus on the following:

(i) TA under REAF: This will be directed to *Executing Entities* and aims to build their capacity to successfully implement the activities related to the operation of the regional financial facility in their charge (REAF or REAF 2), including operational activities and management of the MRV platforms for monitoring, verifying, and reporting results, as well as to coordinate and create synergies with the other program facilities and with COMESA's TA facility and knowledge building activities under ASCENT.

(ii) TA under REAF and REAF 2: This will aim to increase awareness and knowledge of the DRE sector among *regional and local financial institutions,* to familiarize them with the commercial business of the DRE sector and its clients, to help them develop the capacity to assess the business plans of DRE companies, including the commercial risks they face, to familiarize them with the financing instruments provided under the program and strengthen their capacity to participate. TA to FIs will also include support for pipeline development and monitoring processes, including via digital planning, management, and MRV platforms.

(iii) TA under the ASCENT COMESA Project Preparation Facility: This will be provided to *DRE, clean cooking, and PUE companies* to strengthen their capacity, including activities such as pre-investment advisory services, TA, and capacity building to companies to expand their marketing and commercial operations, as well as their capacity to manage and implement projects effectively. It will also include TA to strengthen their capacity to develop solid business cases to support their financing proposals to PFIs. TA will also be provided to companies to integrate and scale-up PUE equipment with their DRE businesses.

(iv) TA under REAF and REAF 2: This will be provided to *DRE companies and financial intermediaries* geared towards enhancing the climate mitigation and adaptation benefits of using the DRE solutions and DRE-powered PUE equipment, including for quality assurance and the selection of equipment that can better withstand adverse climatic conditions. It will also include support to PFIs to integrate these climate-related dimensions in the assessments of proposals.

(v) TA under COMESA's Government Advisory Facility: This will be provided to *governments* to strengthen the DRE policy and regulatory environment. Activities will include support for: (i) preparing and operationalizing national electrification, productive use, and clean cooking strategies and plans; (ii) the adoption of best practices in DRE policies and regulations (e.g., including model policies and regulations); (iii) driving AFE-wide harmonization of DRE policy and regulatory frameworks around best practices and the alignment of technical and quality standards; and (iv) identifying other barriers (e.g., trade, investment, and banking) and facilitating their removal via analytics, TA, advocacy, and convening. These activities integrate PUE support; the first national multi-sectoral PUE strategy has been requested for Kenya with the goal of replicating the process in other AFE countries.

(vi) TA under the COMESA Project for knowledge exchange and coordination: This is done through the periodic convening of ASCENT countries, as well as DRE companies, carrying out ASCENT-GREEN customer surveys for DRE systems, clean cooking, and productive uses to collect direct beneficiary feedback, and the convening of ASCENT-GREEN quarterly meetings to bring together implementation agencies and other key stakeholders with governments to report on the country footprint of regional activities, discuss challenges, and agree on key actions to support a fair distribution of ASCENT-GREEN benefits.

D. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

D.1. Impact potential (max. 500 words, approximately 1 page)

204. **The activities of ASCENT-GREEN in expanding sustainable markets for DRE systems, clean cooking solutions, and productive uses equipment will contribute to a shift to sustainable economic development through low emission sustainable development pathways and increased climate resilience of the population in AFE, especially among the most vulnerable communities, in the following ways**. (Note: Some of the contributions cited below contribute to more than one results area. For example, the increased access to clean and resilient electricity for 11.7 million people and to clean cooking for 11.9 million people contributes to the energy generation and access results area. A subset of these people lives in countries with FCV conditions; therefore, this subset of people will also be counted under the results area for the most vulnerable people and communities.[84])

GCF Results area MRA1: Energy generation and access

205. **The activities under this area will**:

- Directly provide clean and resilient electricity access to 11.7 million people and clean cooking access to 11.9 million people in areas of AFE that are underserved with modern energy, strengthening economic development and climate resilience by powering information and communication technologies to support productive activities and disaster warnings and responses, and improving livelihoods by powering equipment for productive activities, with 15–20% of new users expected to use electricity for income generation.
- Directly provide access to productive uses of energy (PUE) through DRE systems and productive equipment for income generation to 5.2 million people in low income, remote, and FCV areas of AFE countries to improve their livelihoods
- Directly support the installation of 881 MW of distributed renewable energy (DRE) capacity in AFE, mainly from stand-alone solar systems and renewable energy mini-grids, during the lifetime of the program, which will contribute significantly to the expansion and transformation of long-term sustainable markets for these technologies
- Directly reduce GHG emissions by an estimated 12 million tonnes of CO_{2eq}, excluding the expected 8.1 million tonnes to be traded in the carbon market to avoid potential double counting, during the 20-year lifetime of the renewable energy and clean cooking equipment installed
- Directly catalyze an estimated US$521 million of investment from the private sector in DRE solutions to support the installation of this equipment
- Directly strengthen the capacities of key stakeholders in the DRE, clean cooking, and PUE sector, especially sector companies, to expand their markets including in marketing, commercial operations, O&M, and customer support as well as the capacity of PFIs to operate in the sector
- Directly support the development of business models to sustainably provide electricity services through DRE solutions in the medium to long-term for public facilities such as schools and healthcare facilities and support continuous innovation in fine-tuning other DRE business models

GCF Results area ARA1: Most vulnerable people and communities

206. **The activities under this area will:**

- Directly provide clean and reliable electricity access to an estimated 3.5 million people and clean cooking access for 3.6 million people in AFE countries with FCV situations (see Table 1 for FCV countries in AFE)
- Directly provide access to resilient productive equipment (for use with DRE systems) to improve the livelihoods of 1.6 million people, in AFE countries with FCV situations
- Enable people to charge phones or radios at home with DRE systems, to obtain essential information such as on weather and markets, as well as disaster warnings and information on disaster support in AFE countries with FCV situations

[84] For a detailed explanation of the methodology used to estimate direct and indirect beneficiaries, see Appendix 1 of Annex 3 to this Funding Proposal.

GCF Results area ARA2: Health, well-being, food and water security

207. **The activities under this area will:**

- Directly provide clean cooking access to 11.9 million people in areas of AFE that are underserved with modern energy, reducing the serious negative health impacts of indoor air pollution, especially for women and children, and reducing the time that they spend gathering fuel, preparing and cooking food, and tending cooking fires
- Directly provide clean and reliable electricity access to 1,302 schools, healthcare facilities, and public facilities in areas of AFE that are underserved with modern energy**,** thereby indirectly benefiting 13.8 million people through improved public services, especially for education and health.

D.2. Paradigm shift potential (max. 500 words, approximately 1 page)

208. **ASCENT-GREEN's paradigm shift consists of increasing the scale, speed, inclusivity, and sustainability of off-grid energy access efforts in AFE towards sustainable economic development, climate adaptation, and mitigation outcomes**. This shift consists of five critical elements:

(i) **Accelerated market expansion into remote rural areas, FCV contexts, and small countries.** ASCENT-GREEN will leverage RBF grants to incentivize DRE companies to expand from their current markets to underserved areas with priority given to small countries (disadvantaged due to small market size), FCV countries (with higher costs and risks of doing business), and last-mile remote areas of other countries (where poverty and climate vulnerability are concentrated). While implementation will be market-driven, the RBF incentive design will also entail a mechanism to achieve a fair distribution of benefits across participating ASCENT-GREEN countries.

(ii) **The sustainable cost reduction via economies of scale under the regional approach.** ASCENT-GREEN's regional approach encourages companies to build larger multi-country portfolios and reduce transaction costs and enables companies to access affordable financing to support their long-term growth strategies (through patient equity, affordable debt at longer tenor and in local currencies, and flexible RBF to assist companies to expand to unserved markets), thereby also reducing financing costs.

(iii) **Driving increases in household income and climate resilience, while increasing the affordability and long-term viability of energy access by scaling up PUE.** ASCENT-GREEN is the largest effort to scale up PUE in AFE and the only major program to support productive use equipment on an equal footing with access to energy. PUE will lead to increased economic activities in communities, which will result in increased capacity for climate adaptation as well as increased household incomes and higher consumption of DRE solutions based on a greater ability to pay. PUE will also provide DRE companies with diversified revenue streams and anchor clients, who tend to have higher consumption and purchasing power than households, driving long-term sustainability and helping DRE companies to reach commercial viability faster.

(iv) **Crowding-in commercial capital to the DRE sector, including local financial institutions via de-risking, blending, and improving the commercial viability of DRE business models**. Both the perceived and real risks will be reduced over time, as the DRE sector gains more maturity and commercial viability. To accelerate the process, ASCENT-GREEN will launch risk-mitigation instruments aimed at crowding in commercial lenders via guarantees and reducing uncertainty around carbon revenue. These are accompanied by broader risk mitigation strategies via policy dialogue and TA to governments to reduce policy and regulatory risks, as well as additional risk coverage offered by MIGA under the WBG Guarantee Platform.

(i) **A synergetic approach for scaling up DRE, clean cooking and PUE access, with all three technologies integrated on an equal basis.** On the demand side, this approach will result in amplifying benefits at the household level, creating a virtuous circle towards rising incomes and resilience. On the supply side, this approach will help increase the attractiveness of each sub-sector by creating a larger market with economies of scale, reduced costs and diversified risks. On the policy side, this allows engaging Governments in a more holistic manner to build an environment that encourages such synergies in service provision. See Annex 25 for more details of this approach and the specific relevance for PUE.

See section B.2(a), Table 6 to see how ASCENT-GREEN activities addresses key market barriers to deliver this paradigm shift.

209. **This paradigm shift will deliver increases in the scale, pace, inclusivity, and sustainability of DRE markets in AFE**. It will deliver increased **SCALE**, because DRE companies will be able to expand easily across countries and markets, building larger multi-country portfolios, as they will be able to source finance regionally and as the policy and regulatory frameworks will be more harmonized. The paradigm shift will deliver increased **SPEED**, as DRE companies will be able to follow their demand-driven, sustainable growth strategies, with access to a suite of financing instruments needed at the current market stage, while progressively

leveraging increasing amounts of commercial capital to drive the growth of the DRE sector, while implementation bottlenecks are addressed through capacity building efforts for all key stakeholders (governments, DRE companies, financing institutions, and end-users), as well as through the standardization of approaches across countries to cut transaction costs and digitization efforts, including digital monitoring, reporting, and verification (d-MRV) to deliver efficiency and transparency. The paradigm shift will deliver **INCLUSIVITY**, as the regional multi-country expansion will be enabled by and conditioned upon the expansion of DRE companies from their core markets to harder-to-reach populations, in particular those in FCV contexts and remote rural areas, as well as those in small countries, and as RBF will be applied to close the initial affordability gap. The paradigm shift will contribute to the **SUSTAINABILITY** of energy access efforts, as ASCENT-GREEN will aim at reducing costs via economies of scale, as well as by bringing down transaction and financing costs and increasing revenue to DRE companies, in particular by scaling up PUE, which will increase incomes and the capacity to pay of the target population, as well as increasing and diversifying revenue for DRE companies. The program will also crowd in commercial capital to replace concessional financing, including more predictable carbon revenue at an increased volume and value.

210. **Concessional financing is needed to expand the boundaries of the current market to new geographic areas and deliver on the stated paradigm shift,** especially remote rural areas and FCV contexts, and new market segments, such as PUE and clean cooking, while bringing DRE sector to commercial viability and increasing private sector participation. Concessional financing will be provided only to those geographic and market segments that require it to overcome current barriers[85]. By growing the market across the region, delivering economies of scale, reducing the costs of financing, and improving policy and regulatory environments, ASCENT-GREEN aims to achieve the overall sustainable reduction of costs over time. By using concessional financing to jump-start the current nascent market for PUE and generating more viable and sustainable carbon revenues, ASCENT-GREEN also grows revenues of DRE companies over time, reducing their dependence on concessional financing – thus contributing to sustainable market growth as opposed to market distortion. The key is that concessional financing is used here to grow the market and private sector investment, rather than replacing them. Furthermore, as shown in Figure 9, concessionality will be passed to end users by bringing down the costs to affordable levels.

211. **To realize this paradigm shift, ASCENT-GREEN is therefore conceived as a partnership between GCF and the World Bank through which both institutions bring their comparative strengths**. The World Bank is taking a comprehensive approach under ASCENT and M300 to mobilize IDA and other development finance, as well as the private sector, and engage Governments in building a wider ecosystem for sustainable energy access expansion, while leveraging and building capacity of regional bodies, such as COMESA and TDB that countries set up to deliver on common goals requiring cross-border collaboration (including climate and energy). GCF is adding the critical climate dimension, deeply concessional funds that make it possible to reach last-mile communities and de-risking elements that allow increased capital mobilization while pushing markets to new geographic areas and DRE market segments that otherwise would be perceived as too risky by the private sector.

212. **The GCF funding plays an enabling and catalytic role in each of ASCENT-GREEN financing facilities (as described below), which explains its significant incremental value for the ASCENT-GREEN program as a whole, and it does so also in a comprehensive manner that makes it particularly effective**. The comprehensive way in how these facilities together address the identified financing, risk perception, affordability, policy and capacity barriers – leveraging synergies in delivery, aggregation and economies of scale benefits, explains to a significant extent why overall results are more than a sum of individual parts.

- *RBF Facility (sub-component 1.2).* GCF US$130 million RBF grant financing is enabling ASCENT-GREEN to jump-start its penetration into frontier markets – primarily more remote rural areas and FCV. RBF incentivizes and derisks DRE companies to enter new areas, while also helping close affordability gaps for target populations. For example, it reduces an average mini grid tariff by more than half to about 30 kWh under the ASCENT-GREEN approach. It greatly increases capacity to pay for an entry level solar home system from an estimated fewer than 22 percent of the target (bottom two income quintile) population under the market price to over 70 percent in the same target group (as modelled in the Economic and Financial Analysis – EFA in Annex 3 and its Appendix 3). Similarly, it unlocks the initial adoption barrier for PUE appliances (degrees of price reduction depend on type of appliance and consumers). This boost is essential in these early stages of the market. As market failures are addressed, costs decline and income increases, RBF can be progressively phased out. Without GCF RBF grant financing, the RBF facility

[85] For example, RBF under Sub-component 1.2 will have strict geographic boundaries focused on unserved areas that the market is not reaching. GCF concessional loan under Sub-component 1.1 will be blended with less concessional resources and used to provide loans at affordable terms to market segments that are not yet fully commercially viable, such as SMEs, PUE, energy-as-a-service model for public institutions, and help grow the business models towards commercial viability. Concessional financing will also enable more patient equity (Sub-component 1.4) and more comprehensive de-risking (Component 2), which are currently missing in the market.

remains at a pilot level, and as a result, ASCENT would lack a catalyst for jump-starting access expansion in frontier markets and segments, including PUE. The FIRR of 10.6% and a negative NPV, as modelled in the EFA without GCF financing, does not make it possible for the DRE companies to expand to new markets, and would reinforce their concentration on less remote and more affluent (e.g., urban/peri-urban non-FCV) customers.

- *Debt facility (sub-component 1.1).* GCF enables TDB to provide affordable debt financing to market segments that are pre-commercial due to their nascent character, high risk and/or low affordability of end consumers targeted by ASCENT-GREEN. GCF allows TDB to blend GCF concessional loan of US$50 million with less concessional but larger IDA resources (US$260 million) to allow TDB and TDF to lend for ring-fenced uses (SMEs, PUE and other high-risk/high-impact market segments, remote and FCV end uses), leveraging GCF concessionality, while delivering scale through IDA funding, allowing TDB to price loans at 6.51 percent, compared to 13.78 percent regional market benchmark. Without GCF financing, TDB will focus its existing credit line on more mature market segments as higher lending costs would not support expansion to the intended frontier markets and segments.
- *Enabling capitalization of Zafiri (under sub-component 1.4).* There is critical need for patient equity for scaling up the private sector DRE access to enable the growth of DRE companies. Without GCF, due to TDB's risk tolerance enforced by its governance structures, TDB would only be able to mobilize USD20M from its balance sheet for Zafiri, which would not allow it to reach a major shareholder status able to influence Zafiri's decisions. With GCF's USD5M grant capitalization of TDB's ring-fenced loss reserve account, TDB is able to mobilize USD55M from its balance sheet, enabling it to become an anchor stakeholder with a Board seat in Zafiri that allows it to cascade to Zafiri ASCENT-GREEN's focus on new connections and nascent market segments, including for vulnerable populations in rural areas and FCV.
- *Risk-Sharing Facility (RSF, Sub-component 2.1):* To attract private sector players into frontier markets requires availability of comprehensive risk mitigation instruments, in particular to attract local commercial banks that can offer local currency lending, who, however, up to now have stayed at the sideline for the DRE sector due to their perception of the high risks of the DRE, clean cooking and PUE sectors. RSF is not financially viable without GCF financing, as evidenced by negative NPV as per the economic and financial model. GCF capitalization of RSF with US$40 million of reimbursable grant allows RSF to achieve a positive NPV, while mobilizing US$124 million of private sector capital with a strong multiplier effect, primarily via catalyzing local currency lending by commercial banks that are active in AFE countries.
- *Carbon credit mitigation facility (CRMF, Sub-component 2.2)*: Mobilizing financing from carbon offsets, including Article 6, is an essential part of ASCENT-GREEN sustainability and exit strategy. The extent to which carbon credits can be realized today for DRE, clean cooking and PUE investments is limited by the volatility of the carbon credit prices, a risk that CRMF aims to address, which would increase the ability of investors to rely on this currently high-risk revenue stream, and therefore mobilize additional financing. Without GCF TA grant, however, the World Bank is unable to set up and operationalize such a facility, and build the capacity of the key stakeholders, which is necessary for successful implementation, as the World Bank can only mobilize credit resources for the Executing Entity. The GCF's USD5M Technical Assistance grant would enable operationalization of the CRMF, leading to - on a highly conservative basis, (at least) $21.5 million of revenue for the CRMF vehicle while underwriting credits associated with (conservatively) 2.8 million tons of CO2 emission reductions.
- *Regional Energy Access Acceleration Platform (Component 3).* While the majority of funding under Component 3 for COMESA TA facility is provided by IDA, GCF US$5 grant financing has a catalytic impact in orienting COMESA resources towards the critical TA and capacity gaps and transformational opportunities identified under ASCENT-GREEN, such as rolling out of digital MRV platforms, comprehensive policy and market building for PUE and more strategic and coherent implementation of ASCENT-GREEN gender action plan.

213. **Comprehensively, these measures are key in enabling the realization of the paradigm shift**, because they will open a GHG-mitigated pathway, strengthen the climate-resilience and capacity to adapt to climate change of the benefitted populations, and it will attract the private sector into frontier markets.

214. **Conversely, in the absence of GCF funding, ASCENT-GREEN will not be able to achieve this paradigm shift, and the negative impact would be disproportionally larger than the amount of foregone resources, due to the catalytic nature of the GCF funds described above.** If the World Bank tried to pursue ASCENT-GREEN without GCF, this would result in:

- *Significantly lower overall climate impact* Without GCF, the Program will not be able to scale up the activities to expand clean cooking and PUE on the same footing as access to energy because of the higher costs and risks, despite their high climate potential impact, both for mitigation and adaptation purposes.

- *Lower development and climate impact for the most vulnerable populations. Without* GCF concessional funds and their specific mandate that emphasize the focus on rural and FCV areas (eligibility, ring-fencing and RBF targeting criteria), the EEs would be unable to focus on expanding towards the most vulnerable potential beneficiaries in FCV and rural area due to the high costs and risks of reaching out to these populations.
- *Less capital mobilization*: With only a sub-set of financing facilities and in absence of de-risking, IDA financing alone will achieve much more limited private capital mobilization, as financiers will continue to regard the DRE sector as risky, while DRE companies, which will continue to face access to finance barriers, will not be able to grow sustainably to become a more attractive private sector investment target.

215. **The paradigm shift resulting from the implementation of ASCENT-GREEN as an IDA-GCF collaboration will ultimately deliver a triple win:** (i) jump-starting economic development in target communities, delivering rising incomes and jobs, including for women and youth; (ii) making the targeted remote and vulnerable populations more resilient, with an increased adaptive capacity to climate change; and (iii) contributing to climate change mitigation by expanding renewable energy solutions and displacing/avoiding their fossil fuel alternatives.

D.3. Sustainable development (max. 500 words, approximately 1 page)

216. **Cost-benefit analysis measures only a fraction of the benefits that electrification through DRE solutions can bring to households, public institutions, and productive users.** Several studies provide evidence that electrification can trigger a virtuous cycle of economic and social development, extending far beyond initial savings. Electrification essentially facilitates a shift toward more lucrative occupations by stimulating the establishment of small businesses, reducing reliance on agriculture, promoting skills development, and increasing wage-earning opportunities.[86] Research conducted in South Africa indicates that electrification enables women to engage in income-generating activities by freeing up their time, thanks to reduced reliance on traditional fuels and the adoption of electricity for various tasks.[87] It is crucial to understand that electrification sets in motion a cycle of benefits. These encompass the establishment of more businesses, a transition to higher-value production, improved education outcomes, better health, and increased employment opportunities. Targeted awareness campaigns and technical support aimed to women will help ensuring that they can actively participate in the program not only to benefit from the final services (energy, clean cooking, PUEs) but also as entrepreneurs to access the financial resources under the different components, and empowering them by giving them tools to expand their economic opportunities. Over time, these positive effects accumulate, significantly enhancing the well-being of the communities served. These benefits are difficult to capture in ex-ante analysis, but will be monitored during the implementation of ASCENT-GREEN through beneficiary surveys and the program's progress reports.

217. **Access to electricity also increases the capacity of people and communities to adapt to climate change, increasing their climate resilience in four ways.** These are: (i) (ii) DRE systems power productive equipment that enables people to adapt and improve their livelihoods, for example, through modern lighting, communication and refrigeration in schools, health facilities and commercial restaurants and shops or irrigation pumping and cold storage facilities for agriculture; (ii) DRE systems power information and communication technologies (e.g. phones and radios) to provide essential information (e.g. on weather and markets for productive activities), as well as disaster warnings and information; (iii) decentralized DRE systems are less vulnerable than centralized grids in disaster situations, maintaining access to power and communication in critical situations; and (iv) clean cooking improves the health of women and children by reducing indoor air pollution as well as the time needed for cooking/fuel collection, leaving more time for empowering activities like education and income-generation (see sections B1, G2, and Annex 23 for details)

218. **The program directly supports the achievement of the Sustainable Development Goals (SDGs), particularly SDG7—Ensure access to affordable, reliable, sustainable, and modern energy for all—which is also a global priority for GCF.** 42.6 million people in the AFE region will benefit from the ASCENT- GREEN Program with 28.8 million people who will gain access to DRE systems, clean cooking solutions, or productive use equipment, increasing their opportunities for sustainable development and climate resilience, as well as the 13.8 million people who will benefit from the electrification of public facilities. The program will actively support sustainable access to modern energy by scaling up electricity access from renewable energy, while also replacing inefficient burning of traditional fuels with clean cooking solutions. The program will support several other SDGs, as energy access is a crucial element

[86] Akpandjar, G., and Kitchens, C. 2017. "From Darkness to Light: The Effect of Electrification in Ghana, 2000–2010." *Economic Development and Cultural Change, 66*(1).

[87] Dinkelman, T. 2011. "The Effects of Rural Electrification on Employment: New Evidence from South Africa". *American Economic Review, 101*(7): 3078–3108. http://www.aeaweb.org/articles.php?doi=10.1257/aer.101.7.3078

enabling delivery of these goals, including: SDG1: No Poverty: enabling economic activities, job creation, and improving income levels; SDG2: Zero Hunger: boosting agricultural productivity through mechanization, food processing, irrigation, and reducing post-harvest losses through refrigeration and cold chains, thereby improving food security; SDG 3: Good Health and Well-being: powering modern lighting, fans, medical equipment, and refrigeration for vaccines in electrified health facilities, while reducing indoor air pollution, especially through clean cooking, preventing respiratory diseases; SDG 4: Quality Education: improving education outcomes by improving modern lighting in schools and homes, allowing extended study hours, as well as access to digital tools and appliances; **SDG 5: Gender Equality**: empowering women by improving family health through reduced indoor air pollution and reducing time spent on fuel gathering and cooking, allowing more time for education and income-generating activities, enabling new entrepreneurship and employment opportunities, while also enhancing safety and security; and SDG 6: Clean Water and Sanitation: enabling access to clean water through electric pumping and operating water supply and sanitation facilities, reducing waterborne diseases.

219. **In addition, the support provided through ASCENT-GREEN to scale up access to eligible clean and improved cooking solutions is aligned with the Paris Agreement and is expected to significantly reduce reliance on firewood and charcoal, which are often sourced unsustainably from trees and forests in the region**. Reducing the burden on trees and forests by promoting clean cooking will improve the resilience of countries and communities to floods, droughts, and cyclones. ASCENT-GREEN, thus, will also contribute to the resilience of ecosystems in AFE.

220. **ASCENT-GREEN's support to access to clean cooking will directly address the gender gap in AFE by improving the health of women and girls by reducing indoor air pollution from the inefficient burning of traditional fuels for cooking, while also freeing time spent by women and children in** gathering **fuel and cooking for activities including education and income generation.** The program will also apply the ASCENT Gender Action Plan and implement actions related to reducing gender inequality, specifically in facilitating women's access to energy through DRE systems, clean cooking, and productive use technologies. It will also focus on creating energy sector jobs for women, including in STEM fields, while leveraging skill-building and career-enhancing activities targeting women under the COMESA's Platform. Progress towards closing the gender gap in the energy sector will be monitored through program progress reports, which will include the results of project activities and independent surveys with respect to gender-related indicators (see section G2 and Annex 6).

D.4. Needs of recipient (max. 500 words, approximately 1 page)

221. **An estimated 365 million people in AFE (49%) lacked access to electricity in 2023, while 580 million people (77%) lacked access to clean cooking solutions; lack of modern energy access limits opportunities for sustainable economic development and increases vulnerability to climate change.** Three quarters of the people without access to electricity live in rural areas, while more than half live in countries with FCV situations, and the vast majority live on less than US$2.15 per day. Communities living without access to modern energy in low-income, sparsely populated areas and in FCV conditions in AFE are among the most vulnerable to the effects of climate change, such as prolonged droughts, floods, and heatwaves. Many of the AFE ASCENT-GREEN participating countries are highly vulnerable to climate change and have economies with high levels of poverty, especially in rural areas, a combination that explains the low capacity for adaptation to climate change, with contributing factors being low access to electricity and clean cooking (see section B1.2, Table 1 for details).

222. **The main beneficiaries of the ASCENT-GREEN program are the 28.8 million people in the AFE region who will gain access to a sustainable supply of electricity from DRE systems, clean cooking solutions, or PUE equipment, along with the additional 13.8 million people who will benefit indirectly from improved public services like education and health from public facilities electrified under the program**. The benefits that accrue from this modern energy access include modern lighting that extends the working and studying day, phone charging and digital technologies that bring access to information (e.g., on markets, weather, and climate emergencies), improved health from reduced indoor pollution, less time spent on cooking chores and fuel gathering, and better services provided by electrified schools and health clinics because of electricity. Women, with time freed from cooking and gathering fuel will have additional time for education and income-generating opportunities. Farmers, households, and MSMEs will benefit not only from access to clean and reliable energy, but also from access to productive equipment including water pumps and refrigeration, which will help them adapt to droughts and increasing temperatures. Other beneficiaries include DRE companies, financial institutions, and governments, which will benefit from TA to strengthen their capacities to play an effective role in the DRE sector and program activities, as well as the newly created workforce in the expanded DRE sector, particularly women and youth engaged in skills development. Access to electricity is particularly critical to improving household and community level resilience.

223. **As noted in sections B1.2.3 and G2, the expansion in access to clean cooking solutions under ASCENT-GREEN will bring major benefits to women, families, and communities by reducing indoor air pollution and the demand for traditional fuels**. In 2019, air pollution was the second-leading cause of death across Africa after HIV/AIDS, contributing to 1.1 million deaths, with some 63% of those linked to indoor air pollution from burning solid fuels for household cooking and heating. Accelerating the adoption of clean cooking solutions is an immediate and cost-effective way to reduce air pollution and save lives. Clean cooking technologies also reduce the time spent by women and children in gathering fuel and cooking, freeing time for education and income generating activities, as well as reducing the demand for firewood, charcoal, and other traditional fuels, alleviating pressure on forests and ecosystems (see section G2 and Annex 8).

224. **ASCENT-GREEN builds the capacity and institutional strength of governments, companies, and institutions in participating countries, which often have limited human resources and scant institutional capacity.** The program's TA activities play a central role in developing the local and regional capacity of public and private stakeholders to expand access to modern energy from DRE and clean cooking solutions as well as PUE and support the long-term sustainability of the results. COMESA's activities under the main ASCENT MPA include the capacity building of government agencies and DRE and clean cooking companies to build the enabling environment for DRE and clean cooking expansion. The regional financial facilities under ASCENT-GREEN have TA components that will strengthen the capacities of the EEs, DRE/clean cooking companies, PFIs and other stakeholders to contribute to the success of the facilities. Finally, the country-specific projects implemented separately under ASCENT MPA in many of the countries participating in ASCENT-GREEN will also contribute to creating the necessary capacities and enabling environment in the countries.

D.5. Country ownership (max. 500 words, approximately 1 page)

225. **ASCENT-GREEN's efforts to support adaptation and mitigate GHG emissions through the promotion of DRE systems, clean cooking solutions, and PUE equipment are fully aligned with the national climate strategies of AFE countries**, which recognize the important role that the energy sector plays in climate change by emphasizing their commitments to shift to renewable energy and improve energy efficiency (see section B1.2.3, including Table 3 for details on country climate strategies). All AFE countries have signed the Paris Agreement and submitted ambitious NDCs. Most countries submitted two targets for GHG emission reductions: an unconditional target that was to be met by their own resources (2–15% by 2030) and a conditional target subject to financial support from the international community (13–68% by 2030). ASCENT-GREEN's objectives are directly aligned with national climate priorities including National Adaptation Plans, National Climate Change Action Plans, and NDCs, which all give priority to renewable energy development, including DRE for electrification, and clean cooking.

226. **While ASCENT-GREEN is implemented as a regional program by regional EEs, country ownership and participation is central to its design**. Country ownership is reflected in three dimensions of the preparation and future implementation of the Program:

- *As explained in the previous paragraph, ASCENT-GREEN will be implemented following Governments' strategic climate and development priorities*, within the framework of Government-approved documents, such as their National Adaptation Plans, National Climate Change Action Plans, and NDCs, as well as their National Electrification, Clean Cooking and PUE Strategies and Plans, National Energy Compacts, and other development strategies and plans.
- *ASCENT-GREEN countries have participated closely in the design of ASCENT-GREEN through various consultations* (see below), including national workshops, with their insights integrated in the Program design, and will continue do so during implementation, including via the coordination mechanism established by COMESA. ASCENT-GREEN, as an integral part of ASCENT, was designed based on discussions with governments including NDAs and line ministries, and consultations with other national and regional stakeholders, ensuring that the needs of countries are prioritized and that DRE companies and financial institutions are well informed about the program and supported by it. The insights received during the various consultation events contributed shaping the design of the ASCENT-GREEN Program. This iterative process ensured that the setting of the objectives, choices and modalities of the financing instruments proposed under the ASCENT-GREEN Program responded to the range of needs and of priorities of the different participating countries, and it also helped defining result indicators that could be traced, monitored and reported systematically to inform the different parties of the progress achieved or the constraints faced during program implementation. In addition to consultation, the systematic sharing of information during implementation will help maintaining the countries' active engagement in the Program, as all participating countries will receive the periodical progress reports that are sent to the AE and to GCF, and will gather to discuss the advances of the program every six months either virtually or in person, as part of the coordination mechanism set by COMESA.
- *ASCENT-GREEN's regional EEs are not external to Governments of AFE countries*. These are organizations that were created by and are owned by AFE Governments in order to respond to the common needs that require collaboration and collective action to achieve intended impacts, such as is the case with ASCENT-GREEN. These organizations have close ties and contacts with the Governments. In addition, these consultations laid the grounds for establishing a thrusted working relations between the EEs of the ASCENT-GREEN, the national authorities responsible for the Energy Sector, the respective NDAs and other national stakeholders.

Consultations with stakeholders

227. **ASCENT-GREEN, as an integral part of ASCENT, was designed based on discussions with governments including NDAs and line ministries, and consultations with other national and regional stakeholders**. **COMESA, as the EE of ASCENT-GREEN's Component 3**, plays a leading role in consultations, coordination, and knowledge exchange, ensuring that the needs of countries are prioritized and that DRE companies and financial institutions are well informed about the program and supported by it. The ASCENT launch (organized by COMESA in June 2024, in Lusaka) included consultations on Pillar 3 that focused on the barriers that inhibit the expansion of the DRE market, as perceived by governments and the private sector. These insights were used to fine tune COMESA's TA activities and helped shape the design of the ASCENT-GREEN Program.

228. **Additional consultations were held during the first ASCENT Week in Lusaka in September 2025, the first annual learning event under ASCENT, organized by COMESA, with participation of 20 AFE countries, including energy and finance ministries, regulatory agencies, rural energy agencies, as well as NDAs and regional entities, including TDB and TDF.** The participants strongly

endorsed the need for and key features of ASCENT-GREEN and provided valuable feedback, which has been integrated into the ASCENT-GREEN design (see section B3), including, in particular: (i) ensuring country ownership in setting priorities for DRE technologies/segments throughout implementation and additionality to country interventions; (ii) ensuring that companies in small countries and those with less developed markets have access to funding and TA, and awareness about opportunities; (iii) strengthening the support for small and local companies; (iv) engaging local financial institutions, including deliberate collaboration with the regional EEs; (iv) ensuring that NDAs are actively engaged in the coordination mechanism for ASCENT-GREEN; and (v) incorporating consultations/feedback from DRE companies into the coordination mechanism at both the regional and country levels.

229. **Additional evidence of government commitment to DRE solutions is that the Mission 300 Africa Energy Summit declaration, endorsed by 30 African heads of state, stated that governments resolved to "embrace distributed renewable energy (DRE) & clean cooking solutions as critical elements in their National Energy Compacts."[88]** Since then, 14 AFE countries have approved and launched their National Energy Compacts, with several additional compacts under preparation. The compacts include country-specific DRE and clean cooking targets, as well as concrete policy, regulatory, and other reform action commitments to support their achievements.

230. **Extensive private sector consultations were held with local and regional DRE, clean cooking companies, and PFIs on the design of ASCENT/ASCENT-GREEN**. The 8th Global Off-Grid Solar Forum and Expo, co-organized by GOGLA (global association for off-grid solar industry), the Government of Kenya, and the World Bank, brought together off-grid solar, mini-grid, and PUE companies, as well as potential financiers. It sought feedback on barriers to accelerating DRE as an input to the design of Mission 300 and ASCENT-GREEN. The Rockefeller Foundation organized other deep dives on barriers to DRE expansion on behalf of the World Bank and AfDB to seek additional feedback from the private sector. Private sector recommendations on policy and technical assistance have been integrated into the National Energy Compacts and shaped the scope of COMESA TA activities, including the importance of obtaining VAT and tax incentives for DRE equipment, accelerating free trade in Africa, and providing advisory services on legal, regulatory, and reporting requirements. Key recommendations incorporated in the ASCENT-GREEN design include: (i) scaling up RBF, including through regional facilities, and improving its predictability and efficiency; (ii) having currency risk mitigation mechanisms, including to increase local currency lending; (iii) having more patient equity financing with accelerated delivery; (iv) scaling up working capital financing; (v) encouraging DFIs to offer more concessional capital and crowd in philanthropic capital; (vi) mobilizing local institutional capital (e.g., pension funds) bolstered by risk-mitigation financing tools; and (vii) leveraging carbon finance by mitigating risks.

231. **Civil society consultations were held under the umbrella of Mission 300 and during the preparation for the ASCENT-MPA and National Energy Compacts** (during a webinar on the road to the Dar es Salaam Summit and at the Summit). Key feedback received was on the need for transparent communication and the integration of civil society voices in key policy documents, such as the National Energy Compacts (this recommendation has been incorporated as part of the consultation process for the Compacts). Key feedback on ASCENT-GREEN's design included recommendations for: (i) the prioritization of clean energy investments (at the center of ASCENT-GREEN); (ii) the design of investments and activities to lift people from poverty and support sustainable development (incorporated in ASCENT-GREEN through direct support for PUE); (iii) the electrification of schools and health clinics, ensuring service affordability (another focus of ASCENT-GREEN and expansion of the RBF facility); and (iv) taking care that the gender dimension is mainstreamed into the design (also central to ASCENT-GREEN).

232. **Regional consultations were complemented with country-specific consultations, including engagements with NDAs.** Engagement with NDAs began with a brief in advance of a webinar in January 2025 followed by extensive bilateral meetings between the program team and individual NDAs, culminating in circulation of the draft Funding Proposal to the NDAs and a second webinar in parallel with submission in June 2025. No objection letters have been received from 21 of the 24 eligible AFE countries, expressing formally their interest in participating in ASCENT-GREEN. To further strengthen country ownership, dedicated ASCENT-GREEN national consultation workshops have been conducted or are scheduled for October-December 2025 in all participating countries. These workshops are organized in collaboration with NDAs, energy ministries, other relevant ministries (such as environment, agriculture, trade), the private sector, development partners, and other key stakeholders. The objectives of the national consultations are to: (i) present the ASCENT-GREEN proposal to key stakeholders; (ii) gather feedback and insights from public and private sector representatives; (iii) confirm the relevance of ASCENT-GREEN in country contexts and identify the priorities of countries for ASCENT-GREEN in light of government strategies, priorities and plans, and existing country programs; (iv) identify and

[88] See Dar es Salaam Energy Declaration from Mission 300 Summit: https://www.nishati.go.tz/uploads/documents/sw-1738564587-DAR%20ES%20SALAAM%20DECLARATION.pdf

assess readiness and gaps in country enabling environments; (v) discuss strategies to complement and enhance national efforts in DRE and clean cooking, with a strong focus on PUE for income generation and job creation; and (vi) explore opportunities for collaboration and partnership.

233. **Key feedback from the national workshops so far, which is being incorporated, includes**: (i) the program coordination mechanism should be set up at a regional level, but also cascaded to the country level, with both energy ministries and NDAs playing leading roles to provide feedback on the detailed operational design and implementation, so that ASCENT-GREEN activities complement existing national programs and initiatives; (ii) the regional RBF mechanism should be designed with flexibility to support lower-performing countries, while also rewarding better-performing countries; (iii) there is significant value in facilitating knowledge exchange and promoting learning and business opportunities among DRE companies across countries by connecting national industrial associations with regional and global associations; (iv) it is important that small and micro enterprises can also benefit from the program; the de-risking facilities (RSF and CRMF) are highly valued in this regard; (v) there is an acute shortage of equity in the market so the equity financing under ASCENT-GREEN should be as inclusive and patient as possible; (vi) it is essential that there is equal awareness of opportunities across more developed and nascent markets, as well as large international and small local companies—regional EEs need to engage actively in all markets and with governments as well as with local industry associations to help build awareness; (vii) TA should be provided to companies to prepare for the financing opportunities under ASCENT-GREEN; (viii) RBF should cover a wide range of technologies, with priorities confirmed with governments, and with RBF values differentiated to accommodate countries with different market contexts; and (ix) the emphasis on PUE is welcome; PUE should encompass a wide range of technologies, such as solar water heaters, solar dryers, and e-mobility solutions, and public institutions, such as schools and health clinics, are also critical. Annex 7 provides summaries of the results of the consultation workshops conducted. Section B3 of this Funding Proposal incorporates much of the feedback received.

Executing Entities for ASCENT-GREEN

234. **The EE for REAF, the first of ASCENT-GREEN's regional facilities to be established, is the Eastern and Southern African Trade and Development Bank (TDB), which is a strong regional development bank in AFE with a proven record as a well-managed regional financial institution with a demonstrated capacity to finance projects in infrastructure, particularly in energy.** It is also one of the GCF Regional Direct Accredited Entities in AFE. TDB is a treaty-based financial institution with both sovereign and institutional investors, its membership comprises 22 member states from Eastern and Southern Africa and 2 non-regional members, as well as 18 institutional shareholders from Africa, Europe, and Asia.[89] TDB is part of a financial group that has been active since 1985, lending to public-sector institutions, corporations and other financial intermediaries. TDB also has a focus on SMEs and other traditionally underserved groups, including women, through its wholly owned subsidiary, TDF, which will implement the RBF under ASCENT-GREEN. It has an extensive network of regional and local commercial banks, which will be leveraged through co- and on-lending, and has successfully implemented a similar Bank-financed project in the off-grid solar sector (Regional Infrastructure Financing Facility). An assessment of TDF can be found in the REAF Project Paper in Annex 18.

235. **The EEs of ASCENT-GREEN's two financial facilities under REAF 2 are in the final stages of the selection process**. This process follows the same approach used to select TDB for REAF, seeking a respected African financial institution eligible for IDA financing and experienced in the design and implementation of financial instruments to mitigate the financing risks faced by the DRE industry in AFE and by the local and regional financing intermediaries interested in operating in this market.

D.6. Efficiency and effectiveness (max`. 500 words, approximately 1 page)

236. **Annex 3 contains a summary of the economic and financial analyses of ASCENT-GREEN.** The economic and financial analyses are based on the customary World Bank cost-benefit analysis methodology. Using this approach, the annual cost and benefit flows are calculated for up to 20-year life of the program and discounted to the present day using associated economic and financial hurdle rates to derive their respective net present values. The economic and financial flows are also evaluated for their own respective internal rates of return. As is customary for these analyses, the impact of technical assistance financing has generally not been considered in the evaluation. Note that only Activities 1.1 Debt facility, 1.2 RBF facility, 1.4 Enable capitalization of Zafiri, 2.1(a) RSF facility, and 2.2(a) CRMF facility have been evaluated in this analysis.

237. **A further focus of the analysis was on identifying and, where possible, quantifying the unique benefits that accrue on account of the concessionality of the proposed GCF financing**. In general, the analysis found compelling quantitative evidence that

[89] https://www.tdbgroup.org/wp-content/uploads/2022/07/TDB-Group-Factsheet_June-2022.pdf

the concessional features of the proposed GCF had a meaningful impact on the development outcomes and on the financial sustainability of the Debt, RBF, Equity, RSF, and CRMF facilities. Including the proposed GCF funding, the expected economic rate-of-return (EIRR) for the program is projected to be 17.2%, before accounting for GHG benefits. Excluding the proposed funding from GCF, the EIRR declines to 16.4%, reflecting both the reduction in funding quantum and the loss of benefits from GCF's concessionality. Notably, the difference in economic net present value (NPV) (before climate benefits) between the two scenarios—US$367.3 million—exceeds the amount of the proposed GCF funding, indicating that the concessionality of the proposed funds creates meaningful added value. With respect to financial returns, when including the proposed GCF funding, the expected financial rate-of-return (FIRR) for the program is projected to be 24.8%. Excluding the proposed funding from GCF, this rate of return declines to just 14.6%. Importantly, two of the facilities under the "no GCF" scenario show negative NPVs and IRRs below their respective discount rates (i.e., the cost of capital) for that scenario, which is below the assumed cost of capital for that scenario, indicating that the program requires concessional funding from a partner like GCF to be financially sustainable.

238. **The values for the FIRR compared to the EIRR highlight the particular role of the GCF Funds in ASCENT-GREEN, where an important part of the GCF financing's benefits for the project are derived from its concessionality and the de-risking impact for investors in the DRE sector.** The financial analysis demonstrates that without GCF the Funded Activity (FA) would shrink both in terms of its scope and scale because two facilities (RBF and RSF) would not be financially viable at all, and others would be impacted by the type of investments that can be realized. This impact is underestimated when comparing the EIRRs under the two scenarios of "With GCF" and "Without GCF" for two reasons: First, the economic benefits and costs of the FA are not impacted by the type of financing (i.e., they do not consider the costs of funding), and cannot therefore fully reflect the enabling role of GCF financing as already described. Second, to facilitate comparison, the description of the FA has been kept the same under the two scenarios when making the EIRR comparison. However, the resulting economic benefits under the '"without GCF" scenario in this case are theoretical, because they are unlikely to materialize since they are not financially viable, which means that the two facilities would not exist if GCF funds are not made available.

239. **For the economic analysis, the comparison of the Economic Net Present Value better reflects the true impact and additionality of the GCF funding in ASCENT-GREEN given the nature of its impact on the Funded Activity (FA)**. GCF Funds' additionality is better reflected in the substantial difference of economic NPV (i.e., the economic value being created): $367.3M more economic value-added is created with GCF funding than without it, when the same FA is compared under the two scenarios. Comparing this to the US$250M requested from the GCF indicates a substantial economic yield of 46.9 percent. Further, if the "without GCF" scenario has a smaller FA because of the lack of financial viability of the two facilities as per above, the NPV differential is even starker: $509.9M less economic value-added without GCF funding, indicating that the GCF funding of US$250M could result in an economic yield of 104 percent.

Table 10. Economic and financial analysis results of the ASCENT-GREEN Program with GCF funding

Regional Components with GCF Funding

	Economic NPV (US$ millions)			Economic IRR (%)			GHG	Financial		
Project Component	**Without GHG Benefits**	**With GHG Benefits (low)**	**With GHG Benefits (high)**	**Without GHG Benefits**	**With GHG Benefits (low)**	**With GHG Benefits (high)**	**Avoided Emissions ($mmtCO_2e$)**	**NPV[1] (US$ millions)**	**IRR (%)**	**Discount Rate (%)**
Component 1.1 : Regional Debt Facility for DRE	$595.8	$1,076.4	$1,558.1	15.8%	22.6%	27.4%	10.22	$260.3	16.6%	6.6%
Component 1.2 : Regional RBF Facility for DRE	225.6	418.4	611.5	15.5%	22.7%	27.8%	4.09	113.4	33.6%	13.8%
Component 1.4 : Enabling Capitalization of Zafiri	575.1	830.3	1,086.0	19.0%	24.2%	27.6%	5.65	28.7	6.5%	4.3%
Component 2.1 : Regional Risk-sharing Facility for DRE	315.6	533.4	751.6	17.8%	24.5%	29.4%	4.69	7.3	3.9%	0.3%
Component 2.2 : Regional Carbon Risk Mitigation Facility for DRE	121.9	194.4	267.0	19.7%	26.8%	33.2%	1.54	1.8	11.5%	3.2%
Total for selected components	$1,834.0	$3,052.8	$4,274.2	17.2%	23.7%	28.1%	26.20	$472.7	24.8%	6.1%
Expected overlap	(466.0)	(775.6)	(1,086.0)	--	--	--	(5.86)	(74.9)	--	--
Net result	**$1,368.0**	**$2,277.2**	**$3,188.2**	**17.2%**	**23.7%**	**28.1%**	**20.33**	**$397.8**	**24.8%**	**6.1%**

(1) Financial NPV figures do not sum to total amount due to differing discount rates used for each facility

240. **For the economic analysis, the cost and benefit flows considered focused on those that accrue to the RSF population and the broader economy over the useful life of the program's intervention activities**, including those related to GHG emissions. The primary economic costs associated with the program include capital outlays associated with the procurement of equipment, operations and maintenance, and variable energy-usage costs, if any. Some of the benefits evaluated in the analysis included the avoided fuel costs for cooking, avoided costs of diesel generation and kerosene for power, productive output from the use of mini-grids, health benefits from cleaner-burning cookstoves, willingness to pay for improved educational and health outcomes at public facilities, revenue from PUE appliances, and associated net GHG emission reductions, which were calculated using both a high and low shadow-price of carbon, in conformance with World Bank guidelines (see Annex 3 for the detailed assumptions and data sources). Beyond the scope of the benefits that were evaluated for the analysis herein include other, nonetheless valuable, ones like enhanced nighttime productivity for both work and study, reduced food waste owing to electricity-powered refrigeration, and associated methane emissions avoided, among others.

241. **The end results of the economic analysis also provided the baseline indicators for the overall program in terms of beneficiaries, renewable energy capacity, and GHG emission reductions**, on a discounted basis, which are shown in Table 11. This table shows outputs for each facility in terms of beneficiaries, renewable energy capacity, and GHG emission reductions that will be realized at the facility level. These figures are discounted by a factor, to acknowledge the fact that whereas each facility will be implemented independently of each other, there is an expectation that some beneficiaries will be supported from more than one facility (e.g. a company that have been awarded RBF may also source equity from Zafiri etc.), and for that reason a discount factor has been applied. In this way, the outputs in this table are discounted to avoid possible double counting of DRE activity units whose installation may have been supported by more than one of the facilities. This was achieved through an analysis of the underlying activities and financing sources to determine where expected overlaps might occur and then applying a discount factor. On a weighted-average basis based on funding, this overlap amounts to roughly 25 percent (see also Appendix 1 of Annex 3: ASCENT-GREEN's Approach for Calculating Program Beneficiaries). The discounted number of beneficiaries are made up of 28.8 million people who are direct beneficiaries of DRE systems (mini-grids and solar home systems), clean cooking, and PUE equipment, as well as 13.8 million people who are indirect beneficiaries of electrified public facilities like schools and health facilities.

242. **The financial analysis focused more narrowly on the underlying instrument-level cash flows associated with the costs and benefits of the program's interventions and has been carried out separately for each facility**. Costs, with some exceptions, mirrored those used in the economic analysis: capital expenditure for the procurement of equipment, on-going operation and maintenance costs, and variable energy-usage costs. Financial benefits were primarily in the form of avoided fuel costs for cooking, diesel fuel that would have been needed to power a generator for the power consumed, or kerosene for lighting for residential use—in each case calculated based on available research and literature incorporating household survey data—and expected revenue for productive use appliances (see Annex 3 for the detailed assumptions and data sources).

243. **While it is more typical to analyze cash flows from the perspective of the implementing firm(s) or benefiting households, as done for the Debt and RBF facilities, a higher level of abstraction was required in the three other facilities—namely, the Equity, RSF, and CRMF facilities—given the instrument-based nature of those interventions**. Therefore, for the equity and the two de-risking facilities, the analysis focused on returns expected to accrue at the facility or vehicle level, given that the structure of the associated instrument is a deliberate component of their development impact and the difficulty of analyzing cash flows below the fund or portfolio level at a sufficiently granular level.

244. **A brief sensitivity analysis was performed on selected inputs, showing that certain assumptions are quite material.** Among the most salient of these is the assumed level of income from investments in productive-use equipment, which is expressed in terms of a payback period (i.e., amount of time required to recoup the initial investment). When the assumed payback period increased from 3.5 to 4.5 years, the economic NPV for PUE interventions is reduced from US$240.9 million to US$104.9 million, a reduction of 56%, highlighting the importance of focusing on PUE interventions that have a shorter payback period and the related market facilitation to help end-users to monetize the productivity gains on time. The rate of demand growth for energy consumption from minigrids was also evaluated, and while the analysis shows that there is an impact, slower growth does not present a critical concern. Further, the impact of a range of carbon prices was evaluated with respect to the REAF Debt facility; with the exception of clean cooking, however, the overall effect of lower carbon prices on most sectors was negligible on an aggregate **basis**.

245. **The detailed results, methodologies, and assumptions for both the economic and financial analyses are included in Annex 3**. For the purposes of aggregating and organizing the analysis, each of the models used ultimately flows into a single consolidated model file that is used to derive project-level outputs and metrics.

Table 11. Key outputs by ASCENT-GREEN facility and DRE activity (discounted)

Key Outputs by Project Component & Activity | Discounted Amounts									
Intervention Activity	Discounted Funding Amt.	Discounted Units	Beneficiaries per Unit	Discounted Beneficiaries	Capacity (kW) per Unit	Disc. Capacity (MW) Installed	Annual Avoided tCO_2e per Unit	Unit Lifetime	Disc. Avoided $mmtCO_2e$
REAF Debt	$641,546,363	3,014,920	-	23,746,422	-	441.8	-	-	9.69
o/w Minigrids	114,315,160	95,263	5	476,313	0.625	59.5	0.31	15.0	0.44
o/w MG Residential Only	91,452,128	76,210	5	381,051	0.625	47.6	0.31	15.0	0.35
o/w MG PUE	22,863,032	19,053	5	95,263	0.625	11.9	0.31	15.0	0.09
o/w Solar Home Systems	228,630,320	1,381,115	5	6,905,576	0.150	207.2	0.15	5.0	1.03
o/w SHS Residential Only	194,335,772	1,173,948	5	5,869,739	0.150	176.1	0.15	5.0	0.88
o/w SHS PUE	34,294,548	207,167	5	1,035,836	0.150	31.1	0.15	5.0	0.15
o/w Clean Cooking	57,157,580	1,194,947	5	5,974,733	-	-	0.98	5.0	5.84
o/w PUE	190,443,302	342,776	5	1,713,878	0.500	171.4	0.99	7.0	2.36
o/w C&I / IPPs / BESS	-	-	1	-	500.000	-	985.50	15.0	-
o/w Public facilities	51,000,000	820	10,580	8,675,922	4.500	3.7	0.97	15.0	0.01
REAF RBF	$189,016,580	874,745	-	9,474,795	-	111.6	-	-	3.23
o/w Minigrids	37,932,303	31,610	5	158,051	0.625	19.8	0.31	15.0	0.14
o/w MG Residential Only	30,345,842	25,288	5	126,441	0.625	15.8	0.31	15.0	0.12
o/w MG PUE	7,586,461	6,322	5	31,610	0.625	4.0	0.31	15.0	0.03
o/w Solar Home Systems	49,057,247	296,346	5	1,481,731	0.150	44.5	0.15	5.0	0.22
o/w SHS Residential Only	41,698,660	251,894	5	1,259,471	0.150	37.8	0.15	5.0	0.19
o/w SHS PUE	7,358,587	44,452	5	222,260	0.150	6.7	0.15	5.0	0.03
o/w Clean Cooking	21,807,769	455,917	5	2,279,586	-	-	0.98	5.0	2.23
o/w PUE	50,219,261	90,389	5	451,944	0.500	45.2	0.99	7.0	0.62
o/w C&I / IPPs / BESS	-	-	1	-	500.000	-	985.50	15.0	-
o/w Public facilities	30,000,000	482	10,580	5,103,484	4.500	2.2	0.97	15.0	0.01
REAF Equity	$229,423,959	737,399	-	3,686,706	-	169.2	-	-	3.42
o/w Minigrids	57,355,990	47,797	5	238,983	0.625	29.9	0.31	15.0	0.22
o/w MG Residential Only	45,884,792	38,237	5	191,187	0.625	23.9	0.31	15.0	0.18
o/w MG PUE	11,471,198	9,559	5	47,797	0.625	6.0	0.31	15.0	0.04
o/w Solar Home Systems	57,355,990	346,477	5	1,732,387	0.150	52.0	0.15	5.0	0.26
o/w SHS Residential Only	48,752,591	294,506	5	1,472,529	0.150	44.2	0.15	5.0	0.22
o/w SHS PUE	8,603,398	51,972	5	259,858	0.150	7.8	0.15	5.0	0.04
o/w Clean Cooking	11,471,198	239,819	5	1,199,095	-	-	0.98	5.0	1.17
o/w PUE	57,355,990	103,234	5	516,170	0.500	51.6	0.99	7.0	0.71
o/w C&I / IPPs / BESS	45,884,792	72	1	72	500.000	35.8	985.50	15.0	1.06
REAF RSF	$188,626,260	949,497	-	4,747,366	-	136.7	-	-	3.32
o/w Minigrids	37,725,252	31,438	5	157,189	0.625	19.6	0.31	15.0	0.14
o/w MG Residential Only	30,180,202	25,150	5	125,751	0.625	15.7	0.31	15.0	0.12
o/w MG PUE	7,545,050	6,288	5	31,438	0.625	3.9	0.31	15.0	0.03
o/w Solar Home Systems	75,450,504	455,783	5	2,278,915	0.150	68.4	0.15	5.0	0.34
o/w SHS Residential Only	64,132,928	387,416	5	1,937,078	0.150	58.1	0.15	5.0	0.29
o/w SHS PUE	11,317,576	68,367	5	341,837	0.150	10.3	0.15	5.0	0.05
o/w Clean Cooking	18,862,626	394,345	5	1,971,727	-	-	0.98	5.0	1.93
o/w PUE	37,725,252	67,901	5	339,505	0.500	34.0	0.99	7.0	0.47
o/w C&I / IPPs / BESS	18,862,626	29	1	29	500.000	14.7	985.50	15.0	0.43
REAF CRMF	$35,586,322	186,766	-	933,829	-	22.1	-	-	0.68
o/w Minigrids	14,553,182	12,128	5	60,638	0.625	7.6	0.31	15.0	0.06
o/w MG Residential Only	11,642,545	9,702	5	48,511	0.625	6.1	0.31	15.0	0.04
o/w MG PUE	2,910,636	2,426	5	12,128	0.625	1.5	0.31	15.0	0.01
o/w Solar Home Systems	10,038,080	60,638	5	303,191	0.150	9.1	0.15	5.0	0.05
o/w SHS Residential Only	8,532,368	51,543	5	257,713	0.150	7.7	0.15	5.0	0.04
o/w SHS PUE	1,505,712	9,096	5	45,479	0.150	1.4	0.15	5.0	0.01
o/w Clean Cooking	4,930,841	103,085	5	515,425	-	-	0.98	5.0	0.50
o/w PUE	6,064,220	10,915	5	54,574	0.500	5.5	0.99	7.0	0.08
o/w C&I / IPPs / BESS	-	-	1	-	500.000	-	985.50	15.0	-
Discounted Total	**$1,284,199,484**	**5,763,326**		**42,589,119**		**881.4**			**20.33**
o/w Minigrids	$261,881,887	218,235	5	1,091,175	0.625	136.4	0.31	15.0	1.00
o/w Solar Home Systems	420,532,141	2,540,360	5	12,701,800	0.150	381.1	0.15	5.0	1.90
o/w Clean Cooking	114,230,014	2,388,113	5	11,940,565	-	-	0.98	5.0	11.68
o/w PUE	341,808,024	615,214	5	3,076,072	0.500	307.6	0.99	7.0	4.24
o/w C&I / IPPs / BESS	64,747,418	101	1	101	500.000	50.5	985.50	15.0	1.49
o/w Public facilities	81,000,000	1,302	10,580	13,779,406	4.500	5.9	0.97	15.0	0.02

Total direct and indirect beneficaries	42,589,119
Total direct (without public facilities)	28,809,713
Electricity access only (MG & SHS)	11,669,469
PUE only	5,199,577
Clean cooking only	11,940,565

Notes (i)Beneficiaries of PUE include both people that benefit from the use of DRE systems for productive uses and those that have acquired productive equipment powered by DRE systems through the program. (ii) Discounted emission reductions for the Program are estimated at 20.33 $mmtCO_2e$. GCF reportable emission reductions are 12.2 $mmtCO_2e$. The difference is 8.13 mmtCO2e that are expected to be traded in carbon markets to strengthen the long-term commercial sustainability of the DRE companies serving the target populations. See Annex 22 for more information.

LOGICAL FRAMEWORK

E.1. Project/Programme Focus

Please indicate whether this proposal is for a mitigation or adaptation project/programme. For cross-cutting proposals, select both.

☒ Reduced emissions (mitigation)

☒ Increased resilience (adaptation)

E.2. GCF Impact level: Paradigm shift potential (max 600 words, approximately 1-2 pages)

Assessment dimension	Current state (baseline)		Potential target scenario (description)	How the project/programme will contribute (description)
	Description	Rating		
Scale	The AFE region accounts for 364 million people without electricity access while 580 million lack clean cooking. The vast majority (82%) of all people lacking access to electricity live in remote or conflict-affected settings, while at the same time DRE solutions are insufficiently available in low income, sparsely populated, and FCV-affected countries.[90] Off-grid solar (OGS) companies estimate that the cost of providing service in such areas is 57% higher (due to higher operating costs, more bad debt and higher financing costs due to risk).[91] The affordability gap and risk of non-payment are higher due to lower incomes. These factors make it unattractive to expand service to such areas. Only small, last-mile companies are present in some places. Access to financing is a problem for all but the largest DRE companies. Financing to expand services to low income, dispersed	Low	In the target scenario, DRE systems, clean cooking solutions, and productive-use equipment based on DRE are widely available across AFE on affordable terms from a number of DRE companies from last mile to integrated companies, especially in areas with low income, remote and FCV-affected populations. Companies have established successful business models for the sale of productive uses equipment to households, MSMEs, farmers and other customers in unserved areas. Users of DRE systems and productive equipment have also adopted adaptation equipment like fans and digital devices to be informed about markets, weather, and natural disasters. DRE companies have also developed effective business models for service to public facilities like schools and health clinics, even in remote and FCV-affected areas. DRE companies have expanded their operations outside mature market areas and are fully present in smaller countries and remote and FCV-affected areas, using consumer-centric models such as	**Summary**: The outputs of REAF and REAF 2, together with the work of COMESA to improve the enabling environment for DRE, will all lead to the outcome of inclusive and sustainable scaling-up of DRE solution markets in AFE, especially in remote and FCV-affected areas, with an increase in usage of PUE. This is measured by 28.8 million people in AFE benefiting directly from DRE solutions and 13.8 million people benefiting indirectly from the electrification of public facilities, with 30% in FCV-affected countries. With US$695 million of WB and GCF resources, A-G aims to mobilize an additional US$677 million, mainly from the private sector. By its close, it will have laid solid foundations for this market scale-up to continue, so that the number of people without modern energy continues to be significantly reduced over time, rather than remaining static, as in the baseline forecast. A-G will provide **regional RBF** for DRE solutions under the REAF project to DRE companies, which will help reduce the costs and close the

[90] ESMAP, GOGLA, and Dalberg. 2024. *Off-Grid Solar Market Trend Report 2024*. Washington, D.C.: World Bank, p. 2.

[91] Ibid., p. 50.

populations and FCV countries is particularly difficult. DRE company financing needs include: (i) patient equity to finance growth; (ii) debt financing (in local currencies to mitigate risks of equipment purchases in foreign exchange and revenue in local currencies); (iii) results-based financing for first time buyers of OGS; and (iv) business models and RBF for productive users and social infrastructure.[92]

Access to productive uses of electricity based on OGS systems serves only 2% of the potential market worldwide because of a lack of familiarity by both suppliers and users, high capital costs and a lack of affordability. [93] The situation in AFE is similar, with even less availability in sparsely populated and FCV-affected areas.

At the current slow pace and scale of DRE market expansion, the number of people without electricity will remain about 300 million by 2030, while the number of people without clean cooking may increase from 570 million today. People will lack access to productive equipment using DRE that could have contributed to improving people's livelihoods. Schools and clinics will continue to lack access to DRE-based electricity.

PAYG. Well performing companies are able to finance continued expansion and transformation to reach more of the unserved population.

Users use energy for productive uses, which has increased their incomes and improved the affordability of energy services. DRE companies have access to higher revenue from productive uses and are also able to access more affordable commercial capital and carbon credits.

After DRE companies have benefited temporarily from regional RBF targeted mainly to remote and FCV-affected areas, to cover the affordability gap and help expand markets, economies of scale, PUE, lower transaction and financing costs and access to carbon revenue have reduced the affordability gap, allowing for the phasing out of the regional RBF. Government social programs have integrated support in their social safety program to address the remaining gap.

Debt financing including in local currencies and patient equity financing is available on suitable terms to well-functioning small, medium and large DRE and clean cooking companies from local commercial sources and from the Equity Facility for DRE and local equity investors who have been crowded in by the Facility.

Many DRE companies have improved capacity to develop business plans, operate their businesses, obtain equity and debt financing to grow their companies, and provide O&M services under warranties required by ASCENT-GREEN (A-G). Local commercial financial institutions are familiar with the DRE sector and its operations in all market segments; lending to companies in the sector will be part of their normal business.

De-risking instruments has made local commercial financing institutions more familiar with the risks in affordability gap for buyers, while encouraging DRE companies to expand their regular operations beyond mature markets, as the RBF will be targeted mainly to smaller countries, countries with FCV situations, and last mile areas of other countries. RBF will target both international and local, larger and smaller companies and will actively promote PUE.

A-G's **lending** sub-component will provide loans to DRE companies through TDB and TDF, which will lend directly to companies and indirectly through local participating financial intermediaries (PFIs). This will enable DRE companies to grow their operations. GCF financing will extend debt financing for impact-oriented sectors and beneficiaries, including SMEs, PUE, and social facilities such as schools and healthcare facilities in sparsely populated and vulnerable areas, which will help develop sustainable long-term business models for this difficult segment.

Patient equity will be provided to DRE companies by enabling capitalization of Zafiri under REAF. GCF concessional financing will play a catalytic role in enabling TDB to participate in Zafiri as a major shareholder, providing senior and junior equity to seed the facility and attract other patient equity investors. The equity facility will operate commercially after the project closes.

De-risking instruments will be provided. The risk-sharing facility will provide partial credit guarantees to support commercial lending to DRE companies, in local currencies on viable terms, where possible. The carbon risk mitigation facility will provide de-risking instruments to stabilize carbon markets so that they can provide an additional stable source of financing.

[92] Ibid., p. 57.
[93] Ibid. p. 54.

	Almost all AFE countries have had projects, often financed by DFIs or NGOs, aiming to expand DRE systems and clean cooking solutions. However, experience was not built from one stop-and-go project to another. A conducive environment was created for DRE systems and clean cooking in some medium and large AFE countries[94] resulting in active DRE sectors with an average of >100 companies each. However, these companies are mainly active in mature DRE markets near cities, towns, and villages. In most AFE countries, including small and FCV countries, these projects have resulted in a small number of DRE companies operating mainly in accessible areas near main cities, towns, and villages, with inadequate availability, especially in remote and FCV-affected areas. PUE has been mostly included as small pilots and not integrated on an equal footing in these programs. Almost all DRE companies, and PUE companies, in particular, have difficulty obtaining financing to grow their operations, especially to unserved populations in remote and FCV-affected areas where costs and risks are higher and people have lower incomes.		the sector, increasing the availability of debt financing in local currency for DRE companies, while carbon financing has also become a stable source of financing. **TA and capacity building activities** under REAF and REAF 2 will strengthen the technical, financial, and commercial capacities of the EEs, DRE companies, PFIs, and other key stakeholders, combined with activities by COMESA's TA facilities to build the capacity of governments and companies.
Replicability	Low	In the target scenario, A-G's innovative regional, market-based, and private-sector driven approach to increasing clean and resilient energy access and access to productive uses equipment has succeeded in scaling-up energy access to support sustainable development and climate resilience through DRE solutions in AFE countries, especially for low income, dispersed populations, and in FCV-affected areas. These results are demonstrated as follows. A-G has succeeded in its objective of providing 42.6 million direct and indirect beneficiaries in AFE countries with DRE systems, clean cooking, and productive uses equipment, while strengthening the economic and climate resilience of the population by enabling DRE-powered adaptation equipment, including for PUE, and reducing GHG emissions. Markets for these DRE solutions have been sustainably and inclusively expanded, especially to dispersed populations and FCV-affected areas, where DRE solutions are readily available from DRE companies on commercial terms that are affordable to many people using methods such as convenient PAYG, and with increased use for productive/ income-generating purpose. These results show that ASCENT/ASCENT-GREEN's innovations—including ambitious large-scale targets, regional implementation adjusted to country priorities and contexts to achieve economies of scale, the promotion of a combination of clean energy technologies including PUE for a	The other main region where the energy access problem is on a similar scale to AFE, i.e., West Africa. ASCENT/ASCENT-GREEN is being watched for potential replication in West Africa by the World Bank and Mission 300, including governments and DFIs. Many of ASCENT-GREEN's features could be replicated in different types of energy access programs or projects. First, seeking large-scale long-term outcomes, rather than piecemeal short-term outcomes, could be replicated in any project or program. A scaled down version of this approach could be applied at a national level in a small or medium sized country or even at a sub-national scale in a large country like DRC or Ethiopia, based on an ambitious outcome. Second, offering a combination of technologies such as DRE systems (OGS and renewable mini-grids) + clean cooking + PUE could be applied in any scale project/program. By supporting combined technologies, A-G aims for synergies that multiply development impacts, as well as strengthen opportunities for sustainable socio-economic development and climate resilience. Third, the use of the latest technological advances and business models could be replicated in energy access projects of any scale. A-G uses new DRE technologies and business models based on falling solar energy and battery storage costs and smart digital applications that

[94] Countries with conducive environments for DRE and active DRE sectors include Angola, Kenya, Madagascar, Malawi, Rwanda, South Africa, Tanzania, Uganda and Zambia**.**

	For these reasons, the number of people without electricity has been around 300 million in AFE for the last decade and, at the current pace, is expected to remain at that level until 2030. This is the base case. For clean cooking, the SDG-7 2024 Tracking Report says that the deficit has been rising in Sub-Saharan Africa (SSA), as access to clean cooking has failed to keep pace with growing populations.[95] There have been fewer projects targeting increasing PUE. Activity has focused on large countries with active DRE sectors where DRE companies carry some productive equipment like solar water pumps and refrigerators. The share of the potential market served worldwide is less than 2% and even less in AFE. As PUE can increase the affordability of DRE systems and contribute to increased household incomes and the climate resilience of its users, this is a powerful lost opportunity.		synergetic impact, use of the latest technological advances and business practice, and a full package of financing instruments offered to DRE companies under ASCENT-GREEN—have been effective in achieving the objective of the ASCENT-GREEN Program of "access to DRE solutions for sustainable development and climate resilience will increase while GHG emissions will be reduced, because the DRE market will grow inclusively and sustainably, serving a larger number of customers among the low income, dispersed and more vulnerable populations across AFE." In the target scenario, a large number of DRE solutions companies of all sizes, from small national operators to large regional companies, are operating successfully in AFE, supplying an expanded market for DRE solutions that includes not only easily accessible areas near towns and villages, but also rural areas with dispersed populations and FCV-affected areas. Customers of these companies are satisfied, as shown by the low number of complaints to the widely publicized complaints lines operated by the A-G program and regular surveys conducted by the program until its close. An increasing number of users are using energy for productive use, increasing their incomes.	allow remote monitoring and control, which have made modular DRE systems attractive in off-grid locations; consumer friendly business models like PAYG; geo-spatial modeling to determine where DRE systems are most appropriate; and digital platforms to facilitate the deployment of financing as well as MRV. The provision of a full set of financing instruments to support market-driven, private sector DRE company expansion is a highly innovative aspect of A-G. This offers DRE companies access to: (i) predictable regional RBF grants; (ii) commercial lending on affordable terms, including in local currencies, assisted by partial guarantees under (iv); (iii) patient equity assisted by a permanent regional Equity Facility; and (iv) de-risking for local debt financing, especially in local currencies, and for creating stable carbon financing. This aspect of A-G is suitable mainly at a regional scale, like in West Africa, or in large countries. *Outcomes are: 1 Increased access to DRE solutions for sustainable development and climate resilience; 2. Improved resilience of vulnerable populations.* *3. Reduced GHG emissions.* These outcomes will be the result of the outputs of 28.8 million people, mainly in AFE areas with low incomes, dispersed populations, and FCV-affected situations, having direct access to clean and modern energy services and with increased climate resilience through the ability to power adaptation equipment like fans, phones, and digital devices, while productive users will have increased incomes as a result of DRE-powered productive uses equipment and 13.8 million
Sustainability	The sustainability of DRE companies and markets in AFE today is not promising. Companies, particularly SMEs, are reaching the limits of markets in easy to reach areas near cities and towns where people are more prosperous. Equity investors and commercial lenders are not providing financing to enable DRE or clean cooking companies to grow their markets by expanding into the sparsely populated and FCV areas where most of the remaining unserved population lives. As already noted, it is estimated that 82% of people lacking access to electricity live in remote or conflict-affected settings. The	Low		

[95] IEA, IRENA, UNSD, World Bank, and WHO. 2024. *Tracking SDG 7: The Energy Progress Report*. Washington, D.C.: World Bank, https://www.iea.org/reports/tracking-sdg7-the-energy-progress-report-2024

costs of extending service in these areas are estimated at 57% higher than in mature markets. [96] These areas typically have populations with lower incomes, which increases risk of low sales and non-payment by people who have purchased DRE solutions. Hence, obtaining financing to serve such areas is difficult.

A substantially increased number of households in areas in low income, sparsely populated, and FCV-affected areas have access to clean and modern energy services, while households, MSMEs, and other productive users have increased incomes resulting from DRE-powered productive uses equipment. Populations benefiting from expanded access to DRE are more resilient to climate change, not only due to the availability of energy, but also because they are able to use equipment like fans and digital devices that help them to adapt to climate change, and because PUE is helping them to increase and diversify their incomes. An increasing number of public facilities like schools and healthcare facilities are sustainably supplied with clean, modern energy using business models developed under A-G.

So that equipment sold under the program is sustainable and complies with expected product lifetimes, ASCENT-GREEN has financed only proven technologies and adhered to adequate technical standards. OGS and clean cooking solutions meet mandatory internationally defined standards and have a supplier-backed warranty under the A-G's quality assurance program.

indirect beneficiaries will use 1,302 public facilities like schools and healthcare facilities with access to modern energy through new business models. In addition, 30% of the direct and indirect beneficiaries will be in FCV countries, thereby achieving outcome 2. These beneficiaries will keep their systems operating for their lifetimes, supported by O&M support from DRE companies. All of these outputs will reduce GHG emissions.

To reach these outcomes, DRE companies will have expanded their markets and operations, especially into remote and FCV-affected areas. Under A-G, DRE companies will benefit from TA to help strengthen their capabilities, including help in preparing business plans to present to A-G financial facilities and local PFIs. DRE companies will continue to increase access to financing on a commercial basis after A-G closes.

One sub-component contributing to increased access to DRE is *regional RBF for DRE*, which will be provided by TDF to DRE companies to temporarily bridge the affordability gap, targeted mainly at remote, FCV-affected, and last-mile areas. By the close of A-G, economies of scale will have reduced costs, transaction and financing costs will also decline, while PUE will improve affordability for users and DRE company revenue, further enhanced by carbon credits. The companies' operational bases will have expanded to new areas. RBF will no longer be essential for continued market expansion. Regional RBF will be phased out and national RBF may transition to national social programs to support the poorest of the remaining unserved population.

Another sub-component contributing to scaled-up access to DRE solutions is *lending for DRE*, including in local currencies, from TDB and local PFIs. These FIs will become familiar with DRE companies and their risks. After A-G's closing, this

[96] ESMAP et al., 2024, op. cit., p.14.

lending will become part of their normal operations.

The Regional Equity Facility for DRE catalyzed by A-G is permanent; after supplying *patient equity* to support the expansion of DRE markets it will keep operating to support the sector on a commercial basis after A-G's close. By the end of A-G, the *de-risking facilities* will no longer be needed, as FIs will be familiar with the risks of the sector.

Co-benefit 1. Improved health of households due to lower household air pollution – 11.9 million people will have benefited from access to clean cooking equipment, which will significantly lower indoor air pollution and the risk of serious illness and even death. The market expansion will continue as households become familiar with the benefits of clean cooking.

Co-benefit 2. Improved health & educational services – 1,302 public facilities like schools and healthcare facilities will benefit from modern energy access, which will improve the quality of their services through modern lighting, charging of digital devices, and power for other equipment., benefiting 13.8 million people. Sustainable business models for this difficult segment will help it to expand beyond the program close.

Co-benefit 3. Women's empowerment from having access to energy will improve their living standards and to clean cooking will expand their free time and improve their health; all this together with specific targeted programs such as internship for women in the energy sector and technical assistance to prepare better proposals for women-owned DRE businesses to access financing instruments will empower women and allow them to engage into a broader range of economic, income generating activities, benefitting from access to energy, clean cooking and financial resources through the program.

E.3. GCF Outcome level: Reduced emissions and increased resilience (IRMF core indicators 1-4, quantitative indicators)

GCF result area	IRMF indicator	Means of verification (MoV)	Baseline	Target		Assumptions/note
				Mid-term	Final[97]	
MRA1 Energy generation and access	Core 1: GHG emissions reduced, avoided or removed/sequestered	Project Progress Report	0	3 mmtCO_{2eq} (yr 4)	9.44 mmtCO2eq by end implementation (yr 7) (excluding 6.29 mmtCO2eq expected to be traded) 12.20 mmtCO2eq by end lifespan investment (yr 20) (excluding 8.1 mmtCO2eq expected to be traded)	Economic model calculates final target based on DRE, clean cooking and productive uses units financed by each instrument and annual emissions reductions per unit (see Output 8 in TOC, Table 11 and Annex 22 GHG Emissions)
MRA1 Energy generation and access	Supplementary 1.3: Installed renewable energy capacity	Project Progress Report based on monitoring	0	291MW	881 MW	Economic model calculates final target based on numbers of DRE, clean cooking and productive uses units financed by each instrument and kW capacity per unit (see Output 7 in TOC, Table 9 and Annex 3)
ARA2 Health, well-being, food and water security	Core 2: Direct and indirect beneficiaries reached	Project progress report for direct beneficiaries of DRE systems and clean cooking (CC) and surveys of electrified public facilities for indirect beneficiaries	0	Direct and indirect: 14.0 million Direct: 9.5 million (of which 3.8 million DRE systems, 3.9 million clean cooking and 1.7 million PUE) Indirect: 4.5 million people	Direct and indirect: 42.6 million Direct: 28.8 million (of which 11.7 million DRE systems, 11.9 million clean cooking and 5.2 million PUE) Indirect: 13.8 million people	Direct: Economic model calculates final target based on DRE systems, clean cooking units and PUE units financed and number of beneficiaries per unit Indirect: Economic model calculates based on number of public facilities electrified and beneficiaries per facility (see Output1 in TOC, as well as Table 11 and Appendix 1 of Annex 3 for explanation of beneficiary estimates)

[97] The final target means the target at the end of the program implementation period. However, for core indicator 1 (GHG emission reduction), please also provide the target value at the end of the total lifespan period, which is defined as the maximum number of years over which the impacts of the investment are expected to be effective.

ARA1 Most vulnerable people and communities	Core 2: Direct and indirect beneficiaries reached	Project progress report for direct beneficiaries and surveys of electrified public facilities for indirect beneficiaries	0	Direct: 3.7 million people Indirect: 1.6 million people	Direct: 9.6 million people Indirect: 4.6 million people	30% of the total direct beneficiaries (electricity access +clean cooking + productive uses) and 30% of the indirect beneficiaries (electrification of public facilities) from FCV countries (See Output 5 indicator in TOC)

E.4. GCF Outcome level: Enabling environment (IRMF core indicators 5-8 as applicable)

Core indicator	Baseline context (description)	Rating for current state (baseline)	Target scenario (description)	How the project will contribute	Coverage
Core Indicator 5 : Degree to which GCF investments contribute to strengthening institutional and regulatory frameworks for low-emission climate-resilient development pathways in a country-driven manner	Despite the potential of DRE systems and clean cooking solutions, particularly their cost-effectiveness for remote populations, progress has been slow, resulting in electrification efforts barely keeping pace with population growth and clean cooking efforts losing the race. Efforts are failing because of persistent affordability, financing, policy/regulatory, and capacity barriers. The policy and enabling environment are challenging with costly bureaucratic processes; unfriendly and unpredictable policies and regulations in some countries (suboptimal planning regulatory bottlenecks, inadequate	low	ASCENT-GREEN will leverage COMESA's convening power and TA resources under ASCENT COMESA to: (i) harmonize DRE policy and regulatory frameworks around best practices; and (ii) provide TA to governments to implement policies and regulations, especially for small and FCV countries. This includes especially: ✓ Development of national electrification, clean cooking and PUE strategies and plans ✓ Adoption of end-to-end digital platforms, including digital MRV ✓ Enabling policy, regulatory, and quality assurance frameworks ✓ Streamlining and reduction of customs duties/taxation on DRE	Building a consistent and harmonized policy and regulatory environment across AFE countries will be addressed by providing technical assistance, capacity building, and convening for planning, policies, and regulations, including their regional harmonization around best practices and data, as well as the digitization of energy access processes to drive the efficiency and transparency of implementation under the COMESA Platform, as well as coordination and knowledge exchange. This will be further aided by high-level policy dialogue and support under Mission 300, especially under the National Energy Compacts, in which governments	Multi-countries

	quality assurance, high customs duties etc.); lack of alignment of frameworks around best practices, inconsistent application, shifting priorities.		Filling data gaps, e.g., through GIS, market assessments and household surveys. As indicated in Output 11 of Section E5, the final target Policy and regulatory actions implemented under Energy Compacts to strengthen enabling DRE environment would be 30 with mid-term target of 12.	(heads-of-state) commit to implementing policy and reform measures to scale up DRE and clean cooking access. Mission 300 and the Compacts will also help mobilize additional public and private financing, beyond that identified in ASCENT-GREEN	
Core Indicator 6: Degree to which GCF investments contribute to technology deployment, dissemination, development or transfer and innovation	While DRE systems (e.g., SHS and renewable energy mini-grids) and clean cooking solutions are widely available in easily accessible areas of some larger AFE countries with active DRE sectors, they are insufficiently available in small countries and remote and FCV-affected areas of AFE, where the unelectrified population is concentrated, making it difficult for supply to keep pace with population growth, leading to a forecast that 300 million people will still lack electricity access by 2030 and the number of people without clean cooking may increase by then. PUE equipment based on DRE is scarcely available in less accessible areas throughout the region.	low	Companies providing DRE systems, clean cooking solutions and productive uses equipment have expanded their markets to actively serve small countries, remote, and FCV-affected areas. 28.8 million people in AFE have benefited directly from scaled-up access to clean and modern energy under A-G, assisted by GCF financing, especially in remote and FCV-affected areas. Total direct beneficiaries include 11.7 million people with access to clean electricity, 11.9 million people with access to clean cooking, and 5.2 million people with access to DRE systems for productive uses and productive equipment based on DRE, and 1302 public facilities have access to clean and resilient electricity, indirectly	A-G will provide financing at a regional level from regional and local financing institutions to eligible DRE/clean cooking/other companies from participating AFE countries to support market growth of DRE systems, clean cooking, and productive uses of energy in unserved areas. Financing provided to DRE companies will include regional RBF, debt-financing on suitable terms, equity financing, and de-risking instruments. TA will be provided from regional facilities to strengthen the capacities of EEs, DRE and clean cooking companies, and PFIs. The COMESA Platform will build regional and national enabling policy and regulatory environments for DRE together with actions under Mission 300 national energy compacts.	Multi-countries

Core indicator 7: Degree to which GCF Investments contribute to market development/transformation at the sectoral, local, or national level	DRE solutions technologies as described under Core Indicator 6 are insufficiently available to meet the needs of unserved populations living mainly in small countries and remote and FCV-affected areas. Unless they have access to diesel or gasoline generators, these people lack access to modern energy and all the quality of life and livelihood benefits that it brings including modern light to extend working and studying hours indoors, power to charge phones and digital devices that bring information on markets, weather, and natural disasters, productive equipment to increase incomes, and equipment to adapt to climate change including fans, water pumps, refrigerators, etc.	low	benefiting 13.8 million people. Effective business models for providing long-term service to public facilities exist. A-G has transformed the markets of DRE companies operating in the AFE region in two structural ways: (i) by expanding their operations to unserved areas, especially remote and FCV-affected areas, which would not have happened without A-G; and (ii) by expanding the range of technologies offered including not only DRE systems (OGS and renewable mini-grids), but also clean cooking solutions and PUE based on DRE. Of the people directly benefiting from DRE solutions in Core Indicator 6 above, 30% are in FCV-affected countries. Offering consumers a wider range of technologies has broadened the revenue base of companies and will bring potential synergies and greater development impact to consumers.	RBF targeting mainly small countries, FCV-affected countries, and last mile areas of other countries, combined with debt-financing, patient equity financing, and de-risking instruments will be offered to DRE companies to scale-up their markets for all types of DRE solutions (DRE systems, clean cooking solutions and PUE). This financing will help the companies build their operations in target areas. TA will be available to EEs of the two finance facilities, DRE/clean cooking companies, and PFIs to strengthen their capacities. At the highest level, COMESA's TA facilities and enabling environmental activities will support the market transformation and Mission 300's country energy compacts will also support the market transformation.	Multi-countries

Core indicator 8: Degree to which GCF investments contribute to effective knowledge generation and learning processes, and use of good practices, methodologies and standards	While many off-grid energy access and clean cooking projects and programs have been implemented and are underway, lessons learned from these experiences are inadequately documented and shared. While anecdotal evidence of the positive impacts of energy access abound, there are few studies that provide solid evidence over time of the socio-economic impacts of increased energy access on development and climate resilience.	low	The ASCENT MPA, which includes ASCENT-GREEN, has established a regional knowledge-exchange platform which facilitates the rapid exchange of experiences and lessons across participating countries and with other programs in other geographic areas. Particular attention is paid to documenting learning from the FCV context, with a view to developing replicable and scalable approaches.[98]	ASCENT/A-G's regional knowledge-exchange platform will focus on three areas. 1. Evaluating the effectiveness of the A-G approach in: (i) achieving scale while promoting inclusion, (ii) mobilizing private sector finance, and (iii) building effective partnerships. 2. Assessing the impacts of energy access on households (e.g., health, income generation, climate resilience and gender) and at the community level (e.g., job creation, human capital creation, climate resilience and economic growth). 3. Understanding pathways through which outcomes and impacts are achieved.	Multi-countries

E.5. Project/programme specific indicators (project outcomes and outputs)*

*Indicator numbering is the same as in theory of change (TOC), indicators missing in this table are included in section E3

Project/programme results (outcomes/ outputs)	Project/programme specific indicator in TOC	Means of Verification (MoV)	Baseline	Target		Assumptions/note
				Mid-term	Final	
Output 2	Schools, healthcare and other public facilities with access to clean and resilient electricity	Project progress report based on monitoring	0	430	1,302	Economic model calculates the target based on numbers of public facilities electrified (see the Table 11 in section D6 and Annex 3)
Output 3 a.	People with access to clean resilient electricity for productive uses and/or to productive uses equipment	Project progress report based on monitoring	0	1.7 million	5.2 million	Economic model calculates the target based on numbers of units of productive uses equipment financed and beneficiaries per unit (see Table 11 in section D6 and Annex 3)

[98] See World Bank. 2023. *Accelerating Sustainable & Clean Energy,* op. cit., pp. 18–19, Annex 9.

Output 3 b.	Number of units of productive uses equipment	Project progress report based on monitoring	0	203,020	615,214	Economic model calculates the target based on numbers of units of productive uses equipment financed (see Table 11 in section D6 and Annex 3)
Output 3 c.	Share of mini grid users that are using electricity for productive purposes	Project progress report based on monitoring	10	11	20	Economic model calculates the target based on numbers of units of productive uses equipment financed (see Table 11 in section D6 and Annex 3)
Output 3 d.	Share of off-grid solar users that are using electricity for productive purposes	Project progress report based on monitoring	7	10	15	Economic model calculates the target based on numbers of units of productive uses equipment financed (see Table 11 in section D6 and Annex 3)
Output 4	People with access to clean cooking solutions	Project progress report based on monitoring	0	3.9 million	11.9 million	Economic model calculates the final target based on numbers of clean cooking solutions financed (see Table 11 in section D6 and Annex 3)
Output 6	People with DRE-charged radios or phones to increase information on weather and markets	Independent surveys	0	2.6 million	8.1 million	Estimated by project team to be 70% of people with DRE systems.
Output 9	Companies receive financing	Project progress report	0	35	60	Estimated by project team
Output 10	Total amount of local currency lending enabled by RSF	Project progress report	0	US$100 million	US$266.7 million	Estimated by project team
Output 11	Policy and regulatory actions implemented under Energy Compacts to strengthen enabling DRE environment	Project progress report	0	12	30	Estimated by project team, based on the Energy National compacts
Output 12	Companies, governments and financial institutions receive capacity building	Project progress report	0	21	65	Estimated by project team.
Output 13	Finance mobilized – Total	Project progress report	0	US$452 million	US$1.372 billion	Estimated by project team.
Output 14	Finance mobilized – Private	Project progress report	0	US172 million	US$521 million	Estimated by project team.
Output 15	Women provided with access to energy (electricity & clean cooking)	Independent survey	0	3.9 million	11.8 million	Estimated as half of the people with access to clean and resilient electricity and clean cooking
Output 16	Increase in women's employment in supported DRE and clean cooking companies	Independent survey	30%	33%	40%	Estimated by project team.

Output 17	Female owned SMEs with access to clean energy and/or productive uses equipment through the program	Project progress report	0	10,000	30,000	Estimated by project team
Output 18	Internships provided to female graduates of universities and technical institutes with DRE and clean cooking companies	Project progress report	0	30	100	Estimated by project team
Project/programme co-benefit indicators						
Co-benefit 1	Improved health of households due to lower in-door air pollution, as measured by people with access to clean cooking sections (see indicator for Output 4)	Project progress report	0	3.9 million	11.9 million	Same as number of people with access to clean cooking solutions
Co-benefit 2	Improved health and educational services, as measured by number of public facilities like school and healthcare centers with access to clean and resilient electricity ((see indicator for Output 2)	Project progress report	0	4.5 million	13.8 million	Same as number of people benefiting indirectly from public facilities like schools and health facilities with access to clean and resilient electricity
Co-benefit 3	Improved Gender empowerment as measured by indices in output #14,15,16,17.	Project Progress Report/ Independent survey	0	3.9 million	11.8 million	Same as women provided with access to energy (electricity & clean cooking).

E.6. Project/programme activities and deliverables

Activities	Description	Sub-activities	Deliverables
Sub-component 1.1: Debt financing for DRE and clean cooking companies	- Provide debt financing to DRE companies - Develop sustainable energy long term	N/A	Loans made to companies to enable their growth and expansion to new markets
Sub-component 1.2: Results-based RBF financing companies	- Set up regional RBF facility, including digital verification platform - Provide results-based finance per verified connection	N/A	RBF facility established and running, RBF grants provided top private companies, including in small and FCV-affected countries and last mile areas of other countries
Sub-component 1.3: Technical Assistance	- Develop Tools for digital verification platform, quality assurance & independent. verification - Strengthen capacity of local and regional financial entities including Direct Accredited Entities (DAEs)	N/A	Verification platform established and running; FI provided with capacity building and training
Sub-component 1.4: Enable capitalization of Zafiri	- Seed permanent capital vehicle to invest patient equity into DRE companies	N/A	Patient capital provided to DRE, clean cooking, and PUE companies

Sub-component 2.1: Risk sharing facility (RSF)	- Provide partial credit guarantee to scale up commercial financing - Put in place mechanisms to mitigate foreign exchange (FX) risks - Provide TA to support d-MRV platform	N/A	Risk-sharing Facility established and running
Sub-component 2.2: Carbon Risk Mitigation Facility (CRMF)	- Put in place carbon price backstop mechanisms - Provide TA and capacity building that fosters risk, carbon management, MRV platforms and stakeholder coordination	N/A	TA delivered to companies and other key stakeholder on Carbon Market mechanisms
Sub-component 3.1: COMESA Regional Energy Access Acceleration Platform	- Provide TA to companies and governments - Digitalization of energy access - Coordination and knowledge sharing across countries - Regional PUE market assessment	N/A	TA delivered to companies and government

E.7. Monitoring, reporting and evaluation arrangements (max. 500 words, approximately 1 page)

246. **Besides the arrangements laid out in the AMA between the World Bank and GCF, the implementation of the ASCENT-GREEN Program involves** (i) monitoring of program performance indicators (as per section E5); (ii) periodic progress reports; and (iii) a mid-term review of implementation progress. The Accredited Entity (AE) will report to GCF on the implementation status at the level of the program and for each of the projects (REAF, REAF 2, and the COMESA Platform).

Monitoring

247. **As part of the ASCENT-MPA, the implementation of ASCENT-GREEN will be monitored by project staff in the three Executing Entities.** Staff of individual projects (REAF, REAF 2, and COMESA Platform) will be responsible for monitoring project implementation and results. COMESA will also be responsible for monitoring the implementation and the results of the whole ASCENT Program, including ASCENT-GREEN. Monitoring will be facilitated through the adoption of digital platforms under COMESA's leadership and management, which will allow the aggregation of results and individualized dashboards designed for stakeholders (World Bank, COMESA, government agencies, utilities, and the private sector) to improve **continuous** monitoring. As noted in the Learning Agenda, the program will support a multi-layered effort to strengthen: (i) energy access-related data collection and analysis and the statistical capacity of key stakeholders, including COMESA and national agencies; (ii) structured and systematic impact evaluation through partnerships with research institutions and donor partners; and (iii) collaborative research with pilot countries to inform improved planning and governance. Structured, systematic, and repeated independent surveys will be conducted by COMESA to gather data in critical areas, such as the synergistic impact of the program's interventions in relation to DRE equipment, clean cooking solutions, and productive uses equipment on income generation in households, climate adaptation, and gender gaps.

248. **ASCENT, including ASCENT-GREEN, will promote digitization and help participating governments and regional organizations, including EEs, to adopt digital platforms.** Digitization will enable faster, more efficient, and transparent planning, implementation, and MRV of energy access efforts. Such efforts, particularly the digital MRVs, will contribute to finance mobilization; increased efficiency and transparency will build trust among private-sector service providers and their investors, and enable the aggregation and monetization of climate and other impacts. In addition, the digital platforms will enable real-time tracking and data for faster feedback loops, decision-making, and learning.

249. ASCENT-GREEN will leverage the digital MRV platform and the Independent Verification Agent (IVA) to operationalize the GHG mitigation methodology outlined in Annex 22 for transparent tracking, third-party verification, and attribution of emission reductions (ERs) to financing sources. Following the methodology, the program will (i) track and report the volume of GHG ERs directly attributable to the GCF's Use of Proceeds; at least 70% of this volume will not be converted via the program into offset credits and will be retired domestically in each participating country as contributions to their NDCs; (ii) calculate and disclose the balance of GHG ERs not attributable to GCF proceeds, which may be converted into offset credits via the program; and (iii) incorporate in the program GHG mitigation calculations that reflect this allocation, including reporting of "tCO2e mitigated" both for the entire program and specifically "tCO2e mitigated attributable to GCF Use of Proceeds." The d-MRV will integrate project-level activity data, meter/IoT and survey data, and verification results to avoid double counting and "double dipping" across incentives, with the IVA validating unique issuance and retirement events and ensuring that ERs expected to be traded as offsets are not claimed under GCF funding. The program GHG indicator already distinguishes ERs that are to be traded and therefore not reported as GCF results (e.g., traded VERs are excluded from GCF-claimed results). To avoid market distortions, the program will apply Annex 22's attribution and allocation rules alongside the RBF's non-distortionary design and geographic targeting, and the CRMF's demand aggregation and floor-price architecture, which stabilize revenues while preserving market-based price discovery through off-taker prices, mitigating risks of price suppression or crowding-out and ensuring credits remain fungible in international markets; the CRMF will cap its exposure consistent with its operating parameters, and where VERs are subsequently sold at or above cost recovery. The EE will periodically report to the World Bank on: (a) compliance with the non-distortion methodology; (b) the prevention of double counting (including corresponding adjustments and unique serializations/retirements as applicable); and (c) transparent disclosure of ERs attributed to GCF vs. those

converted to offsets, including country-level retirements toward NDCs. The World Bank will review and consolidate and then report to GCF following the FAA reporting requirements.

250. **The World Bank has dedicated ASCENT-GREEN program staff in its energy team and other operational departments, who will supervise the implementation of the ASCENT-GREEN Program**. This includes staff from operation departments, including procurement, financial management, environment, and social departments, and country offices, who will conduct due diligence, including in relation to fiduciary aspects such as procurement and financial management, monitor compliance and performance risks, and supervise implementation of the ESMSs and the stakeholder engagement plans (see also section G).

251. **The World Bank will follow its standard monitoring and reporting policies and procedures, which will include semi-annual reports on the implementation status and performance of each project**. At the end of each project supported by ASCENT-GREEN, the Bank will conduct, in collaboration with each respective EE, an implementation completion assessment and prepare an implementation completion report (ICR), which will review the performance of the project, assess the effectiveness and efficiency of project implementation as well as the achievement of the project development objectives, and provide lessons learned. Financial reporting is discussed in section G3.

Reporting

252. **Reporting of EEs to the World Bank**. As specified in the subsidiary agreements (financing agreements in World Bank terminology) between the EEs and the World Bank, the EEs are obliged to report on the implementation of the project in accordance with the terms and conditions of the subsidiary agreements, including on the environmental and social performance of the project and the achievement of the indicators agreed between the AE and the EE, to the World Bank on a semi-annual basis. For each project supported by ASCENT-GREEN, the respective EE will be responsible for the overall M&E of the project, including project performance information and reporting on project impacts and results.

253. **Reporting of World Bank to GCF.** The World Bank will provide to the GCF (i) annual activity performance reports (APRs) on the status of the program throughout the relevant reporting period, (ii) mid-term evaluation reports at the midpoint of the implementation period, and (iii) final evaluation reports at the end of the implementation period of the program, as per the FAA provisions. The APRs will provide information specific to projects supported under the program, as relevant

Mid-term and closing evaluations

254. **World Bank projects or programs have mandatory mid-term reviews and Implementation Completion and Results Reports (ICRs).** *The mid-term review* assesses the program's performance, identifies challenges, and recommends improvements for the remaining implementation period. It evaluates the project's design, activities, outputs, and collaboration with counterparts. To accomplish this, desk reviews of project documents and interviews with key stakeholders are conducted. The evaluation criteria include the project's relevance, effectiveness, efficiency, and sustainability. It concludes by providing concrete suggestions for improving the project's implementation and achieving its objectives. The I*mplementation Completion and Results Report (ICR)* is a key document for evaluating the performance and effectiveness of a World Bank project or program**.** As with the mid-term review, it involves desk reviews of project documents and interviews with key stakeholders. It serves as a self-evaluation tool, assessing the project's objectives, design, implementation, and operational experience. The report evaluates the extent to which the project/program achieved its intended results, using both quantitative and qualitative data, as well as assessing the likelihood that the project/program's effects will be sustained over time, and the factors that may affect sustainability. It identifies the successes and challenges of the project/program and draws lessons that can be applied to future programs.

F. RISK ASSESSMENT AND MANAGEMENT

F.1. Risk factors and mitigations measures (max. 3 pages)

Selected Risk Factor 1: Market economics and financial viability

Category	Probability	Impact
Technical and operational	High	Medium

Description

The fundamental economics of deploying DRE solutions in last-mile and FCV markets are inherently challenging. Companies face a trifecta of financial pressures: (1) **high structural costs**, including elevated capital expenditure, complex logistics, security, and marketing in hard-to-reach areas; (2) **limited and volatile revenue streams**, driven by the low and unpredictable purchasing power of target customers, which are also susceptible to climate and economic shocks; and (3) **significant currency risk**, as DRE companies often incur hard-currency debt for imported equipment while earning revenue in volatile local currencies, creating a debilitating mismatch. Without intervention, these factors render business models financially unviable, stifling market entry and scale.

Mitigation measure(s)

The program's Executive Entities (EEs) for each financing facility except RBF facility will bear investment risks including currency risk. The blended finance structure is designed to help EEs to mitigate some of those investment risks. This is particularly the case when utilizing the proposed GCF reimbursable grant for Sub-component 1.4 Enable capitalization of Zafiri and Sub-component 2.1 risk sharing facility. In addition, the program employs an integrated financial toolkit to address these interconnected challenges:

- **Cost reduction and affordability:** Results-based financing directly lowers unit costs for end-users. Regional facilities harness economies of scale for pooled procurement.
- **Enhanced company viability:** Access to affordable debt and equity reduces DRE companies' financing costs. De-risking instruments (partial credit guarantees, carbon revenue stabilization) lower capital barriers.
- **FX and revenue risk management:** The REAF 2 risk-sharing facility promotes local currency lending and the REAF 2 carbon risk mitigation facility supports carbon finance mobilization. Support for PAYG models aligns payments with customer cash flow.
- **Business model support:** Technical assistance strengthens companies' financial management and FCV-adapted operations.

Selected Risk Factor 2: Macroeconomic, regulatory, and security volatility

Category	Probability	Impact
Other	High	Medium

Description

The operating environment presents systemic threats that can disrupt project implementation and integrity. These include: (1) **legal and regulatory volatility**, such as unpredictable changes in import duties, tax regimes, and energy policies, which create investor uncertainty and supply chain instability; (2) **political and security instability** in FCV contexts, which can halt operations, endanger personnel, and destroy assets; and (3) **macroeconomic shocks** like inflation and currency devaluation, which rapidly erode end-user purchasing power. Furthermore, risks to program integrity, such as fraud in the verification of RBF results or misuse of funds, threaten the project's credibility and development impact.

Mitigation measure(s)

A multi-layered strategy is employed to build resilience:

- **Stabilizing the policy environment:** The program leverages the high-level policy commitments of Mission 300 and COMESA's regional platform to advocate for harmonized and stable regulatory frameworks, reducing fragmentation and policy risk.
- **Insuring against political shocks:** Political risk insurance from MIGA is embedded at the portfolio level within the Zafiri equity vehicle, providing comprehensive and efficient coverage against expropriation, war and civil disturbance, and currency inconvertibility for all underlying investments.
- **Safeguarding program integrity:** A robust digital MRV platform will be used for transparent RBF verification, coupled with independent audits. A cascaded ESMS and a grievance redress mechanism will enforce ethical standards and provide accountability across all implementing partners.
- **Adaptive management:** RBF subsidies are inflation-adjusted, and continuous policy dialogue allows for real-time adjustments to changing conditions.

Selected Risk Factor 3: Implementation capacity and coordination gaps		
Category	**Probability**	**Impact**
Technical and operational	Medium	Medium

Description

The program's ambitious scale-up is contingent on the capabilities of a diverse set of stakeholders, who face significant capacity constraints. Governments may lack the technical capacity for effective policy implementation and grid integration planning. Financial intermediaries (PFIs) are often unfamiliar with DRE asset classes, leading to conservative lending and slow credit approval. DRE companies, especially local SMEs critical for last-mile delivery, frequently lack the expertise to develop bankable projects, manage complex E&S requirements, or navigate procurement processes. These individual capacity gaps are compounded by a **program-level coordination risk**, where multiple partners (WB, IFC, MIGA, COMESA, country projects) and facilities (REAF, REAF 2) could duplicate efforts or work at cross-purposes without a strong unifying framework, leading to inefficiencies and diluted impact.

Mitigation measure(s)

The program addresses key pain points in the DRE sector, drawing on stakeholder consultations and lessons learned from past and ongoing initiatives. Executive Entities (EEs) are selected based on their technical capacity and financial soundness to implement the program. The blended finance structure is designed to help EEs maintain the financial viability of each facility while ensuring that concessionality is effectively passed through to end users. The program addresses any remaining gaps through a centralized and coordinated capacity-building strategy:

- **Targeted technical assistance:** Dedicated TA activities under each component will provide tailored support:
  - To governments**:** For policy formulation, regulatory harmonization, and national electrification planning
  - To PFIs: For building DRE sector expertise, enhancing due diligence capabilities (including E&S and gender aspects), and utilizing digital MRV tools
  - To DRE companies**:** Assisting with business plan development, E&S compliance, financial modeling, and securing financing
- **Strengthening execution capacity:** EEs will be supported in recruiting specialized procurement and technical staff and streamlining internal processes to mitigate delays, underpinned by the World Bank's rigorous fiduciary supervision.
- **Ensuring structured coordination:** The 'One Bank Approach' ensures strategic alignment among the World Bank, IFC, and MIGA from the design phase and continues to leverage the respective technical expertise during implementation. The COMESA secretariat will act as the central coordination hub, leveraging the ASCENT knowledge exchange platform to align all partners and share best practices, preventing duplication and filling implementation gaps.

Selected Risk Factor 4: Market misalignment and off-target expansion		
Category	**Probability**	**Impact**
Technical and operational	Medium	Medium

Description

There is a risk that DRE companies, driven by commercial incentives, will use program financing to expand in more profitable urban or existing markets, rather than the intended last-mile, small, and FCV countries. This would undermine the program's inclusive energy access goals. While concessional finance is necessary to catalyze the sector, its use must be carefully targeted to avoid market distortion or creating subsidy dependency.

Mitigation measure(s)

The program design embeds strong incentives and a clear market-building philosophy to ensure alignment with development objectives:

- **Incentivized targeting through design:** Access to the program's concessional resources (RBF, debt, equity) is explicitly conditional on a company's commitment to expand into target geographies. This is enforced via eligibility criteria and verified through the digital MRV system. Furthermore, the RBF mechanism includes reserved allocations and strategically higher subsidy tiers for small and FCV countries to actively offset the commercial disincentives.
- **Strategic, transitional use of concessionality:** Concessional finance is deployed not as a permanent subsidy, but as a temporary tool to de-risk the sector and demonstrate its commercial potential. The program is explicitly designed to catalyze private investment, with a monitoring framework that tracks the gradual mobilization of commercial capital, aiming for a sustainable market transition over the program's lifespan.

Selected Risk Factor 5: Macroeconomic, regulatory, and security volatility		
Category	**Probability**	**Impact**
Other	Low	Select

Description

ASCENT-GREEN relies on concessional financing to reach the target beneficiaries and to accelerate DRE markets. There is a risk that at the end of the Program, when concessional financing is no longer available, markets revert to the pre-Program situation and the targeted users are unable to sustain and increase their energy access status.

Mitigation measure(s)

The mitigation measures are embodied in ASCENT-GREEN key design features. The overarching objective of ASCENT-GREEN is to catalyze self-sustaining markets for DRE, clean cooking, and PUE across the AFE region. While concessional financing is necessary to achieve ASCENT-GREEN objectives, it is used to grow the DRE markets beyond their current boundaries and to attract private sector investment. By growing the market across the region, delivering economies of scale, reducing the costs of financing and improving the enabling environment, ASCENT-GREEN will result in the overall sustainable reduction of costs over time. By using concessional financing to jump-start the current nascent market for PUE, target populations will increase their incomes and climate resilience, while DRE companies will grow their revenues. More available and sustainable carbon revenues will be used to close any remaining affordability gaps. Improved enabling environment will increase investment inflows and ensure their sustainability over time. Section B.6 lays out clear sustainability features and measures at Program, facility and user level. Key mitigation measures at the program level include:

- **Accelerated and sustainable market growth**: The pace of DRE deployment is projected to double as companies finance growth through ASCENT-GREEN's blended financial instruments, supported by the improved enabling environment. Smaller and FCV-affected countries will see the most significant acceleration, benefiting from regional scale and de-risking instruments, while mature markets will extend services to last mile populations.
- **Enhanced economic and climate resilience and affordability of DRE solutions:** By systematically scaling up PUE, the program will increase household incomes and create jobs, thereby improving the affordability and long-term viability of DRE solutions. This rural economic transformation, supported by digital access and electrified public services, will bolster climate resilience, adaptation, and food security.
- **Reduced viability gap and subsidy dependence:** The cost of energy access will decrease due to economies of scale, patient capital, and an improved policy environment. Simultaneously, revenue for DRE companies will increase through diversified income streams (PUE, public infrastructure, carbon finance). This narrowing viability gap will significantly reduce the need for future subsidies, limiting them to the poorest segments, which can be supported through government social safety nets.
- **Transition to commercial finance.** By the exit of the program:
    a. The Zafiri equity vehicle will be capitalized to attract commercial investors for future funding rounds.
    b. Commercial banks will possess the experience and confidence to finance DRE without IDA guarantees.
    c. The regional Results-Based Financing facility will be phased out as costs fall, affordability rises, and carbon revenue is generated.

G. GCF POLICIES AND STANDARDS

G.1. Environmental and social risk assessment (max. 750 words, approximately 1.5 pages)

255. **Both regional financing projects under Components 1 and 2 of ASCENT-GREEN will apply OP 4.03 World Bank Performance Standards for Private Sector Activities**, as its ESMS incorporates World Bank Performance Standards as the underlying technical standards for project financing. Many of the DRE, clean cooking, and PUE private companies are familiar with and apply already these standards, and the Executing Entities will make the information available to all companies interested in participating in the Program.

256. **The E&S risks for REAF and REAF 2 are categorized as F1–2 (substantial) in accordance with OP/BP4.03, as it is expected that the potential adverse E&S risks and impacts of subprojects will be few**, generally site-specific, largely reversible, and readily addressed through mitigation measures. The EEs (TDB and the two EEs to be selected for REAF 2) will bear full responsibility for handling E&S risks and impacts linked to these activities. The remaining paragraphs detail how TDB will manage E&S aspects of the program, and this will also apply for the EEs responsible for implementing REAF 2.

257. **TDB has a well-established ESMS that includes a clearly defined E&S policy and institutional commitments to integrate E&S sustainability into all its operations**. This comprehensive system incorporates an exclusion list and aligns with the World Bank Performance Standards. Within the ESMS, there are procedures for E&S categorization, screening, due diligence, monitoring, and external communication, all presented with a clear process flow that aligns with best international practices. The ESMS effectively addresses E&S procedures for direct lending, and TDB is proactively enhancing it to include comprehensive guidelines for lending through PFIs, thus creating a more robust framework.

258. **TDB's existing ESMS and E&S policy are suitable for direct lending projects; TDB's ESMS is disclosed on its website** along with an external communication mechanism to receive, assess, and respond to queries and complaints about its operations. TDB will require all PFIs to disclose their ESMS and develop, disclose, and implement an external communication mechanism. While TDB lacks experience in managing complex E&S issues independently, it has already met a disbursement condition for the existing World Bank project that required a Guidance Note on how to manage E&S issues that are more complex and for which TDB lacks strong experience.

259. **Stakeholder engagement, information disclosure, and grievance management will be required for all concerned parties, including those affected by subprojects and others that may be involved in service delivery under ASCENT-GREEN**. Communities and individuals who believe that they are adversely affected by a project supported by the World Bank may submit complaints to existing project-level grievance mechanisms or the World Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed to address project-related concerns. Project affected communities and individuals may submit their complaint to the World Bank's independent Accountability Mechanism (AM). Stakeholder consultations, including engaging with governments, the private sector, and civil society, are an ongoing part of the program and will be carried out throughout implementation. Details of consultations conducted since the inception of the program can be found in section D5.

260. **The two EEs for REAF 2 are under selection; the assessment of environmental and social risks will be a critical component of the appraisal process.** To support effective project implementation, capacity building and institutional strengthening will be provided to address any identified gaps. This approach will help equip the selected EEs with the tools and knowledge to manage environmental and social aspects effectively.

G.2. Gender assessment and action plan (max. 500 words, approximately 1 page)

Summary of Gender Annex (see Annex 8 for full text)

261. **While the AFE region has made progress in closing gender gaps in the last decade, many challenges remain.** A woman or girl in AFE has a 59% chance of not being enrolled in secondary school, a 20% chance of starting childbearing as a teenager and a 30% chance of being married before the age of 18. She earns significantly less than a male farmer entrepreneur or wage worker and has only 74% of the legal rights of males across the legal system. She is worse-off across all dimensions if she lives in a rural area, is poor, disabled, or belongs to an ethnic minority.[99] At the same time, the United Nations Educational, Scientific and

[99] World Bank. 2024. *Regional Gender Action Plan for Eastern and Southern Africa (AFE)* FY24–28. Washington, D.C.: World Bank, p. 2–3 https://documents1.worldbank.org/curated/en/099720003042421894/pdf/IDU-e951cc1f-da4b-4506-8f67-45956c62edae.pdf

Cultural Organization (UNESCO) observes that women in SSA "own a third of all firms and are key to the welfare of their families and the life prospects of their children", yet they continue to "face an array of barriers to achieving their full potential, from restrictive cultural practices to discriminatory laws and highly segmented labour markets."[100] In agriculture, using individual, plot-level labor input data from nationally representative household surveys across six SSA countries, a 2023 study estimated the average female labor share in crop production at 40%. It is slightly above 50% in Malawi, Tanzania, and Uganda, and substantially lower in Nigeria (37%), Ethiopia (29%), and Niger (24%).[101]

262. **Women are disproportionately impacted by climate change, as they mainly work informally in the home and in agriculture, have fewer education opportunities, greater financial and resource constraints, less access to information, and less decision-making authority[102]** (see Annex 8). Africa's socio-economic development is seriously challenged by climate change, with heavy dependence on climate sensitive activities like rainfed agriculture and low adaptive capacities of countries, as shown in Table 1**.** The IPCC, in its Fifth Assessment Report, underscores that climate change hazards increase existing gender inequalities, and, thereby, contribute to the higher level of climate change vulnerability of many women, compared to their male counterparts. This is largely due to persisting gender norms and widespread gender discriminations, which deny women income, legal rights, and access to resources or political participation, while assigning them the primary role in caring for their families and providing for their livelihoods. [103] Women in fragile states in Sub-Saharan Africa face greater challenges due to their domestic responsibilities, increased agricultural work resulting from climate impacts, male migration, and the limited capacity of the state to respond to climate shocks and increased temperatures. Nevertheless, some AFE countries are moving to support climate actions that support gender equality: (i) Kenya, Zambia and Zimbabwe have developed climate change and gender action plans; and (ii) more than 20 African countries have integrated gender considerations into their updated NDCs.[104]

263. **The AFE region is experiencing adverse impacts from climate change, which threatens the progress made in closing gender gaps, as impacted countries are reallocating resources to deal with economic damages, which in turn slow down socioeconomic development**. Reducing gender inequality is a necessary condition and a strong catalyst for increasing energy access. Furthermore, reducing gender inequality in the DRE sector through the ASCENT-GREEN Program will contribute to the program goals of increasing sustainable economic development and climate resilience and mitigation, as well as having the potential to make women and girls more resilient to the adverse impacts of climate change in the AFE region.

264. **ASCENT-GREEN's activities in increasing access to electricity from distributed renewable energy systems will directly benefit 5.85 million women and clean cooking solutions will directly benefit 5.95 million women in AFE, with an immediate impact on reducing gender inequalities in the region.** Across SSA, women and children disproportionately bear the burden of a lack of clean cooking, spending an average of five hours a day collecting fuel and preparing and cooking food including tending fires. In regions facing deforestation, collection times are increasing and in areas with security problems violent attacks are becoming more common. The health consequences of the lack of clean cooking are immense. Household air pollution is the second-largest cause of premature death among women and children in SSA, with women and children representing 60% of those deaths. Many of these deaths are associated with respiratory and cardiovascular disease, which is accelerated by breathing in particulate matter produced by the incomplete combustion of solid biomass in a three-stone fire. A recent analysis by the International Energy Agency (IEA) estimates that access to clean cooking will result in 2.5 million fewer deaths worldwide by 2030, while the average household saves nearly 1.5 hours a day from the switch, making time available for other activities, including studying and engaging in income generation.[105] Access to electricity from DRE will also significantly increase the time available for women and girls to engage in the indoor tasks that will become possible with modern lighting, as well as opening up the possibility of using digital devices for increased access to information, as well as equipment for income generation, climate adaptation, and

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[100] UNESCO. 2017. *UNESCO and Gender Equality in Sub-Saharan Africa: Innovative programs, visible results*. UNESCO, p. 10. https://unesdoc.unesco.org/ark:/48223/pf0000259590

[101] Palacios-Lopez, A., Christiaensen, L., and Kilic, T. 2027. How much of the labor in African agriculture is provided by women? *Food Policy*, Feb 2017,67: 52–63. https://pmc.ncbi.nlm.nih.gov/articles/PMC5384444/; Christiaensen, L.D., Lionel, C.L., and Demery, L. (eds). 2018. *Agriculture in Africa: Telling Myths from Facts*. Directions in Development—Agriculture and Rural Development. Washington, D.C.: World Bank. http://hdl.handle.net/10986/28543

[102] UNDP, and African Group of Negotiators. 2023. *Gender Responsive Climate Change Actions in Africa*. Technical Paper, United Nations Development Programme (UNDP), p. 11.

[103] IPCC. 2014. *Fifth assessment report (AR5) of the IPCC*. Geneva: Intergovernmental Panel on Climate Change. https://unfccc.int/topics/science/workstreams/cooperation-with-the-ipcc/the-fifth-assessment-report-of-the-ipcc

[104] UNDP, and African Group of Negotiators, 2023, op. cit., p. 12.

[105] IEA, and AfDB. 2023. *A vision of clean cooking access for all,* p. 22–23 (for costs of lack of clean cooking) and p. 15 (for benefits). https://iea.blob.core.windows.net/assets/f63eebbc-a3df-4542-b2fb-364dd66a2199/AVisionforCleanCookingAccessforAll.pdf

climate emergencies.

265. **To increase gender benefits further, the ASCENT-GREEN Gender Assessment and Action Plan in Annex 8 seeks to support effective targeted interventions that would both improve women's adaptability and resilience to climate change and help to close the gender gaps that are being exacerbated by climate change.** ASCENT-GREEN's gender assessment was guided by the ASCENT Gender Framework developed for the ASCENT MPA. The gender analysis that contributed to the gender assessment for the ASCENT-GREEN Program was conducted through project preparation for ASCENT MPA and individual ASCENT country projects, which included stakeholder consultation workshops at the regional and country level, country diagnostic gender assessments, desk reviews, and a review of multitier framework surveys at the country level. In alignment with the ASCENT Gender Framework, the ASCENT-GREEN Program identified priority areas for gender and social inclusion, including access to energy for households and enterprises, entrepreneurship, employment, institutional capacity to integrate gender and social inclusion in corporate policies, and national energy policies to enable women's participation in the DRE sector.

266. **The gender assessment followed a two-pronged approach—regional level and country level focusing on 17 AFE countries identified for a deep dive**, namely: Botswana, Burundi, Comoros, Democratic Republic of the Congo, Eritrea, Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Rwanda, Sao Tome and Principe, Somalia, South Africa, South Sudan, Tanzania, Uganda, Zambia, and Zimbabwe (see Annex 8 for the findings at regional and country level).

267. **Based on the assessment, the ASCENT-GREEN Gender Action Plan was developed related to the DRE sector and program activities in the mainly low income, remote, or FCV areas of AFE targeted by ASCENT-GREEN.** The following outcome statements and monitoring indicators of the ASCENT-GREEN Gender Action Plan are aligned with gender-responsive indicators from the overall ASCENT MPA and ASCENT country projects. Together with the actions and indicators proposed in Annex 8, they reflect the intention of the ASCENT-GREEN Program: (1) access of women to clean and resilient energy is increased; (2) access of women owned/led businesses to clean and resilient energy and productive uses equipment is increased; (3) access of women owned/led DRE and clean cooking companies to finance and technical assistance for capacity building is increased; (4) women's access to employment in the DRE sector is increased; and (5) the policy dialogue on decreasing gender gaps in AFE related to the DRE sector is strengthened. The targets mentioned below and in Annex 8 are generally initial indicative values that reflect the need to develop more solid baseline data; COMESA will lead the effort to improve such baseline data and refine these indicators during the implementation of ASCENT-GREEN.

1. Access of females to clean and resilient energy in the AFE region will be increased.

- Access of women and girls to clean and resilient electricity will be increased, targeting 5.85 million females.
- The resilience of women and girls to adverse impacts of climate change will be increased by electricity from DRE systems enabling the use of equipment (for adaptation, digital communication, water pumping, etc.), targeting 5.85 million females.
- Access of women and girls to clean cooking solutions will be increased, targeting 5.95 million females.
- The resilience of women and girls to adverse health impacts will be increased by the reduction in indoor air pollution due to clean cooking, targeting 5.85 million females.
- TA will be provided to supported DRE, clean cooking, and PUE companies to help develop awareness campaigns to make information available on access to energy access and to PUE equipment under the program, to women in vulnerable households, including female-headed households, targeting 100% of companies.

2. Access of women owned/led enterprises (including farmers) to clean and resilient energy and productive uses equipment will be increased.

- Access of women owned/led enterprises (including farmers and all types of productive activities including home-based) to clean and resilient energy and productive uses equipment will be increased, with an indicative target of 30,000 women owned/led enterprises.

3. Access of women owned/led DRE and clean cooking companies to finance and capacity building will be increased.

- Access of women owned/led DRE and clean cooking companies to finance will be increased, with an indicative target that 10% of all companies receiving equity and debt financing are women owned/led.
- Access of women owned/led DRE and clean cooking companies to capacity building will be increased, with an indicative target that 30% of all companies receiving TA for capacity building are women owned/led.

4. **Access of women to employment in DRE and clean cooking companies will be increased.**

- Access of women to employment in the supported DRE and clean cooking companies will increase, with an indicative target of an increase from 30% to 40%**.**
- Access of women to employment in technical, managerial, and STEM positions in the supported DRE and clean cooking companies will increase, with an indicative target that 30% of DRE and clean cooking companies will increase women in these positions by at least 10%.
- Women graduates from universities and technical colleges will participate in internships with supported DRE and clean cooking companies, with a target of 100 interns.
- Sustainable livelihoods of women and vulnerable households will improve due to increased participation in the energy sector.

5. **Policies and strategies to increase women's overall engagement in the DRE sector will be strengthened.**

- The EEs of ASCENT-GREEN will adopt gender inclusive strategies supported by TA from COMESA, with a target of 100%.
- A regional framework for policies and strategies to increase women's overall engagement in the DRE sector will be developed and adopted by COMESA.
- A monitoring and evaluation framework for gender-related activities and indicators in ASCENT-GREEN will be developed and implemented by COMESA, based on ASCENT's d-MRV system.

268. **The action plan supports interventions to increase gender equality in the DRE sector**. It supports awareness and education campaigns that are designed so that vulnerable women such as those in rural and FCV areas have access to information on DRE systems, clean cooking solutions, and productive uses equipment (e.g., for agriculture). It will provide results-based financing to target women owned/led enterprises to increase their access to DRE systems and productive uses equipment. It will also increase access to debt and equity financing and technical assistance for capacity building to women owned/led enterprises in the DRE sector. The program will use results-based incentives and internships to increase the share of women employed in supported DRE companies, especially graduates from universities and technical colleges. Through technical assistance, the program will support the program's EEs like TDB to adopt and implement gender inclusive strategies in implementation of the program.

269. **Finally, as part of the ASCENT Gender Framework and the ASCENT-GREEN Gender Action Plan, COMESA will lead work to strengthen the gender agenda in the region, aiming to harmonize policies to accelerate the closing of gender gaps related to DRE sector related energy access, and promotion of women's participation in the DRE sector**. It will see that monitoring and **evaluation** is conducted on an ongoing basis to collect gender-linked data and report on progress of the gender interventions through the proposed indicators, using a state-of-the-art digital monitoring, reporting, and verification (d-MRV) system, as well as periodic surveys to provide data to be used for impact assessment and course correction during program implementation. The program will also work to provide data currently lacking, such as information on the number and situation of women owned/led enterprises in the DRE sector.

G.3. Financial management and procurement (max. 500 words, approximately 1 page)

Financial management

270. **This section focuses mainly on the REAF Project, which is under implementation by TDB**. The process of selecting the executing entity/entities for the REAF 2 Project is underway, and the financial management procedures of the World Bank followed for the REAF Project will be applied to the REAF 2 Project. These include financial management assessments of the EEs and preparation of project operating manuals for both facilities, which will define FM procedures under the Project (see Project Paper for Additional Financing REAF).

271. **A Financial Management (FM) Assessment and a Financial Intermediary Assessment (FIA) were carried out for the REAF Project and its executing entity, TDB, in accordance with World Bank policy and directives on Investment Project Financing (IPF).**[106] The assessment revealed that TDB has adequate capacity to manage REAF, leveraging the FM capacity developed in the RIFF Project. TDB has a well-staffed accounting department; a comprehensive entity financial policies and procedures manual

[106] See Financial Intermediary Assessment in Annex 1 of REAF Project Paper. World Bank. *Eastern and Southern Africa – Accelerating Sustainable and Clean Energy Access Transformation: Regional Energy Access Financing Platform Project – Additional Financing* (English). Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/099062725145010877

implemented under the RIFF project; and satisfactory FM performance under the RIFF. Measures to mitigate risks have been incorporated in the REAF Project. The mitigating measures include: (i) TDB will fully manage fiduciary responsibilities, including exclusively handling all funds flows, noting that TDF will continue to be a beneficiary service financed under TDB, until all establishment requirements are met and a fiduciary assessment is carried out by the Bank; (ii) timely preparation of annual work program and budgets (WAPBs) before the beginning of the year and seeking the Bank's no objection for all pipeline operations under components 1 and 2; (iii) preparation of a detailed project operational manual (POM), including a loans and grants manual and FM procedures manual, to guide implementation; (iv) assigning qualified project accountants for the REAF Project; and (v) providing capacity building under Sub-component 1.3 (see section B4 Capacity assessments of TDB for more details).

272. **For the COMESA Platform under Component 3, financial management capacity and risk assessment was carried out by the World Bank,** also in accordance with World Bank policy and directives on IPF. The assessment covered budgeting, flow of funds, accounting, internal controls, financial reporting, and audit arrangements. The COMESA Secretariat was found to have adequate financial management capacity. The overall residual risk of financial management has been assessed as Moderate.

273. **The program will ensure robust external audit arrangements in line with World Bank and GCF requirements.** Specifically, the Executing Entities (EEs) will be required to appoint an independent external auditor with qualifications and terms of reference acceptable to the World Bank. Annual audited financial statements for each project will be submitted within six months after the end of each fiscal year. The audit will be conducted in accordance with international standards on auditing, and the scope will cover all project funds and activities. Audit findings, including any issues of non-compliance or ineligible expenditures, will be reported and followed up as per Bank procedures. These arrangements will be detailed in each project's legal agreements and reflected in the operations manual.

Procurement

274. **For both the REAF and REAF 2 Projects, the EEs will be responsible for all procurement activities.** For project activities not implemented directly by the EEs as financial intermediaries, such as TA and advisory services, procurement will be carried out in accordance with the World Bank Procurement Regulations for IPF Borrowers (dated July 2016 and revised in September 2023, Fifth Edition), referred to as 'Procurement Regulations'. Both projects will also be subject to the World Bank's Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants (revised as of July 1, 2016) and other provisions stipulated in the project legal agreement with the Borrower.

275. **As with all World Bank projects, a project procurement strategy for development (PPSD) is prepared by the EEs to support implementation of project procurements and deliver value for money (VfM**). The PPSDs will form the basis for the preparation of the procurement plans (PP), providing justification for procurement decisions including the selection methods and market approaches in the PPs (see Annex 10 for current Procurement Plan for REAF). The PP will be prepared for the first 18 months of project implementation and will be updated at least annually, or as required, to reflect the actual project implementation needs. The envisaged key procurements include: (i) consulting services: due diligence services, independent verification services, technical advice, environmental and safeguards, and (ii) goods that include contracts of low value, which may be procured to support project management and administration. The project will use Systematic Tracking of Exchanges in Procurement (STEP), the Bank's online procurement planning and tracking tool, to record all procurement actions including planning, updating, and clearing PP and seeking and receiving Bank's review and 'no objection' to procurement actions, as needed, and establish benchmarks, monitor delays, and measure procurement performance.

276. **The procurement capacity of TDB as the executing entity of REAF has been assessed and confirmed to be reasonably adequate for implementing the project, with a procurement risk assessed as Moderate.** Some of the key risks identified include inadequate capacity and delays in the preparation of project procurement requirements and readiness activities, lengthy administrative processes in the evaluation of proposals/bids and contract awards, and limited contract management capacity. To mitigate these identified risks, TDB will deploy additional qualified and experienced procurement and relevant technical staff to enhance its procurement capacity, provide focused training on procurement and contract management to project staff, and streamline its internal procurement processes and approvals to expedite procurement processes. The Bank will provide regular and targeted capacity building on procurement and contract management to TDB and monitor the performance of the fiduciary systems for smooth implementation.

277. **Procurement capacity assessment and procurement risk assessment and management will be conducted for the REAF 2 Project and its two competitively selected EEs**, **following the same process that took place for REAF and its EE, TDB.**

278. **For the COMESA Platform, under Component 3,** the World Bank has carried out a review of COMESA's procurement

capacity. The procurement risk was rated as Moderate. COMESA has implemented several World Bank-funded projects in the past. As a result, COMESA has acquired capacity and experience in implementing Bank-financed projects from a procurement perspective, and it is expected that procurement arrangements under ASCENT-GREEN will not be complex. To implement procurement activities under the Platform, the COMESA Secretariat will update its Procurement Rules and Regulations and carry out training of newly assigned procurement staff. The Procurement Plan and the Project Procurement Strategy for Development (PPSD) have been prepared and agreed on with COMESA.

G.4. Disclosure of funding proposal

☐ No confidential information: The accredited entity confirms that the funding proposal, including its annexes, may be disclosed in full by the GCF, as no information is being provided in confidence.

☒ With confidential information: The accredited entity declares that the funding proposal, including its annexes, may not be disclosed in full by the GCF, as certain information is being provided in confidence. Accordingly, the accredited entity is providing to the Secretariat the following two copies of the funding proposal, including all annexes:

- Full copy for internal use of the GCF in which the confidential portions are marked accordingly, together with an explanatory note regarding the said portions and the corresponding reason for confidentiality under the accredited entity's disclosure policy, and
- Redacted copy for disclosure on the GCF website.

The funding proposal can only be processed upon receipt of the two copies above, if containing confidential information.

H. ANNEXES

H.1. Mandatory annexes

☒	Annex 1	NDA no-objection letter(s) **(template provided)**
☒	Annex 2	Feasibility study and a market study, if applicable
☒	Annex 3	Economic and/or financial analyses in spreadsheet format
☒	Annex 4	Detailed budget plan **(template provided)**
☒	Annex 5	Implementation timetable including key project/programme milestones **(template provided)**
☒	Annex 6	E&S document corresponding to the E&S category (A, B or C; or I1, I2 or I3): **(ESS disclosure form provided)** ☐ Environmental and Social Impact Assessment (ESIA) or ☐ Environmental and Social Management Plan (ESMP) or ☒ Environmental and Social Management System (ESMS) ☐ Others (please specify – e.g., Resettlement Action Plan, Resettlement Policy Framework, Indigenous People's Plan, Land Acquisition Plan, etc.)
☒	Annex 7	Summary of consultations and stakeholder engagement plan
☒	Annex 8	Gender assessment and project/programme-level action plan **(template provided)**
☒	Annex 9	Legal due diligence (regulation, taxation and insurance)
☒	Annex 10	Procurement plan **(template provided)**
☒	Annex 11	Monitoring and evaluation plan **(template provided)**
☒	Annex 12	AE fee request **(template provided)**
☒	Annex 13	Co-financing commitment letter, if applicable **(template provided)**
☒	Annex 14	Term sheet including a detailed disbursement schedule and, if applicable, repayment schedule

H.2. Other annexes as applicable

☒	Annex 15	Evidence of internal approval **(template provided)**
☐	Annex 16	Map(s) indicating the location of proposed interventions
☐	Annex 17	Multi-country project/programme information **(template provided)**
☒	Annex 18	Appraisal, due diligence or evaluation report for proposals based on up-scaling or replicating a pilot project
☒	Annex 19	Procedures for controlling procurement by third parties or executing entities undertaking projects financed by the entity
☐	Annex 20	First level AML/CFT (KYC) assessment
☒	Annex 21	Project Operational Manual
☒	Annex 22	Assessment of GHG emission reductions and their monitoring and reporting (for mitigation and cross cutting-projects)
☒	Annex 23	ASCENT-GREEN Program Contribution to Adaptation and Mitigation
	Annex 24	Detailed Implementation Arrangements
	Annex 25	PUE

[81] Annex 22 is mandatory for mitigation and cross-cutting projects.

No-objection letter issued by the national designated authority(ies) or focal point(s)

TELEPHONE: 395100
FAX: 3956086
Toll free: 0800600773

REPUBLIC OF BOTSWANA

MINISTRY OF FINANCE
PRIVATE BAG 008
GABORONE

REF: MoF6/7/5 IV (33)

Date: 26th March 2025

Ms Mafalda Duarte
Executive Director
Green Climate Fund
Songdo Business District
175 Art Center-Daero
Yeonsu-gu, Incheon 22004
Republic of Korea

Dear Ms Duarte,

RE: ASCENT- GREEN, RESILIENT ENERGY ACCESS FOR INCLUSIVE DEVELOPMENT PROGRAM

1. We refer to the programme titled "ASCENT-GREEN, Resilient Energy Access for Inclusive Development" in Botswana as included in the Concept note submitted by the World Bank on the 6th February 2025.

2. The undersigned is the duly authorised representative of the Ministry of Finance, the National Designated Authority of Botswana. Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the concept note.

3. By communicating our no-objection, it is implied that:

   a) The government of Botswana has no-objection to the programme as included in the funding proposal;

   b) The programme as included in the funding proposal is in conformity with the national priorities, strategies and plans of Botswana;

c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

4. We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed, and that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

5. We acknowledge that this letter will be made publicly available on the GCF website.

Yours Sincerely,

Keineetse Lepekoane
Director, Development Programmes
Ministry of Finance
Botswana

REPUBLIC OF BURUNDI

Gitega, March, 12th 2025

MINISTRY OF ENVIRONMENT,
AGRICULTURE AND LIVESTOCK

NATIONAL DESIGNATED AUTORITY
N/Réf: AND-PF/FVC- BURUNDI/2025

Ms. Mafalda Duarte
Executive Director
Secretariat of the Green Climate Fund
175 Art Center-daero
Yeonsu-gu, Incheon 22004
Republic of Korea

Date: 12.03.2025
Reference:
Page: 2

Subject: Funding proposal for the GCF by the World Bank regarding GREEN – ASCENT (Accelerating Sustainable and Clean Energy Transformation Multiphase Programmatic Approach)

Dear Madam, Sir,

We refer to the programme titled GREEN – ASCENT (Accelerating Sustainable and Clean Energy Transformation Multiphase Programmatic Approach) in Burundi as included in the funding proposal submitted by the World Bank to us on 10 December 2024.

The undersigned is the duly authorized representative of the Ministry of Environment, Agriculture, and Livestock, the National Designated Authority of Burundi.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, in my capacity as representative of the National Designated Authority, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

(a) The government of Burundi has no-objection to the programme as included in the funding proposal;
(b) The programme as included in the funding proposal is in conformity with the national priorities, strategies and plans of Burundi;
(c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

NDAYIRUKIYE Diomède

National Designated Authority
Permanent Secretary for Agriculture and Livestock
Ministry of the Environment, Agriculture and Livestock
Tél : +257 79942336/69733653
Email : bandiom@yahoo.fr.

UNION DES COMORES
Unité - Solidarité – Développement

Ministère de l'Environnement chargé du Tourisme

DIRECTION GÉNÉRALE DE L'ENVIRONNEMENT ET DES FORÊTS

Autorité Nationale Désigné

جمهورية القمر المتحدة
الوحدة ـ التضامن ـ التنمية

وزارة البيئة مسؤولة عن السياحة

المديرية العامة للبيئة والغابات

Réf. N° 025- 26/MET/DGEF

Moroni, 26 February 2025

To: The Green Climate Fund ("GCF")

Re: Funding proposal for the GCF by the World Bank regarding ASCENT-GREEN Program

Dear Madam, Sir,

We refer to the project titled *ASCENT-GREEN Program* in Comoros as included in the funding proposal submitted by **the World Bank** to us on 15 November 2024.

The undersigned is the duly authorized representative of the Ministry of Agriculture, Fisheries, Environment, Tourism, and Handcraft, the National Designated Authorityof Comoros.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the project as included in the funding proposal.

By communicating our no-objection, it is implied that:

(a) The government of Comoros has no-objection to the project as included in the funding proposal;
(b) The project as included in the funding proposal is in conformity with the national priorities, strategies and plans of Comoros;
(c) In accordance with the GCF's environmental and social safeguards, the project as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the project as included in the funding proposal has been duly followed.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

_____
Youssouf Elamine Youssouf Mbechezi
Focal Point
Ministry of Agriculture, Fisheries, Environment, Tourism, and Handcraft
Comoros

MINISTÈRE
DE L'ENVIRONNEMENT
ET DÉVELOPPEMENT
DURABLE

MDP-FVC
Mécanisme de Developpement Propre et Fonds Vert pour le Climat
L'Autorité Nationale Désignée

To: The Green Climate Fund ("GCF")

Kinshasa, 28 March 2025

Re: Funding proposal for the GCF by The World Bank regarding ASCENT Green, Resilient Energy Access for Inclusive Development (ASCENT-GREEN) Program

Dear Madam, Sir,

We refer to the programme titled *ASCENT-GREEN* in The Democratic Republic of the Congo as included in the funding proposal submitted by The World Bank to us on 15 March 2025.

The undersigned is the duly authorized representative of The Ministry of Environment and Sustainable Development, the [NDA/FP] of The Democratic Republic of the Congo.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

(a) The government of The Democratic Republic of the Congo has no-objection to the programme as included in the funding proposal;
(b) The programme as included in the funding proposal is in conformity with the national priorities, strategies and plans of the Democratic Republic of the Congo;
(c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

Isaac Kalonda Kanyama, PhD
NDA and GCF Focal Point
Ministry of Environment and Sustainable Development
The Democratic Republic of the Congo

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ሚኒስትሪ መሬት፡ማይን ኣከባብን

دولة ارتريا
وزارة الاراضي والمياه

THE STATE OF ERITREA
Ministry of Land, Water & Environment

28 February, 2025

Ref: MLWE /0.1/ 21 /25

To: The Green Climate Fund ("GCF")

Dear Madam, Sir,

Subject: Funding proposal for the GCF by the World Bank regarding ASCENT-Green, Resilient Energy Access for Inclusive Development.

We refer to the programme titled ***ASCENT-GREEN, Resilient Energy Access for Inclusive Development*** as included in the funding proposal submitted by World Bank to us on 7 January 2025.

The undersigned is the duly authorized representative of Ministry of Land, Water and Environment, the National Designated Authority of Eritrea.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

(a) The government of the State of Eritrea has no-objection to the programme as included in the funding proposal;
(b) The programme as included in the funding proposal is in conformity with the national priorities, strategies and plans of the State of Eritrea;
(c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

Tesfai Ghebreselassie
Minister of Land, Water & Environment

KINGDOM OF ESWATINI

MINISTRY OF TOURISM AND ENVIRONMENTAL AFFAIRS

OUR REF:

DATE: 8 May 2025

To: The Green Climate Fund ("GCF")

Re: Funding proposal for the GCF by World Bank regarding ASCENT-GREEN, Resilient Energy Access for Inclusive Development

Dear Madam, Sir,

We refer to the programme titled ***ASCENT-GREEN, Resilient Energy Access for Inclusive Development*** in Eswatini as included in the funding proposal submitted by **World Bank** to us.

The undersigned is the duly authorized representative of Ministry of Tourism and Environmental Affairs, the National Designated Authority of Eswatini.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

(a) The government of Eswatini has no-objection to the programme as included in the funding proposal;
(b) The programme as included in the funding proposal is in conformity with the national priorities, strategies and plans of Eswatini;
(c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

MINISTRY OF TOURISM AND ENVIRONMENTAL AFFAIRS
PRINCIPAL SECRETARY
08 MAY 2025
P.O. BOX 2652
MBABANE- ESWATINI

Ms Khangeziwe Mabuza
Principal Secretary
Ministry of Tourism and Environmental Affairs
Eswatini

Physical Address: Inter- Old Income Tax Building, 2nd Floor, Mhlambanyatsi Road, Mbabane, Eswatini
Postal Address: P.O. Box 2652, Mbabane, Eswatini
Tel: +268 2404 6632 **Email:** ps_tourism@gov.sz

FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
MINISTRY PLANNING AND DEVELOPMENT

To: The Green Climate Fund ("GCF")

Addis Ababa, March 10, 2025

Re: **Funding proposal for the GCF by World Bank regarding ASCENT-GREEN Program**

Dear Madam, Sir,

We refer to the programme titled ***ASCENT-GREEN Program*** in Ethiopia as included in the funding proposal submitted by the World Bank to us on 27 February 2025.

The undersigned is the duly authorized representative of the **Ministry of Planning and Development, Abas Mohammed Ali**, the National Designated Authority of Ethiopia.

Pursuant to GCF decisions B.08/10 and B.13/21, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the Project Preparation Facility activities as included in the PPF Proposal.

By communicating our no-objection, it is implied that:

(a) The government of Ethiopia has no-objection to the Project Preparation Facility request as included in the PPF Proposal.
(b) The PPF Proposal is in conformity with Ethiopia's national priorities, strategies and plans; and
(c) In accordance with the GCF's environmental and social safeguards, the PPF activities as included in the PPF Proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

Kind regards,

Abas Mohammed Ali, CEO, Environment and Climate change Policy, Strategy Analysis and Mainstreaming
NDA for GCF projects in Ethiopia
UNFCCC focal person in Ethiopia
Ministry of Planning and Development
Addis Ababa, Ethiopia
Cell: +251 91 154 45 26
P. O. Box 4472 (Office)

REPUBLIC OF KENYA
THE NATIONAL TREASURY AND ECONOMIC PLANNING

Telegraphic Address: 22921
FAX NO. 310833
Telephone: 2252299

THE NATIONAL TREASURY
P O BOX 30007 – 00100
NAIROBI

When Replying Please Quote

Ref: TNT/CONF/36/021/C/TY (05) **Date: April 7, 2025**

Ms. Mafalda Duarte
Executive Director
Green Climate Fund
175 Art Centre-daero, Yeonsu-ngu
Incheon City, Republic of Korea

Re: No-objection letter in respect of the funding proposal titled "ASCENT-GREEN, Resilient Energy Access for Inclusive Development submitted by The World Bank.

We refer to the funding proposal titled "**ASCENT-GREEN, Resilient Energy Access for Inclusive Development**" in Kenya submitted by The World Bank to us on November 21, 2024 (the "**Proposal**").

The undersigned is the duly authorized representative of the National Treasury, the National Designated Authority of Kenya.

Pursuant to GCF Decisions B.08/10, B.37/22, and B.41/02, the content of which we acknowledge to have reviewed, in my capacity as representative of the national designated authority, we hereby communicate our no-objection to the Proposal.

By communicating our no-objection, it is implied that:

(a) The government of Kenya has no-objection to the Proposal; and
(b) The Proposal is in conformity with the national priorities, strategies and plans of Kenya

We also confirm that our national process for ascertaining no-objection to the Proposal has been duly followed.

Notwithstanding the foregoing, we expect The World Bank to take the necessary measures to ensure that the programme [and its sub-projects]as described in the Proposal are implemented in a manner consistent with applicable national laws.

We further confirm that our no-objection to the Proposal also applies to any project preparation facility application made by The World Bank after the submission of the Proposal to the GCF Secretariat.

We acknowledge that this letter will be made publicly available on the GCF website.

DR. CHRIS KIPTOO, CBS
PRINCIPAL SECRETARY/THE NATIONAL TREASURY

Copy to: **Mr. Zarau Wendeline Kibwe**
Executive Director, Africa Group
World Bank Group
Washington DC, USA

LESOTHO

Ministry of Energy

P/Bag A91

Maseru 100

Lesotho, 7 April 2025

To: The Green Climate Fund ("GCF")

Dear Madam/Sir,

Re: Funding proposal for the GCF by the World Bank (WB) regarding ASCENT-GREEN, Resilient Energy Access for Inclusive Development

We refer to the programme titled ***ASCENT-GREEN, Resilient Energy Access for Inclusive Development*** in Lesotho as included in the funding proposal submitted by The World Bank to us on 5 March 2025.

The undersigned is the duly authorized representative of the Ministry of Energy, the National Designated Authority of Lesotho.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

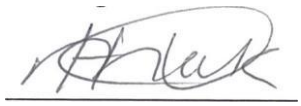
(a) The government of Lesotho has no-objection to the programme as included in the funding proposal;
(b) The programme as included in the funding proposal is in conformity with the national priorities, strategies and plans of Lesotho;
(c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,



Habofanoe Makopela
Deputy Principal Secretary - Ministry of Energy
NDA - Lesotho

REPOBLIKAN'I MADAGASIKARA
Fitiavana - Tanindrazana - Fandrosoana

SECRETARIAT GENERAL

BUREAU NATIONAL DES CHANGEMENTS CLIMATIQUES ET DE LA REDD+

Belem, 20th November 2025

N°: 491-25/MEDD/SG/BNCCREDD+

To: The Green Climate Fund ("GCF")

Re: No-objection letter in respect of the funding proposal titled "ASCENT-GREEN Resilient Energy Access for Inclusive Development" submitted by World Bank.

Dear Madam, Sir,

We refer to the funding proposal titled "ASCENT-GREEN Resilient Energy Access for Inclusive Development" in Madagascar submitted by World Bank to us on 05th June 2025 (the "**Proposal**").

The undersigned is the duly authorized representative of Ministry of the Environment and Sustainable Development, the focal point of Madagascar.

Pursuant to GCF Decisions B.08/10, B.37/22, and B.41/02, the content of which we acknowledge to have reviewed, in my capacity as focal point, we hereby communicate our no-objection to the Proposal.

By communicating our no-objection, it is implied that:

(a) The government of Madagascar has no-objection to the Proposal; and
(b) The Proposal is in conformity with the national priorities, strategies and plans of Madagascar.

We also confirm that our national process for ascertaining no-objection to the Proposal has been duly followed.

Notwithstanding the foregoing, we expect World Bank to take the necessary measures to ensure that the programme [and its sub-projects] as described in the Proposal are implemented in a manner consistent with applicable national laws.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

Lovakanto Njaran'ny Fo Ravelomanana
Coordinator of the National Office of Climate Change and REDD+
Green Climate Fund Focal point
Madagascar

Telephone:265 1 771111
Telefax No:265 1 773379
Our Reference No: EAD/99/06/4L
Your Reference No:

Correspondence should be addressed to:
The Director of Environmental Affairs

ENVIRONMENTAL AFFAIRS DEPARTMENT
LINGADZI HOUSE
CITY CENTRE
PRIVATE BAG 394
LILONGWE 3
MALAWI

To: The Green Climate Fund ("GCF")

Malawi, 26 March 2025

Re: Funding proposal for the GCF by the World Bank regarding ASCENT-GREEN, Resilient Energy Access for Inclusive Development

Dear Madam, Sir,

We refer to the programme titled *ASCENT-GREEN, Resilient Energy Access for Inclusive Development* in Malawi as included in the funding proposal submitted by the World Bank to us on 19 February 2025.

The undersigned is the duly authorized representative of the Director of Environmental Affairs, the National Designated Authority of Malawi.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

(a) The government of Malawi has no-objection to the programme as included in the funding proposal;
(b) The programme as included in the funding proposal is in conformity with the national priorities, strategies and plans of Malawi;
(c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

Ms. Tawonga Mbale-Luka
Director and NDA
Environmental Affairs Department
Ministry of Natural Resources and Climate Change
Malawi

REPUBLIC OF MOZAMBIQUE
MINISTRY OF ECONOMY AND FINANCE
NATIONAL DESIGNATED AUTHORITY

To:
Green Climate Fund (GCF)

Maputo, 06th March, 2025

Re: Funding proposal for the GCF by the World Bank regarding the ASCENT Green, Resilient Energy Access for Inclusive Development (ASCENT-GREEN) program

Dear Madam, Sir,

We refer to the financing proposal for the ASCENT Green, Resilient Energy Access for Inclusive Development (ASCENT-GREEN) program submitted by the World Bank to us in February 2025.

The undersigned is the duly authorized representative of the Ministry of Economy and Finance of Mozambique.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

(a) The government of Mozambique has no-objection to the programme as included in the funding proposal.

(b) The programme as included in the funding proposal is in conformity with the national priorities, strategies and plans of Mozambique.

(c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme

We acknowledge that this letter will be made publicly available on the GCF website.

Best regards,

Yours sincerely

Albano Maniate
(Director & NDA Focal Point, Mozambique)

Republic of Rwanda
Ministry of Environment

RWANDA ENVIRONMENT MANAGEMENT AUTHORITY (REMA)

REMA
OUR ENVIRONMENT OUR FUTURE

Kigali, on 12 FEB 2025
N°..0242/NDA/2024

To: The Green Climate Fund (GCF)

Dear Madam, Sir,

Re: Funding proposal for the GCF by the World Bank regarding ASCENT-Green, Resilient Energy Access for Inclusive Development.

We refer to the programme titled **ASCENT-Green, Resilient Energy Access for Inclusive Development** in Eastern and Southern Africa Region as included in the funding proposal submitted by the World Bank to us on 20 December 2024.

The undersigned is the duly authorized representative of Rwanda Environment Management Authority, the National Designated Authority of Rwanda.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

(a) The Government of Rwanda has no-objection to the programme as included in the funding proposal;
(b) The programme as included in the funding proposal is in conformity with the national priorities, strategies and plans of Rwanda;
(c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

Ms. Juliet KABERA
Director General/ GCF National Focal Point
Rwanda Environment Management Authority
RWANDA

MINISTÉRIO DA ECONOMIA E FINANÇAS
DIRECÇÃO NACIONAL DO PLANEAMENTO

O Director

Helmute Neto V. Barreto

To: The Green Climate Fund ("GCF")

Sao Tome, 13 March 2025

Re: Funding proposal for the GCF by Ministry of Economy and Finance regarding ASCENT-GREEN, Resilient Energy Access for Inclusive Development

Dear Madam, Sir,

We refer to the programme titled *ASCENT Green, Resilient Energy Access for Inclusive Development (ASCENT-GREEN) Program* regional facility as included in the funding proposal submitted by the World Bank to us on 14 March 2025.

The undersigned is the duly authorized representative of **Ministry of Economy and Finance** , the National Designated Authority of Sao Tome and Principe.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

(a) The government of Sao Tome and Principe has no-objection to the programme as included in the funding proposal;
(b) The programme as included in the funding proposal is in conformity with the national priorities, strategies and plans of Sao Tome and Principe;
(c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

Fausto Policarpo Abreu das Neves
NDA Focal Point
Ministry of Economy and Finance

Sao Tome and Principe

JAMHUURIYADDA FEDERAALKA SOOMAALIYA
Wasaaradda Deegaanka
& Isbeddelka Cimilada
Xafiiska Wasiirka

جمهورية الصومال الفيدرالية
وزارة البيئة والتغير المناخي
مكتب الوزير

FEDERAL REPUBLIC OF Somalia
MINISTRY OF ENVIRONMENT & CLIMATE CHANGE
Office of the Minister

Ref: MOECC/0146/2025 **Date:26-04-2025**

To: Green Climate Fund

Subject: No Objection To ASCENT-GREEN Program

Dear Madam, Sir,

We refer to the programme titled ASCENT-GREEN, Resilient Energy Access for Inclusive Development in Eligible countries in Eastern and Southern Africa Region: Angola, Botswana, Burundi, Comoros, Democratic Republic of Congo, Eritrea, Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Namibia, Rwanda, Sao Tomé and Principe, Somalia, South Africa, South Sudan, Sudan, Tanzania, Uganda, Zambia and Zimbabwe (ongoing engagement, to be confirmed with NDAs) as included in the funding proposal submitted by World Bank to us on 24 April 2025.

The undersigned is the duly authorized representative of Ministry of Environment and Climate Change, the National Designated Authority of Federal Republic of Somalia.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

(a) The government of Federal Republic of Somalia has no-objection to the programme as included in the funding proposal;

(b) The programme as included in the funding proposal is in conformity with the national priorities, strategies and plans of Federal Republic of Somalia;

(c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

H. E Lt. Gen Bashir Mohamed Jama,
Minister of Environment and Climate Change, Federal Republic of Somalia

Address: Wadajir District, Airport Road, Mogadishu - Somalia
Website: moecc.gov.so | **Email:** minister@moecc.gov.so

forestry, fisheries
& the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Private Bag X447, Pretoria, 0001, Environment House, 473 Steve Biko Road, Pretoria, 0002 Tel: +27 12 399 9000, Fax: +27 86 625 1042

Ref: EDMS 257742
Enquiries: Stuart Mangold
Tel: 012 399 9243 **Email:** smangold@dffe.gov.za

The Green Climate Fund
Songdo Business District
175 Art center-daero
Yeonsu-gu
INCHEON 22004
Republic Of Korea

Email: fundingproposal@gcfund.org

NO-OBJECTION LETTER IN RESPECT OF THE FUNDING PROPOSAL BY THE WORLD BANK TITLED "ACCELERATING SUSTAINABLE AND CLEAN ENERGY TRANSFORMATION - GREEN, RESILIENT ENERGY ACCESS FOR INCLUSIVE DEVELOPMENT (ASCENT-GREEN)"

Dear Sir/Madam

We refer to the funding proposal titled "Accelerating Sustainable And Clean Energy Transformation - Green, Resilient Energy Access For Inclusive Development (Ascent-Green)" submitted to the Department of Forestry, Fisheries and the Environment (DFFE) on 13 March 2025 ('the Proposal').

The undersigned is the duly authorised representative of the Department of Forestry, Fisheries and the Environment, the national designated authority of South Africa.

Pursuant to GCF Decisions B.08/10, B.37/22, and B.41/02, the content of which we acknowledge to have reviewed, in my capacity as representative of the national designated authority, we hereby communicate our no-objection to the Proposal.

By communicating our no-objection, it is implied that:
(a) The government of South Africa has no-objection to the Proposal; and
(b) The Proposal is in conformity with the national priorities, strategies and plans of South Africa.

We also confirm that our national process for ascertaining no-objection to the Proposal has been duly followed.

NO-OBJECTION LETTER IN RESPECT OF THE FUNDING PROPOSAL BY THE WORLD BANK TITLED "ACCELERATING SUSTAINABLE AND CLEAN ENERGY TRANSFORMATION - GREEN, RESILIENT ENERGY ACCESS FOR INCLUSIVE DEVELOPMENT (ASCENT-GREEN)"

Notwithstanding the foregoing, we expect the World Bank to take the necessary measures to ensure that the project as described in the Proposal is implemented in a manner consistent with applicable national laws.

The DFFE acknowledges that this letter will be made publicly available on the GCF website.

Yours sincerely

Ms Nomfundo Tshabalala
DIRECTOR-GENERAL
DATE:28/03/2025

REPUBLIC OF SOUTH SUDAN
MINISTRY OF ENVIRONMENT & FORESTRY

Office of The Undersecretary of Environment

Ref: RSS/MoEF/US/J/3/18 Juba, 11th, July 2025

To: Ms Mafalda Duarte
Executive Director
The Green Climate Fund ("GCF")
Incheon, Republic of Korea

Dear Ms Duarte,

Re: No-objection letter in respect of the funding proposal for the GCF by The World Bank regarding ASCENT - GREEN (Accelerating Sustainable and Clean Energy Transformation Multiphase Programmatic Approach)

We refer to the programme titled *"ASCENT-GREEN"* Accelerating Sustainable and Clean Energy Transformation Multiphase Programmatic Approach in the Republic of South Sudan as included in the funding proposal submitted by the World Bank to us on 6th February 2025..

The undersigned is the duly authorized representative of the Ministry of Environment and Forestry, the National Designated Authority of the Republic of South Sudan.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

(a) The government of the Republic of South Sudan has no-objection to the programme as included in the funding proposal;
(b) The programme as included in the funding proposal is in conformity with the national priorities, strategies and plans of the Republic of South Sudan;
(c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

Joseph Africano Bartel
Undersecretary for Environment, GCF National Designated Authority
Ministry of Environment and Forestry
The Republic of South Sudan

CC: Ministry, Minister of Environment and Forestry/RSS/Juba
: World Bank, Head Quarters and South Sudan Office

THE UNITED REPUBLIC OF TANZANIA
VICE PRESIDENT'S OFFICE

Telegram: "MAKAMU", HQ
Telephone No: +255 026 2329006
Fax No: +255 026 2329007
Barua Pepe:ps@vpo.go.tz

Government City,
Mtumba Area,
Vice President's Office Building,
P.O. Box 2502,
44046 DODOMA,

In reply please quote:
Our Ref: BA.38/90/01F/100

To: The Green Climate Fund ("GCF")

Dodoma, United Republic of Tanzania, 21st October, 2025.

Re: Funding proposal for the GCF by the World Bank regarding ASCENT-Green, Resilient Energy Access for Inclusive Development

Dear Madam, Sir,

We refer to the programme titled **ASCENT - Green, Resilient Energy Access for Inclusive Development** in Eastern and Southern Africa Region as included in the funding proposal submitted by the World Bank to us on 12 September 2025.

The undersigned is the duly authorized representative of Vice President's Office, the National Designated Authority of Tanzania.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

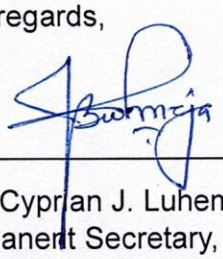
(a) The government of Tanzania has no-objection to the programme as included in the funding proposal;
(b) The programme as included in the funding proposal is in conformity with the national priorities, strategies and plans of Tanzania;
(c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,



Eng. Cyprian J. Luhemeja,
Permanent Secretary,
National Designated Authority (NDA),
Vice President's Office.

Telephone: 256 41 4341305/230487
Fax : 256 41 4233524
Email : finance@finance.go.ug
Website : www.finance.go.ug
Plot No. 2-8 Apollo Kaggwa Road
In any correspondence on
This subjectpleasequoteNo.DARC 79/251/03

Ministry of Finance, Planning &
Economic Development,
P.O Box 8147s
Kampala, Uganda

17th March, 2025

Ms. Mafalda Duarte,
Executive Director,
Secretariat of the Green Climate Fund,
175 Art Center-daero,
Yeonsu-gu, Incheon 22004,
REPUBLIC OF KOREA.

LETTER OF NO OBJECTION TO THE GREEN CLIMATE FUND FOR A PROGRAMME TITLED "ASCENT-GREEN RESILIENT ENERGY ACCESS FOR INCLUSIVE DEVELOPMENT"

We refer to the Programme titled ASCENT-Green, Resilient Energy Access for Inclusive Development in Eastern and Southern Africa Regions as included in the funding proposal submitted by the World Bank for funding by the Green Climate Fund.

The undersigned is the duly authorized representative of Ministry of Finance, Planning and Economic Development, the National Designated Authority/focal point of Uganda.

Pursuant to GCF decisions B.08/10; the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the project as included in the funding proposal.

By communicating our no objection, it is implied that:

(a) The government of Uganda has no objection to the programme as included in the funding Proposal;

(b) The programme as included in the funding proposal is in conformity with the national priorities, strategies and plans in Uganda.

(c) In accordance with the GCF's environmental and social safeguards, the programme as included in the Funding Proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

We acknowledge that this letter will be made publicly available on the GCF website.

Ramathan Ggoobi
PERMANENT SECRETARY/ SECRETARY TO THE TREASURY / NATIONAL DESIGNATED AUTHORITY FOCAL POINT FOR THE GREEN CLIMATE FUND.

Copy to: Hon. Minister of Finance, Planning and Economic Development.

Permanent Secretary, Ministry of Energy and Mineral Development

All communications should be addressed to the
Permanent Secretary
Telephone: +260 211-252395
+260 211-252394
+260 211-252391

In reply please quote

No.:_____

REPUBLIC OF ZAMBIA

MINISTRY OF GREEN ECONOMY AND ENVIRONMENT

OFFICE OF THE PERMANENT SECRETARY
Corner of John Mbita & Nationalist Roads
P.O. Box 30147
Lusaka - Zambia

Mafalda Duarte
Executive Director
Secretariat of the Green Climate Fund
175 Art Center-daero
Yeonsu-gu, Incheon 406-840
REPUBLIC OF KOREA

Date: 18th March 2025
Reference: **NDA/71/21/1**
Pages: 2

Dear Madam/Sir,

SUBJECT: EXPRESSION OF NO-OBJECTION IN RESPECT OF THE PROGRAMME TITLED "ASCENT-GREEN, RESILIENT ENERGY ACCESS FOR INCLUSIVE DEVELOPMENT" SUBMITTED BY WORLD BANK.

We refer to the Programme titled "ASCENT-GREEN, Resilient Energy Access for Inclusive Development", submitted by the World Bank to us on 5th March, 2025.

The undersigned is the duly authorized representative of the Ministry of Green Economy and Environment (MGEE), the National Designated Authority for Zambia.

Pursuant to the GCF Board decision B.08/10, the content of which we acknowledge to have reviewed, in my capacity as representative of the National Designated Authority, we hereby communicate our **no-objection** to the programme as included in the Concept Note.

The ASCENT-GREEN Programme provides a comprehensive approach to expanding access to sustainable, clean energy in Zambia and across the Eastern and Southern Africa region. By leveraging Distributed Renewable Energy (DRE) solutions, the programme enhances resilience against climate change impacts while reducing greenhouse gas emissions. Additionally, it aligns with Zambia's national climate priorities, supporting energy access, climate adaptation, and socio-economic development through clean energy solutions.

By communicating our **no-objection**, it is implied that:

(a) The Government of the Republic of Zambia has no objection to the programme as included in the concept note;
(b) The programme aligns with Zambia's national priorities, strategies, and development plans;
(c) The programme, as included in the funding proposal, is in conformity with **national laws and regulations** in accordance with the GCF's environmental and social safeguards.

We also confirm that our national process for ascertaining no-objection to the programme as included in the concept note has been duly followed.

If the concept note is for a programme, we confirm that our no-objection applies to all projects or activities to be implemented within the approved framework.

We acknowledge that this letter will be made **publicly available** on the GCF website.

Sincerely,

Billy Katontoka
National Coordinator
National Designated Authority
MINISTRY OF GREEN ECONOMY AND ENVIRONMENT

All communications should be addressed, "The Secretary for Environment, Climate and Wildlife

P Bag 7753 Causeway,
Zimbabwe
Telephone: 242701681/3
Fax: 242252673

Your Ref.:
Our Ref:

ZIMBABWE

MINISTRY OF ENVIRONMENT, CLIMATE, AND WILDLIFE

11th Floor, Kaguvi Building

Cnr S. V. Muzenda St/Central Ave

Harare

The Green Climate Fund ("GCF")

Zimbabwe, 29 April 2025

Re: No-objection letter in respect of the funding proposal titled "Accelerating Sustainable and Clean Energy Transformation Multiphase Programmatic Approach (ASCENT MPA) Initiative" submitted by The World Bank

Dear Madam, Sir,

We refer to the Choose an item. titled Accelerating Sustainable and Clean Energy Transformation Multiphase Programmatic Approach (ASCENT MPA) Initiative" in Zimbabwe submitted by The World Bank to us on 25 March 2025 (the "Proposal").

The undersigned is the duly authorized representative of the Climate Change Management Department, Ministry of Environment, Climate and Wildlife, the national designated authority of Zimbabwe.

Pursuant to GCF Decisions B.08/10, B.37/22, and B.41/02, the content of which we acknowledge to have reviewed, in my capacity as focal point, we hereby communicate our no-objection to the Proposal.

By communicating our no-objection, it is implied that:

(a) The government of Zimbabwe has no-objection to the Proposal; and
(b) The Proposal is in conformity with the national priorities, strategies and plans of Zimbabwe

We also confirm that our national process for ascertaining no-objection to the Proposal has been duly followed.

Notwithstanding the foregoing, we want the World Bank to take the necessary measures to ensure that the programme [and its sub-projects] as described in the Proposal is implemented in a manner consistent with applicable national laws.

[We further confirm that our no-objection to the Proposal also applies to any project preparation facility application made by The World Bank after the submission of the Proposal to the GCF Secretariat.]

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

Mr Washington Zhakata
Chief Director Climate Change and Meteorological Services
Ministry of Environment, Climate and Wildlife
Zimbabwe

Environmental and social safeguards report form pursuant to para. 17 of the IDP

Basic project or programme information	
Project or programme title	ASCENT-GREEN: Resilient Energy Access for Inclusive Development
Existence of subproject(s) to be identified after GCF Board approval	Yes
Sector (public or private)	Public
Accredited entity	International Bank for Reconstruction and Development and International Development Association (World Bank)
Environmental and social safeguards (ESS) category	Category B
Location – specific location(s) of project or target country or location(s) of programme	Botswana, Burundi, Comoros, Democratic Republic of Congo (the), Eritrea, Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Rwanda, Sao Tome and Principe, Somalia, South Africa, South Sudan, Tanzania, Uganda, Zambia, and Zimbabwe
Environmental and Social Impact Assessment (ESIA) (if applicable)	
Date of disclosure on accredited entity's website	Thursday, February 19, 2026
Language(s) of disclosure	English, French, Portuguese and Amharic
Explanation on language	English is an official language of Botswana, Eritrea, Eswatini, Kenya, Lesotho, Malawi, Rwanda, Somalia, South Africa, South Sudan, Tanzania, Uganda, Zambia, and Zimbabwe. French is an official language of Burundi, Comoros, Democratic Republic of the Congo (the), and Madagascar. Portuguese is the official language of Mozambique, Sao Tome and Principe. Amharic is the official language of Ethiopia.
Link to disclosure	English: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099546202192642543 French: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099221002262639246 Portuguese: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099817102252618515 Amharic: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099849502252614406
Other link(s)	N/A
Remarks	An ESIA template consistent with the requirements for a Category B programme is contained in the Environmental and Social Sustainability Framework (ESSF).
Environmental and Social Management Plan (ESMP) (if applicable)	

Date of disclosure on accredited entity's website	Thursday, February 19, 2026
Language(s) of disclosure	English, French, Portuguese and Amharic
Explanation on language	English is an official language of Botswana, Eritrea, Eswatini, Kenya, Lesotho, Malawi, Rwanda, Somalia, South Africa, South Sudan, Tanzania, Uganda, Zambia, and Zimbabwe. French is an official language of Burundi, Comoros, Democratic Republic of Congo (the), and Madagascar. Portuguese is the official language of Mozambique, Sao Tome and Principe. Amharic is the official language of Ethiopia.
Link to disclosure	English: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099546202192642543 French: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099221002262639246 Portuguese: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099817102252618515 Amharic: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099849502252614406
Other link(s)	N/A
Remarks	An ESMP template consistent with the requirements for a Category B programme is contained in the Environmental and Social Sustainability Framework (ESSF).
Environmental and Social Management System (ESMS) (if applicable)	
Date of disclosure on accredited entity's website	N/A
Language(s) of disclosure	N/A
Explanation on language	N/A
Link to disclosure	N/A
Other link(s)	N/A
Remarks	N/A
Any other relevant ESS reports, e.g. Resettlement Action Plan (RAP), Resettlement Policy Framework (RPF), Indigenous Peoples Plan (IPP), Indigenous Peoples Planning Framework (IPPF) (if applicable)	
Description of report	The Environmental and Social Sustainability Framework includes the templates for the following: Resettlement Policy Framework (Appendix 10), Resettlement Action Plan (Appendix 11), Indigenous Peoples Planning Framework (Appendix 13) Indigenous Peoples Plan (Appendix 14).
Date of disclosure on accredited entity's website	Thursday, February 19, 2026
Language(s) of disclosure	English, French, Portuguese and Amharic
Explanation on language	English is an official language or Botswana, Eritrea, Eswatini, Kenya, Lesotho, Malawi, Rwanda, Somalia, South Africa, South Sudan, Tanzania, Uganda, Zambia, and Zimbabwe. French is an official language of Burundi, Comoros, Democratic Republic of

	Congo (the), and Madagascar. Portuguese is the official language of Mozambique, Sao Tome and Principe Amharic is the official language of Ethiopia.
Link to disclosure	English: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099546202192642543 French: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099221002262639246 Portuguese: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099817102252618515 Amharic: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099849502252614406
Other link(s)	N/A
Remarks	A Resettlement Policy Framework and Indigenous Peoples Planning Framework are included as Annexes to the ESSF
Disclosure in locations convenient to affected peoples (stakeholders)	
Date	Disclosure in physical locations will be done according to the World Bank's policies and procedures including the ESS on stakeholder engagement.
Place	Disclosure in physical locations will be done according to the World Bank's policies and procedures including the ESS on stakeholder engagement.
Date of Board meeting in which the FP is intended to be considered	
Date of accredited entity's Board meeting	N/A
Date of GCF's Board meeting	Wednesday, March 25, 2026

* Subsequent to the disclosure of this form to the Board and active observers on 23 February 2026, the disclosure of the translations of the Environmental and Social Sustainability Framework (ESSF) in Portuguese and Amharic was made on 25 February 2026, and in French on 26 February 2026.

Note: This form was prepared by the accredited entity stated above.

Secretariat's assessment of FP291

Proposal name:	ASCENT-GREEN: Resilient Energy Access for Inclusive Development
Accredited entity:	the International Bank for Reconstruction and Development and International Development Association (World Bank)
Country(ies):	Botswana, Burundi, Comoros (the), Democratic Republic of the Congo (the), Eritrea, Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Rwanda, Sao Tome and Principe, Somalia, South Africa, South Sudan, Tanzania, Uganda, Zambia, Zimbabwe
Project/programme size:	Large

I. Overall assessment of the Secretariat

1. The funding proposal is presented to the Board for consideration with the following remarks:

Strengths	Points of caution
Climate Adaptation at Scale: Integrates electricity, clean cooking, and PUE to multiply adaptation, gender and health co-benefits and drive sustained economic uplift across vulnerable communities, reaching 42 million beneficiaries including 5 million PUE users.	**Political instability** could reduce commitment under the World Bank's Mission 300, which aims to connect 300 million people to electricity in sub-Saharan Africa by 2030, and shift government priorities, delaying implementation or misaligning the programme with national energy strategies.
Innovative, market-driven approach: ASCENT-GREEN delivers a full suite of financing instruments that address usual barriers in African financing architecture, affordability, risk perception, capacity, scaling up, and policy barrier – thus mobilizing significantly larger private flows and accelerating market transformations to deliver far greater reach.	**Foreign exchange fluctuations** can constrain local currency lending and heighten convertibility/transfer risk, exposing hard-currency financing to depreciation and refinancing pressures that ultimately reduce the impact of the programme.
Inclusive targeting: Ring-fenced eligibility criteria prioritize rural households, fragile, conflict-affected populations, small and medium-sized enterprises and women-owned enterprises as recipients of first-time electricity access, ensuring concessional resources reach the people most in need.	**Delay and inefficient use of GCF proceeds:** Delays in Executing Entity selection or identification of underlying pipeline may delay deployment of funds and actual utilization**.**

2. The Board may wish to consider approving this funding proposal in accordance with the term sheet agreed between the Secretariat and the accredited entity (AE) and, if considered appropriate, subject to the conditions set out in annex II to document GCF/B.44/02.

II. Summary of the Secretariat's assessment

2.1 Programme background

3. Eastern and Southern Africa face growing vulnerability to climate change, with rising temperatures, erratic rainfall and more frequent extreme weather events eroding economic development gains and impacting social resilience. These challenges are especially acute in economic activities that depend on the energy sector, where nearly half the region's population lacks access to electricity and over three-quarters lack access to clean cooking, further intensified by rapid population growth, urbanization, and high rates of poverty and fragility.

4. The proposed programme, ASCENT-GREEN: Resilient Energy Access for Inclusive Development (ASCENT-GREEN), will support people in 21 countries across Eastern and Southern Africa, particularly those living in remote and fragile contexts, by enabling private sector businesses to deliver distributed renewable energy (DRE) systems such as solar home systems and renewable energy mini-grids, clean cooking solutions and productive uses of energy (PUE) equipment, such as solar irrigation pumps and cold storage facilities. Implemented by the World Bank as the AE, and in partnership with regional and national stakeholders, the Programme aims to catalyse country-led climate action for populations that have low per capita emissions, significant infrastructure gaps and high climate vulnerability.

5. ASCENT-GREEN provides a strategic and transformational approach that leverages architecture of the World Bank's Pillar 3 of the ASCENT Multi-Phase Programmatic Approach to programmatically deliver these components of Mission 300, which aims to connect 300 million people to electricity in sub-Saharan Africa by 2030. GCF is a member of Mission 300's Development Partners Coordination Group, and ASCENT-GREEN operationalizes Pillar 3 of this platform at scale while aligning with GCF's mandate to mobilize private investment for low-emission, climate-resilient development by expanding DRE, clean cooking and productive use solutions across the region.

6. With GCF proceeds, ASCENT GREEN will benefit approximately 42.6 million people (28.8 million direct and 13.8 million indirect) and mitigate an estimated 12.2 million tonnes of carbon dioxide equivalent (Mt CO2 eq) over 20 years (excluding potentially traded emission reductions), compared to only 10 million beneficiaries without GCF, with lower EIRR (16.4% without GCF versus 17.2% with GCF) and FIRR (14.6% without GCF versus 24.8% with GCF), and consequently more limited private capital mobilization. GCF's additionality is catalytic and structural: by partnering with the World Bank, GCF brings concessional instruments and risk-mitigation capacity that the International Development Association (IDA) cannot provide, creating a comprehensive, multi-facility blended-finance architecture that reduces affordability barriers and shifts risk perceptions for financiers. This design unlocks high-risk, high-impact market segments that would otherwise remain underserved, while ring-fenced eligibility and targeted results-based financing will ensure that resources reach rural and fragile, conflict-affected (FCV) communities, small and medium-sized enterprises and women-owned enterprises. Without assistance from GCF, the programme would be limited to an IDA credit line and small pilot projects, resulting in far fewer beneficiaries, weaker climate and development outcomes for the most vulnerable, and materially lower private capital mobilization; GCF concessionality and de-risking crowd in local and international investors well beyond GCF's own contribution, enabling market transformation at scale.

7. GCF categorizes the project as category B for its environmental and social safeguards.

2.2 Component-by-component analysis

8. The Programme is structured into three components as set out below.

Component 1: Regional Energy Access Financing (REAF) Project (total cost: USD 539 million; GCF cost: USD 50 million in loans, USD 145 million in grants)

9. Component 1, the REAF project, aims to accelerate access to sustainable and clean energy in Eastern and Southern Africa by addressing key barriers in the DRE sector through a suite of blended finance instruments and capacity-building by mobilising significant volume of affordable, long-term lending to suppliers of DRE, clean cooking and PUE, either directly or via participating financial institutions, alongside a regional results-based financing facility to incentivize expansion into underserved and high-impact markets, including remote FCV populations by offsetting capital expenditure, resulting in lowering initial tariffs for end-users.

10. The component also includes catalysing TDB's disbursement of patient equity financing to nurture the growth of DRE companies, and technical assistance to strengthen the capacity of companies, financial institutions and executing agencies. By integrating these instruments, Component 1 is designed to provide a comprehensive mobilization of private and public capital, reduce costs and facilitate the accelerated market transformation to build a sustainable ecosystem for energy access into frontier markets.

11. Given the programme's complex structure and the World Bank's accreditation scope limitations, the Secretariat also assessed subcomponent 1.4 Enabling Capitalization of Zafiri, where the Eastern and Southern African Trade and Development Bank (TDB) acts as an Executing Entity and investor in Zafiri's permanent vehicle, in detail. This subcomponent is aimed at addressing early-stage downside risk, shallow local capital markets and the scarcity of long-tenor risk capital in frontier and FCV markets where commercial equity remains structurally constrained. For this purpose, a US$5 million GCF non-reimbursable grant will capitalize a contingent loss reserve on TDB's balance sheet, strengthening its credit and giving comfort to put much greater portion of balance sheet at risk in investing in Zafiri at scale. The objective is to mobilize significantly larger equity resources for investment into Zafiri's permanent capital vehicle which, in turn, will make equity investments in DRE companies in line with ASCENT-GREEN eligibility criteria (including first-time access areas, FCV/frontier markets and PUE).

12. From a commercial standpoint, structuring the support as a grant-funded contingent loss reserve is the most efficient solution: direct GCF equity exposure would entail risk disproportionate to the grant size. The additionality of this approach is illustrated by the fact that, without GCF, TDB's governance-driven risk tolerance would limit its investment to around USD 20 million, which is insufficient to reach a material shareholder position and influence Zafiri's strategy; whereas with GCF, TDB can invest around USD 55 million. Moreover, the target scale cannot be achieved through IDA concessional funding alone, which is insufficient to address the loan-to-equity conversion risk – hence the need for catalytic GCF support.

13. To ensure disciplined use and verifiable mobilization, the term sheet includes clear disbursement conditions and a verification methodology, including (1) verified anchor investor participation, (2) achievement of a fixed mobilization threshold and (3) confirmation at first close of a material equity position with associated governance rights (e.g. a board seat or equivalent oversight mechanisms) as conditions for disbursement from the AE to TDB.

14. The Secretariat acknowledges that the structure could potentially be construed as indirectly underwriting part of the downside equity risk, because the grant may absorb TDB's

net realized losses in an economically second-loss position (with accrued dividends and/or recoveries absorbing first losses), but notes that the term sheet prohibits use of grant proceeds for direct equity investments, for covering return shortfalls against hurdle rates, for expected losses beyond the defined purpose or for servicing IDA debt. The grant is contractually ring-fenced, time-bound and purpose-restricted solely to the contingent loss reserve; it cannot be diverted to corporate overheads, profit distributions or non-eligible markets/segments.

15. In addition, from an accounting standpoint, the instrument is recorded as a grant on balance sheets of both GCF and the World Bank (i.e. non-equity, non-returnable capital), thereby addressing accreditation-related concerns for the World Bank as the AE.

16. The Term Sheet also requires that upon expiry of the Zafiri vehicle's tenure, any remaining balance and accrued interest will be transferred as a grant to TDB's not-for-profit subsidiary, the Trade and Development Fund (TDF), to be used exclusively for activities that meet ASCENT-GREEN's eligibility criteria.

Component 2: The Regional Energy Access De-Risking Facilities (REAF 2) Project (total cost: USD 105 million; GCF cost: USD 40 million in reimbursable grants, USD 10 million in grants)

17. Component 2, the REAF 2 project establishes two key de-risking mechanisms to unlock private sector investment in DRE, clean cooking and PUE across Eastern and Southern Africa.

18. The first, the Risk-Sharing Facility (RSF), uses a combination of a GCF reimbursable grant and World Bank guarantee to provide partial credit guarantees to local financial institutions, encouraging them to lend, especially in local currencies, to DRE companies serving climate-vulnerable and FCV areas. This addresses the lack of affordable local currency debt and high perceived risks that have limited commercial lending to the sector.

19. The rationale for GCF providing a reimbursable grant to the RSF, the RSF's operating mechanics, the RSF's guarantee fee structure, loss caps for GCF, as well as the proposed replenishment mechanism for the RSF loss layer, are mentioned in the term sheet.

20. Current market conditions in the target countries – including shallow local currency markets, high perceived credit risk of DRE portfolios, limited long-tenor lending capacity of local financial institutions, and elevated macro and currency volatility – mean that purely commercial guarantee structures are not sufficient to unlock lending at scale. The GCF reimbursable grant capitalizes the RSF loss-absorption layer in a manner that improves the sustainability of the facility, enables local currency risk sharing and allows guarantee coverage to extend to higher-risk FCV areas and underserved market segments that would otherwise remain excluded. This concessional design ensures that the RSF operates as a catalytic and time-bound market-creation instrument rather than a permanent subsidy, crowding in private capital while preserving the facility's financial viability.

21. The second, the Carbon Risk Mitigation Facility (CRMF), stabilizes carbon market revenues for DRE projects by offering a floor price guarantee for carbon credits, reducing revenue volatility and attracting more investment. Both facilities are complemented by technical assistance to build the capacity of financial institutions and project developers, strengthen risk management and support policy harmonization. Together, these instruments aim to crowd in commercial capital, reduce financing costs and make DRE solutions more accessible and sustainable for underserved populations.

Component 3: The Regional Energy Access Acceleration Platform (total cost: USD 51 million; GCF cost: USD 5 million in grants)

22. Component 3 focuses on creating an enabling environment for the acceleration and sustainability of DRE, clean cooking and PUE markets across Eastern and Southern Africa. Implemented by the secretariat of the Common Market for Eastern and Southern Africa

(COMESA), this component provides technical assistance and capacity-building to governments and DRE companies, supporting policy and regulatory reforms, digitization and market intelligence. Key activities include helping countries implement energy sector reforms prioritized in their national energy compacts; developing digital monitoring, reporting and verification (digital MRV) platforms; supporting project preparation and business development for DRE companies (with a special focus on smaller and local enterprises); and closing data, knowledge and skills gaps, especially for women and youth.

23. Under component 3 COMESA also leads the ASCENT-GREEN gender action plan, coordinates knowledge exchange, and ensures strong country engagement and ownership throughout implementation. By strengthening policy frameworks, building capacity and fostering regional coordination, this component underpins the long-term impact and sustainability of energy access expansion in the region.

24. The project management budget will finance project management expenses in various fields, such as finance and procurement.

III. Assessment against investment criteria

25. The Programme consistently scores medium to high against the GCF investment criteria. A detailed assessment of the Programme's fit with the GCF investment criteria is provided below.

3.1 Impact potential *Scale: High*

26. The ASCENT-GREEN Programme will directly provide clean and resilient electricity access to 11.7 million people and clean cooking access to 11.9 million people across Eastern and Southern Africa. It will also support the provision of PUE for 5.2 million people and electrify more than 1,300 public facilities. The project is expected to reduce greenhouse gas (GHG) emissions by 12 Mt CO_2 eq over 20 years, catalyse over USD 521 million in private sector investment, and strengthen the capacity of key stakeholders – including companies, financial institutions and governments – to expand and sustain the markets for DRE, clean cooking and PUE. By prioritizing the most vulnerable populations, particularly in FCV settings, ASCENT-GREEN is expected to improve health and education outcomes, advance gender equality and expand economic opportunities.

3.2 Paradigm shift potential *Scale: High*

27. The paradigm shift potential of the ASCENT-GREEN Programme lies in its innovative regional and market-driven approach, which accelerates and sustains access to DRE, clean cooking and PUE solutions across Eastern and Southern Africa. By integrating concessional finance, risk-sharing and technical assistance, the Programme enables the private sector to expand into remote and fragile areas, drives down costs through economies of scale and mobilizes commercial capital, transforming the energy access landscape from fragmented, small-scale interventions to a coordinated, inclusive and sustainable ecosystem. This approach not only delivers climate resilience, economic opportunity and gender empowerment for millions of people, but also enhances climate resilience and supports sustainable development at a scale intended to enable the market to remain viable beyond the Programme implementation period.

3.3 Sustainable development potential *Scale: High*

28. The ASCENT-GREEN Programme has strong sustainable development potential because it will provide access to clean energy and cooking to millions of people in Eastern and Southern Africa, which will drive economic growth, improve health and education, empower women and enhance climate resilience. By electrifying homes, schools and health facilities, and supporting PUE, the Programme enables new business opportunities, better educational outcomes and improved healthcare, while reducing indoor air pollution and time spent gathering fuel, especially for women and children. These outcomes directly support several Sustainable Development Goals (SDGs), including SDG 1(No poverty), SDG2 (Zero hunger), SDG 3 (Good health and well-being), SDG 4 (Quality education), SDG 5 (Gender equality) and SDG 6 (Clean water and sanitation).

3.4 Needs of the recipient *Scale: Medium to high*

29. Approximately 365 million people – nearly half of the population in Eastern and Southern Africa (49 per cent) – lack access to electricity, and 580 million people (77 per cent) lack access to clean cooking solutions. The majority of the people without electricity live in rural areas, and more than half are in FCV countries, with most surviving on less than USD 2.15 per day. These energy deficits severely limit opportunities for sustainable economic development and increase vulnerability to climate change, especially for the poorest and most climate-exposed communities. The programme places a strong emphasis on women and youth as well as on long-term sustainability, aiming to improve the livelihoods, health, education and resilience of millions of people across the region.

3.5 Country ownership *Scale: High*

30. No-objection letters have been issued by all 21 countries.

31. The ASCENT-GREEN programme is fully aligned with the national climate strategies and priorities of participating Eastern and Southern African countries, all of which have signed the Paris Agreement and set ambitious renewable energy and clean cooking targets in their nationally determined contributions. The Programme is fully aligned with national climate strategies and priorities of participating countries, with strong government, private sector and civil society engagement throughout design and implementation. Regional institutions such as TDB and COMESA play key roles as executing entities (EEs), and extensive consultations have ensured the programme addresses local needs and supports national and regional goals.

3.6 Efficiency and effectiveness *Scale: Medium to high*

32. The GCF cost per direct beneficiary is around USD 4.3, and per total beneficiary is around USD 9.1. The cost per t CO_2 eq mitigated is USD 10.25 over the lifetime of the programme, which is lower than the average GCF Programmes. With a very high co-financing rate of 1:1.78, the programme demonstrates strong cost efficiency.

33. The ASCENT-GREEN programme demonstrates strong economic and financial viability, with an economic internal rate of return (EIRR) of 17.2 per cent and a financial internal rate of return (FIRR) of 24.8 per cent when GCF concessional funding is included. Without GCF support, these rates drop to 16.4 per cent (EIRR) and 14.6 per cent (FIRR), and the two key facilities show negative net present values (NPVs) and internal rates of return below their discount rates, indicating that the programme would not be financially sustainable without concessional finance. The analysis confirms that GCF funding is essential for achieving positive returns, reducing risk and enabling the programme to deliver meaningful impact for millions of beneficiaries across Eastern and Southern Africa.

34. GCF's additionality is clearly demonstrated by the difference in economic NPV between the "with GCF" and "without GCF" scenarios, which amounts to USD 367.3 million, which is well above the proposed GCF contribution. This catalytic effect means each dollar of GCF funding generates more than one dollar of benefit, amplifying the developmental impact and mobilizing further capital from other sources. The structuring and sizing of the funding request is grounded in rigorous analysis and World Bank standards, ensuring that ASCENT-GREEN is both ambitious and achievable, with concessional resources playing a crucial role in unlocking private sector participation and maximizing development finance. This differential is further validated by the economic and financial analysis "with and without GCF" modelling, which shows concessional capital directly improves bankability by reducing weighted average cost of capital, extending tenor, and mitigating early-stage and market risks that would otherwise prevent investment. The economic and financial analysis also confirms that GCF support is decisive in shifting projects from marginal or non-viable to bankable status, thereby enabling scale and private capital mobilization.

IV. Assessment of consistency with GCF safeguards and policies

4.1 Environmental and social safeguards

35. Programme brief. ASCENT-GREEN is a regional programme aimed at scaling up access to modern energy in the AFE Region to improve climate resilience and support economic development of those in remote, fragile, conflict and violence-affected areas. It will provide financing to SMEs either through direct lending to DRE companies or on-lending through participating financial institutions (PFIs) for clean cooking and productive uses of energy (PUE) such as for the electrification of schools, health and other public facilities. It will also provide partial credit guarantees to mitigate risks of PFIs for lending to DRE companies and other de-risking instruments to have more carbon revenues secured. These interventions will be complemented by institutional and technical capacity building activities.

36. Environmental and social (E&S) risk category and safeguard instrument. The Programme is classified as moderate to substantial risk under the AE's environmental and social risk classification and is classified as Category B in accordance with the GCF's Revised Environmental and Social Policy given that the proposed activities under the programme are expected to have potential limited adverse environmental and/or social risks and impacts that individually or cumulatively, are few, generally site-specific, largely reversible, and readily addressed through mitigation measures. No activities categorized as high risk (Category A) will be supported under the programme as indicated in the exclusion criteria. The Programme has developed an Environmental and Social Sustainability Framework (ESSF) which: (i) set out the standards, procedures, and tools that will apply across all programme components under ASCENT GREEN; (ii) enumerated the key steps to be taken by the executing entities to manage E&S risks and impacts in accordance with the applicable requirements, and (iii) provided indicative templates and outlines of E&S documents that may be required for the activities supported under the programme.

37. Compliance with GCF's Environmental and Social Safeguards (ESS) Standards. The following paragraphs summarize the assessment of the programme's consistency with GCF's interim ESS:

38. **ESS1: Assessment and Management of Environmental and Social Risks and Impacts.** The programme has prepared an ESSF that describes how the environmental and social impacts and risks of the activities will be assessed, managed, and supervised both by the AE at the programme level and by the EEs at the operational level. Among the key E&S risks and impacts identified include potential for construction-related impacts in the installation of mini-

grids and associated infrastructure that may lead to air and noise pollution, water runoff, and localized biodiversity disturbance. Management of electronic waste and potentially hazardous materials is also a concern given that the subprojects may use components such as lithium-ion and lead-acid batteries, solar panels, wirings, and inverters, where improper handling and disposal may result in soil and groundwater contamination. Occupational health and safety (OHS) risks to workers during construction, installation, and maintenance phases include potential for electrocution, falls when working at heights, and health issues when exposed to hazardous substances. Labour risks can include the lack of formal labour policies by companies, exposure of labourers to unsafe work conditions, and risks of forced or child labour in the supply chains. TDB, the EE for Component 1, has an existing environmental and management system (ESMS), and has been assessed by the AE to be well-versed in applying the AE's Operational Policy (OP) 4.03 on Performance Standards for Private Sector Activities. The EEs for Component 2, which are yet to be identified during implementation, will also be required to establish their own ESMS. For both components, E&S requirements and responsibilities will be cascaded down to the PFIs and DRE companies from the EEs, who will further include specific E&S obligations in the financing agreements with sub-borrowers or investee companies.

39. **ESS2: Labour and Working Conditions.** The programme will involve construction activities that require hiring of labourers by contractors. Thus, construction-related risk on labour management, safety and social concerns may occur. Issues related to construction activities include compliance of contractors with labour and working condition standards including on OHS, child labour, and community health and safety, issues such as traffic and construction site safety for nearby communities, potential for spread of sexually transmitted diseases (STDs) including HIV/AIDS, and potential for conflicts with communities due to cultural differences. The ESSF requires all EEs to manage the working conditions of their workforce aligned with applicable national labor laws and the requirements of World Bank Performance Standard 2 (PS2) on Labor and Working Conditions. The PFIs as well as Zafiri will be required to maintain PS2-compliant human resource policies, including specific provisions for employee grievance redress mechanism. Labour and working conditions-related risks will be identified and addressed through a Labor Management Procedure (LMP) and other OHS management plans. To address the risk of forced labor in the supply chain, EEs will require as part of their financing agreement, a mandatory provision for all contractors, subcontractors, suppliers, and manufacturers to declare their compliance history, commit to contractual prohibitions on forced and child labour, and cascade these requirements through all tiers of the supply chain. As part of its exclusion list, the programme will also not support production or activities involving forced labour or child labour.

40. **ESS3: Resource Efficiency and Pollution Prevention.** Interventions under the programme are generally expected to promote resource efficiency and conservation initiatives. Nevertheless, the nature of DREs, clean cooking and PUE systems being considered will still incur environmental pollution both during construction and operations stages. Key pollution concerns include management of potentially hazardous e-waste especially as regards end of life and/or damaged solar panels and batteries and air, noise, fugitive dust, and solid waste generation during construction. All subprojects under the programme will be required to assess ESS3 related risks by undertaking an E&S impact assessment (ESIA) or an initial environmental examination ((IEE) and develop and implement Environmental and Social Management Plans (ESMPs) to mitigate and address the identified risks and/or impacts. Management measures will be in accordance with Good International Industry Practice (GIIP) and the relevant World Bank Group's Environmental, Health, and Safety Guidelines.

41. **ESS4: Community Health, Safety and Security (CHSS).** The construction and operation of the facilities under the programme may pose health and safety risks to nearby communities. These risks include exposure to construction site hazards, traffic accidents, disease transmission and exposure to hazardous materials. In conflict-affected target countries,

security personnel could be deployed and poses community risks, including of SEAH. EEs will be required to identify and address CHSS risks in the subprojects and develop appropriate management plans including as needed, emergency response and preparedness plans. Any project-induced, conflict-related risk will be assessed through the E&S assessment process considering local conditions such as community tensions, disputes over land or resources, or concerns as regards safety of workers or nearby communities If the screening finds concerns related to FCV, the project developer will carry out a conflict-sensitivity assessment that is appropriate to the level of risk and will identify the specific local issues and develop measures to ensure that the issues will be adequately addressed.

42. **ESS5: Land Acquisition and Involuntary Resettlement.** Off-grid distributed renewable energy (DRE) subprojects, including solar home systems and hydro/solar mini-grids may require land acquisition thus could result to physical and/or economic displacement. Should these risks occur, TDB is required to notify the AE of any subprojects involving land acquisition, whether financed directly or through PFIs and Zafiri, and will need to seek and apply AE's guidance. Prior AE approval is mandatory for any subproject that entails resettlement or displacement. PFIs and Zafiri may initially support only small subprojects under 2 MW with clear, unencumbered land titles, verified through due diligence procedures in accordance with their ESMSs. All land acquisition or involuntary resettlement impacts, regardless of scale, must comply with the AE's PS5 requirements and will be mitigated through AE-approved instruments such as a Resettlement Action Plan or Livelihood Restoration Plan.

43. **ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.** All subprojects will be required to assess risks to biodiversity and natural resources as part of the environmental and social due diligence (ESDD). While mini-grid subprojects, particularly hydro-based systems, may result in biodiversity and hydrology impacts including potential for habitat loss, decreased residual flows, increased sediment deposition, reduced organic matter retention, cumulative basin-level effects, and hydrological changes, the programme will only support small run of the river technologies without any water impoundment or reservoir. As part of its exclusion list, the programme will also not support "any activity involving or requiring destruction of critical habitat and any forest project under which no sustainable development and managing plan is carried out' as well as "any activity involving areas gazetted by host countries through national or international legislation and deemed to have a high biodiversity and/or cultural value or any other activities that lead to substantial destruction of the environment." Subprojects will be screened for biodiversity risks early and will avoid critical habitats through alternatives analysis and will develop, if necessary, a stand-alone Biodiversity Management Plan.

44. **Indigenous Peoples Policy and ESS 7: Indigenous Peoples.** The AE meets the requirements of GCF Indigenous Peoples Policy through an Indigenous Peoples Policy Framework (IPPF) and by applying its relevant policies in a manner that ensures the programme meets at all the times the GCF requirements. Many of the target countries have Indigenous Peoples who may be affected by the programme activities. At this stage, the programme document does not identify any specific Indigenous Peoples who may be impacted and details screening criteria, procedures and measures that must be followed if Indigenous Peoples are identified in any programme impact area in any of countries where the funded activity is implemented. The IPPF aims to safeguard the rights and interests of Indigenous Peoples with consideration for meaningful and culturally appropriate consultation throughout the programme cycle. The presence of Indigenous Peoples will be screened using the criteria outlined in the IPPF, and potential impacts on their lands, natural resources, livelihoods, and cultural heritage will be assessed in proportion to the context, scale, and complexity of activities. Where Indigenous Peoples are present, an Indigenous Peoples Plan (IPP) will be prepared to ensure meaningful engagement, mitigate negative impacts and promote benefit-sharing. Consultations will be conducted at subproject level as part of the IPP development,

with due consideration for cultural appropriateness, use of local languages and traditional decision-making processes. All consultations on the subprojects will be well documented, including issues raised and how these have been addressed. Subprojects that may create adverse impact on Indigenous Peoples are excluded from financing, as are subprojects that may create adverse impacts on such peoples. Compliance with the IPPF will be monitored and reported through defined indicators, including the consultations, grievance resolution performance, and actions taken to strengthen cultural appropriateness and inclusivity. In line with its roles and functions, the GCF Indigenous Peoples Advisory Group is available to provide advice to the AE, who is also encouraged to share emerging good practices and success stories with the group.

45. **ESS8: Cultural Heritage.** Subprojects will be required to consult with affected communities in identifying cultural heritage (either tangible or intangible) to incorporate its views into the decision-making process. All subprojects will also be required to implement a Chance Find Procedure to ensure that any previously unknown cultural heritage encountered during construction or earthworks is immediately protected, reported, and assessed by relevant authorities to be managed in accordance with national law and ESS8 requirements. The programme will also not finance "any subproject or activity that creates adverse impacts on cultural heritage." The ESSF provides guidance in the preparation of "Chance find" procedures and management plans to identify and avoid impacts on physical cultural resources from its investments.

46. **Sexual exploitation, abuse and harassment safeguarding**. The revised GCF Environmental and Social Policy adopted by decision B.BM-2021/18 requires safeguarding from sexual exploitation, abuse and harassment (SEAH) in GCF-financed activities. The AE provided SEAH safeguarding in its submission to this funding proposal. The AE conducted an assessment on SEAH and, in the ESSF and gender assessment, highlights that the programme's support for distributed renewable energy subprojects may lead to several labour-related risks, including SEAH affecting community members or project workers, security risks for workers, workplace conflicts, and gender-based exclusion. The AE further notes that in conflict-affected countries, ensuring security may necessitate the deployment of security personnel to safeguard workers and assets and the presence of security staff itself may pose additional risks to the community, including SEAH.

47. Key labour risks also include the likely presence of migrant or seasonal workers, labour influx, and gender-based violence. Risks of GBV and SEAH may also arise during construction, stakeholder engagement, or in fragile settings. The AE identifies the heightened risk of SEAH and GBV in fragile and conflict-affected countries, some of which have high incidences of GBV. To prevent SEAH, the program states that subprojects requiring security will be carefully evaluated in accordance with applicable guidelines and assessments, and implementing countries should develop management plans for the same, including clear codes of conduct for interactions with the community. It is recommended that the AE require implementing countries to ensure that in instances where security personnel are deployed, the security personnel should undergo SEAH awareness sessions. All the sub

48. Projects will be required to establish a dedicated grievance mechanism for workers, separate from the overall project grievance redress system. Monitoring of SEAH activities will be the responsibility of the ESF specialist who will be part of the team of the respective Executing Entities.

49. **Implementation arrangements.** The AE will be responsible in overseeing E&S risk management for the programme in line with its policies and procedures. The EEs' E&S performance will be evaluated based on compliance with legal agreements, environmental and social action plan (ESAP), and environmental and social commitment plan (ESCP) requirements, and will be consolidated and submitted by the AE to GCF through the APRs. EEs will be required

to submit quarterly E&S performance reports to the AE covering issues such as grievance management, site supervision, ESMS implementation and incident/accident monitoring. These monitoring and reporting requirements will be applied to EEs for both programme components to ensure consistency in E&S risk management across all activities and partners.

50. **Stakeholder engagement.** Consultations were held with various stakeholders in the target countries including with representatives from the government, private sector and civil society. It has also incorporated feedback from beneficiaries. During implementation, stakeholder engagements will continue and a Stakeholder Engagement Plan (SEP) is prepared. The SEP defines the strategy for stakeholder engagement, including public information disclosure and consultation throughout the entire programme cycle. The SEP outlines the options by which the programme will communicate with stakeholders and include a mechanism by which stakeholders can raise concerns, provide feedback, or make complaints about the programme or any of its activities.

51. **Grievance redress mechanism (GRM).** The AE has an established Grievance Redress Service (GRS) which is available for use by any aggrieved party. Communities and individuals who believe that they are adversely affected by a World Bank - supported project may submit complaints to the GRS by phone or through online. Project-affected communities and individuals may also submit their complaints to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, because of WB's non-compliance with its policies and procedures. The EEs will also be required to establish mechanisms to receive and address inquiries and complaints from the public and stakeholders. All PFIs and Zafiri will likewise be required to develop a GRM and require their investments to establish the same.

4.2 Gender policy

52. In compliance with the GCF Gender Policy, the AE prepared and submitted a gender assessment accompanied by its gender action plan. Noting the various gender disparities in the sector and across the targeted countries, the AE asserts that applying a gender lens to increasing energy access could result in poverty reduction in the region because there would be reduction in time drudgery, increased positive health outcomes, increased engagement in income-generating activities, and increased access to information that would lead to economic empowerment of vulnerable communities. On the supply side, an increase in energy access could increase gender equality in employment and asset ownership within the energy sector and improve effectiveness of supply value chains. Evidence shows that availability of household appliances such as cookstoves tailored for the end-user, particularly women, are more likely to be accepted and used, thereby increasing the demand for connections and profit margins for the service providers. Also, the energy sector is male dominated and offers high-paying jobs; increasing the employment of women in the sector could result in more high-paying jobs and subsequently better livelihoods.

53. The ASCENT-GREEN programme will integrate gender-transformative approaches that are aimed at closing the gender gaps related to energy access; and such approaches will also employ interventions that will empower women to make meaningful contributions to the AFE energy sector. The intended results are focused on activities that will increase access to electricity from DRE benefiting 8.4 million women and clean cooking solutions for 7 million women in AFE who have a direct impact on reducing gender inequalities in the region. The gender action plan, therefore, has been designed from an investment capital (debt and equity) and results-based financing perspective. Technical assistance in the form of capacity-building will also be provided by the programme to the companies in the DRE sector in AFE to support increased access to clean and sustainable energy to women in households, including those in women-led households, as well as increased access to clean and sustainable energy and

productive uses equipment to women-owned/-led enterprises, increased access to debt and equity to women-owned/-led enterprises in the DRE sector, and increased women's employment in the DRE sector. The programme will also contribute to and strengthen the ongoing policy dialogue on gender and the DRE sector in AFE, including the awareness of the need to have a specific focus on reducing gender gaps as an essential part of conducting energy sector interventions.

54. The AE will ensure that the following gender outcomes are achieved: increased access of women to clean and resilient energy in the AFE region; access for women and girls to clean and resilient electricity will be increased, targeting 8.5 million women; 7 million women and girls will have access to clean cooking solutions; an increase in the resilience of women and girls to adverse health impacts, and so on. Furthermore, the programme will work with women-owned/-led enterprises, ensuring that they have access to clean and resilient energy and equipment, ensuring that there is increased access to finance for women-owned and women-led DRE and clean cooking products.

4.3 Risks

4.3.1. Accredited entity/executing entity capability to execute the current project (medium risk)

55. Notwithstanding the AE's strong institutional capacity and track record, the programme's multiple financing structures and financial instruments, reliance on EEs and other multiple PIEs, and the phased readiness requirements introduce execution, credit, disbursement and impact risks that require close monitoring. Given the complexity of the AE–EE structure and varying institutional readiness, the AE/EE capability is assessed as Medium risk.

4.3.2. Project-specific execution risks (High risk)

56. **Co-financing risk**: The planned programme-wide GCF financing to co-financing ratio is 1:1.78 on a 'all reasonable efforts' basis by AE. This may expose the programme's impact to scale-down risks if co-financing does not fully materialize. Mitigation measures include a disbursement condition requiring AE confirmation of committed co-financing amounts; and a partial cancellation provision enabling GCF and the AE to revisit the financing envelope if co-financing declines materially.

57. **Impact risk**: The programme allows conversion of GHG ERs not attributable to GCF financing. Although the TS requires that (i) GCF attributable ERs be retired and not converted into offsets credits, and (ii) at least 60% of total ERs be attributed to GCF financing, a residual risk remains that offset conversion of non-GCF ERs may reduce the total impact mitigation impact of the programme. Robust MRV, third party verification and transparent attribution at host country level are critical to maintaining integrity. Delays and weakness in these systems could undermine the traceability and transparency of reported mitigation impacts.

58. **Delay and inefficient use of GCF proceeds**: While the initial disbursement to the AE is significant, risks of idle balances are mitigated through disbursement conditions and AE-EE covenants that link fund flow to downstream legal commitment and amendment of Subsidiary Agreements prior to subsequent disbursements. Despite these controls, delays in Operations Manual completion or EE selection may postpone deployment of funds and actual utilization. To address this, the programme includes timebound partial cancellation triggers should approval or disbursement thresholds not be met.

59. **Credit risk**: GCF is exposed to the credit risk of the TDB (BB by Fitch, Ba1 by Moody's as of Sep & Nov 2025, respectively). Rating agencies cited that TDB operates in a challenging macroeconomic environment with heightened vulnerability to sovereign debt restructurings across several member countries. In addition, GCF proceeds do not benefit from AE's Preferred Creditor Status.

60. **Concessionality:** Loan (Sub-component 1.1): Concessionality is expected to be passed down to beneficiaries in line with the eligibility criteria. Concessional terms of GCF public loans reflect the challenging operating environment and the focus on underserved sector and regions despite private sector-oriented activities.

61. Grant (Sub-component 1.4): The GCF grant would be held in a segregated account with strict usage triggers. While the grant would still absorb losses arising from the Zafiri equity investment, the concessionality would remain ring-fenced at the activity level. Investment income would remain within the facility structure under TDB management for the same purpose. This structure therefore limits the transfer of concessionality beyond the intended purpose and contains exposure-specific capital preservation loss buffer linked to TDB's approved equity investment only. The term sheet stipulates that, prior to the Completion Date, the EE should provide action plans acceptable to the AE, detailing EE's systems and mechanisms for monitoring the use of GCF proceeds to ensure continued eligibility. Following TDB's exit from Zafiri, any remaining balance of the GCF Grant will be transferred to TDF for investment in projects that meet the established eligibility criteria.

62. Reimbursable grant (Sub-component 2.1): The RSF loss waterfall places the GCF reimbursable grant ahead of the IDA guarantee, resulting in earlier loss absorption by GCF and indirectly strengthening IDA's contingent position. Though the sequencing reflects 'funded vs. contingent' nature of the instruments, it indirectly provides loss protection to IDA's contingent liability. In non–IDA eligible countries, where no IDA backstop exists, excess losses must be absorbed by the facility, potentially requiring less concessional structuring for these markets.

63. Grant (Subcomponent 1.3): TA Activity 1.3 is financed by a combination of IDA credit, IDA grants, and GCF grants. This arrangement raises questions regarding the justification for 100% concessional GCF grant financing. The AE clarified that IDA credit will support the piloting financial innovation, while GCF grant financing will support TA functions. To avoid dual financing of identical budget lines, the scope, activities and cost allocations must be explicitly defined and monitored.

4.3.3. Compliance risk (High risk)

64. Given the vast geographic scope covering 21 countries across Eastern and Southern Africa and the complex nature of the proposed programme – which includes on-lending via participating financial institutions, equity financing via a new equity vehicle and implementation in countries affected by United Nations Security Council financial sanctions – the inherent risks of money laundering/terrorist financing (ML/TF) and other prohibited practices (PP) are determined to be high.

65. The AE has existing anti-money laundering/countering the financing of terrorism (AML/CFT) and other integrity risk-related internal controls, which include sanctions screening of counterparties. In addition, the AE will conduct ongoing risk assessment including during project preparation, at least annually, and ad hoc based on triggers. The ongoing monitoring comprises periodic reporting, audits, site visits and third-party verification. The co-EE TDB also conducts integrity due diligence, screening and risk assessments of all clients.

66. Moreover, the AE has conducted first-level due diligence/capacity assessments on the EEs of Components 1 and 3, TDB and COMESA, respectively, and found that both EEs have

sufficient financial management capacity, including relating to integrity risk management. The AE has also confirmed that a prospective regional EE for Component 2 has been identified and their appraisal is due to be completed by March 2026.

67. As the AE has not conducted a programme-specific ML/TF/PP risk assessment relating to the proposed activities and counterparties, and given the complexities of the multi-jurisdictional scope, residual compliance risk is determined to be high.

4.3.4. GCF portfolio concentration risk (within monitoring threshold)

68. In the event of approval, the impact of this proposal on the GCF concentration risk remains within the monitoring thresholds of the Risk Appetite Statement in terms of results areas, single proposal or AE concentration.

4.3.5. Recommendation

69. It is recommended that the Board consider the above factors in its decision.

Summary risk assessment	
Accredited entity/executing entity capability	Medium
Project-specific execution	High
Compliance	High
GCF portfolio concentration	Within monitoring threshold

4.4 Fiduciary

70. As the AE, the World Bank will be responsible for the management and administration of GCF resources, in accordance with its policies, procedures and practices, as well as the relevant provisions of the funded activity agreement (FAA) and the accreditation master agreement (AMA). The World Bank will enter into agreements with the EEs in order to make available both World Bank and GCF financing for eligible investments, consistent with the provisions of the FAA.

71. The World Bank will also be responsible for overall programme governance, oversight and quality assurance, including E&S risk management, in line with its policies and procedures and any specific requirements set out in the AMA and FAA. As a GCF AE, the World Bank will sign subsidiary agreements with each EE implementing activities under the GCF-financed components of the programme. The World Bank will use its operational systems and established processes to supervise projects, approve eligible subprojects under preparation in line with the criteria presented in this funding proposal and facilitate integrated reporting to the GCF, as well as learning across projects.

72. The programme will be implemented by TDB and COMESA as EES. TDB's not-for-profit subsidiary, TDF, will act as the project implementing entity for subcomponents 1.1 and 1.2. TDB will sign an agreement with TDF to cascade relevant EE obligations, and the World Bank, as the AE, will also sign a project agreement directly with TDF.

73. TDB will establish a coordination team comprising, at a minimum, a programme/project manager, a disaster risk and resilience specialist, two environmental and social specialists, a financial management specialist, a procurement specialist, and a gender and inclusion specialist, alongside an expanded investment officer capacity for both TDB and TDF. For subcomponent 1.4, TDB will dedicate a specialized asset management team to manage the equity financing component. A financial management capacity assessment and a financial intermediary assessment of TDB have been conducted in accordance with World Bank policies.

74. The programme will ensure robust external audit arrangements consistent with World Bank and GCF requirements. EEs will be required to appoint independent external auditors with qualifications and terms of reference acceptable to the World Bank.

75. EEs will be responsible for all procurement activities. For project activities not implemented directly by the EEs in their capacity as financial intermediaries, such as technical assistance and advisory services, procurement will be carried out in accordance with the World Bank Procurement Regulations for IPF Borrowers (July 2016, revised September 2023, Fifth Edition).

4.5 Results monitoring and reporting

76. The proposal presents clear results logic for a regional programme aimed at accelerating access to DRE, clean cooking solutions and PUE across 21 countries in Eastern and Southern Africa. The programme articulates expected mitigation and adaptation results at the outcome level, supported by economic and financial modelling approaches designed to estimate beneficiaries and avoid double counting across financing windows.

77. In terms of mitigation results, the programme commits to reporting against GCF Core Indicator 1 on GHG emissions reduced, avoided or removed. It targets 9.44 Mt CO_2 eq by the end of implementation and 12.20 Mt CO_2 eq over the investment lifetime. These estimates are supported by a defined accounting methodology and are complemented by a target of 881 MW of installed renewable energy capacity (GCF Integrated Results Management Framework (IRMF) supplementary indicator 1.3). The mitigation results are well aligned with the GCF IRMF.

78. On adaptation results, the programme targets GCF Core Indicator 2 on direct and indirect beneficiaries reached, with an estimated total of 42.6 million beneficiaries, including 28.8 million direct and 13.8 million indirect beneficiaries. Indirect beneficiaries are primarily associated with electrification of public facilities. The proposal outlines appropriate means of verification, including project reporting systems and structured beneficiary surveys, to support tracking of these outcomes. We note that the beneficiaries have not been disaggregated by gender as per the requirement of the GCF IRMF.

79. The monitoring, evaluation and learning system is described in annex 11 of the funding proposal and is anchored in periodic reporting by the EEs to the World Bank, consolidated through annual performance reports, a mid-term evaluation and a final evaluation submitted to the GCF. The system emphasizes the use of primary data, digital MRV platforms, geo-referenced data sources and independent surveys to track progress against indicators. Indicator tracking frequencies and indicative budgets are defined, and independent evaluation arrangements are aligned with the World Bank's evaluation systems.

80. From a results monitoring and reporting perspective, key strengths include the scale and clarity of headline GCF results, the use of standardized accounting approaches to reduce double counting, and the intention to deploy digital and geo-spatial monitoring tools to support traceability across a large regional portfolio. The institutional reporting chain from the EEs to the World Bank and onward to the GCF is clearly articulated, with defined reporting products and learning mechanisms.

81. However, the Secretariat notes several limitations and risks. Although the monitoring framework is well developed at the aggregate level, some data collection tools and reporting formats are to be finalized during implementation, which may pose risks for early harmonization and comparability across countries. More significantly, although this is a multi-country programme, the funding proposal does not contain annex 17, which is required for multi-country GCF proposals to present country-resolved targets and results. The absence of

annex 17 limits transparency on country-level allocations and expected results for beneficiaries and GHG emission reductions.

82. This gap poses a material risk for monitoring and evaluation because it constrains the ability to track country-specific performance, support aggregation of results and ensure alignment with national reporting frameworks and national designated authority oversight. The Secretariat therefore expects that country-disaggregated targets and reporting templates for beneficiaries, adaptation outcomes and mitigation results be provided, either through submission of annex 17 or an equivalent consolidated country results table, and embedded within the programme's reporting and digital MRV systems.

4.6 Legal assessment

83. The legal arrangements for the project will be based on the accreditation master agreement between GCF and the Accredited Entity which has been signed and is effective (the "AMA"). Consequently, they will consist of a project-specific funded activity agreement which incorporates the AMA.

84. The Accredited Entity has not provided a legal opinion/certificate confirming that it has obtained all internal approvals and it has the capacity and authority to implement the project.

85. The proposed project will be implemented in the Republic of Botswana, the Republic of Burundi, the Union of the Comoros ("Comoros"), the Democratic Republic of the Congo ("Congo"), the State of Eritrea, the Kingdom of Eswatini, the Federal Democratic Republic of Ethiopia, the Republic of Kenya, the Kingdom of Lesotho, the Republic of Madagascar, the Republic of Malawi, the Republic of Mozambique, the Republic of Rwanda ("Rwanda"), the Democratic Republic of São Tomé and Príncipe, the Federal Republic of Somalia, the Republic of South Africa, the Republic of South Sudan, the United Republic of Tanzania, the Republic of Uganda, the Republic of Zambia ("Zambia") and the Republic of Zimbabwe (the "Host Countries"), of which GCF is provided with privileges and immunities only in Congo, Rwanda and Zambia. This means that, amongst other things, GCF is not protected against litigation or expropriation in the other Host Countries, which risks need to be further assessed. Moreover, the ability of GCF to undertake redress activities and/or investigations in such Host Countries may be hindered due to the absence of privileges and immunities for relevant GCF personnel.

86. Therefore, it is recommended that the Board considers whether disbursements of GCF proceeds should only be made after GCF has obtained satisfactory protection against litigation and expropriation in such Host Countries, or has been provided with appropriate privileges and immunities for GCF and its personnel.

87. GCF does not hold industrial property protection for its combined logo (sphere with the words "Green Climate Fund") in the Host Countries except Comoros and Congo. This means that, while industrial property protection is pending, (i) GCF's combined logo could be used by other entities or individuals (including those seeking to impersonate GCF) and (ii) there could be legal claims by entities or individuals asserting their protected trademark, opposing GCF using its combined logo in such Host Countries. In both cases, this may lead to reputational risk.

88. To address the matters raised in this section and facilitate prompt implementation of the project, it is recommended that any approval by the Board is made subject to the following conditions:

(a) Submission by the Accredited Entity to GCF of a certificate or legal opinion, in form and substance satisfactory to the GCF Secretariat, within 120 days after Board approval, confirming that the Accredited Entity has obtained all final internal approvals needed by it and has the capacity and authority to implement the proposed project;

(b) Signature of the funded activity agreement in a form and substance satisfactory to the GCF Secretariat within 180 days from the date of Board approval, or the date the Accredited Entity has provided a certificate or legal opinion confirming that it has obtained all final internal approvals whichever is later; and

(c) Completion of the legal due diligence to the satisfaction of the GCF Secretariat prior to the signature of the funded activity agreement.

Independent Technical Advisory Panel's assessment of FP291

Proposal name:	ASCENT-GREEN: Resilient Energy Access for Inclusive Development
Accredited entity:	the International Bank for Reconstruction and Development and International Development Association (World Bank)
Country(ies):	Botswana, Burundi, Comoros (the), Democratic Republic of the Congo (the), Eritrea, Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Rwanda, Sao Tome and Principe, Somalia, South Africa, South Sudan, Tanzania, Uganda, Zambia, Zimbabwe
Project/programme size:	Large

I. Assessment of the independent Technical Advisory Panel

1.1 Overview

1. The Eastern and Southern Africa (AFE) region comprises 26 countries, of which 24 have not yet achieved universal electrification and are therefore eligible under the proposed ASCENT (Accelerating Sustainable and Clean Energy Access Transformation)-GREEN programme. Of these countries, 21 have issued a no-objection letter and will participate in ASCENT-GREEN. AFE is the least-electrified region in the world, with half its people lacking access to electricity and more than three quarters lacking access to clean cooking solutions. Most AFE countries also rank high on international indices of climate vulnerability.

2. ASCENT-GREEN aims to support people in the AFE region who lack access to clean energy, particularly those living in remote areas and fragile and conflict-affected contexts, to become more resilient in the face of climate change. It will support private sector companies to deliver access to distributed renewable energy (DRE) systems (including solar home systems and renewable energy mini-grids), clean cooking solutions, and productive uses of energy (PUE) equipment.

3. The programme's three components are (a) the Regional Energy Access Financing (REAF) project, which will provide various financing instruments and capacity-building for the DRE sector; (b) the Regional Energy Access De-Risking Facilities project for the DRE sector as well as capacity-building support; and (c) the Regional Energy Access Acceleration Platform, which aims to provide for an enabling ecosystem for ASCENT-GREEN, support governments and DRE companies, and provide for overall programme coordination and knowledge exchange.

4. Within component 1, lending will be provided to DRE, clean cooking and PUE companies to enable expansion of their activities. For DRE companies, patient equity will also be offered. Result-based finance will be provided to incentivize DRE and clean cooking companies to enter frontier markets and expand to unserved markets and populations.

5. Within component 2, partial credit guarantees will be offered to participating financial institutions when lending to DRE companies, especially if loans are given in local currencies, and to companies operating in riskier markets. Component 2 also includes a carbon risk mitigation

facility targeted at clean cooking companies. The facility will offer a floor price for carbon credits to de-risk the companies' participation in carbon markets, with the target of increasing the flow of carbon finance and commercial capital through a more secured carbon revenue.

6. ASCENT-GREEN is a public sector programme. The sources of finance for the USD 695 million programme are USD 200 million in grant finance from GCF, USD 50 million as a senior loan from GCF, USD 345 as senior loans from the International Development Association and International Bank for Reconstruction and Development (IDA/IBRD), USD 46 million in grant finance from IDA/IBRD, USD 25 million in guarantees from IDA/IBRD and USD 29 million in grant finance from a trust fund managed by IDA/IBRD. The programme implementation period is 7 years, with a total lifespan of 20 years.

7. The World Bank is the accredited entity (AE). The executing entity (EE) for component 1 is the Eastern and Southern African Trade and Development Bank (TDB), a regional development financial group with its principal offices located in Mauritius and Burundi. For component 3 the EE is the Common Market for Eastern and Southern Africa (COMESA), a regional intergovernmental diplomatic organization, established under an international treaty, with its main office in Zambia. For the two facilities in component 2, an EE (or EEs) is currently under selection.

8. ASCENT is an existing programme of the World Bank, approved in 2023 with USD 5 billion in IDA funding and the target of mobilizing an additional USD 10 billion from other sources, including GCF. ASCENT-GREEN is part of the existing ASCENT pillar 3. Key programme pillars, facilities and institutional arrangements were approved and are already operational prior to GCF engagement with ASCENT-GREEN. The GCF financing can thus be considered as co-financing of an existing programme. ASCENT is already operational and will continue with or without GCF financing, albeit with differences (see points below).

9. GCF financing under ASCENT-GREEN would primarily allow the ASCENT programme to expand services to unserved populations and enhance the ability to enter riskier markets. The focus is, to a larger extent than under ASCENT, on climate mitigation and adaptation impacts. The grant financing by GCF would enable the programme to better reach underserved communities at scale, with a high development impact and a large impact on reducing the climate vulnerability of the poorest. GCF financing would also allow a significant increase in the clean cooking and PUE activities of ASCENT. The GCF financing would thus primarily enable an increase in scope and an improvement in the ability to reach unserved populations in rural areas.

1.2 Impact potential *Scale: Medium*

10. In total, from the contributions of both GCF and the co-financiers, 50 per cent of the financing is destined for mitigation and 50 per cent for adaptation.

11. The expected mitigation impact is 12.2 million tonnes of carbon dioxide equivalent (t CO_2 eq) reduced by the end of the 20-year lifespan. The mitigation impact will be achieved through supporting the installation of 881 MW of DRE capacity in the AFE region. Credits traded in carbon markets from clean cooking activities supported by the programme are not included in the GCF mitigation impact estimations. The programme has established clear procedures, instruments and monitoring components to avoid such double counting.

12. The major mitigation impact is expected from the area of clean cooking, accounting for around 57 per cent of the total expected greenhouse gas (GHG) emission reduction, followed by PUE with 21 per cent and solar home systems with 9 per cent.

13. GHG impacts are calculated based on projected unit numbers and annual avoided t CO_2 eq per unit. As an example, in the case of clean cooking, calculations are based on 2.4

million units with a per unit per annum reduction of around 1 t CO_2 eq and a lifespan of five years, resulting in around 7 million t CO_2 eq avoided for the area of clean cooking assigned to the GCF Program (excludes the reductions traded as carbon credits). Per unit and technology annual avoided emissions are sourced from international literature and in the case of clean cooking from lessons learned from previous projects in the region. Emission factors for clean cooking are based on the United Nations Framework Convention on Climate Change published Comprehensive Lowered Emission Assessment and Reporting (CLEAR) methodology for cooking energy transitions. The independent Technical Advisory Panel (iTAP) considers that the methodological approach and calculations performed by the AE are in line with best practices. It is, however, difficult to determine the GCF-induced additional impact and what share of the mitigation impact would be achieved even in the absence of GCF finance, through the existing ASCENT programme using AE resources. Since the proposed GCF investment would essentially expand an existing programme, it is considered likely that the assumed 12.2 million t CO_2 eq of mitigation impact triggered by ASCENT-GREEN and the GCF involvement represents a significant overestimation.

14. The programme expects to reach 28.8 million direct beneficiaries representing 4.4 per cent of the population of the participating countries. The largest shares of direct beneficiaries will come from clean cooking (41 per cent) and electricity access (41 per cent). Clean and reliable electricity access will also be provided to more than 1,300 schools, health-care facilities and public facilities, thereby indirectly benefiting 13.8 million people through improved public services.

15. Energy access is expected to reduce vulnerability through extending time for indoor activities and enabling households to have electrical appliances and communication devices, which can provide news as well as information on weather, labour and market opportunities, and so on. PUE allows households to generate and diversify income. Energy also plays an important role in food security and crop productivity improvement – for example, through crop irrigation or cold storage facilities. To prevent rising GHG emissions, it is essential that electricity provision follows a low-emission pathway.

16. The number of direct beneficiaries is based on projected deployments of clean cooking units, mini-grids, solar home systems and PUEs. It is estimated that there will be five beneficiaries per deployed unit and a discount factor has been applied to account for beneficiaries who participate in various programme activities. The average applied discount factor is one third – that is, every third beneficiary is expected to participate in two activities.

17. The indirect beneficiaries of the programme will be people who have improved access to public facilities and services – assuming 10,500 beneficiaries per public facility. A 50 per cent discount has been applied to the indirect beneficiaries of public units due to potential double counting of the same beneficiary.

18. The iTAP considers the approach used to determine the numbers of direct and indirect beneficiaries appropriate. The choice of discount factor and the process for estimating the number of deployed units have their uncertainties, which results in uncertainty about the number of beneficiaries targeted; however, this is the case in many GCF projects. Furthermore, as with the mitigation calculations, the additional number of beneficiaries triggered by GCF finance is likely to be lower in reality, as it is probable that a significant part of the activities would happen even in the absence of GCF finance.

19. Overall, the iTAP considers that ASCENT-GREEN is likely to deliver material mitigation and adaptation benefits. However, the additionality of at least part of the impact of the activities due to GCF finance is questioned, and therefore the impact potential is considered to be medium.

1.3 Paradigm shift potential *Scale: Medium*

20. The paradigm shift of ASCENT-GREEN relates to the GCF-financed activities that go beyond the existing ASCENT programme. The paradigm shift in this context is essentially related to increasing the speed, scale and depth of delivery of services.

21. Activities will be expanded relative to the existing ASCENT programme to underserved areas, disadvantaged due to either small market size or higher risks and costs of doing business. This will enhance the inclusivity of the programme. ASCENT-GREEN will encourage and support companies to reduce the costs and risks of entering these markets, inter alia through building multi-country portfolios and using flexible results-based financing and concessional financing.

22. The scope will also be expanded, especially in the areas of PUE and clean cooking, relative to the existing ASCENT programme. The GCF-financed component will allow ASCENT-GREEN to reach a far larger number of beneficiaries.

23. GCF financing will allow the programme to deliver increased speed (relative to the programme continuing with no GCF financing), due to a reduction of implementation bottlenecks. This would be addressed through capacity-building efforts and a suite of financial instruments attractive for DRE companies.

24. The programme will implement capacity-building activities with key stakeholders at the national and regional levels. ASCENT-GREEN will leverage the COMESA convening power and technical assistance resources to harmonize and improve DRE policies and regulatory frameworks, especially for small countries and areas affected by fragility, conflict and violence (FCV). This will include developing national electrification, clean cooking and PUE strategies; streamlining and reducing customs and duties on DRE; and develop digital monitoring, reporting and verification systems. The programme will also support the capacity development of involved companies delivering services. The ASCENT programme has already established a regional platform to facilitate the exchange of knowledge, experience and lessons across the participating countries.

25. The iTAP does not consider the expected paradigm shift to be a structural change. The paradigm shift will essentially be achieved by the existing ASCENT programme itself, rather than the markets in which it operates. The paradigm shift brought about by the GCF finance would relate to scope, scale and speed. As such, no significant additional transformational impact is expected from the programme, although it is anticipated that there would be an important expansion of activities. The inclusion of underserved people and markets is considered to be the area with the largest paradigm shift potential; however, this would be a gradual expansion relative to the existing ASCENT programme and not a new approach.

26. Based on the above, the iTAP considers the paradigm shift potential of ASCENT-GREEN to be medium.

1.4 Sustainable development potential *Scale: High*

27. ASCENT-GREEN is expected to directly contribute to the Sustainable Development Goals (SDGs), particularly SDG 7 (Affordable and Clean Energy). The programme will actively support access to modern energy by scaling up electricity access from renewable energy and by replacing inefficient burning of traditional fuels with clean cooking solutions. It will also support SDG 1 (No Poverty) by enabling economic activities, creating jobs and improving income levels; SDG 2 (Zero Hunger) by boosting agricultural activity and improving food security; SDG 3 (Good Health and Well-being) by reducing indoor air pollution, especially through clean cooking, and by electrifying health facilities; SDG 4 (Quality Education) by electrifying schools and improving lighting in homes, allowing extended study hours; SDG 5 (Gender Equality) by enabling new

economic opportunities and reducing time spent on gathering fuel and cooking; and SDG 6 (Clean Water and Sanitation) by enabling access to clean water through electric pumping and operating water supply and sanitation facilities.

28. The programme may achieve significant economic benefit by increasing economic opportunities, employment, and the productivity and income of farmers and small enterprises. The expansion of reliable electricity supply and PUE applications would result in increased income-generating activities, productivity improvements and more rural employment. Job creation is related directly to DRE and cookstove manufacturing and maintenance, and indirectly to economic development enabled by energy access.

29. The programme will have a positive social impact by implementing activities in underserved markets and regions, supporting people in the AFE region who lack access to clean energy, particularly those living in remote areas and fragile and conflict-affected contexts. Indoor air pollution from burning solid fuels for household cooking and heating is a leading cause of death across Africa. Accelerating the adoption of clean cooking solutions is an immediate and cost-effective way to reduce air pollution and save lives.

30. Women and girls in the AFE region have limited access to electricity and clean cooking technologies. Based on tradition, women and girls in Africa are more likely to be assigned the role of searching for cooking fuels. They tend to spend longer on household chores, which can prevent them from pursuing economic empowerment activities, such as education, or engaging in income-generating activities. Fuel collection also entails considerable physical effort and exposes women and girls to health and safety risks.

31. ASCENT-GREEN will increase people's climate resilience capacity through DRE systems that, for example, power productive equipment (e.g. cold storage facilities for agriculture) and information and communication equipment (e.g. used for disaster warnings). Additionally, decentralized DRE systems are less vulnerable than centralized grids in disaster situations. The programme targets women's increased access to clean and resilient energy in the AFE region, increased participation of women-owned and women-led enterprises in the DRE space, increased access to finance and capacity-building among women-owned and women-led DRE and clean cooking companies, and strengthened gender-inclusive strategies and policies in the DRE sector.

32. The focus of ASCENT-GREEN on the most vulnerable populations and underserved regions may result in a high social and economic impact, contributing significantly towards the achievement of core SDG targets in the region.

33. Based on the above, the iTAP considers the sustainable development potential of ASCENT-GREEN to be high.

1.5 Needs of the recipient *Scale: High*

34. An estimated 365 million people, or 49 per cent of the population in the AFE region, lacked access to electricity in 2023, while 580 million people (77 per cent of the population) lacked access to clean cooking solutions. Fewer than half of public institutions, including schools and health facilities, have access to electricity. Moreover, access to energy is uneven, concentrated in urban and peri-urban areas. The majority of the people in the AFE region without access to electricity live in rural areas targeted by the programme. People living in these areas without access to modern energy are among the most vulnerable to the effects of climate change, such as prolonged droughts, floods and heatwaves. Women and girls are disproportionally exposed to climate risks and affected by lack of energy access. More than half of the people in the AFE region live in countries with FCV situations targeted by the programme.

35. Agriculture is the main sector in the AFE region. Agricultural growth is insufficient to match population growth and the supply of food and agricultural production has recently declined, triggered by (among other things) drought and climate change. The AFE region's economic development and progress towards poverty reduction are being held back by, inter alia, lack of energy access. The electricity access deficit is concentrated in the lower income brackets, exacerbating inequalities and undermining resilience for the most vulnerable populations, including women and girls.

36. In total, 13 of the 24 eligible countries are ranked in the bottom 20 per cent of Notre Dame University's Global Adaptation Index, which ranks countries on climate vulnerability and readiness. Major climate risks to which AFE countries are exposed include flooding, water scarcity, extreme heat, wildfires and landslides. The frequency and intensity of climate shocks are increasing in the region. A significant proportion of the population lives below the international poverty threshold of USD 2.15 per day, making them particularly vulnerable to climate shocks and extreme weather events, such as cyclones. Increased water scarcity negatively affects the very important agricultural sector.

37. In total, 17 of the 24 eligible countries were on the 2024 United Nations list of least developed countries. In 2025, 11 of the 24 eligible countries were on the World Bank list of fragile and conflict-affected situations.

38. The capacity-building activities of the programme directed towards governments, institutions and companies aim to improve the limited human resources and institutional capacity of those entities, especially in smaller countries as targeted by the programme.

39. ASCENT is already addressing well-documented needs of the participating countries, and ASCENT-GREEN will follow it by focusing on underserved markets, small countries and FCV-affected regions with the highest needs. The comprehensive capacity-building and training initiatives will build and improve institutional capacity, which is considered central in achieving long-term sustainability. The iTAP considers the high share of GCF grants to be justified as it is necessary to target the most vulnerable populations and to reach underserved markets.

40. Based on the above, the iTAP considers the needs of the recipient of ASCENT-GREEN to be high.

1.6 Country ownership *Scale: High*

41. No-objection letters have been received from the national designated authorities of the 21 participating countries. In total, 24 countries are eligible for ASCENT-GREEN and have not yet achieved 100 per cent electricity coverage. However, no-objection letters have not been obtained from Angola, Namibia and the Sudan. GCF funds will flow to the 21 countries with a no-objection letter.

42. The AE has conducted stakeholder engagement based on discussions with involved governments (including national designated authorities and line ministries) and private sector consultations with local and regional DRE companies, clean cooking companies and participating financial intermediaries. Regional and civil society consultations have also been carried out under different umbrellas.

43. The promotion of DRE is included in all nationally determined contributions (NDCs) and in a significant number of the national adaptation programmes of action (NAPAs) of the participating countries. Clean cooking is included in the overwhelming majority of the NDCs and more than 50 per cent of the NAPAs. DRE and clean cooking are included to a smaller extent under unconditional GHG targets and to a larger extent under conditional GHG targets. ASCENT-GREEN is well aligned with national climate priorities and national climate change action plans

giving priority to renewable energy development, including DRE for electrification and clean cooking.

44. ASCENT-GREEN will form part of the electrification efforts under Mission 300. Mission 300 is an African initiative to provide energy access to 300 million people in sub-Saharan Africa by 2030, endorsed by 30 African Heads of State or governments at the Africa Energy Summit held in the United Republic of Tanzania in January 2025. As part of Mission 300, governments are preparing national energy compacts that include time-based targets and acknowledge the role of policy reform. Some AFE countries have already prepared these reports while others are preparing them. The expectation is that all participating countries will develop a national energy compact.

45. The World Bank has extensive experience with GCF projects and programmes and is executing the ASCENT programme. The Accelerating Sustainable and Clean Energy Transformation Multiphase Programmatic Approach (ASCENT MPA), approved in November 2023, has as its objective to expand electricity access to 100 million people across the AFE region by 2030. In parallel, ASCENT is exploiting synergies with the clean cooking sector to provide clean cooking access to at least 20 million people and with the PUE sector to benefit 10 million people. It is a USD 15 billion programme, with USD 5 billion of IDA funding and an additional USD 10 billion to be mobilized from public, private, climate fund and other partners, as well as participating governments. This includes the GCF financing for ASCENT-GREEN.

46. TBD, the EE for component 1 (REAF project), is a leading African regional development bank majority owned by AFE governments. It is also a GCF regional direct AE. TDB is currently administering three regional operations financed by IDA credits. TDB will finance DRE companies or financial institutions operating in participating countries. It will also provide results-based finance to DRE companies. TDB has good coverage of the AFE region, including a network of regional and local commercial banks; close links to AFE governments that are majority shareholders in TDB; the ability to offer longer-tenor debt; and a track record in financing the off-grid solar sector.

47. The EE for component 3 (regional access acceleration platform) is the secretariat of COMESA. COMESA is an intergovernmental diplomatic organization. It manages an energy programme to support its member countries.

48. The proposed programme is well embedded with national and regional institutions, and those institutions have taken an active position in the programme design. Both the AE and the designated EEs have long track records in the activity areas of the programme. ASCENT-GREEN, being part of a larger programme, will profit from the experiences and activities undertaken by ASCENT as a whole.

49. Based on the above, the iTAP considers the country's ownership of ASCENT-GREEN to be high.

1.7 Efficiency and effectiveness *Scale: Low to medium*

50. The GCF funding for the programme is USD 250 million, of which USD 50 million is in senior loans, USD 40 million is in reimbursable grants and USD 160 million is in grants. The total investment volume of USD 695 million includes USD 345 million in senior loans from IDA/IBRD, USD 46 million in grants from IDA/IBRD, USD 25 million in guarantees from IDA/IBRD and USD 29 million in grant finance from trust funds managed by IDA/IBRD. The programme is expected to leverage an additional USD 156 million from other international financial institutions and USD 521 million from the private sector, to a total indicative cost of ASCENT-GREEN of USD 1,372 million.

51. From the GCF financing, USD 195 million will be used for component 1 (equivalent to 78 per cent of the total GCF financing; this represents 36 per cent of the financing for component 1, including the GCF and World Bank co-financing), of which USD 130 million will be for results-based financing for frontier markets, all in the form of grants. This sub-component will largely be financed by GCF. GCF will contribute USD 50 million to component 2 (equivalent to 20 per cent of the total GCF financing; this represents 48 per cent of the financing for component 2, including the GCF and World Bank co-financing), of which USD 45 million will be for the risk-sharing facility. The USD 45 million contribution will include USD 40 million in reimbursable grants for capitalization and backstopping of the risk-sharing fund, and USD 5 million as a grant for technical assistance to the fund. GCF will contribute USD 5 million to component 3 (equivalent to 2 per cent of the total GCF financing; this represents 10 per cent of the financing for component 2, including the GCF and World Bank co-financing).

52. The co-finance amounts to USD 445 million, with a co-financing ratio of 1:1.78, which is high. However, the additionality of the co-finance of the AE is questioned – that is, it can be assumed that at least a significant share of the World Bank funds would flow anyway (to the ASCENT programme) in the absence of GCF financing of ASCENT-GREEN. The co-financing grant volume is USD 75 million compared to GCF grants and a reimbursable grant volume of USD 200 million. Grant co-finance represents 17 per cent of the co-financing compared to 80 per cent of the GCF financing. The GCF grants and reimbursable grants will essentially be used for results-based finance for frontier markets, the risk-sharing facility and technical assistance. The iTAP considers the high share of GCF grants and the usage of grants for these areas to be justified as it is necessary to target the most vulnerable populations and to reach underserved markets.

53. The expected financial internal rate of return (FIRR) is 25 per cent with GCF financing and 15 per cent without GCF financing. For two facilities of the programme (the regional results-based financing facility for DRE companies and the regional risk-sharing facility for DRE companies), the FIRR drops below the assumed cost of capital which is an indication that the GCF concessional funding is critical and necessary to implement these facilities.

54. The economic internal rate of return (EIRR) is calculated in line with the customary World Bank cost–benefit analysis methodology. Benefits included in the analysis are, inter alia, avoided fuel costs for cooking, avoided costs of diesel generation and kerosene for power, productive output from the use of mini-grids, health benefits from cleaner cookstoves, willingness to pay for improved educational and health outcomes at public facilities, and revenue from PUE appliances. The EIRR including GCF funding but excluding GHG benefits is 17.2 per cent, and the EIRR excluding GCF funding but excluding GHG benefits is 16.4 per cent. This difference is considered within the margin of uncertainty of the economic assessment performed. Including GHG benefits in economic calculations increases the EIRR with GCF finance from around 17 per cent to 24–28 per cent.[1]

55. The highest EIRRs with GCF financing are achieved in clean cooking (24 per cent excluding GHG benefits), mini-grids (24 per cent excluding GHG benefits), and commercial and industrial/independent power producer systems and battery energy storage systems (22 per cent excluding GHG benefits).

56. The GCF cost per mitigated t CO_2 eq is USD 10 based on 50 per cent mitigation finance. This is a low cost. However, this low cost is to a certain extent related to the assumption that the entire GHG benefit stems from the GCF intervention. In programmes like ASCENT-GREEN, the high co-finance shares result in low GCF mitigation costs, which does not reflect an appropriate assignment of costs and benefits. The cost per t CO_2 eq mitigated including the GCF and World Bank financing is USD 28 per t CO_2 eq, which the iTAP considers to be a more realistic value.

[1] The lower figure is based on a social cost of carbon of USD 58 for 2025 and the upper level on a cost of USD 114. Both increase annually by around 2 per cent.

This cost per t CO_2 eq is based on very high grant shares, especially from GCF, and can thus only be partially compared with other GCF programmes and projects where a significant investment proportion of GCF financing is also based on loans, equity or guarantees.

57. Overall, the iTAP considers the cost of the programme to be reasonable in the context of the countries involved and the markets and population strata targeted. The co-financing, at least on paper, is high. The individual facilities have high EIRRs and with GCF financing also high FIRRs. However, the additionality of co-financing is questioned by the iTAP. The moderate impact on the EIRR and an already overall high EIRR, including in the absence of GCF financing, raises questions about the effectiveness of the use of GCF funding for this programme.

58. Based on the above, the iTAP considers the efficiency and effectiveness of ASCENT-GREEN to be low to medium.

II. Overall remarks from the independent Technical Advisory Panel

59. The iTAP recommends that the Board approve this funding proposal.

Response from the accredited entity to the independent Technical Advisory Panel's assessment (FP291)

Proposal name:	ASCENT-GREEN: Resilient Energy Access for Inclusive Development
Accredited entity:	the International Bank for Reconstruction and Development and International Development Association (World Bank)
Country(ies):	Botswana, Burundi, Comoros (the), Democratic Republic of the Congo (the), Eritrea, Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Rwanda, Sao Tome and Principe, Somalia, South Africa, South Sudan, Tanzania, Uganda, Zambia, Zimbabwe
Project/programme size:	Large

Impact potential
We would like to emphasize that while ASCENT-GREEN is implemented within the umbrella of Mission 300/ASCENT, it goes beyond these initiatives in terms of its climate and development ambition. Enabled by GCF funding, ASCENT-GREEN catalyzes IDA resources to increase resilience and climate adaptation capacity of vulnerable populations in Eastern and Southern Africa through a synergetic provision of DRE, clean cooking and productive use of energy – seeing energy access as a tool for these outcomes, rather than an end-goal. This catalytic impact of GCF funding is reflected in the high incrementality of climate and development results achieved by ASCENT-GREEN, compared to what could be achieved with IDA alone, an increment that significantly exceeds GCF's share in the total ASCENT-GREEN financing, putting in evidence the additionality of GCF funds.
Paradigm shift potential
ASCENT-GREEN with GCF funds aims to achieve a paradigm shift whereby access to DRE, clean cooking and productive use equipment for income generation, sustainable development and climate resilience will increase in scale, speed and inclusiveness, while GHG emissions will be reduced. While the scale, speed and inclusiveness can also increase with IDA funding alone, NOT the extent that it would constitute a paradigm shift. Only with GCF financing ASCENT-GREEN is able to create a comprehensive toolbox that addresses the intertwined market failures/barriers, resulting in a materially different portfolio composition, that is able to attract private sector investments. Only then it leads to the creation and growth of sustainable DRE markets that can reach those currently left behind, in particular in FCV countries and remote rural areas, as reflected in the Theory of Change.
Sustainable development potential
We agree with iTAP's assessment and have no further comment.

Needs of the recipient
We agree with iTAP's assessment and have no further comment.
Country ownership
We agree with iTAP's assessment and have no further comment.
Efficiency and effectiveness
As noted in iTAP's assessment, the impact of GCF financing on IFRR demonstrates the enabling impact of GCF financing, as the proposed facilities and/or underlying investments benefiting ASCENT-GREEN target beneficiaries would not be feasible without GCF proceeds' concessionality and de-risking impacts. The financial analysis demonstrates that without GCF the Funded Activity (FA) would need to shrink both in terms of its scope and scale because two facilities are not financially viable at all, and others are impacted by the type of investments that can be realized. Economic benefits can be theoretically very high, but they are unlikely to materialize unless also financially viable. With respect to the EIRR, economic benefits and costs of FA are not impacted by the type of financing (e.g., they do not consider the costs of funding), and cannot therefore fully reflect the enabling role of GCF proceeds. GCF Funds' additionality is better reflected in the substantial difference of economic NPV (i.e., the economic value being created): $367.3M more economic value-added is created with GCF funding than without it, when the same FA is compared under the two scenarios. Comparing this to the GCF$250M requested indicates a substantial economic yield of 46.9 percent. Further, if "without GCF" scenario has a smaller FA because of the lack of financial viability of the two facilities as per above, the NPV differential is even starker: $509.9M less economic value-added without GCF funding, indicating that the GCF funding of US$250M could bring an economic yield of 104 percent.
Overall remarks from the independent Technical Advisory Panel: The results discussed in the previous answers are anchored in ASCENT GREEN's distinctive characteristics due to GCF Funding. ASCENT-GREEN is a unique GCF climate action Program designed and implemented within the broader ASCENT and Mission 300 architecture. ASCENT-GREEN catalyzes IDA resources that are being made available under this broader energy access umbrella to deliver on its specific climate and development outcomes, which go beyond ASCENT's energy access objective. Specifically, ASCENT-GREEN: (i) includes specific eligibility criteria that focus on vulnerable populations; (ii) integrates DRE, clean cooking, and PUE on an equal footing, promoting synergies in delivery and impact; and (iii) offers a comprehensive, fit-for-purpose mix of financing instruments to DRE companies that comprehensively address intertwined market failures and barriers, leading to private sector mobilization and sustainable growth of the DRE market,. Without GCF funding, ASCENT-GREEN could not achieve its paradigm shift. This negative impact of the "without GCF scenario" would be disproportionally larger than the amount of

foregone resources, given the catalytic nature of the GCF funds. If the World Bank tried to pursue ASCENT-GREEN without GCF, this would result in:

Lower development and climate impact for the most vulnerable populations. Without GCF concessional funds and their specific mandate that emphasize rural and FCV areas, the Executing Entities could not focus on expanding towards these populations due to the high costs and risks of serving them.

Significantly lower overall climate impact Without GCF, activities to expand clean cooking and PUE could not be scaled up on the same footing as access to energy because of the higher costs and risks, despite their high climate potential impact.

Less capital mobilization: With only a sub-set of financing facilities and without de-risking, IDA financing alone will achieve much more limited private capital mobilization, as financiers will continue to regard the DRE sector as risky, while DRE companies, lacking access to financing, will not be able to grow sustainably and become more attractive for private sector investors.

ANNEX 8A

ASCENT-GREEN Program

GREEN GENDER ASSESSMENT AND GENDER ACTION PLAN

December 2025

ASCENT-GREEN

Annex 8A: Gender Annex

ASCENT-GREEN GENDER ASSESSMENT AND GENDER ACTION PLAN

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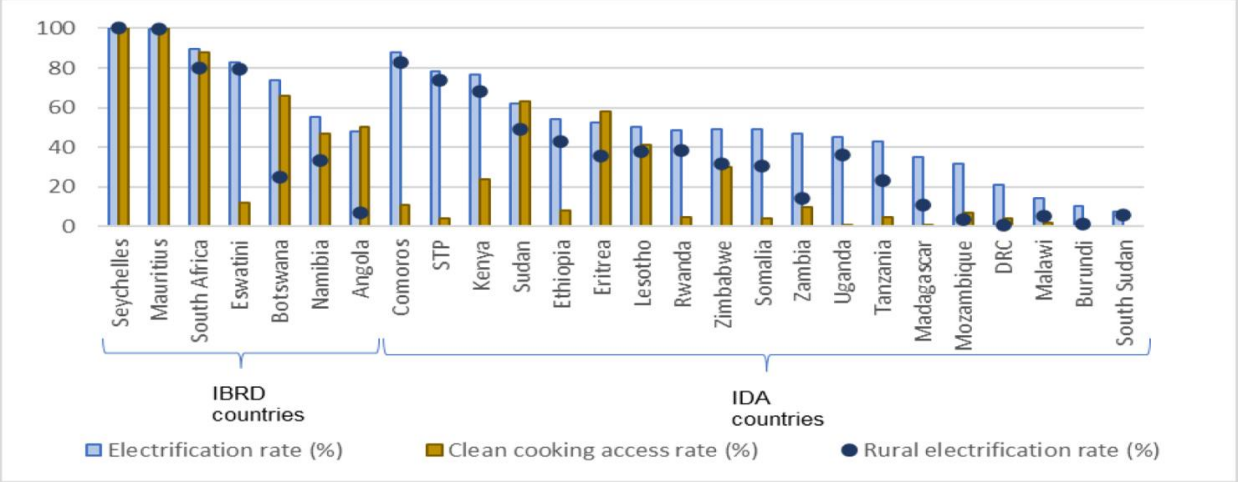
Part 1. GENDER ANALYSIS/ASSESSMENT

1. Introduction

While the Eastern and Southern Africa (AFE) region has made progress in closing gender gaps in the last decade, many challenges remain. A woman or girl in AFE has a 59% chance of not being enrolled in secondary school, a 20% chance of starting childbearing as a teenager and a 30% chance of being married before the age of 18. She earns significantly less than a male farmer entrepreneur or wage worker and enjoys only 74% of the legal rights of males across the legal system. She is worse-off across all dimensions if she lives in a rural area, is poor, disabled, or belongs to an ethnic minority.[1] The AFE region is experiencing emergencies including adverse impacts from climate change and economic crises which threaten the progress made in closing gender gaps, as impacted countries are reallocating resources to deal with these situations, which in turn slow down socioeconomic development.

The energy sector faces enormous challenges with respect to accessing sustainable and clean energy in AFE, including for women, which hinders socio-economic development. In 2022, it was estimated that 539 million people or 51% of the population in AFE and lacked access to electricity while 570 million people or 78% lacked access to clean cooking, with rural areas having much lower rates of access.[2] IEA has projected that unless significant efforts are made to accelerate electrification 645 million people will remain without access worldwide in 2030, of which 85% or about 545 million people will be in sub-Saharan Africa.[3]

Figure 1: Electricity and clean cooking access rates vary in AFE Countries[4]



Source : *World Bank -ESMAP Gender & Energy database*

[1] World Bank, 2024, Regional Gender Action Plan for Eastern and Southern Africa (AFE) FY24-28. Washington DC. p. 2-3 https://documents1.worldbank.org/curated/en/099720003042421894/pdf/IDU-e951cc1f-da4b-4506-8f67-45956c62edae.pdf

[2] See Table 1 of the ASCENT-GREEN Funding Proposal to the Green Climate Fund based on data from the World Bank data base

[3] IEA (2024), SDG7: Data and Projections, IEA, Paris. https://www.iea.org/reports/sdg7-data-and-projections/access-to-electricity.

[4] Figure is taken from World Bank, 2023, Accelerating Sustainable and Clean Energy Access Transformation (ASCENT) Program (P180547), *Project Appraisal Document*, p. 9. https://documents1.worldbank.org/curated/en/099113023180038846/pdf/BOSIB02ca62b030d109c720b59a2fa65b89.pdf.

In order to maximize equitable development outcomes consistent with Sustainable Development Goal (SDG) 5 (Gender Equality) and SDG 7 (Sustainable Energy for All), it is important not only to have a comprehensive strategy to accelerate the closing of energy access gaps but also to account for the gender differences in the demand, access, and usage of energy. Applying such a gender lens to increasing energy access could result in poverty reduction in the AFE region through reduction in time drudgery, increased positive health outcomes, increased engagement in income generation activities, and increased access to information which would lead to economic empowerment of vulnerable communities.[5] On the demand side, increased access to electricity would provide women and girls with hours of additional time to carry out indoor tasks due to modern lighting, including studying and income generating activities, as well as enabling the charging of digital devices to gain access to information and powering equipment for climate adaptation and productive activities. Increased access to clean cooking solutions would improve the health of women and girls by reducing respiratory and cardiovascular diseases from indoor air pollution caused by burning traditional biomass fuels that are now the second largest cause of premature deaths in Africa, as well reducing the time spent by women and girls in fuel gathering and cooking, making more time available for productive activities, studying and socializing.

On the supply side, an increase in energy access could increase gender equality in employment and asset ownership within the energy sector and improve effectiveness of supply value chains. Evidence shows that availability of household appliances such as cookstoves tailored for the end-user, particularly women, are more likely to be accepted and used, thereby increasing the demand for connections and profit margins for the service providers. Also, the energy sector is male dominated and offers high paying jobs; increasing the employment of women in the sector could result in more high-paying jobs and subsequently better livelihoods. Furthermore, supply value chains enabled by access to electricity have the potential to create employment and entrepreneurship opportunities for women in rural areas resulting in income generation for vulnerable communities. On the institutional side, increasing women's access to energy has the potential to increase the customer base for energy service providers through increased connections and usage.

The ASCENT (Accelerating Sustainable and Clean Energy Access Transformation) Program, including the ASCENT-GREEN Program that focuses on distributed renewable energy (DRE) technologies, is the leading vehicle for delivering the targets under Mission 300 (M300) in AFE. ASCENT aims to provide electricity access to 100 million people in Africa by 2030, including provision to 40 million people with DRE. It also aims to provide clean cooking to 20 million people in AFE by 2030.[6] The ASCENT Program will continue to integrate gender-transformative approaches that will not only close gender gaps related to energy access but will also employ interventions that will empower women to make meaningful contributions to the AFE energy sector in alignment with the WBG Gender Strategy 2024-2030 and the regional AFE Gender Action Plan. For instance, evidence shows that women have been the main driving force behind large scale adoption of distributable renewable energy products as well as DRE-related employment in Kenya and Nigeria.[7]

[5] Cecelski, Elizabeth W.; Dutta, Soma; Kooijman, Annemarije. 2017. Energy access and gender: getting the right balance (English). Washington, D.C. : World Bank Group. http://documents.worldbank.org/curated/en/463071494925985630

[6] World Bank, 2023, Accelerating Sustainable and Clean Energy Access Transformation (ASCENT) Program (P180547), *Project Appraisal Document*. https://documents1.worldbank.org/curated/en/099113023180038846/pdf/BOSIB02ca62b030d109c720b59a2fa65b89.pdf

[7] World Bank.2023. Nigeria - Distributed Access Through Renewable Energy Scale-Up Project. https://documentsinternal.worldbank.org/Search/34204828

This note adapts the ASCENT gender framework to the distributed renewable energy (DRE sector) which is the focus of the ASCENT-GREEN Program; it includes DRE systems such as off-grid solar systems and renewable energy mini-grids, clean cooking solutions and productive uses of energy. It seeks to highlight the gender issues and gaps in the DRE sector of the AFE region, identify entry points through which the ASCENT-GREEN program can introduce innovative interventions that could be effective in closing the gaps and improve women's access to energy, thereby which would improve their resilience and adaptability to climate change, as well as propose the gender-linked indicators that could be used to track the interventions under the program.

2. Gender issues and barriers to gender equality in the DRE Sector

In order to recommend interventions for the ASCENT-GREEN Program, it is important to examine the gender issues and gender gaps that currently exist in the AFE DRE sector. The analysis will follow a two-prong approach – regional level and country level focusing on AFE countries identified for the deep dive.

A. Regional Analysis

i. Burdens on women and girls and gender inequities resulting from the lack of clean cooking and the lack of access to electricity in households

Women in the AFE region are the primary users and producers of energy at the household level and yet have limited access to electricity and clean cooking technologies. Only 53% of people in Sub-Saharan Africa (SSA) had access to clean electricity in 2023 while access in rural areas is even lower at 33%, while access rates to clean cooking in SSA in 2023 were even lower at 22% overall and 10% in rural areas.[8] The sources of energy for most rural AFE households are unclean biomass and fossil fuels. Traditionally, women and girls in Africa are more likely to be assigned the role of searching for cooking fuels and water, due to cultural and social norms. This means they spend longer hours on household chores and care roles, which can prevent them from pursuing economic empowerment activities including education.

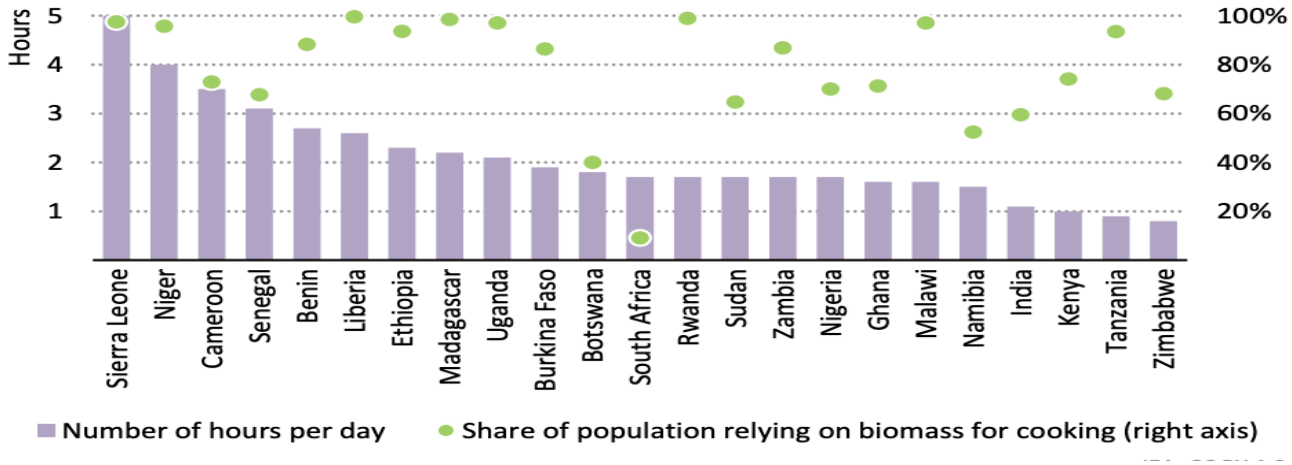
Lack of clean cooking. Across Sub-Saharan Africa, households without clean cooking access typically spend an average of 2 hours per day collecting fuel and an additional 3 hours for cooking and food preparation, including tending to the fire (Figure 1). However, in regions facing deforestation and increased urbanization, fuel collection times are increasing. The time required for fuel collection and cooking limits opportunities for women, often preventing them from working, engaging in independent income generating activities or earning a wage. According to World Bank estimates, the global opportunity cost associated with these activities is approximately USD 0.8 trillion per year. Often, women must wander outside community boundaries to collect fuel exposing them in some cases to violent attack and other forms of abuse.[9] Further, fuel collection entails a lot of physical effort and exposes women and girls to other health risks. Women and girls who carry wood in large bundles on their backs or heads face the risk of developing spinal conditions and chronic headaches over their lifetime.[10]

Figure 2. Average number of hours spent collecting fuel per household per day

[8] World Bank data base https://data.worldbank.org/indicator/EG.ELC.ACCS.RU.ZS

[9] IEA, AfDB, 2023, A vision of clean cooking for all, p.22 [9] https://iea.blob.core.windows.net/assets/f63eebbc-a3df-4542-b2fb-364dd66a2199/AVisionforCleanCookingAccessforAll.pdf

[10] WHO, 2016, Burning opportunity: clean household energy for health, sustainable development, and wellbeing of women and children https://iris.who.int/bitstream/handle/10665/204717/9789241565233_eng.pdf?sequence=1&isAllowed=y



Source: IEA, AfDB, 2023, A vision of clean cooking for all.

Cooking with traditional stoves and open fires poses serious health risks, particularly for women and children. Due to a lack of clean cooking access, household air pollution contributes to around 3.7 million fatalities per year globally. Household air pollution is the third-largest cause of premature death among women and children globally and the second in sub-Saharan Africa, where women and children represent[11]. Cooking with traditional fuels imposes a heavy burden on women and girls in terms of time, hard physical work and poor health.

On the other hand, universal access to clean cooking offers substantial advantages in terms of gender equality, health outcomes, and time efficiency. The IEA analysis showed that there are 2.5 million less premature deaths worldwide caused by reduced indoor air pollution toward 2030, and the average household saves nearly 1.5 hours a day from the switch, which can instead be spent pursuing education or work. Reaching universal access to clean cooking is also a net-gain for the environment. The switch to clean cooking solutions, such as LPG, results in a net reduction of 1.5 gigatons of CO2 equivalent by 2030, similar to the amount of CO2 emitted by planes and ships last year. The shift toward clean cooking creates jobs, but also reduces the need for charcoal, a major part of Africa's informal economy today, emphasizing the need for a just, people-centered transition, including efforts to formalize these industries and upskilled workers.[12]

Lack of access to electricity. Women and girls in low income, rural and FCV areas often also lack access to electricity, which **d**eprives them of opportunities for human and socio-economic development. Access to electricity for modern indoor lighting can provide several additional hours daily to complete indoor tasks like food preparation, cooking, studying, producing crafts or food products for sale or socializing. The ability to power end-use appliances like digital devices for communication and accessing information can reduce isolation and provide opportunities for human development while power for productive equipment can provide opportunities for income generation. Outdoor lighting can help reduce gender-based violence in remote areas. Electrification also has significant implications for health centers by improving lighting and providing fans, which can enhance conditions for women at childbirth, reduce

[11] Op.cit. IEA 2023, p.23
[12] Op. Cit. IEA 2023 p. 15

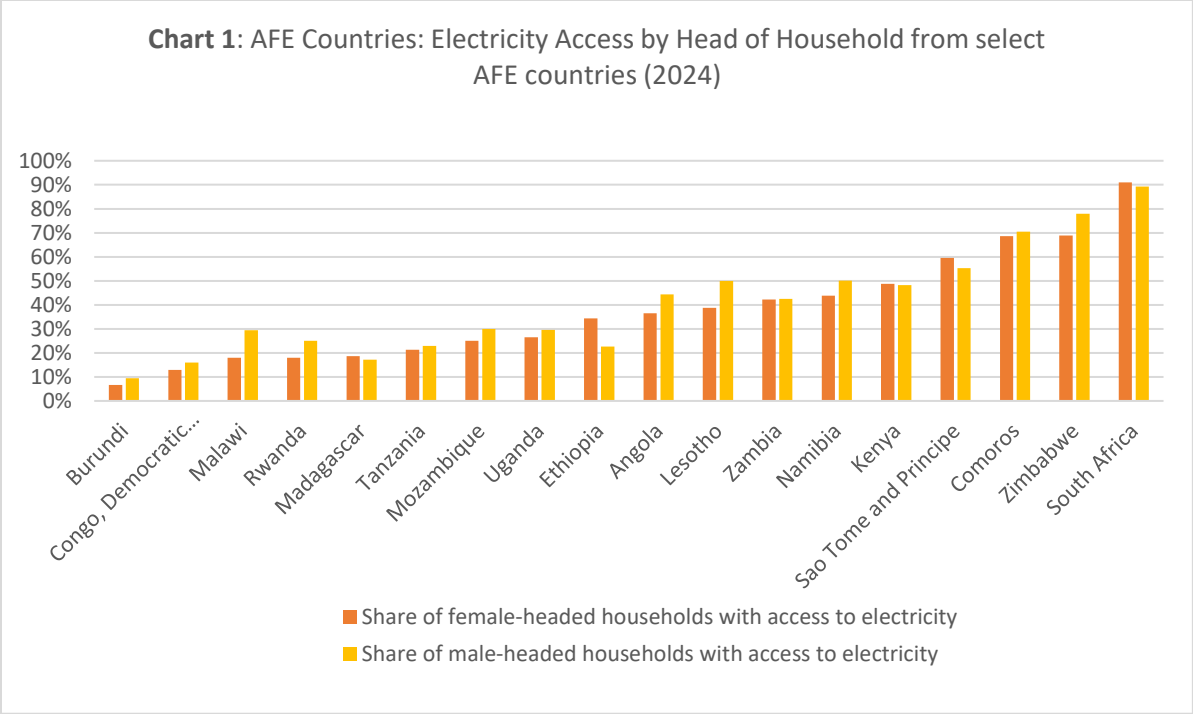
maternal deaths and enable better storage of medicines.[13] Similarly in schools, electrification allows for improved lighting for teachers and students as well as fans to keep classrooms cool during hot weather.

ii. Barriers to access to energy by women and girls, especially in female-headed households

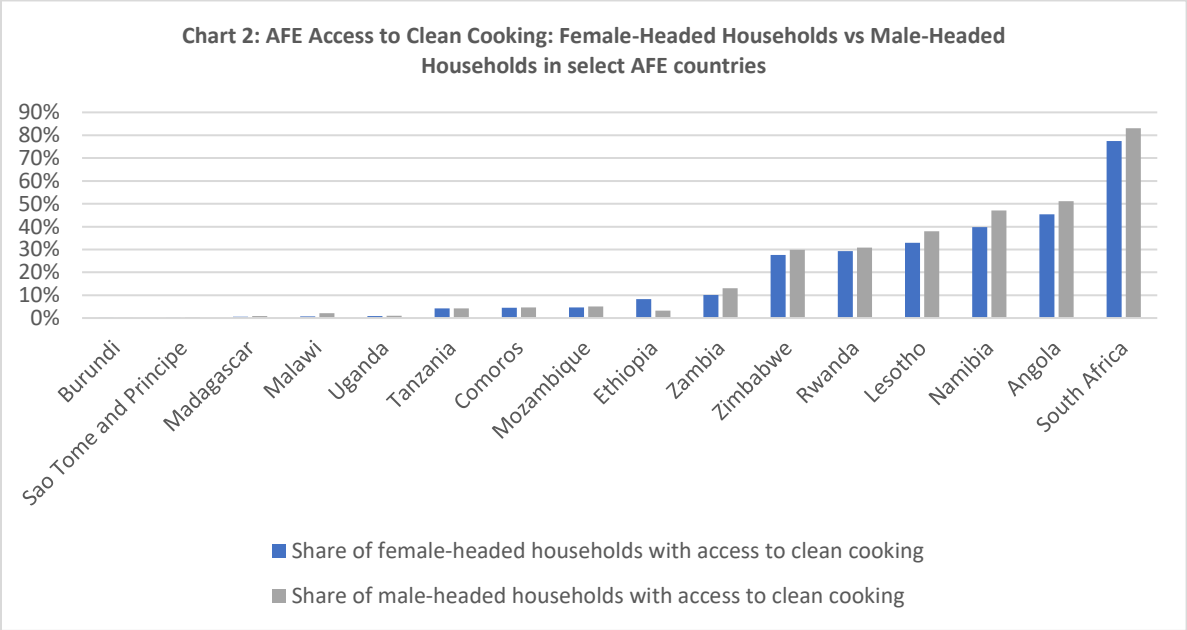
Evidence shows that women in AFE have a 42% probability of being excluded from key decisions like their own health care, major household purchases, and visiting family.[14] This indicates that women are often not equal involvement in decisions-making about purchasing a DRE system like an Off-Grid solar system or adopting clean cooking solutions. It is also more difficult for them to be aware of these options and the terms of their availability as they are likely to spend more time in the home and less time in markets, shops, and in public places where they would hear about availability of products.

With respect to electricity access, recent evidence shows that in countries within the AFE region, the share of female headed households with access to electricity ranges from 7 percent to 91 percent while for male headed households, access ranges from 10 to 89 percent (see **Chart 1**). There is considerable variation between countries, with relatively minor differences between female and male-headed households in Madagascar, Tanzania, Zambia, Kenya, Comoros and South Africa and relatively major differences in Malawi, Rwanda, Ethiopia, Angola, Lesotho, and Zimbabwe. Even when households have access to electricity, factors such as availability, affordability, and knowledge of proper usage of modern and clean energy still hinder vulnerable households such as female-headed households from obtaining the maximum benefits from clean energy. It is important to note that even when households have access to modern clean energy, electricity is used for lighting while most cooking is done on three-stove firewood or charcoal stoves as the clean cooking technologies are not accessible. As such, households have extremely low access rates to clean cooking in most countries, mainly due to lack of affordability and limited access to clean cooking fuels, although female headed households have significantly lower access rates in some countries like Lesotho, Namibia, and Angola (see **Chart 2**).

[13] Op cit. Energia
[14] Op cit. World Bank. 2024, p 4.



Source: Demographic and Health Surveys. https://dhsprogram.com/



Source: Demographic and Health Surveys. https://dhsprogram.com/

ii. Access of women owned vs male-owned enterprises (productive uses of renewable energy -PURE)

Women-owned and women-led enterprises in the AFE region face more barriers to success than men-owned and men-led enterprises, including limited access to financial and non-financial resources, limited access to markets, limited agency to switch between care work and productivity roles, inequality in education and skills, as well as patriarchal structures that enforce rigid social and cultural norms on

women's roles in the society. Due to operating low productivity enterprises, most AFE women-owned enterprises cannot afford electricity connections and tariffs, nor to buy productive uses of energy (PUE) equipment and yet these enterprises have the potential to increase income generation capacity, improve productivity and in turn improve livelihoods. Further, a pilot project on women-led agricultural processing and marketing enterprises showed that electricity access enhanced business skill development, however, financial sustainability of the enterprises was reduced due to the enterprises lacking technical expertise on operating and maintaining the equipment productively and oversubscribing on equipment, indicating the need for adequate operation and maintenance, and oversight of commitments by the sponsoring agency.[15]

On the clean cooking side, there is lack of awareness among women-owned and women-led enterprises in AFE on the benefits of using clean energy and clean cooking technologies and the potential for income generation, especially in rural areas. A survey conducted by Agency for the Development of Household Energy and Rural Electrification found that women were less likely than men to leverage access to electricity for income generation due to limited number of women owned enterprises, lack of access to credit and training for the enterprises that exist, and the design of energy projects that are not gender-inclusive but rather focus on technological solutions[16]. On the other hand, when women-owned enterprises can afford connections, they still face delays in connections to electricity and are subject to bribes[17].

iii. Women's Entrepreneurship in the DRE Sector

Women entrepreneurs in DRE sector have the potential to contribute to innovation and foster sustainable development in the male-dominated distributed renewable energy sector (DRE). As the World Bank projects expand the DRE markets to provide electricity access to 40 million people in the AFE region, it is important that new and existing women entrepreneurs in the DRE sector benefit from the opportunities offered by the projects. However, women entrepreneurs face both financial and non-financial barriers to enter, grow, and be sustainable their business in the DRE markets relative to their peers. Barriers include limited access to finance, insufficient information on availability of and predictability of results based-financing and loans, difficulties in targeting and supporting end user affordability, exposure to foreign exchange risks due to limited affordable local currency financing, as well as inadequate information, market volatility and high transactions costs associated with carbon markets which impact the potential revenue to DRE companies from these sources. Moreover, lack of affordable equity financing that enable companies to scale up has also been a constraint in creating and growing women-owned enterprises in the energy sector and yet evidence shows women entrepreneurs are key to expanding the adoption of DRE products in rural areas[18]. Furthermore, the existing evidence does not isolate constraints specific to women entrepreneurs in the DRE sector and yet they face these barriers on a disproportionately greater scale than male entrepreneurs; if this knowledge gap were addressed, it would allow effective programming of gender interventions that would positively impact new and existing women enterprises in the DRE sector.

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[15] https://www.esmap.org/sites/default/files/resources-document/esmap_giz_bmz_aei_produse_study_fulltext_optimized_0-1_0.pdf
[16] Ibid.
[17] https://www.esmap.org/sites/default/files/resources-document/esmap_giz_bmz_aei_produse_study_fulltext_optimized_0-1_0.pdf
18 World Bank: Eastern and Southern Africa: ASCENT Project Appraisal Document: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099113023180038846/bosib02ca62b030d109c720b59a2fa65b89

iv. Women's Employment in the DRE *Sector*

Data regarding women's employment in the DRE sector is limited and frequently documented in an inconsistent manner. According to the International Energy Agency (IEA)**,** women make up 39 percent of the global labor force, however, women only account for 16 percent of the traditional energy sector. While the Off-Grid solar (OGS) sector has made strides in hiring women in the sector, women are underrepresented in technical and engineering positions. An IRENA study showed that women make up 40 percent of the employment in the Off-Grid solar industry worldwide; however, women accounted for 58 percent of the administrative positions, only 32 percent of the science, technology, engineering, and mathematics (STEM) positions, and 38% of the non-STEM technical positions.[19] Another study showed that about 27% of total full-time jobs in the off-grid solar sector worldwide are filled by women, and this percentage is expected to rise as the market evolves. This is almost 20% higher than female employment in other energy sectors such as oil and gas, where the number of women only make up 22%.[20]

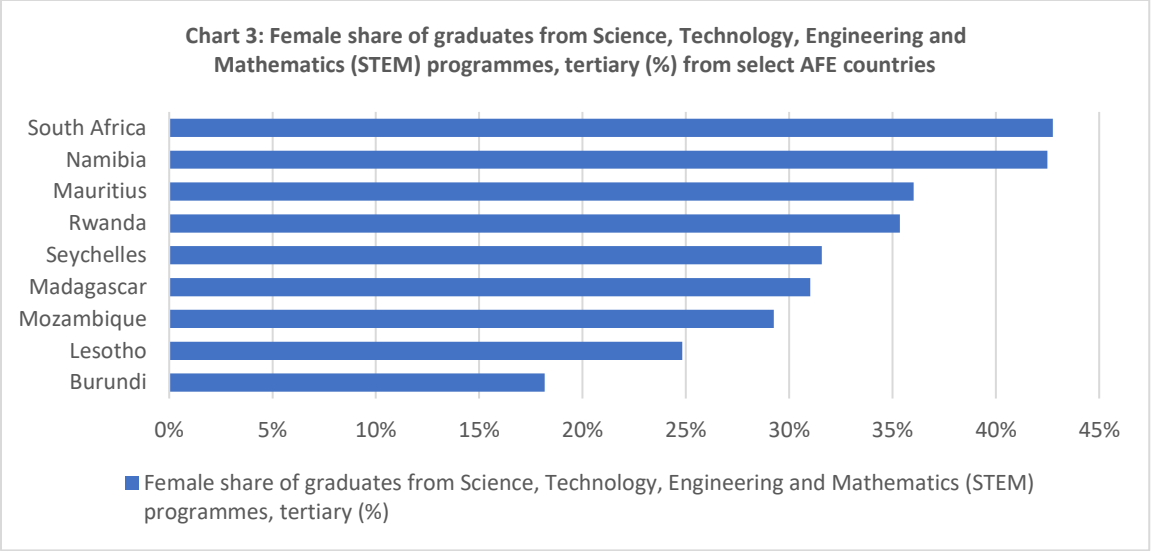
Although these challenges are not exclusive to the AFE region, underlying constraints to low participation of women in the sector include limited awareness of available opportunities in the renewable energy sector, restricted mobility, work environments that do not support women's employment, and low participation of women with STEM backgrounds in talent pools for STEM-related positions.

From the employers' perspective, barriers to women's employment in the renewable energy sector include prevailing hiring practices which tend to favor men, workplace policies that lack flexibility and family-friendly measures, and limited access to mentorship, networking and training opportunities to support career development. In the AFE region, it is evident (see **Chart 3**) that women are underrepresented in the energy sector as employers and employees, especially for those with STEM backgrounds, as the share of female graduates in STEM fields is 43 percent or less. A gender gap assessment of the Somalia energy sector showed that women who graduate with STEM degrees are less likely to be employed in the renewable energy sector when compared to their male counterparts. The low absorption of women in the sector could be attributed to social and cultural norms, where women's jobs are confined to care roles, such as teaching and nursing, rather than designing or engineering. Such norms have limited girls from pursuing STEM courses and careers. Further, women who have graduated with STEM degrees, for example in Somalia, are more likely to lack skills to work in the sector as most internships that bridge skill gaps [21].

[19] IRENA (2022), *Solar PV: A gender perspective*, International Renewable Energy Agency, Abu Dhabi, www.irena.org/publications/2022/Sep/Solar-PVGender-Perspective

[20] GOGLA, 2024, Energizing job creation: employment opportunities along the off-grid solar value chain. https://gogla.org/wp-content/uploads/2024/12/GOGLA_PB_Energizing-job-creation_DEF-1.pdf

[21] *Somalia Energy Sector-A Gender Diagnostic Assessment of the Employment Sector* conducted during project preparation for the Somalia Energy Sector Recovery Project (P173088)



Source : World Bank -ESMAP Gender & Energy database

v. Institutional Capacity and Policy Gaps on Gender Equality in the DRE sector

The absence of comprehensive legal and policy frameworks promoting gender parity in the energy sector not only contributes to the underrepresentation of women in the sector, but also to the existence of gender differences that are unfavorable to women with respect to energy access. While most countries have ratified the Convention on the Elimination of all forms of Discrimination Against Women (CEDAW)[22], not all AFE countries have a legal or policy frameworks that support gender equality in the energy sector. Gender audits conducted on energy policies of some AFE countries have shown that lawmakers lack sensitization in the gender differences related to modern energy access and usage, and its linkage to development outcomes. While 50 percent of the AFE countries have policies to improve affordability of household electricity connections and 38 percent of the AFE countries have policies to improve affordability of household electricity tariffs, only eight percent of the countries have policies or national strategies to improve affordability of connections and tariffs for specifically female-headed households. Further, most institutions critical to the DRE sector such as fund managers, lack the capacity or knowledge on the importance of integrating gender equality in the vetting women-owned off grid solar companies, and therefore there is need to create awareness on women's inclusion in the DRE sector. Enhancing institutional capacity with gender expertise has the potential to open opportunities to women-owned enterprises in the DRE sector.

[22] https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-elimination-all-forms-discrimination-against-women

B. Country Analysis

This section provides a gender gap assessment of the countries eligible to receive ASCENT GREEN funding by examining gender gaps in clean energy access to households and enterprises, entrepreneurship in the DRE sector, employment in the DRE sector, and institutional capacity and policies to increase engagement of women in the sector. It is important to note that there are data gaps in the country-level assessments due to lack of information in all aspects, so analysis is provided where data is available. Further, it is important to note that countries with ASCENT projects have more information when compared to other countries included in the analysis (See **Annex 8A.1**).

In summary, the analysis shows that gender inequality remains a pressing issue within the energy sector across various countries in the AFE region. Despite efforts to close the gender gaps, women continue to face significant barriers in accessing energy, opportunities, and resources. This assessment reveals some disparities and commonalities in gender equality within the DRE sector among specific countries. It highlights at country-level the challenges female-headed households encounter in accessing electricity and clean cooking technologies, the underrepresentation of women in technical and leadership roles in the DRE sector, underlying factors that restrict women's participation in the energy sector, and the lack of effective gender-responsive policies.

Common themes across the countries are discussed in the regional section above. Among the common themes is the level of electrification varies widely among the AFE countries. For instance, São Tomé and Príncipe has a relatively high electrification rate of 73 percent, while countries like Malawi and Uganda still struggle with low rates of electrification, particularly in rural areas (see Figure 1). Female-headed households face greater barriers to accessing electricity and clean cooking technologies in most countries, like Eswatini, Ethiopia, and Tanzania where women are often less likely to afford the costs associated with energy access.

Another common theme is the underrepresentation of women in the energy sector, particularly in technical and leadership roles. Whether in Botswana, Kenya, or the Democratic Republic of the Congo, women are less likely to occupy positions in science, technology, engineering, and mathematics (STEM) fields and are often found in support or administrative roles. Fragile and conflict states, such as Somalia and South Sudan, exhibit strong societal and cultural norms that limit women's participation in the energy sector. These norms often confine women to traditional roles and discourage them from pursuing careers in STEM fields. The percentage of women with STEM degrees also varies. While Rwanda has a significant number of female STEM graduates (35 percent), countries like the Democratic Republic of the Congo (11 percent) have very low numbers of women in STEM fields. Further, the rate of women employment in the energy sector differs.

Another notable similarity is the absence or inadequacy of gender-responsive policies and legal frameworks for the energy sector (See **Annex 8A.2** and **Annex 8A.3**). Currently, only Uganda[23], South

[23]Uganda Gender Policy (2007)
https://www.rodra.co.za/images/countries/uganda/policy/The%20Uganda%20Gender%20Policy%202007.pdf

Africa[24] and Kenya[25] have gender policies for the energy sector Other countries have developed gender compendiums to national energy policies such as Burundi and Madagascar, which have National Gender Policies for all sectors, including energy, however their implementation and effectiveness are often lacking. On the other hand, many countries have developed or are in the process of developing gender equality strategies for the energy sector such as South Africa, Zambia and Zimbabwe. Regarding institutional capacity and policy effectiveness, some countries like Rwanda have proactive policies aimed at achieving full household electricity access and reducing reliance on traditional cooking methods. In contrast, other countries, such as South Sudan, lack any gender unit or department within their energy ministries.

The AFE region has a segment in the populations that is disproportionately impacted by risks related to energy poverty and climate change impacts. The vulnerable groups include women-headed households; indigenous and historically underserved women (SSAHUTLC); women entrepreneurs and MSME owners; adolescent girls and young women; elderly women; caregivers; persons with disabilities; displaced or refugee women and host communities; and pastoralist women. These populations face overlapping challenges that limit economic participation and resilience (See **Annex 8A.4**).

Key challenges:

- Fragility, conflict, violence, and displacement: 10 AFE countries (Burundi, Comoros, Democratic Republic of Congo, Eritrea, Ethiopia, Mozambique, Somalia, South Sudan, Sudan, and Zimbabwe) are on the Fragile and Conflict-Affected Situations (FCS) list.
- High prevalence of gender-based violence (GBV) and low help-seeking behavior.
- Heavy unpaid care burdens and lack of childcare services.
- Energy poverty, particularly limited access to electricity and clean cooking solutions.
- Digital and financial exclusion constraining women-led MSMEs.
- Weak infrastructure and high tariffs affect affordability and reliability.
- Climate shocks (droughts, floods) drive food insecurity, school dropouts, and early marriage.
- Restrictive social norms and legal barriers reducing mobility and market access.
- Heightened exclusion in fragile, conflict, and displacement settings.

These patterns are observed regionwide, including in Botswana with significant data gaps on women's economic participation; Eritrea, Ethiopia, Kenya, Somalia facing persistent challenges in borderlands energy access and SSAHUTLC inclusion, Eswatini with lower electricity access and affordability for female headed households, and broader AFE GBV rates affecting Burundi, Zambia and neighboring countries, emphasizing the need for gender responsive social protection, connectivity, finance, and services.

Below is a gender analysis of countries under ASCENT GREEN. It is important to note that the following countries have ASCENT projects: Burundi, Eswatini, Ethiopia, Malawi, Mozambique, Rwanda, Sao Tome

[24] South Africa Department of Energy Policy Framework for Women's Economic Empowerment and Gender Equality (https://www.dmre.gov.za/Portals/0/Energy_Website/files/PPMO/Framework-for-Women-Empowerment-and-Gender-Equality.pdf

[25] Kenya Ministry of Energy Gender Policy (2019) https://advocacy.energia.org/assets/2021/11/Gender-Policy-in-Energy-Kenya.pdf

and Principe, Somalia, South Sudan, Tanzania, and Zambia, and therefore will have more information based on the assessments that were conducted during country preparation. It is also important to note that the following countries either preparing ASCENT projects or are just starting to engage with the World Bank on energy sector initiatives and these include Botswana, Comoros, Democratic Republic of Congo, Eritrea, Kenya, Madagascar, South Africa, Uganda and Zimbabwe.

i. Botswana

Gender equality and women's empowerment in Botswana have improved over the past 20 years but inequality remains a pressing concern. Botswana has made significant strides towards equal treatment of women under the law. It is ranked 60 out of 148 in the 2025 Global Gender Gap Report (GGGR)[26] and is among the countries that have closed at least 73 percent of its gender gaps. However, important gender gaps remain. Currently, Botswana has initiatives, including legal and policy frameworks to close gender disparities. The government of Botswana ratified internals laws such as CEDAW (1996) and SADC Protocol on Gender and Development (2008) and has developed the National Policy on Gender and Development (2015) to provide legal and policy frameworks for reducing gender inequalities in the country. Regardless frameworks, the country has low levels of women's political representation in the National Assembly (only 9 percent of seats held by women), significant gender gap in labor force participation (63 percent women vs 73 percent men), and high rates of Gender-Based Violence (GBV) (37 percent of women). The share of young women (15-34) in Botswana who are not in education, employment, or training is significantly higher (43 percent) than among young men (36 percent). The 2021 Mastercard Index of Women Entrepreneurs (MIWE) has, for the third consecutive year, ranked Botswana (38.5 percent) as the country with the most women business owners globally. Barriers remain, for example, female-owned and led businesses in Botswana suffer from a lack of credibility with male interlocutors, clients, or investors that hinder their business development.

The gender disparities pertaining to the energy sector of Botswana are also prevalent. Most rural female headed households do not have access to electricity, the majority of whom are low-income households. This situation has led to a stark disparity in energy access, hindering rural development, and worsening socioeconomic and gender inequality. With respect to education in the STEM fields, girls start falling behind boys in Science, Technology, Engineering and Mathematics (STEM) subjects in secondary education and are underrepresented in STEM subjects at tertiary level resulting in fewer opportunities to enter dynamic sectors of the labor market such as energy. According to the 2025 GGGR, 11 2 percent of women and 31.5 percent of men graduated from STEM fields; specially, 6 percent of women and 23 percent of men graduated from engineering, construction, and manufacturing fields. The low graduate rates of women in STEM fields has led to the low absorption of women in employment in the energy sector as women in technical positions are underrepresented in the sector.

ii. Burundi

Burundi continues to make progress in closing gender gaps as the 2025 Global Gender Gap Report ranked it 44 out of 148 countries as it has closed 76 percent of its gender gaps. Burundi is one of the countries that has achieved equality in the labor participation rates of males and females at 78 percent however are disparities remain. With respect to policy and legal frameworks, Burundi ratified CEDAW in 19080 as and the COMESA Gender Policy in 2016. Burundi also developed a National Gender Policy (2012-2025), which serves as guiding framework to achieve equity and equality among men and women in the public

[26] https://www.weforum.org/publications/global-gender-gap-report-2025/

sector[27], including energy. The 2005 constitution, revised in 2018, institutionalized gender equality with a 30% quota for women in public office including in parliament, the senate, and the government.[28]
Regardless on the legal frameworks, among vulnerable groups in Burundi include women and girls from rural areas who are in indigenous communities as well as those who are displaced and disables. Underlying factors for vulnerability include legal and institutional barriers that limit access to resources, economic and educational exclusion, harmful social norms, and widespread gender-based violence. According to the 2025 GGGR, 40 percent of women have experienced some kind of violence in their lifetime however evidence on national based interventions is lacking. The government of Burundi has taken action through existing legal and policy actions however challenges remain due to social and cultural norms which prevent women from filing complaints, the patriarchal culture that trivializes violence against women, lack of reinforcement of existing laws and limited collaboration among institutions that support victims, among others.

Burundi has made tremendous progress in closing gender gaps in the past few decades; however, there is room for improvement in the energy sector, especially with respect to access to clean and modern energy. Of all households in Burundi, 29 percent are female-headed; only 7 percent of these households are electrified, compared with 10 percent of male-headed households. -In 2023, Burundi developed a gender responsive government's electrification strategy (2023) to increase electricity access with a focus on women in rural area. With respect to employment in the energy sector, the 2025 Global Gender Gap Report indicates that only 40 percent of female employees are professional and technical workers, compared with 60 percent of their male counterparts. An evaluation of the pipeline shows that 14 percent of women and 22 percent graduated with STEM degrees according to the 2025 GGGR. Further, 2 percent of women and 11 percent graduated from engineering, manufacturing, and construction degrees. The low participation of women in the technical field could be attributed to cultural norms and social barriers which dictate careers for women and men. A further look at Burundi's energy public sector shows that the Energy Directorate of REGIDESO reports the employment rate of women averaged 17 percent in 2020–23. This falls below the gender quota in the Burundi Gender Policy, which stipulates that public institutions are to employ a minimum of 30 percent women. The number of women with a background in science, technology, engineering, and mathematics (STEM) employed at the electricity utility, REGIDESO, ranged between 3.3 percent and 4.4 percent in 2020–23. Women engineers make up 13 percent of engineers at REGIDESO. The underrepresentation of women in Burundi's energy sector could be explained in part by patriarchal social and cultural norms that limit women's participation, especially in public-facing or decision-making roles.

iii. Comoros

Comoros is among countries that is making progress in closing gender gaps. According to the 2025 Global Gender Gap Report, Comoros is ranked 115 out of 148 countries as it has closed 67 percent of its gender gaps. Comoros ratified CEDAW in 1994 and it has a National Policy for Gender Equity and Equality which was updated in 2017 to align with the Sustainable Development Goals. Due to the policy frameworks, Comoros has seen improvements in gender equality; however, much remains to be done. The labor force participation rates of women and men are 47.2 percent and 63.5 percent, respectively; the gap widens for those in professional and technical workers showing 49 percent of women and 65 percent of men in those positions. Most women (92 percent) in Comoros work in the in the formal sector when compared

[27] https://africa.unwomen.org/sites/default/files/2024-03/burundi_country_gender_equality_profile-english.pdf
[28] https://www.undp.org/fr/burundi/projets/egalite-des-genres

to men (87 percent). The 2025 GGGR[29] also reports women having limited rights to accessing justice and reproductive autonomy. Gender norms that tolerate violence against women and girls contribute to high prevalence rates of GBV. The prevalence of child, early, and forced marriage is high, with 32 percent of women married by the age of 18 and four percent gave birth before age of 15. Adolescent girls in rural areas, from the poorest households and lowest education groups are the most exposed to GBV. In terms of physical safety, 17 percent of women and girls have experienced physical and sexual violence in their lifetime, mostly from partners/husbands.

Women in Comoros also face significant constraints that shape both their access to and participation in the energy sector. Overall female human development is lower than for men, and women's labor force participation is just 42 percent compared to 60 percent for men, reflecting constraints from unequal education outcomes, care burdens, and social norms that limit access into male dominated fields like energy[30]. Despite a matrilineal system in which many women jointly or solely own key assets (66.5 percent own a house and 58.5 percent own land) control over the use of these assets and earnings often lies with male relatives or spouses, dampening women's economic agency and access to finance; only 40 percent of women report deciding mainly how their paid earnings are used[31]. These structural and normative barriers translate into very low participation in the electricity workforce; only 19 percent of sector employees are women, guiding project measures to open pathways for women through targeted training and employment in awareness campaigns and household energy efficiency audits, with a concrete goal to raise women's participation in the electricity sector to 25 percent[32].

iv. Democratic Republic of the Congo

The Democratic Republic of Congo is ranked 143 out of 148 countries as it has closed approximately 60 percent of its gender gaps according to the 2025 Global Gender Gap Report[33]. While DRC ratified CEDAW in 1986 and is part of the SADC Protocol on Gender and Development (2008) and COMESA Gender Policy (2016), it also has a National Gender Policy (2017-2021) which focuses on strengthening women's role in the economy and decision making, combating sexual violence and improving women and girls' access to education and other areas. The labor participation rate of females and males is at 60.3 percent and 66.8 percent, respectively. While DRC has made progress in decreasing disparities in certain areas, high incidences of gender-based violence (GBV) continue to counter the progress. According to 2025 GGGR, 47 percent of women have reported experiencing gender-based violence in their lifetime. Vulnerable groups in the DRC continue to be women and children including internally displaced and refugee women. Drivers of vulnerability include lack of access to basic services and conflict which subjects women and girls to sexual- and gender-based violence. In all dimensions, Congolese women experience more significant difficulties than men to fully enjoy opportunities and to exit poverty.

[29] https://www.weforum.org/publications/global-gender-gap-report-2025/
[30] World Bank. 2022. Comoros - Solar Energy Access Project. Washington, D.C. : World Bank Group. https://documentsinternal.worldbank.org/search/33815314
[31] Comoros - Solar Energy Integration Platform Project
[32] World Bank. 2022. Comoros - Solar Energy Access Project. Washington, D.C. : World Bank Group. https://documentsinternal.worldbank.org/search/33815314
[33] https://www.weforum.org/publications/global-gender-gap-report-2025/

The energy sector shows important gender gaps that inhibit women's freedom and potential. In DRC, 25 percent of households are female headed: 13.3 and **97.5 percent of female-headed households use polluting fuel for lighting and cooking** respectively, in comparison to 9.3 and 95.1 percent for male-headed households exacerbating health and social issues. 85 percent of the time women and girls are in charge of collecting water (including 67 percent of women under the age of 18) and cooking fuels, putting them at GBV risks, and **inhibiting their opportunities to access education and/or jobs due to the time burden. Women have less opportunities to access technical jobs, including for electricity sector.** The 2025 GGGR shows that 30.2 percent of women and approximately 70 percent of men are in professional or technical work. Women have a lower tertiary enrollment rate than men (5 percent vs. 8 percent) and a lower labor participation (61 percent vs. 66 percent). Only 9 percent of female workers have a salary (vs. 28 percent for men). Women represent less than a fifth of the permanent full-time workers. Only 11 percent of women that attend tertiary education are enrolled in a STEM careers. A 2017 assessment indicates that women represent 1.7 percent of all students in electrician courses at the National Institute for Professional/Vocational Training (*Institute National de Préparation Professionnelle)*. Further 11 percent of women and 18 percent of males graduated with STEM degrees (2025 GGGR), further illustrating the underrepresentation of women in the energy sector.

v. Eritrea

Despite its strategic position along the Red Sea, Eritrea ranks behind many Horn of Africa countries in advancing gender equality. Gender gaps reflect overlapping constraints on women's time, mobility, access to information, and economic agency. Electricity access rates for the entire population were estimated at 52.2% as of 2020[34]. Electricity is available only in the larger cities and towns, leaving the majority of Eritreans in rural areas and vulnerable populations, such as women-headed households and pastoral communities, without electricity. In both urban and rural communities where access to electricity is limited, women tend to bear a disproportionate burden of the lack of access to modern energy services, both at the household level and within the local economy. Given their traditional role as stay-at-home managers, the lack of access to electricity implies that many women and girls in Eritrea are affected by time poverty, resulting in the loss of opportunities to participate in political, economic, and social activities, including education. Women and girls bear an unequal burden of household energy responsibilities, including collecting fuel, hauling water often with traditional biomass, which heightens exposure to indoor air pollution and safety risks while eroding time for education, paid work, and civic participation. Limited access to modern electricity and clean cooking compounds these burdens, and women's lower access to information and technical skills reduces their ability to adopt modern technologies or benefit from energy-enabled livelihoods. Participation of women in the energy workforce and decision-making remains minimal, mirroring broader social norms and fragile-borderland dynamics that restrict movement, market access, and asset control.

vi. . Eswatini

Eswatini is one of the countries in southern Africa that has made strides in closing gender gaps however more work needs to be done. According to the 2025 Global Gender Gap Report, Eswatini is ranked 46 out of 148 countries, as it has closed approximately 75 percent of its gender gaps. Eswatini has the legal frameworks to advance gender equality in the energy including the ratification of the CEDAW in 1994 and

[34] World Bank (2022) World Development Indicators.

the National Gender Policy of Eswatini which provides a framework for gender mainstreaming that guides the integration of gender considerations into institutional policies, strategies, and programs to achieve gender equality and women's empowerment and the National Energy Policy 2018 policy which includes a gender mainstreaming component aimed at reducing gender inequalities in the energy sector.

Despite these supportive frameworks and commitments, gender equality remains a challenge for Eswatini across various sectors, including the energy sector. Patriarchal norms and social traditions have contributed to constraints women face in accessing services and resources. **Women in Eswatini face difficulties in accessing electricity and clean cooking technologies**, despite being the primary users and producers of household energy. Female-headed households (FHH) are overall less likely to have access to electricity compared to male-headed households (76% vs. 81%). This disparity also exists in rural areas (75% vs. 80%), driven by both lower grid and off-grid access. In urban areas, the gap is smaller (82% vs. 80%), with FHH slightly more likely to have grid access. Regarding affordability, FHH are less likely to afford the connection cost and monthly bills, which could be related to lower income levels, as FHH tend to be poorer than male-headed households[35]. Poverty rate among females is 55.5% compared to 44.5% among males[36].

Despite these efforts, **gender gaps persist in energy sector institutions** such as the Eswatini Electricity Company (EEC). Females constitute only 25 percent of the staff while 10 percent of technical staff are females, of which 2.3 percent are in electrical engineering or IT fields. Further only 22 percent of the leadership positions are women in management positions. Key bottlenecks contributing to the gender gaps in employment include the lack of a gender equality supportive framework such as a gender in Energy Policy, a gender equality strategy, and gender-responsive human resource recruitment and promotion policies. Other factors include unconscious bias, social norms, and gender-based stereotypes. These are the underlying causes that hinder the promotion of women to leadership/decision-making positions as well as the hiring of women technical professionals in the energy sector.

vii. Ethiopia

Ethiopia continues to make strides in closing gender gaps. According to the 2025 Global Gender Gap Report[37], Ethiopia is ranked 75 out of 148 countries as it has closed 71 percent of its gender gaps. While Ethiopia had policy and legal frameworks in place including the ratifications of CEDAW (1980) and the COMESA Gender Policy (2016). Further Ethiopia has the National Policy of Ethiopian Women and a National Energy policy that includes a framework for gender inclusion, however certain gender gaps persist. The labor force participation rate of Ethiopia is approximately 58 percent and 80 percent females and males, respectively. Further, 37 percent of women have indicated prevalence of gender violence in lifetime. Some of the underlying factors leading to the persistent gender gaps include patriarchal, social, and cultural norms as well as well as conflict in the northern part of Ethiopia which determine the roles of women in society including access to services and career opportunities.

Women in Ethiopia face significant challenges in accessing electricity and clean cooking technologies despite being the primary users and producers of household energy. **Female-headed**

35 Draft Multi-Tier Framework Energy Access Diagnostic Report 2024

36 Poverty Trends in Eswatini (Based on the 2009/10 and 2016/17) EHIES 2020

37 https://www.weforum.org/publications/global-gender-gap-report-2025/

households have limited access to clean cooking (8%) and electricity (34%), and rural areas are heavily reliant on collected firewood[38]. **Affordability is the underlined issues** for Female-headed households in accessing electricity. Only 37.5% are willing to pay upfront for a grid connection, compared to 60.1% of male-headed households. For Tier 2 solar products, 28.4% of FHHs are willing to pay full price upfront, versus 47.5% of MHHs[39]. **Lack of end user subsidies for the uptake of off grid solutions in deep rural areas is one of the challenges to for women that limit their access to off-grid solutions**

Despite some progress, such as increased overall female employment to 22.8 percent from 20 percent in 2019 and in technical fields rising to 20 percent from 14.4 percent **female professionals remain underrepresented especially in leadership and management positions** with only 13.5 percent. In Ethiopia and other sub-Saharan countries, only 36 percent of females enroll in secondary school. This low educational attainment limits the number of qualified women in the energy sector. Also, societal and cultural norms often favor men in STEM fields, discouraging women from pursuing these careers. On top of that, women face biases in the workplace that hinder their career progression and opportunities in the energy sector[40]. The government of Ethiopia's National Energy Policy 2015 recognizes gender equality issues in energy and outlines seven policy instruments to address the gender gaps. However, strategic implementation guidelines that translate the policy instruments including tailored male engagement strategies that support gender equality in the energy sector are missing.

viii. Kenya

Kenya is one of the countries in Eastern Africa that continues to make progress in closing gender gaps. According to the 2025 Global Gender Gap Report, Kenya is ranked 98 out of 148 countries and closed approximately 69 percent of its gender gaps. Kenya has the gender policy and legal frameworks to facilitate the attainment of gender equality including the ratification of CEDAW in 1984 and the COMESA Gender Policy (2016), and the National Policy on Gender and Development (2019). It is important to note Kenya is also one of the few countries in Africa with a Gender Policy for in Energy (2019). While Kenya has the legal and policy frameworks to attain gender equality, many gaps persist including in the energy sector. The labor force participation rate is 53.3 percent for women and 63.2 percent for men. The gap widens with respect to technical and professional workers where 38 percent of women and 61 percent of men occupy those positions. With respect to financial services, women have uneven rights with respect to inheritance rights for widows, as well access to land and non-land assets. Further, 38 percent of women have reported experiencing gender-based violence in their lifetime. Vulnerable people in Kenya include women and children in pastoralist communities who live in remote areas where public services are not available.

Like other African countries, the energy sector in Kenya is male dominated. A recent Gender Gap Assessment (GGA) conducted in the Kenya Power and Lightning Company (KPLC) (January 2023) shows **a large male over-representation at all levels**. Out of total staff, only 23 percent are female. The percentage of female technical staff is only 9 percent (622). T**he representation of women in executive leadership position is only 19 percent** (13 out of 68 executives); 16 percent at managerial level (16 out of 100 positions); 24 percent at senior standard level (177 out of 748 positions); and 33 percent at standard

38 Demographic Health Survey: https://dhsprogram.com/

39 Ethiopia Beyond Connections 2018: Energy Access Diagnostic Report Based on Multi-Tier Framework

40 Women's participation in the renewable energy workforce in Sub-Saharan Africa. IFC 2023 https://www.ifc.org/en/insights-reports/2022/womens-participation-in-the-renewable-energy-workforce-in-sub-saharan-africa

level (758 out of 2,289 positions). **Career development opportunities especially in STEM** fields are identified to be a **challenge for female staff**. Also, women in leadership and managerial positions have very **limited opportunities to access job** coaching and mentorship programs. Inadequate workplace facilities (e.g., absence of women-friendly separate washrooms) was identified as one of the challenges. Institutionalized gender-responsive planning, M&E as well as reporting, are also not in place.

ix. Lesotho

Lesotho is ranked 99 out of 148 countries as it has closed 68.8 percent of gender gaps, but many disparities remain. With respect to legal and policy frameworks, Lesotho ratified CEDAW in 1995 and is also part of the SADC Protocol on Gender and Development[41]. Lesotho also has other national strategies in place included the Gender and Development Policy (2018-2030); however, Lesotho faces persistent gender gaps in energy access, education, health, economic participation, and agency, driven by entrenched social norms and conflicting legal frameworks. Lesotho's energy access reflects notable gender disparities. Women's economic participation lags behind men's, marked by lower labor force engagement, concentration in vulnerable jobs, and earnings gaps driven by unpaid care work and limited access to credit. The labor force participation rate of females and males is 48.9 percent and 67 percent, respectively, and the gaps widens for professional and technical positions is 39 percent for females and 61 percent for males. Voice and agency have improved through quotas but remain below parity targets, while gender-based violence is widespread and socially tolerated. Approximately 40 percent of women reported to have experienced gender-based violence in their lifetime. Household decision-making and control over resources and fertility remain unequal. Cross-cutting drivers include patriarchal norms, contradictions between statutory and customary law, and disparities limiting access to services.

Female-headed households are about five percentage points less likely to have electricity connections, primarily due to affordability challenges such as high connection fees and monthly bills that burden poorer households. Clean cooking access remains limited overall, most still rely on wood or kerosene, heightening health risks and time burdens for women. National access rates stand at 57% for electricity and 41% for clean cooking, with women disproportionately affected because they are overrepresented among poorer and rural households[42]. Women remain underrepresented in utility and engineering roles[43] and face cultural and legal barriers, as well as weaker land rights in practice due to the dominance of customary law. According to the 2025 GGGR, women graduating with STEM degrees are at 6.4 percent compared to 28.3 percent of men in the same field, illustrating the underrepresentation of women in the recruitment for technical positions.

x. Madagascar

Madagascar has made progress in narrowing gender disparities as it is ranked 58 out of 148 countries as it has closed 73.4 percent of its gender gaps. Although the Government is undertaking efforts to achieve greater gender equality, women's economic empowerment is still limited in Madagascar. The country has legal and policy frameworks and ratifies international policies including CEDAW (1989), the SADC Protocol for Gender and Development (2008) and the COMESA Gender Policy (2016). Nationally, Madagascar has implemented the National Gender and Women Empowerment Policy in additional to other policies to

[41] https://www.weforum.org/publications/global-gender-gap-report-2025/

[42] Lesotho - Gender Assessment https://documents1.worldbank.org/curated/en/099015105102231913/pdf/P1715600219ee403708dad08cfff91db633.pdf

[43] World Bank. 2020. Lesotho - Renewable Energy and Energy Access Project. Washington, D.C. : World Bank Group. https://documentsinternal.worldbank.org/search/31702850

promote gender equality in the energy sector. However, women are underrepresented in the labor force participation where women represent approximately 69 percent of women compared to 82 percent of men. While the gap in professional and technical workers is only 4 percent, women in STEM courses continue to lag behind male counterparts. According to 2025 GGGR, the 17 percent of women and 32.2 percent males graduated with STEM degrees. Further 28 percent of women reported to have experienced gender-based violence in their lifetime.

As Madagascar continues to invest in and reform the power sector, it is essential to develop and implement measures and policies that create more gender-inclusiveness across issues such as access, entrepreneurship, employment, and customer relations to close identified gender gaps. There are significant gender gaps in Madagascar for electricity access among female-headed households which represent 28.5 percent of all households in the country[44]. Gaps were found to vary also depending on the region (urban or rural areas), wealth, and composition of the household. Specifically, female-headed households have a disproportionally lower access to electricity in rural areas at 14.1 percent as compared to male-headed households at 18.5 percent. The gap persists but shrinks in urban areas with 66.4 percent of female-headed households versus 67.9 percent for male-headed households. However, the gap is even higher in certain geographical areas, with three of Madagascar's geographical departments presenting a gap above 10 percentage. Further, female-headed households and women-led enterprises are disproportionately affected by energy poverty due low access to finance.

xi. Malawi

Malawi continues to make progress in achieving gender equity and equality. While Malawi is not ranked in recent intercountry comparison with respect to gender equality, the country has established legal and policy frameworks to support its attainment of gender equality goals. Malawi is a signatory to several international laws and conventions on gender equality, such as CEDAW (1987), the Southern African Development Community (SADC) Protocol on Gender and Development (2008) but has not signed the revised 2016 protocol and the COMESA Gender Policy (2016). At national level, Malawi has implemented legal and policy frameworks including the National Gender Policy 2015 whose objective include to mainstream gender in all sectors and guiding women's economic empowerment initiatives. Regardless of the frameworks, gender disparities remain. The Malawi labor force participation rate for females in 2024 was 63.2%, compared to 71.1% for males. Approximately 33 percent of women have reported to have experienced gender-based violence in their lifetime. Other vulnerable population include Ultra-poor, rural populations, women, and girls, and those living in remote or last-mile communities which have limited access to public services including electrification programs.

Malawi has made great strides in increasing clean energy access since 2018 however, the access gender gaps still persist. **Access to electrification in Malawi currently stands at 25.9 percent, however, only 18% of female headed households have access** to any source of electricity as compared to 19.4 percent of male headed households[45]. Further, evidence shows that women-led/owned enterprises are less likely to have access to electricity when compared men-led/owned enterprises due to various factors including **affordability**, and yet having access has the potential to increase income generation that would sustain

44 World Bank Development Indicators, Access to Electricity as a percentage of the populations, at: https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?end=2020&most_recent_value_desc=false&start=1996&view=chart
45 Malawi Beyond Connections: Energy Access Diagnostic Report Based on MultiTier Framework, June 5, 2024.

livelihoods[46]. On the supply side, **women continue to be underrepresented in the energy sector.** Evidence shows that women employees at Ministry of Energy and ESCOM represent 25 percent and 20 percent of all staff, respectively. Further, at Ministry of Energy, 4 percent of women compared to 15 percent men are work in technical positions. Similarly, at ESCOM approximately 18 percent of women are employed in technical positions compared to 82 percent of men[47]. Most of the gender disparities could be attributed to cultural and social norms which dictate careers for men and women[48]. At national level, the Ministry of Energy **lacks the capacity for gender integration** due to budget constraints and lack of expertise to guide the gender integration process.

xii. Mozambique

Mozambique continues to make strides in reducing gender disparities as it is ranked 53 out of 148 countries and has closed approximately 73.8 percent of gender gaps. Mozambique has legal and policy frameworks in place to attain gender equality. Mozambique ratified CEDAW in 1997 and national strategies including the Gender Policy and Implementation Strategy (2018) and national plans to advance women and combat gender-based violence, which sets a framework for gender equality across sectors. However, Mozambique faces deep and multidimensional gender inequalities that constrain girls' and women's human capital, health, safety, and economic opportunities. Gender gaps intersect with disability and sexual orientation and gender identity (SOGI), intensifying exclusion. The risk of gender-based violence (GBV) is high as 30 percent of women have reported experiencing gender-based violence in their lifetime. The risk is higher among adolescent girls in Mozambique as one-third of 15-year-old adolescent girls declare that they are survivors of physical violence, and 46 percent say they are survivors of domestic sexual or emotional violence from their partners. Internally displaced women and girls are also increasingly vulnerable to different forms of GBV due to limited shelter. High risk areas tend to lack reinforcement mechanism, resources, and facilities to project survivors. There is marked sectoral segregation, with the majority of women concentrated in agriculture, coupled with limited access to land, credit, and other productive resources, which perpetuate income disparities and productivity gaps.[49]

Nearly half the country remains unelectrified, with large regional disparities. Female-led households have lower access to electricity than male-led households, and over 94 percent of households rely on traditional biomass for cooking, burdens that disproportionately impact women and girls through time poverty, exposure to indoor air pollution, and safety risks. Lack of clean cooking technologies exacerbates health risks and heightens GBV risks associated with fuel collection, especially in remote and insecure areas. Women's labor force participation is high (78 percent), almost at par with the men's participation rate at 80 percent, however the gap is wider at professional and technical workers where women represent 42 percent and men represent 58 percent of workers in the positions. Further, an evaluation of educations skills, according to the 2025 GGGR, shows that approximately 6 percent of women graduated with STEM degrees when compared to 14 percent of men, qualifying the underrepresentation of women in technical

46 https://documents1.worldbank.org/curated/en/463071494925985630/pdf/115066-BRI-P148200-PUBLIC-FINALSEARSFGenderweb.pdf

47 The Electricity Sector Gender and Disability Mainstreaming Assessment Report. Malawi Energy Programme / Wala Malawi, European Union Technical Assistance

48 The Electricity Sector Gender and Disability Mainstreaming Assessment Report. Malawi Energy Programme / Wala Malawi European Union Technical Assistance

49 World Bank. Mozambique - Accelerating Sustainable and Clean Energy Access Transformation in Mozambique Project (English). Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/099030425173028516

position in the energy sector. Further, women entrepreneurs face both financial and non-financial constraints in accessing resources to operate in the energy sector.

xiii. Rwanda

Rwanda has made tremendous strides to attain gender equality and among the leading countries in Africa countries that have closed at least 75 percent of gender gaps in the country. According the 2025 Global Gender Gap Report, Rwanda was ranked 39 out of 148 countries as it has closed 76.2 percent of gender disparities. The progress could be partially attributed to the legal and policy frameworks that Rwanda subscribes to including the ratification of international and regional policies such as CEDAW (1980) but also national policies such as the Revised National Gender Policy (2021) and the National Energy Policy (2015) which commits to gender integration in energy planning and implementation. Moreover, Rwanda has the highest percentage of women in parliament globally, with women holding approximately 64 percent of seats in legislature. In spite of the progress, Rwanda still lags in some sectors; according to the 2025 GGGR, the labor force participation rate of women is 58.1 percent compared to men's participation rate at 70 percent. In addition, women in professional and technical work represent 40 percent compared to 60 percent of men in the same position. Evidence also shows that 38 percent of women have reported experiencing gender-based violence in their lifetime. Among vulnerable populations include refugee women and rural communities who have limited access to services including national electrification due to affordability constraints and most development being concentrated in urban areas.

Gender equality gaps also exist in Rwanda's energy sector. For example, EDCL HR Data (2023) shows the **overall percentage of the female workforce at EDCL is only 17 percen**t though the Global Gender Gap Report 2025 shows the current women STEM graduates in Rwanda is 35.6 percent. Gender gaps in electricity access persist, as **female-headed households have lower access both to grid and off-grid electricity[50]. Also, access to clean cooking solutions is still a challenge** in Rwanda since household cooking practices are still based on traditional fuels and stoves. The gender gap is reflected in the primary cooking fuels used by households, with female-led households relying more on firewood (85%) than male-led households (78%). In addition, only 2% of the population has access to modern cooking fuels and technologies, in urban areas and 76% of Rwandan households spend more than 7 hours per week acquiring and preparing fuel, posing a high burden on women and girls. As a result, women and children are more susceptible to Household Air Pollution (HAP) and associated adverse health effects, and chores relating to cooking take a considerable amount of their time, which otherwise could have been used for other productive areas such as education or employment[51]. Also, **availability, distribution, and access to productive uses of energy solutions especially that meet the needs of women-owned/led enterprises is not yet at the level of their demand**.

xiv. São Tomé and Príncipe

São Tomé and Príncipe has taken initiatives to close gender gaps in all sectors. São Tomé and Príncipe has legal and policy frameworks to increase equality in addition to subscribing to international treaties such as CEDAW which was ratified in 1995. In addition, São Tomé and Príncipe developed the National Strategy for Gender Equality and Equity 2019-2026 (ENIEG, first adopted in 2007 and updated in 2019, which

50 Modern Energy Cooking Services. 2021.Policy and market review for modern energy cooking in Rwanda
51 *Rwanda - Energy Access and Quality Improvement Project (English).* Washington, D.C. : World Bank Group. http://documents.worldbank.org/curated/en/819241600653622828.

provides the overarching framework for gender equality, equity, and women's empowerment. Regardless of the frameworks, gender disparities in all sectors exist and the most vulnerable include women in rural and coastal areas as well as youth. Approximately 43% of teenage girls aged 14–19 who are not in school cite their pregnancy as the reason they dropped out. While data on violence committed by a non-partner is unavailable, lifetime physical or sexual violence committed by an intimate partner is 28%, indicating that violence against women is widely accepted in society. In addition to risks of sexual exploitation and abuse and sexual harassment (SEA/SH) in school, girls are also exposed to risks of GBV while walking long distances to and from school due to the small number of upper secondary schools in the country and lack of adequate transportation.

Evidence from the Africa Development Bank shows that approximately 73 percent of Sao Tome and Principe's population has access to electricity while 80 percent of the population depends on biomass for their needs. While the country is committed to achieving universal access by 2030, the power infrastructure is aging and the impact of environmental factors including climate change continues to impact the existing infrastructure. In São Tomé and Príncipe, 38 percent of the households are headed by female however access gender gaps are not available. Gender gaps were identified in São Tomé and Príncipe with regards to **women's employment** in the labor market and specifically in the energy sector and at the utility (EMAE), as well as to **their access and use of electricity.**

Gender gaps were identified in São Tomé and Príncipe with regards to women's employment in the labor market and specifically in the energy sector and at the utility (EMAE), as well as to their access and use of electricity. Targeted activities under the project aim to close these gaps and are focused on: (i) strengthening local capacity to increase women's participation in the energy sector and in particular solar generation; and (ii) ensuring their access to electricity for productive uses. Solar generation, and particularly utility-scale solar generation, remains an incipient sector in São Tome and Principe and thus local capacity needs to be reinforced. As a first step, identification of needs and possibilities was completed, in order to implement the best approaches to facilitate the development of skills, STEM knowledge and creation of domestic employment in the energy sector for women. It was established that targeted trainings were needed to improve the pipeline of female engineers and technicians and their integration in the solar plant construction, operation, and maintenance phases as well as in leadership positions, with the additional observation that these trainings were unavailable in the country. Furthermore, increased access to and use of electricity by women beneficiaries and collectivities affected by the project was assessed to be needed and was decided to be achieved by promoting trainings and activities that directly address the gender gaps and livelihood constraints faced by women and encourage income-generating activities.

xv. Somalia

Somalia has made tremendous progress in closing gender gaps in spite of constraints including fragility and conflict. Somalia has subscribed to regional treaties including the COMESA Gender Policy (2016) and has drafted a National Gender Policy (2019) to establish a policy framework for providing equal opportunities and rights for both women and men in all sectors. The policy landscape for gender mainstreaming in Somalia's energy sector is progressively evolving, with key legislative and institutional frameworks now recognizing the importance of addressing gender disparities.

As a fragile conflict state, Somalia faces multiple fronts in order to achieve gender equality. Somalia has a large population of rural populations that are nomads as well internally displace populations and ethnic minorities who face challenges such geographic isolation, poverty, political instability, and discrimination, which dictate access to public services. Further women and girls face high rates of gender-based violence

driven by conflict as well as prevalence of female genital mutilations which has a prevalence rage of 99 percent with insignificant variation among age groups and education levels.

The National Energy Policy (NEP) highlights sustainable energy access as a critical driver of economic development, explicitly acknowledging the differing impacts of energy poverty on men and women. Women, particularly in rural areas, bear a disproportionate burden from limited access to modern energy, which hinders their ability to participate in income-generating activities and increases their workload related to household energy needs. According to National Gender Diagnostic Assessment of Somalia (2025), the Somalia energy sector has faced significant challenges due to years of conflict that have led to the destruction of public electricity infrastructure and severely limited access to reliable energy services. This has perpetuated a situation of entrenched energy poverty throughout the country, with significant gendered implications. Deep-rooted socio-economic norms and inequalities have led to reduced access to energy services for girls and women, which in turn limits their participation in the sector. Hence, addressing systemic problems within the energy sector becomes critical to ensure overall inclusive growth and align with the aspirations outlined within Somalia's Ninth National Development Plan (NDP-9) (2020–2024). Gender disparities in the energy sector are influenced by deeply embedded cultural and institutional factors. Prevailing social norms frequently restrict women to domestic roles, limiting their participation in traditionally male-dominated sectors such as energy. Institutional frameworks, particularly in the private sector, often lack comprehensive gender-responsive policies, including provisions for flexible working arrangements, mentorship Programmes and the establishment of safe and inclusive workplace environments. Furthermore, women entrepreneurs in the energy sector face systemic barriers, including limited access to financial resources and professional networks, as highlighted in the World Bank's Women, Business, and the Law report (2023).

Access to electricity in vulnerable households is constrained due to the high cost of electricity from the private sector through electricity service providers (ESPs) in Somalia as it is highly unaffordable for most of low-income households particularly women-headed households[52]. Even when electricity is accessible in households, supply tends to be highly unstable and unreliable partly due to the poor electricity infrastructure. The provision of electricity services to the vulnerable such as female-headed households and women-owned enterprises is also considered a risk that could affect the profit margin of ESPs because such vulnerable households are unable to pay their tariffs on time. Further, payment options offered to women-owned enterprises and vulnerable households for tariff payment tend to focus on reducing the risk of losing customers which tends to be unsustainable in the long run for the ESPs because many vulnerable households are unable to utilize that window of opportunity due to persistent poverty. In addition, an assessment on employment gender gaps showed that women with STEM backgrounds are less likely to be employed in the private sector due to several factors including rigid social and cultural norms that define traditional jobs for women.

xvi. South Africa

South Africa has made strides in achieving gender equality among African countries however the gains are unequally distributed between racial groups. According to the 2025 Global Gender Gap Report, South Africa is ranked 33 out of 148 countries and has closed almost 77 percent of its gender gaps[53]. Most of these gains are from the health and educational attainment of women. South Africa has implemented

52 *Africa Gender and Energy Team. 2025. Gender, Social Inclusion, and Energy Access in the Horn of Africa Borderlands: A Vantage Point. ESMAP Paper. © World Bank. http://hdl.handle.net/10986/42946 License: CC BY-NC 3.0 IGO.*

53 https://www.weforum.org/publications/global-gender-gap-report-2025/

legal and policy frameworks to support the attainment of gender equality including CEDAW in 2015, and the National Policy Framework for Women's Empowerment and Gender Equality to promote cross sectoral approach to integrating gender equality in policies and programs. Further South Africa is among a few countries with a gender policy and strategy for the energy sector namely Department of Energy Policy Framework for Women Empowerment and Gender Equality (2016) and Women Empowerment and Gender Equality Strategy for the Energy Sector (2021-2025). In spite of the legal and policy frameworks, South Africa continues to gender inequalities. The labor participation rate of women and men is 49.8 percent and 61.8 percent respectively, which the disparity is narrower for those in professional and technical work with a gap of 7.6 percent. Among vulnerable populations include rural households headed by females, people with disabilities and Black South Africans who have limited access to public services due low incomes and historical discrimination. Recently, gender-based violence has reached epidemic proportions as the country has recoded high rates of rape and femicide, a crisis which is deeply rooted in patriarchal structures, inequalities stemming from apartheid and poverty.

In South Africa, interconnected gender gaps in energy access affect women and girls across availability, affordability, quality, and usage. Female-headed households face greater barriers to electricity connections and lower consumption due to affordability constraints, limited access to finance, and administrative requirements such as proof of tenure or account setup. These challenges are most pronounced in poor, rural communities, deepening the urban–rural divide and intersecting with race and income increasing vulnerability among Black/African female-headed households[54]. Despite high national electrification rates, many low-income households still rely on polluting fuels because of cost, reliability concerns, or lack of appliances—exposing women and children to household air pollution and time burdens from fuel collection and cooking[55]. Without modern energy services, women spend more time on domestic chores, face safety risks when collecting fuels, and have reduced access to information and services. Conversely, electrification has been shown to increase women's employment by freeing time and enabling home-based productive activities[56]. Women remain underrepresented in the energy sector workforce and face distinct vulnerabilities in the energy transition, including limited mobility into alternative jobs, childcare responsibilities, and weaker agency in male-dominated spaces.

On the supply side, the 2025 GGGR shows that 13.1 percent of women and 25.8 percent of men graduated with STEM degrees, showing a gap which impacts the absorption of women in the energy sector. Recently ESKOM reported that just over 33% of Eskom's workforce is now female, 20% of Eskom executives are women, and women occupy approximately 43% of senior management roles however additional interventions are needed to increase women's employment.

xvii. South Sudan

Gender disparity in South Sudan is high; the country ranks in the bottom third of all countries worldwide for the 'life-course gender gap' on the Human Development Index. Around 50 percent of South Sudan's population of 13.3 million is female, with 80 percent of the population under the age of 35, placing an inordinate burden on women and children, who represent the majority of those fleeing violence. **South**

[54] Tackling Energy and Gender Challenges in Sub-Saharan Africa (blog)
[55] Energy Sector Management Assistance Program (ESMAP) Annual Report 2024
[56] Mary Dominic; Adriana Maria Eftimie; Sherry Lisa Goldberg.2022. The Business Case for Gender-Responsive Climate-Smart Mining. Washington, D.C. : World Bank Group. https://documentsinternal.worldbank.org/search/33879344

Sudanese women and girls have fewer choices and opportunities over the course of their life compared to men and boys and have less agency and options for self-determination. In order to reduce the existing gender disparities, South Sudan ratified the international treaties such as CEDAW in 2015. Further, the country has established legal and policy frameworks including the National Gender Monitoring and Reporting Framework which tracks disparities such as women's health, education, economic empowerment. However, reinforcement of the frameworks faces obstacles as gender disparities continue to persist. According to UNICEF, at least 50 per cent of women in South Sudan have experienced violence from their intimate partner; some of the root causes of the violence include conflict, social and cultural norms driven by patriarchal structures, and displacement.

An Institutional gender gap assessment (GGA) of the energy sector has shown that the **gender equality supporting structure has never been integrated and considered as one of the areas of support in the energy sector. T**here is no gender unit/department in the Ministry of Energy and gender-responsible staff or focal persons are nonexistent. The energy sector has a large male representation at all levels and female employees are mostly involved in jobs that demand low skills as support staff. None of these female employees passed through college/universities for their first degrees except those in technical areas. All leadership and management positions at ministry and utility level are held by men. Out of 21 technical staff in the Ministry of Energy and Dams (MoED), there is only one female technical staff. Further, job capacity development opportunities have not been provided since 2016 for all employees. This highly affects the career advancement opportunities of women in the sector. The findings of the GGA further showed that percentage of f**emale students in STEM fields are very low** starting from primary education up to tertiary level.

xviii. Tanzania

The recent Global Gender Gap Report 2025 ranked Tanzania 55 out of 148 countries, as it has closed approximately 74 percents of its gender gaps. In order to attain gender equality, Tanzania has included gender inclusion legal and policy frameworks at the international and regional level, as well as nationally. Tanzania ratified CEDAW in 1980 and the SADC Protocol on Gender and Development in 2008 Tanzania Development Vision 2025 and the National Five-Year Development Plan (2021/22–2025/26) place gender equality and women's empowerment at the center of national development. At national level, Tanzania has implemented the National Gender Policy (2000, updated 2023) and the National Climate Change Response Strategy (NCCRS, 2021–2026) which has integrated gender equality; however, reinforcement of the policy and legal framework is necessary to achieve gender equity and equality. According to the 2025 GGGR, the labor force participation rate of women and men is at 79.4 percent and 86.6 percent respectively however the gap widens for those in professional and technical work at 31.3 percent for women and 68.7 percent for men. The underlying factors of inequality include social and cultural norms which are driven patriarchal structures, limited education and skills, low incomes especially rural areas, among others, and those subject to the vulnerabilities include female headed households in rural areas, elderly and child headed households and persons with disabilities. Further, 38 percent of women have reported experiencing gender-based violence in their lifetime.

The national access rate to clean cooking in 2020 was 8.1%, with majority of Tanzanians (89%) still relying on biomass energy (charcoal and firewood) for cooking. In 2020, it was reported that 39.9% of households countrywide were connected; out of which 27.9% were male headed households and 11.9% were female

headed households. In urban areas, connection rate was reported at 72.9% of all urban households, upon which 48.9% were male headed households and 23.9% were female headed households. In rural areas, the overall number of households connected to electricity was 24.3%, of which 17.9% were male headed households and 6.3% were female headed households. Rural Energy Agency (REA) 2022 HR data shows a wide employment gap where the percentage of women workforce are only 26.5 percent and male workforce are 73.5 percent. The low absorption of women in the energy sector could be partially attributed to the low numbers of women graduating with STEM degrees at 9.1 percent when compared to men's graduation rates at 18.1 percent and social and cultural norms that dictate careers for men and women.

xix. Uganda

Uganda continues making progress in closing gender gaps as the 2025 Global Gender Gap Report shows the country has closed 70 percent of the gender gaps with rank of 80 out of 148 countries. In order to reach gender equity and equality, Uganda has subscribed to international treaties included CEDAW (1989) and the COMESA Gender Policy (2016) but also has implemented a legal and policy framework such as the National Gender Policy (2007) which emphasizes gender-responsive planning and the National Energy Policy that puts gender disparities at the forefront of its energy planning agenda. Uganda has yet to make progress in closing gender gaps in different sectors. According to the 2025 GGGR, the female labor force participation rate was at 75 percent compared to 84 percent of men, while among the professional and technical workers, the gap widens with women at 37 percent and men at 63 percent. Further, rural households and communities especially female headed households including those from ethnic minorities and indigenous communities, and refugees are vulnerable due to being in remote areas that have limited access to public and social services and low incomes, which in turn, negatively impacts livelihoods. Further Data from Uganda shows high prevalence rates of lifetime at 45 percent, and last 12 months physical and sexual violence as well as high rates of IPV for ever-married women

National household surveys indicate that 52.4 percent of male-headed households and 48.4 percent of female-headed households have access to the grid or other sources of electricity, but the access gender gaps are more prominent in the rural areas. Further, 66 percent of male-headed households have access to the national grid compared to 58 percent of female-headed households. According to the Energia, 31 percent of STEM graduates in Uganda are women when compared to 69 percent of men, which contributes to the energy sector being male dominated. Underlying constraints to low participation of women in the sector, especially in the renewable energy sector, include lack of education and skills in the field, lack of access to renewable energy and opportunities and services, lack of technical training and limited access to credit and financing.

xx. Zambia

Zambia continues to make strides in achieving gender equity and equality. According to the 2025 Global Gender Gap Report, Zambia is ranked 79 out of 148 countries and has closed approximately 71 percent of its gender gap. Zambia is a signatory to several international laws and conventions on gender equality, such as the Protocol to the African Charter on Human and People's Rights on the Rights of Women in Africa, the Southern African Development Community (SADC) Protocol on Gender and Development (2008) and the CEDAW (1980). Nationally, Zambia has implemented legal and policy frameworks to support gender equality in all sectors including the National Gender Policy (2014), the Climate Change Gender Action of 2015 and the Gender Equality and Strategic Action Plan for the Energy Sector in 2022, however gender disparities remain in all sectors. According to the 2025 GGGR, the labor force

participation rates of women and men was 56.4 percent and 67.8 percent respectively, while among professional and technical workers the gap is narrower with women at 46.4 percent and men at 53.4 percent. Further 41 percent of women reported the prevalence of gender violence in their lifetime. Rural communities are considered vulnerable especially female headed households and low incomes households.

Access to clean energy has the capacity transform households and spur economic growth in Zambia. Recent data shows Zambia's electrification rate at 42 percent; a further breakdown shows **57.5% of female-headed households and 57.9 percent of male-headed households have no access to any kind of electrification.** The access gender gaps widen by geographic location where 93.1 percent of female headed households and 86.7 percent of male headed household in rural areas have no access to any kind of electrification. According to the Zambia's *Gender Equality Strategy and Action Plan* (GESAP), the **underlying constraints to access gender gaps could be attributed to lower incomes which impact affordability, as well as lower literacy levels, lower awareness of the benefits of electricity and, lower awareness of suppliers of Off-Grid solar solutions among female-heads of households compared to male-heads of households**. Moreover, in Zambia, biomass remains the most common energy source for cooking by 80 percent of households in rural areas while 75 percent in urban areas use mainly charcoal for cooking. Women and girls bear the disproportionate burden and time of searching for cooking fuels such biomass, which reduces time available for other empowerment activities. Further, use of biomass fuels has negative outcomes including respiratory diseases which women experience disproportionately as managers of households. On the supply side, employment data shows that women represent 24 percent of the energy workforce in Zambia; 6 percent of the workforce are women in technical positions in Zambia's energy agencies and most of them are concentrated in corporate offices rather in field based or technical operations. The l**ow representation of females in the energy sector has created imbalances in energy solutions to resolve needs for both men and women.** Further, new graduate engineers struggle to penetrate the male-dominated energy sector due to lack of experience, among other factors. The Rural Electrification Authority of Zambia, the implementing agency for the project, also **lacks capacity to integrate gender leading to poor operationalization of Gender Policy.**

xxi. Zimbabwe

Zimbabwe has made strides in closing gender gaps especially in education attainment and health and survival of women. According to the 2025 Global Gender Gap Report[57], Zimbabwe was ranked 49 out of 148 countries and has closed 74 percent of its gender gaps. Zimbabwe is a signatory to international conventions including CEDAW (1991), the SADC Protocol on Gender and Development (2008) and the COMESA Gender Policy (2016). Further, Zimbabwe has implemented legal and policy frameworks to support the gender equity and equality including the National Gender Policy, which was revised in 2017,but gender disparities still remain. According to the 2025 GGGR, the labor force participation rate of women and men was 62 percent and 74 percent respectively, while for professional and technical workers, the gap was narrower with women at 48 percent and men at 52 percent. Further, 35 percent of women report to have experienced gender-based violence in their lifetime. Other vulnerable groups include female headed households in rural areas and women with disability. The underlying causes of the gender disparities include social and cultural norms that rooted in patriarchal structures with disproportionately and negatively impact women.

[57] https://www.weforum.org/publications/global-gender-gap-report-2025/

A High-Level Gender Assessment of the Zimbabwe Energy Sector by the World Bank shows that 69 percent of female headed households and 78 percent of male-headed households have access to electricity while 28 percent of female headed households and 30 percent of male headed households have access to clean cooking technologies. In terms of employment and entrepreneurship, women are underrepresented in the energy sector. According to the Global Gender Gap Report 2024,7.4 percent of women graduated in Engineering, manufacturing and construction to 25 percent men who graduated in the same fields. Further, according to Zimbabwe Census of 2022, women constituted 17.7 percent of employees in the electricity, oil, gas, and air conditioning supply as compared to 82.3 percent of men. Zimbabwe has recently instituted the Renewable Energy Fund to support entrepreneurs in the DRE sector and strategies to increase women entrepreneurs' participation have been implemented however the participation of women is yet to be realized.

C. Stakeholder Engagement

During the preparation of regional and country projects under the ASCENT MPA, consultations were held with various gender stakeholders to ensure that the project design closes gender gaps in the energy sector. At regional level, consultations were conducted prior to and during the launch of ASCENT on **June 6-7**, **2024**, in Lusaka Zambia, with gender specialists and gender focal points from ASCENT countries and COMESA members. Prior to the launch, the COMESA project management unit conducted a survey of gender focal points to understand the current infrastructure for implementing the regional gender action plan of ASCENT projects. During the launch, the consultations focused on explaining the ASCENT Program and how it could support closing gender gaps in the energy sector in countries by discussing the regional gender action plan, the feasibility of implementing the project in the countries, and how the ASCENT regional facilities could support the country level actions.

Some countries under ASCENT also conducted individual stakeholder consultations in preparation for country-level ASCENT projects. Key information interviews were conducted with gender stakeholders under ASCENT Ethiopia The Ministry of Energy in Malawi conducted a 2-day gender stakeholder consultation with participants coming from different parts of the country including representatives from utilities, women-owned enterprises , community based organization working on energy initiatives in rural areas and others to understand the barriers to women's inclusion energy sector, the implications on climate change given Malawi's dependency on biomass fuels for cooking especially in rural areas, and solutions to increase women's engagement in the energy sector especially in utilities and through policy dialogue.

The following are the insights gained during the stakeholder consultations:

1. The Ministries of Energy under ASCENT need gender capacity building to implement the regional gender action plan and country gender action plan under ASCENT.
2. Country projects would benefit from conducting capacity needs assessments at country level to pinpoint areas of gender capacity building that would support project implementation including webinars, conferences, workshops for gender focal points.
3. ASCENT countries' gender focal points requested the need for increased awareness of the ASCENT regional gender action plans and implementation strategy.

4. Stakeholder gender participants sought to engage in ongoing dialogue regarding project implementation including challenges, best practices through a platform that will be created for knowledge sharing with gender focal points and gender stakeholders under ASCENT projects.

Stakeholder engagement will continue throughout the implementation of the ASCENT Program, especially on how to close gender gaps in the DRE sector. Ongoing gender capacity building programs are being designed to include webinars, workshops and other knowledge sharing events through the ASCENT project implementation unit at COMESA, which is located under COMESA's Gender Directorate.

Part II: ASCENT- GREEN GENDER ACTION PLAN

A. Impact Statement

The intended results of ASCENT-GREEN's activities in increasing access to electricity from distributed renewable energy benefiting 8.4 million females and clean cooking solutions for 7 million females in AFE will have a direct impact on reducing gender inequalities in the region. Access to clean cooking will result in improved health for these women and girls as a result of reduced indoor air pollution that causes respiratory illness and death as well as a significant reduction in time spent on gathering fuel and cooking that will make more time available for other activities including studying and engagement in income generation. Access to electricity from DRE will significantly increase the time available for women and girls for indoor tasks that will become possible with modern lighting, as well as providing the possibility of using digital devices for increased access to information, as well as other equipment for human and economic development as well as climate adaptation and climate emergencies.

In line with the ASCENT-GREEN Gender Action Plan described below, appropriate investment capital (debt and equity), results based financing (RBF), and technical assistance for capacity building will be provided by the Program to the companies in the DRE sector in AFE to support increased access to clean and sustainable energy to females in households, including those in female headed households, as well as increased access to clean and sustainable energy and productive uses equipment to women owned/led enterprises, increased access to debt and equity to women owned/led enterprises in the DRE sector, and increased women's employment in the DRE sector. The Program will also contribute to and strengthen the ongoing policy dialogue on gender and the DRE sector in AFE, including the awareness of the need to have a specific focus on reducing gender gaps as an essential part of conducting energy sector interventions.

B. Outcome Statements

The following outcome statements of the ASCENT-GREEN Gender Action Plan are aligned with gender-responsive indicators from the overall ASCENT MPA and ASCENT country projects. They reflect the intention of the ASCENT-GREEN Gender Action Plan that: (1) access of women to clean and resilient energy is increased; (2) access of women owned/led businesses to clean and resilient energy and productive uses equipment is increased; (3) access of women owned/led DRE and clean cooking

companies to finance and technical assistance for capacity building is increased; (4) women's access to employment in the DRE sector is increased; and, (5) the policy dialogue on decreasing gender gaps in AFE related to the DRE sector is strengthened.

These desired outcomes result from the activities to be carried out by the Executing Entities (EEs) of the ASCENT-GREEN Program as part of the Gender Action Plan and will be measured by monitoring indicators as summarized in section D below. The responsibility of the EEs to report regularly on these monitoring indicators is included in the Operating Manual of each Project. COMESA will lead and oversee the reporting on these indicators, as part of its responsibility for overseeing the ASCENT Gender Framework. A major difficulty in setting targets for the monitoring indicators is the weakness of baseline data in the target areas, especially in remote and FCV areas of AFE. Therefore, the targets of many of the monitoring indicators will be initially indicative and will be refined during implementation of the Program as the baseline data on the situation of women in AFE improves. COMESA will collect and analyze data from the activities of ASCENT and ASCENT-GREEN, as well as conducting independent surveys and studies, to create solid baseline information in order to refine the targets for the indicators.

The outcome statements for the ASCENT-GREEN Gender Action Plan in AFE are as follows, organized by categories:

1. **Access of females to clean and resilient energy in the AFE region will be increased.**
   - Access of women and girls to clean and resilient electricity will be increased, targeting 8.5 million females.
   - Access of women and girls to clean cooking solutions will be increased, targeting 7 million females.
   - The resilience of women and girls to adverse health impacts will be increased by the reduction in indoor air pollution due to clean cooking, targeting 7 million females.
   - The resilience of women and girls to adverse impacts of climate change will be increased by electricity from DRE systems enabling the use of equipment (for adaptation, digital communication, water pumping, etc), targeting 8.5 million females.
   - TA will be provided to DRE and clean cooking companies supported by the program to support awareness campaigns for information on energy access equipment and costs under the program to women in vulnerable households, including female-headed households, targeting 100% of participating DRE and clean cooking companies.
2. **Access of women owned/led enterprises to clean and resilient energy and productive uses equipment will be increased.**
   - Access of women owned/led enterprises (including farmers and other types of productive activities, including home based) to clean and resilient energy and productive uses equipment will be increased, with an indicative target of 30,000 women owned/led enterprises.
3. **Access of women owned/led DRE and clean cooking companies to finance and capacity building is increased.**
   - Access of women owned/led DRE and clean cooking companies to finance will be increased, with an indicative target that 10% of all companies receiving equity and debt financing are women owned/led.

- Access of women owned/led DRE and clean cooking companies to capacity building will be increased, with an indicative target that 30% of all companies receiving TA for capacity building are women owned/led.

4. **Access of women to employment in DRE and clean cooking companies will be increased.**
    - Access of women to employment in the supported DRE and clean cooking companies will increase, with an indicative target of an increase from 30 to 40%**.**
    - Access of women to employment in in technical, managerial and STEM positions in the supported DRE and clean cooking companies will be increased, with an indicative target that 30% of DRE and clean cooking companies increase the number of women in these positions by at least 10%.
    - Women graduates from universities and technical colleges will participate in internships with DRE and clean cooking companies, with an indicative target of 100 women interns.
    - Sustainable livelihoods of women and vulnerable households will improve due to increased participation in the energy sector, through above opportunities.

5. **Policies and strategies to increase women's overall engagement in the DRE Sector will be strengthened.**
    - ASCENT-GREEN Executing Entities adopt gender inclusive strategies, supported by TA from COMESA, with a target of 100%.
    - A regional framework for policies and strategies to increase women's overall engagement in the DRE Sector will be developed and adopted by COMESA.
    - A monitoring and evaluation framework for gender related activities and indicators in ASCENT-GREEN will be developed and implemented by COMESA, based on ASCENT's digital monitoring, reporting and verification (D-MRV) system.

C. Output Statements

As part of the Gender Action Plan, ASCENT-GREEN's financing facilities together with the COMESA Regional Energy Acceleration Platform will provide financing and technical assistance including capacity building that will lead to the expansion of the DRE sector to: increase access to clean and sustainable energy to females in households, including female headed households; increase access to clean energy and productive uses equipment to enterprises, including women owned/led enterprises; increase equity and debt financing to women owned/led enterprises in the DRE sector; increase women's employment in technical, management and STEM positions in DRE and clean cooking companies; and support strengthening of policies and strategies that result in women's engagement in the DRE sector.

D. Summary of ASCENT-GREEN Gender Action Plan (activities, monitoring indicators, timeline, and responsibilities)

Table 1 below summarizes ASCENT-GREEN's Gender Action Plan. It defines the activities planned to result in the improvements in gender equality as measured by the monitoring indicators and indicates the entities responsible for conducting the activities and the timelines of the activities. It includes baseline data for some indicators, based on existing evidence, as available to date.

A major difficulty in developing the Action Plan below is the lack of baseline data needed to set targets for many of its monitoring indicators. The program targets mainly low income, remote and FCV areas of the entire AFE region. Information on the number and characteristics of female-owned/led productive activities or businesses in these areas or on female owned/led DRE, clean cooking and PUE companies in the region is virtually non-existent. This makes it difficult to set meaningful targets for the monitoring indicators in the plan below. Therefore, one of the aims of ASCENT-GREEN, under COMESA's leadership, will be to increase the data available on gender related to the DRE sector in AFE to provide solid baseline data for the indicators below. Indicative targets are included in the plan below that will be refined by COMESA during the implementation of ASCENT-GREEN, based on the data gathered through ASCENT and ASCENT-GREEN on female-headed households and women's entrepreneurship in the DRE sector in AFE, as well as on studies and independent surveys conducted by COMESA.

In order to monitor the targets, various methodologies will be implemented to collect data in collaboration with the regional ASCENT implementing agencies COMESA and TDB. The number of females, female headed households, women-led and women-owned enterprises with access to clean energy including grid and off grid electricity and clean cooking will be collected annually through independent surveys coordinated by ASCENT implementing agencies at regional and country level. Data verification protocols will be implemented to avoid double-counting of connections by private DRE companies receiving funding from multiple ASCENT MPA sources. In order to measure indicators pertaining to employment and **internships**, regional employment surveys and analysis will be conducted annually and analyzed through the regional implementing agencies. Further, impact of the various technical assistance to be employed such as assistance provided to women-owned/women-led DRE enterprises will be monitored and evaluated through mixed-method approaches such as quantitative and qualitative data and other performance metrics which will be tailored to the various technical assistance employed during implementation. Other data such as RBF allocated to women-owned/women-led DRE companies will be collected through the implementing agencies and fund managers who will determine the frequency of data collection.

Table 1 below summarizes ASCENT-GREEN's Gender Action Plan including details of the budget required.

Table 1: ASCENT GREEN Gender Action Plan ($3,608,000)*

Activities	Indicative Baseline	IndicativeTargets	Monitoring Indicators	Timeline	Responsibility	Budget
1. Access to electricity and clean cooking to Female-headed households						
1.1 Conduct activities in the A-G Funding Proposal to: **(a) Increase access to DRE systems**	0 0	8.5M 7.0M	Number of females with access to clean and resilient electricity	Years 1-7	ASCENT-GREEN (A-G) Executing Entities (EEs) and DRE and clean cooking companies	No budget is needed. Costs included in implementing agencies' project implementation budget.

(b) Increase access to clean cooking solutions			Number of females with access to clean cooking solutions	Years 1-7		
1.2 Provide TA on gender-targeted consumer awareness and education campaigns to DRE and clean cooking companies to try to ensure information on how to access DRE systems and clean cooking and their costs reaches vulnerable households, including female-headed household**s.**	0	100%	Share of participating DRE and clean cooking companies that receive TA on reaching vulnerable households, including female-headed households, with information on how to access clean energy and its costs	Years 1-7	COMESA Gender Directorate, A-G Executing Entities and DRE and clean cooking companies	**$500,000** Consultant firm to develop a regional gender-targeted consumer awareness and education strategy/toolkit that could be adapted by PIUs.
Activities	**Indicative Baseline**	**IndicativeTargets**	**Monitoring Indicators**	**Timeline**	**Responsibility**	**Budget**
2. Access to electricity and clean cooking for women owned/women led businesses/enterprises						
2.1 Provide results-based financing (RBF) for access to DRE systems and productive use equipment to women-owned/led enterprises	0	30,000	Number of women led/owned businesses provided with clean and resilient electricity for PUE and PUE equipment	1-7 years	TDF (Executing entity for RBF)	No budget is needed. Costs included in implementing agencies' project implementation budget.

(including farmers and other types of productive activities including home-based).						
3. Women Entrepreneurs in DRE Sector						
3.1 Provide equity and/or debt financing to women owned/led DRE and clean cooking companies	0	10%	Share of women owned/led DRE and clean cooking companies in total companies that receive debt and equity financing	Years 1-7	TDB and TDF (EE and Program implementing entity (PIE) of lending facility), Zafiri (EE of equity facility)	No budget needed. Implementing facilities will cover the cost within their budgets
3.2 Provide technical assistance to strengthen capacity of women owned/led DRE and clean cooking companies	0	20%	Share of women owned/led DRE and clean cooking companies in total companies that receive TA to strengthen capacity	Years 1-7	ASCENT COMESA TA facility for DRE and clean cooking company	**$1,000,000** TA for DRE and Clean Cooking Companies in 20 countries
4. Women's employment in the DRE Sector						
4.1 Increase in women's employment in supported DRE and clean cooking companies (including technical positions)	30%	40%	Increase in the share of women in total employees of supported DRE and clean cooking companies			**$600,000** Budget for training and capacity building
4.2 Establish internship program for female graduates of universities and technical institutes with DRE and clean cooking companies	No	Yes	Internship Program Established	Year 1	COMESA Gender Directorate	**$200,000** Consultant needed to design the internship program that is applicable to all ASCENT projects

4.3 Provide internships for female graduates of universities and technical institutes with DRE and clean cooking companies	0	100	Number of female internships provided to female graduates through DRE and clean cooking companies	Years 1-7	COMESA Gender Directorate	**$1,008,000** Cost for 7 years. Stipend to interns participating in the internship program in the DRE Sector. Unit cost is US $100 per intern per month
4.4 Provide incentives to companies receiving debt, RBF, and equity financing to increase the number of females employed in technical, managerial, STEM positions by at least 10%	0	30%	Share of supported DRE and clean cooking companies that have increased female employment in technical/ managerial/STEM positions by at least 10 percent	Years 1-7	TDB (EE) TDF (PIE) Zafiri (EE) Other A-G EEs Dre and clean cooking companies	Incentives to be provided by implementing entities so no additional funding needed
5. Enhanced Institutional Capacity and Technical Assistance to support gender integration						
5.0 Adoption by A-G EEs of gender inclusive strategies with TA provided by COMESA	0	100%	Percentage of A-G EES, with gender inclusive strategies	Years 1-7	TDB (EE) TDF (PIE) Zafiri (EE) Other A-G EEs COMESA Gender Directorate	No budget is needed. TDB already has developed an Inclusion Strategy
5.1 COMESA Gender Directorate will support and monitor gender activities of ASCENT-GREEN	No	Yes	Gender experts to provide TA to EEs, PIEs, DRE, and clean cooking companies, and participating financial institutions, monitor and evaluate A-G Program	Year 1-7	COMESA Gender Directorate	No budget is needed. Costs included in implementing agencies' project implementation budget.
5.2 Establish a monitoring and evaluation framework to track gender activities	No	Yes	ASCENT GREEN gender M&E framework established	Years 1-7	COMESA Gender Directorate	No budget is needed – M&E specialist in COMESA PIU will be responsible

						for M&E related to gender activities
5.3 Develop and adopt a regional framework for policies and strategies to increase women's engagement in the DRE sector.	No	Yes	Regional framework for policies and strategies to increase women's engagement in the DRE sector adopted	Year 4	COMESA Gender Directorate	**$300,000** For consultant to develop regional framework and policies complementing the Creating Pathways for Women Entrepreneurs in the DRE sector in the AFE Region project under Umbrella for Gender Equality Climate Window funding

E. Conclusions

This assessment has provided an overview of the gender gaps that exist in the AFE distributed renewable energy (DRE) sector at the regional and country level. In alignment with the ASCENT Gender Framework, the assessment has focused on the gender gaps and underlying constraints with respect to access to energy for households and enterprises, entrepreneurship and employment in the DRE sector, and the institutional capacity to integrate gender equality such as implementation of organizational policies and the existence of national gender policies to enable women's meaningful participation in the DRE sector.

The gender assessment, using the ASCENT Gender Framework, outlined the underlying constraints of the gender gaps at regional and country level impacting women's full participation in the DRE sector in access, entrepreneurship, employment, and institutional capacity. In order to have women participate in the DRE sector in meaningful way as users of energy, customers, employees, entrepreneurs and decision makers, the Program will utilize a comprehensive or integrated approach as shown in the Action Plan above.

The ASCENT-GREEN Assessment and Gender Action Plan has adapted the general ASCENT gender framework to focus on the DRE sector. As noted above, the results of ASCENT-GREEN's activities in increasing access to clean electricity from distributed renewable energy (DRE) systems benefiting 8.5

million females and clean cooking solutions for 7 million females in AFE will have a direct impact on reducing gender inequalities in the region, resulting in improved situations for these women and girls including improved health, significant additional time for studying and engagement in income generation, and the possibility of using digital devices for increased access to information, as well as equipment for human and economic development, climate adaptation and climate emergencies

Women's participation in the DRE sector is higher than the traditional energy sector, however, there are areas that need additional interventions to ensure gender equality in the sector. The gender action plan supports awareness and education campaigns that are designed so that vulnerable women such as those in rural areas have access to information on DRE systems, clean cooking solutions, and productive uses equipment. The program will provide use results-based financing to target women owned/led enterprises to increase their access to DRE systems and productive uses equipment. It will also provide financing and technical assistance for capacity building to women owned/led enterprises in the DRE sector. Through technical assistance, the program will support the program's executing entities like TDB to adopt and implement gender inclusive strategies in implementation of the program.

Finally, COMESA will work to strengthen the gender agenda in the region, aiming to harmonize policies to accelerate the closing of gender gaps related to DRE sector related energy access, and promotion of women's participation in the DRE sector. It will ensure that monitoring and evaluation is conducted on an ongoing basis to collect gender-linked data and report on progress of the gender interventions through the proposed indicators, utilizing state-of-the-art digital monitoring, reporting and verification (D-MRV) system, as well as periodic surveys to provide data to be used for impact assessment and course correction during program implementation. The program, led by COMESA, will work to provide improved baseline data for the above monitoring indicators and to refine the targets as improved baseline data becomes available.

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ANNEXES

The deep-dive country analysis included a desk review of national gender assessments, especially those conducted for the energy sector, examination of international and regional gender treaties that countries in the deep dive studies have ratified, legal and policy frameworks the countries have developed as well as a summary of vulnerable groups in the AFE region. The information could be summarized as follows Annex 8A.1: **ASCENT Projects under Deep Dive Country Analysis –** Annex 8A.2: **Country-Level Initiatives and Strategies –** Annex 8A.3 **Legal and Policy Frameworks –** Annex 8A4: **Vulnerable Groups.**

ASCENT GREEN

Summary of Gender response

Annex 8A.1: ASCENT Projects under Deep Dive Country Analysis

ASCENT Project	Status of ASCENT Project	Gender Assessments completed
Botswana		No
Burundi	Project implementation	Yes
Comoros	Project implementation	Yes
DRC	Pipeline	Yes
Eritrea		No
Eswatini	Project implementation	Yes
Ethiopia	Project implementation	Yes
Kenya	Pipeline	Yes
Lesotho	Pipeline	Yes
Madagascar	Pipeline	Yes
Malawi	Project implementation	Yes
Mozambique	Project Implementation	Yes
Rwanda	Project implementation	Yes
Sao Tome & Principe	Project implementation	Yes
Somalia	Project implementation	Yes
South Africa		No
South Sudan	Project implementation	Yes
Tanzania	Project implementation	No
Uganda	Pipeline	Yes
Zambia	Project implementation	Yes
Zimbabwe		Yes

Annex 8A.2: **Country-Level initiatives and Strategies**

Country	Country level initiatives /Strategies	Implementation and Realization on the Ground
Botswana	**National Policy on Gender and Development (2015)**: This policy provides a legal and institutional framework for reducing gender inequalities across sectors, including energy and education	Botswana has strong **policy and legal frameworks**, but **implementation gaps and structural barriers persist**, especially in: Energy access, Political representation, Economic participation, STEM education and energy sector employment, Protection against GBV.
Burundi	- The 2005 constitution, revised in 2018, mandates a quota 30% for women in public office including in parliament, the senate, and the government. - A National Gender Policy for all sectors; energy included. - A gender responsive government's electrification strategy (2023) with a focus on women in rural area	ASCENT project provides a Gender Action Plan and Technical Assistance for capacity building. It focuses on expanding electricity access for households, enterprises, and public institutions while elevating women's participation and leadership in the energy sector (including addressing underrepresentation and social norms). The sector remains male-dominated, and sex-disaggregated data have historically limited tracking of women's roles.
Comoros	The government's "Emerging Comoros Plan" and National Energy Strategy include gender as a cross-cutting priority.	World Bank projects (e.g., Solar Energy Access Project) have integrated gender action plans, focusing on increasing women's employment in the electricity sector (target: 25% by 2027, up from 19% in 2022). Women's participation in the electricity sector is increasing, with progress toward the 25% target. Persistent barriers include limited access to formal employment, education gaps, and cultural norms, but targeted interventions show positive results.
DRC	DRC has a solid legal framework for gender equality, including the National Gender Policy and sectoral strategies.	Projects such as the Access Governance and Reform for the Electricity and Water Sectors Project include vocational and entrepreneurship training for women, HR empowerment policies, and gender-sensitive recruitment in utilities (targets: 30% of new jobs for women, 15% in technical roles) Despite strong policy frameworks, gender disparities remain significant, especially in technical and leadership positions (e.g., only 7% female workers in SNEL. Project interventions are addressing gaps, but progress is gradual due to deep-rooted social norms and conflict-related challenges
Eritrea	Eritrea's policy framework emphasizes equal rights, with active civic organizations like the National Union of Eritrean Women. In energy, women's vulnerability and access gaps are documented.	A World Bank gender and energy assessment notes electricity access at 52% (2020), much higher in urban areas than rural, and highlights disproportionate burdens on women, time poverty, and limited female asset ownership. WBG support for power distribution and rural

Country	Country level initiatives /Strategies	Implementation and Realization on the Ground
	National Gender Equality Policy (NGEP) in August 2021, which is a 2021-2030 strategic document. It is structured around five strategic areas: eliminating discrimination and violence against women and girls, enhancing women's economic empowerment, advancing women's leadership and political participation, fostering gender-responsive solutions to climate change and disasters, and promoting gender equality in development programs	electrification aimed at reform and capacity building, including financing a rural electrification fund. Despite progress in electrification in towns, rural women still face limited access. Gender inequalities persist in education and employment; female-headed households are numerous, but women remain concentrated in low-paying informal jobs. New programs need robust sex-disaggregated monitoring and targeted measures for women's employment in energy, which prior operations did not systematically capture
Eswatini	The country ratified the UN Convention on the Elimination of All Forms of Discrimination Against Women in 2004 and passed the National Gender Policy and Action Plan in 2010, with a renewed commitment in the National Gender Policy (2023)	The National Energy Policy and the Accelerating Sustainable and Clean Energy Access Transformation (ASCENT) project integrate gender considerations, aiming for 30% women's representation in leadership and decision-making positions. Programs include STEM internships, job shadowing, and curriculum revisions to promote girls' participation in technical fields
Ethiopia	Ethiopia's pursuit of gender equity is supported by a comprehensive policy framework, targeted development programs, and strong institutional mechanisms.	The Ethiopia Electrification Program (ELEAP) and Accelerating Sustainable and Clean Energy Access Transformation (ASCENT) include gender action plans, targets for women's employment (especially in STEM), childcare facilities, and institutional responses to sexual harassment
Kenya	The National Policy on Gender and Development (2019) sets out Kenya's agenda for gender equality, emphasizing mainstreaming gender in all government and non-state actor policies, programs, and practices.	In the Energy sector, the Green and Resilient Expansion of Energy Program (GREEN) includes five-year gender action plans for sector institutions (e.g., KPLC, KenGen, KETRACO), focusing on recruitment, retention, leadership, and workplace policies for women, as well as outreach to girls in STEM
Lesotho	The Lesotho National Gender and Development Policy (2018–2030) sets out priority areas including legal rights and governance; education and training; economic empowerment and access to productive resources; health; GBV; HIV/AIDS; climate/disaster risk management; food and nutrition security; peacebuilding; media/ICT; and water and sanitation.	The Lesotho Renewable Energy & Energy Access Project (P166936), includes gender action plan targeting increase women's participation and employment in the energy sector (5% baseline to 10%); and expand women's access to electricity benefits as consumers, entrepreneurs, and community members (conduct an assessment of barriers to female entrepreneurship and develop a consumer awareness program with a focus on female members).

Country	Country level initiatives /Strategies	Implementation and Realization on the Ground
Madagascar	National Gender and Women Empowerment Policy and ratification of international conventions.	National policies promote gender equality, with the energy sector integrating gender into new projects. The Digital and Energy Connectivity for Inclusion in Madagascar Project (DECIM) and Least-Cost Electricity Access Development (LEAD) project set targets for female-headed households (28.5% of new connections) and women-led MSMEs.
Malawi	Malawi has implemented legal and policy frameworks including the National Gender Policy 2022 whose objective include to mainstream gender in all sectors and guiding women's economic empowerment initiatives	Malawi's Electricity Access Project and planned ASCENT Malawi explicitly target gender gaps. ASCENT will bolster MoE capacity with TA, expand grid/off-grid access for female-headed households via pay-as-you-go and awareness campaigns, and support ESCOM's Social and Gender Inclusion policy through internships, scholarships, HeForShe engagement, and leadership training for women in technical roles. MEAP implementation shows tangible progress: 28% of grid connections and 43% of SHS under certain components reached female-headed households; ESCOM is recruiting gender inclusion officers and streamlining definitions and tracking, though a clear strategy is still required to raise women technicians from ~5.5% toward the target of 18%
Mozambique	**Gender Policy and Implementation Strategy (2018):** Sets the framework for gender equality across sectors, including energy. **IV National Plan of Action for Advancement of Women (2018–2024):** Focuses on women's empowerment, economic inclusion, and participation in decision-making. **National Plan to Prevent and Combat Gender-Based Violence (2018–2021):** Addresses GBV, including in workplaces and communities.	Gender-focused initiatives are ensuring that female-headed households and women-led businesses benefit directly from expanded energy access. To build a pipeline of women in technical roles, scholarship and internship programs have been scaled up, and a gender strategy has been developed for the rural energy fund. Progress is visible: women's representation in technical positions is increasing, supported by clear targets for female interns and women-led firms. While gender gaps persist, they are being actively addressed through these targeted actions.
Rwanda	- The Revised National Gender Policy (2021) - National Policy against Gender-Based Violence (2011) - Rwanda's National Energy Policy (2015) explicitly commits to gender	Project-Level Actions including gender action plans with measurable targets. Female workforce Development. Gender-disaggregated data collection and gender-responsive M&E frameworks are in place to track progress.

Country	Country level initiatives /Strategies	Implementation and Realization on the Ground
	integration in energy planning and implementation	
Sao Tome and Principe	National Strategy for Gender Equality and Equity (ENIEG): First adopted in 2007 (Decree No. 14/2007), updated in 2019 for 2019–2026. Provides the overarching framework for gender equality, equity, and women's empowerment.	Implementation is led by the National Institute for the Promotion of Gender Equality and Equity (INPG). World Bank projects (e.g., ASCENT Regional Program) identify gender gaps in employment and access to energy. Women represent less than 15% of the energy workforce, and only 8% in technical positions. The ASCENT project includes training-to-work and scholarship/internship programs for women, with targets to reach 12% women in technical staff and 30% women in solar park operations. Community-based approaches and productive use of energy are promoted for women's economic empowerment. Gender gaps in employment and access persist, but targeted training and quotas are being implemented.
Somalia	Somalia's National Energy Policy and the Power Sector Master Plan support current reforms	The ASCENT Somalia project directly integrates gender: a diagnostic to identify gender gaps in access and employment; it includes indicators for female-headed households and women-owned enterprises with electricity connections, and it sets a target to raise the share of women with STEM backgrounds employed by electricity service providers (ESPs) to 10% through incubators and TA. The ASCENT ISR shows institutional reforms progressing. Gender indicators are being operationalized: targets include 10% women with STEM in ESPs, 30% women-owned enterprises connected, and tracking of female beneficiaries. sustained effort is needed to move beyond pilots to systematic recruitment and retention of women in technical roles.
South Africa	National Policy Framework for Women's Empowerment and Gender Equality (NPF-WEGE), aims to address historical gender inequalities through legislation, public and private sector initiatives, and a "gender mainstreaming" approach	In South Africa, there is a gender strategy whose key actions include: - Strengthening the technical, management and leadership skills required by women and other disadvantaged groups to improve access to decent employment, business ownership, and decision-making in the energy sector. - Collaboration of the public and the private sectors to improve their culture, systems and

Country	Country level initiatives /Strategies	Implementation and Realization on the Ground
		practices to enhance women's empowerment and gender equality in the sector. - Effective oversight, governance and policy guidance by the DMRE and boards, will support the department and the sector to show meaningful commitment to women's empowerment and gender equality - Increase access to opportunities, promote the economic empowerment of women, and strive to alleviate energy poverty amongst women.
South Sudan	National Gender Policy (2012) and implementation strategy (from 2013): Sets the overarching goal of integrating gender equality across laws, policies, programs, and institutions in the cultural, social, political, and economic spheres; it positions gender as a cross-cutting priority in national planning.	In the South Sudan Energy Sector Access and Institutional Strengthening Project (P178891), the World Bank's gender strategy focuses on closing employment and career-advancement gaps for women in the energy sector, building a future talent pipeline through STEM outreach for girls, and ensuring safe, inclusive project delivery through robust SEA/SH risk management and grievance systems. It is implemented through a five-year gender work plan, institutional HR policy reforms, targeted capacity-building for female staff, school-based STEM counseling programs, and ESF safeguards (including GBV action planning), with clear results indicators tracked in the project's M&E framework.
Tanzania	Tanzania Development Vision 2025 and the National Five-Year Development Plan (2021/22–2025/26) place gender equality and women's empowerment at the center of national development.	Gender equity is mainstreamed across sectoral policies, including education, health, water, energy, trade, and agriculture. Sectoral policies integrate gender perspectives, promote equal employment opportunities, and ensure gender-sensitive project design and implementation
Uganda	Uganda National Gender Policy (2007) guides gender mainstreaming across government sectors, establishing gender focal points in all ministries, departments, and local governments	Sectoral policies emphasize gender-responsive planning, stakeholder engagement, and inclusion of women in decision-making and technical roles. While Uganda has strong legal and policy frameworks, enforcement and practical implementation lag, especially at local and community levels.
Zambia	Zambia is committed to gender equality through international conventions (e.g., African Charter Protocol, SADC Gender Protocol, CEDAW) and national frameworks such as the National Gender Policy (2014), Climate Change Gender Action Plan	Zambia's NEAT program (MPA) and the ASCENT Zambia operation embed gender results: targeting female-headed households for access (grid/off-grid), consumer education on productive uses, and pipeline-building for women with STEM in REA and ZESCO.

Country	Country level initiatives /Strategies	Implementation and Realization on the Ground
	(2015), and the Energy Sector Gender Equality Action Plan (2022).	ASCENT Zambia plans internships and graduate trainee programs to raise women in engineering from ~5–6% to materially higher shares, and REA will track female-headed connections and women-led enterprises access. RETRADE-SA adds a regional gender integration plan to reduce GBV risks and boost women's leadership and technical participation in utilities and regional power pooling.
Zimbabwe	Zimbabwe's energy policies (National Energy Policy and Renewable Energy Policy) acknowledge gender implications, and the government has advanced gender-responsive budgeting, issuing a Gender Budget Statement and aligning expenditures with gender goals.	There is strong evidence of legal and policy commitment yet persistent gaps remain in women's participation and heightened GBV risks. Sector critiques point to gender integration being mentioned without concrete targets or institutional mechanisms to drive change. At the same time, emerging women-led initiatives in off-grid solar, such as local enterprises and networks, offer practical entry points for inclusion. However, translating policy intent into measurable gender equity in energy access and employment will require systematic sex-disaggregated data tracking and reforms within utility workforces.

Annex 8A.3: **Legal and Policy Frameworks (table)**

Country	International/Regional Laws	Gender Laws/ Gender & Energy/Climate Change strategies
Botswana	• CEDAW 1996 • SADC Protocol on Gender and Development 2008	National Policy on Gender and Development (NPGAD) (2015)
Burundi	• CEDAW 1980 • COMESA Gender Policy (2016)	National Gender Policy of Burundi 2012-2025
Comoros	• CEDAW 1994	National Gender Equity and Equality Policy (PNEEG) 2007
DRC	• CEDAW 1980 • SADC Protocol on Gender and Development 2008 • COMESA Gender Policy (2016)	National Gender Policy (2017-2021)
Eritrea	• CEDAW 1995	National Gender Equality Policy (NGEP) in August 2021, which is a 2021-2030 strategic document.
Eswatini	• CEDAW 2004 • SADC Protocol on Gender and Development 2008 • COMESA Gender Policy (2016)	• Legal Reforms on Sexual Offences and Domestic Violence Act (2018): • Gender and Energy Strategies: National Energy Policy (NEP) 2018 and Gender Mainstreaming • Eswatini is a signatory to the UNFCCC, the Maputo Protocol, and the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), and is working to harmonize national laws with these frameworks
Ethiopia	• CEDAW 1980 • COMESA Gender Policy (2016)	• Gender Laws and Legal Frameworks in Ethiopia: Constitutional and Legal Protections (1995) • Policy Frameworks: National Policy on Ethiopian Women (1993): • Gender and Energy: Policy and Institutional Framework - National Energy Policy (2015)
Kenya	• CEDAW 1984 • COMESA Gender Policy (2016)	• Gender Laws and Legal Frameworks in Kenya: Constitutional and Legal Protections (2010) • **National Gender and Equality Commission Act (2011):** • **National Policy on Gender and Development (2019)** • Policy Frameworks and Institutions: National Gender and Equality Commission (NGEC)

Country	International/Regional Laws	Gender Laws/ Gender & Energy/Climate Change strategies
		• Gender and Energy: Policy and Institutional Framework - Gender Policy in Energy (2019)
Lesotho	• CEDAW 1995	• **Gender and Development Policy (2018–2030)** This is the cornerstone of Lesotho's gender legal framework. It aligns with: - **International instruments**: CEDAW, Beijing Declaration, AU Protocol on Women's Rights, SADC Protocol on Gender and Development. - **National strategies**: Vision 2020 and NSDP II. The policy mandates gender mainstreaming across all sectors, including governance, education, health, and energy.
Madagascar	• CEDAW 1989 • SADC Protocol on Gender and Development 2008 • COMESA Gender Policy (2016)	
Malawi	• CEDAW 1987 • SADC Protocol on Gender and Development 2008 • COMESA Gender Policy (2016)	Malawi Gender Equality Act (2013) Malawi National Gender Policy of 2015
Mozambique	• CEDAW 1997	National Action Plan on Women, Peace, and Security (2018-2022)
Rwanda	• CEDAW 1980	• **Rwandan Constitution (2003, revised)** Guarantees **gender equality and non-discrimination**, mandating equal rights for men and women in political, economic, social, and cultural spheres. • Establishes a **minimum 30% quota for women** in decision-making bodies, which Rwanda has exceeded (currently over 60% in Parliament). • **National Gender Policy** • **Revised National Gender Policy (2021)** • Aims to accelerate gender mainstreaming and accountability across all sectors. ○ Integrates gender into the **National Strategy for Transformation (NST1)** and sectoral plans.

Country	International/Regional Laws	Gender Laws/ Gender & Energy/Climate Change strategies
		○ Promotes gender-responsive budgeting and monitoring through the **Gender Monitoring Office (GMO)**.
Sao Tome and Principe	• CEDAW 1995 • Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa (Maputo Protocol) 2019.	National Strategy on Gender-Based Violence
Somalia	• CEDAW No Action • COMESA Gender Policy (2016)	Somalia's Draft National Gender Policy (2018)
South Africa	• CEDAW 1995	• Department of Energy Policy Framework for Women Empowerment and Gender Equality (2016) • Women Empowerment and Gender Equality Strategy for the Energy Sector 2021 – 2025
South Sudan	• CEDAW 2015	**Constitutional and Policy Foundations** • **Transitional Constitution (2011)** ○ Guarantees **equal rights and dignity for women and men**. ○ Provides for **equal pay**, participation in public life, and property rights. ○ Mandates **affirmative action quotas**: at least **25% representation of women** in legislative and executive bodies; peace agreements later raised this to **35%**. ○ Requires government to combat harmful customs and traditions undermining women's status. [lawgratis.com],
Tanzania	• CEDAW 1980 • SADC Protocol on Gender and Development 2008	• Gender Laws and Legal Frameworks in Tanzania: Constitutional and Legal Protections (1977, as amended): • Policy Frameworks: National Gender Policy (2000, updated 2023) • Gender and Climate Change Strategies: National Climate Change Response Strategy (NCCRS, 2021–2026)
Uganda	• CEDAW 1989 • COMESA Gender Policy (2016)	• Gender Laws and Legal Frameworks in Uganda:

Country	International/Regional Laws	Gender Laws/ Gender & Energy/Climate Change strategies
		• Constitutional and Legal Protections (1995, as amended) • Policy Frameworks: National Gender Policy (2007) • Gender & Energy - Policy and Institutional Framework: Uganda Gender Policy (2007)
Zambia	• CEDAW 1980 • SADC Protocol on Gender and Development 2008 • COMESA Gender Policy (2016)	• Zambia Gender Equality and Strategic Action Plan for the Energy Sector (2022) • The National Gender Policy 2014 • The Climate Change Gender Action Plan of 2016
Zimbabwe	• CEDAW 1991 • SADC Protocol on Gender and Development 2008 • COMESA Gender Policy (2016)	• Revised **National Gender Policy** (NGP), 2017 • Strategy for the **Elimination of Sexual Harassment** and Gender-Based **Violence in the Workplace**, 2021-2025

Annex 8A.4: Vulnerable Groups and Their Challenges (regional)

Group	**Key challenges in AFE**
Women-headed households	Lower electricity access and affordability; administrative barriers to connection; severe time poverty and unpaid care burdens, worsened by climate impacts on water/fuelwood collection
Indigenous women (incl. SSAHUTLC)	Dispossession and displacement from ancestral lands; weak recognition of land/asset rights; exclusion from decision-making; limited access to credit/services despite strong ecological knowledge
Women heading businesses/entrepreneurs	Lower profits and earnings; constrained access to finance, digital tools, and markets; heavy childcare/care burdens depress firm performance; need targeted capital and market access
Elderly	High multidimensional exclusion (services, income security, climate risk exposure), often higher than for other age groups
Youth (esp. adolescent girls)	Elevated risks of GBV, early marriage, adolescent fertility, school dropout; vulnerabilities at borders and in crises; need integrated education–SRH–social protection–livelihoods approaches
Housewives/caregivers	Significant time poverty from unpaid domestic/care work; shocks, climate change, further constrain education, health access, and earnings
People with disabilities (PWD)	Risk of exclusion from services/benefits without inclusive design/targeting/GRMs; high needs for GBV and psychosocial services in FCV settings
Women and girls facing GBV	High prevalence, low reporting, service coverage gaps; risks intensify with labor influx in civil works, border areas, and post-shock periods; capacity deficits and remoteness limit response
Informal cross-border traders (majority women)	Exposure to insecurity and sexual harassment at border posts; poor facilities; limited representation; persistent barriers in assets, skills, and care responsibilities despite African Continental Free Trade Area (AfCFTA) opportunities.

Accelerating Sustainable and Clean Energy Access Transformation (ASCENT) MPA (P180547)

Technical Note

Gender Annex 8B

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1. Introduction

The Eastern and Southern Africa (AFE) region has made tremendous progress in closing gender gaps in the last decade; however, the evidence pertaining to the energy sector shows the contrary especially with respect to access to sustainable and clean energy. IEA[1] has projected that the share of the global population in Sub-Saharan Africa expected not to have access to electricity by 2030 is approximately 85 percent or 560 million people[2]. In order to maximize equitable development outcomes consistent with Sustainable Development Goal (SDG) 5 (Gender Equality) and SDG 7 (Sustainable Energy for All), it is important not only to have a comprehensive strategy to accelerate the closing of energy access gaps but also to account for the gender differences in the demand, access, and usage of energy. Applying such a gender lens could result in poverty reduction in the AFE region through reduction in time drudgery, increased positive health outcomes, increased engagement in income generation activities, and increased access to information which would lead to economic empowerment of vulnerable communities[3]. On the supply side, increase in energy access could increase gender equality in employment and asset ownership within the energy sector and improve effectiveness of supply value chains. The energy sector is male-dominated and offers high paying jobs; increasing the employment of women in the sector would lead higher paying jobs, and in turn, improved livelihoods. On the other hand, supply value chains enabled by access to electricity have the potential to create employment and entrepreneurship opportunities for women in rural areas resulting in income generation for vulnerable communities. On the institutional side, increasing women's access to energy has the potential to increase the customer base for energy service providers through increased connections and usage. Evidence shows that availability of household appliances such as cookstoves tailored for the end-user, particularly women, is more likely to be accepted and used, thereby increasing the demand for connections and profit margins for the service providers[4].

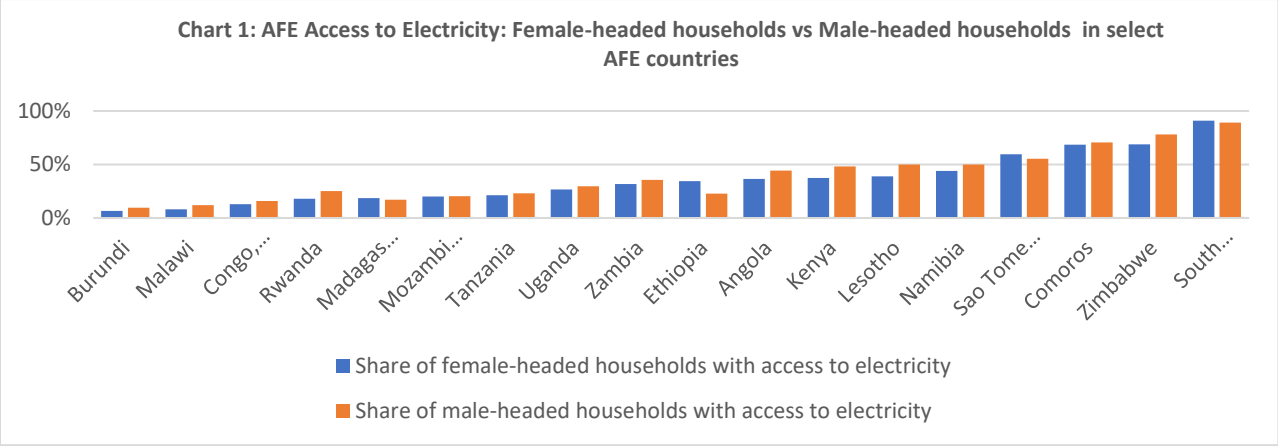
As such, the Accelerating Sustainable and Clean Energy Access Transformation (ASCENT) (P180547): MPA Phase I (ASCENT MPA) project, whose objective is to increase access to sustainable and clean energy in Eastern and Southern Africa, is committed to integrating gender-transformative approaches that will not only close gender gaps related to energy access but will also employ interventions that will empower women to make meaningful contributions to the AFE energy sector in alignment with the WBG Gender Strategies of 2016-2023 and 2024-2030. This note seeks to highlight the gender gaps that currently exist in the AFE region, identify gender entry points through which the ASCENT MPA project can address, propose gender interventions that could be effective in closing the gaps, as well as propose the indicators that could be used to track the interventions in alignment with the World Bank Gender Strategy 2024-2030.

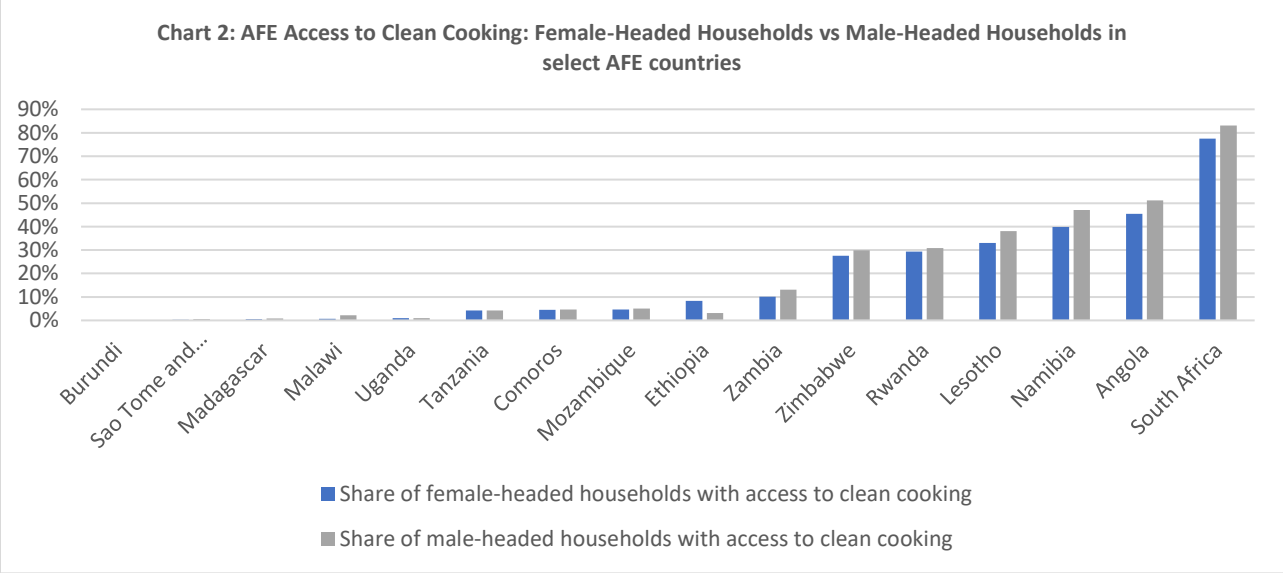
2. Gender Analysis with respect to energy access in AFE

Demand side: Women in the AFE region are the primary users and producers of energy at the household level and yet have limited access to electricity and clean cooking technologies (see **Chart 1** and **Chart 2**). The sources of energy for most rural AFE households are unclean biomass and fossil fuels. Traditionally, women and girls in Africa are more likely to be assigned the role of searching for cooking fuels and water, resulting in women and girls working longer hours to complete household chores and care roles, which in

[1] IEA (2022), SDG7: Data and Projections, IEA, Paris. https://www.iea.org/reports/sdg7-data-and-projections, License: CC BY 4.0
[2] According to IEA, among the AFE countries requiring considerable efforts to increase access include DRC, Madagascar, Malawi, Sudan, Tanzania, and Uganda.
[3] Dutta, Soma; Kooijman, Annemarije; Cecelski, Elizabeth W. 2017. Energy Access and Gender: Getting the Right Balance. Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/463071494925985630/Energy-access-and-gender-getting-the-right-balance
[4] Ibid.

turn, inhibits women and girls from pursuing economic empowerment activities including education. The search and usage of such fuels leads to unfavorable health outcomes in women and children. Searching for fuels such as firewood and coal could vary from 4-10 hours a week. Further, studies have shown that the weight of a fuel load which is carried on the head or back can be as heavy as 25 kg (55 pounds) especially for those who use coal or firewood for cooking, such as in the Horn of Africa region, resulting in physical health challenges[5]. Moreover, the usage of biomass fuels leads to respiratory diseases due to inhalation of air polluted by smoke especially when cooking. Even when households have access to the clean energy infrastructure, factors such as availability, affordability, and knowledge of proper usage of energy still hinder vulnerable households such as female-headed households from reaching the maximum benefits of clean energy.





Source: Demographic and Health Surveys. https://dhsprogram.com/

Further, women-owned and women-led enterprises face more barriers to running successful enterprises than men-owned and men-led enterprises including limited access to finance and resources, limited access to markets, limited agency to switch between care work and productivity roles, inequality in

[5] https://www.energia.org/assets/2019/04/Gender-in-the-transition-to-sustainable-energy-for-all_-From-evidence-to-inclusive-policies_FINAL.pdf

education and skills, as well as patriarchal structures that enforce rigid social and cultural norms[6]. Due to operating low productivity enterprises, most women-owned enterprises cannot afford electricity connections or tariffs, which has the potential to increase income generation capacity and improve productivity. On the other hand, according to the Africa Development Bank, when women-owned enterprises can afford connections, they still face delays in connections to electricity and are subject to bribes[7].

Supply Side According to the International Energy Agency (IEA)**,** women make up 39 percent of the global labor force, however, women only account for 16 percent of the traditional energy sector. While the off-grid solar (OGS) sector has made strides in hiring women in the sector, women are underrepresented in technical and engineering positions. In the renewable energy sector, women make up 40 percent of the employment, however, only 32 percent are in science, technology, engineering, and mathematics (STEM) positions, while 58 percent are in administrative jobs and 35 percent are in non-STEM technical positions. Furthermore, female participation in the OGS sector in SSA is even more restricted than the global figures: the average female employment in the distributed renewable energy companies in SSA is estimated at 27 percent per the latest surveys by Power for All, with Kenya at (41 percent), Ethiopia and Nigeria at 37 percent, Uganda at 28 percent.[8] Further, women working in the energy sector make 20 percent less in wages when compared to their male counterparts[9].

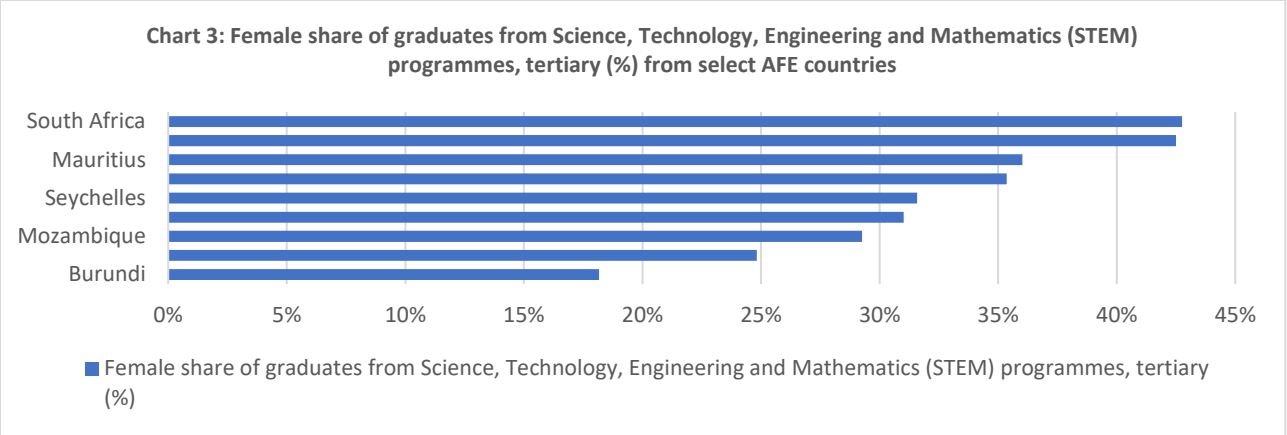
Underlying constraints to low participation of women in the sector include distance to work, work environments not conducive to women's employment, and low participation of women with STEM backgrounds in talent pools for STEM-related positions. In the AFE region, it is evident that women are underrepresented in the energy sector as entrepreneurs, energy service providers, as well as employers and employees especially for those with STEM backgrounds, as the share of female graduates in STEM fields is 43 percent or less (See **Chart 3**). An assessment on the energy sector under the P173088 *Somalia Energy Sector Recovery Project* showed that women who graduate with STEM degrees are less likely to be employed in the energy sector when compared to their male counterparts. The low absorption of women in the sector could be attributed to social and cultural norms, where women's jobs are confined to care roles such as teaching and nursing, rather than technical or engineering. Such norms have limited girls from pursuing STEM courses and careers. Further, women who have graduated with STEM degrees, for example in Somalia, are more likely to lack skills to work in the sector as most internships that bridge skills for employment in the energy sector tend to focus on men with STEM degrees. For women seeking entrepreneurship opportunities in the sector, limited access to finance has also been a constraint in creating and growing women-owned enterprises in the energy sector.

[6] Pueyo, A. and Maestre, M. (2019) 'Linking energy access, gender and poverty: A review of the literature on productive uses of energy', Energy Research & Social Science 53: 170-181

[77] https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/AfDB-Gender_and_Energy_Desk_Review-EN-2016.pdf

[8] Power for All Fact Sheet: Decentralized Renewable Energy can help to address gender gap, March 2023

[99] https://www.powerforall.org/application/files/3016/6324/8657/Powering-Jobs-Census-2022-914.pdf



Source: UNESCO Institute for Statistics (http://uis.unesco.org/). Data as of March 2020.

Policy Side: The lack of legal and policy frameworks that support gender parity in the energy sector does not only contribute to the underrepresentation of women in the sector, but also to the existence of gender differences that are unfavorable to women with respect to energy access. Gender audits conducted on energy policies of some AFE countries have shown that lawmakers lack sensitization in the gender differences related to modern energy access and usage, and its linkage to development outcomes[10]. While 50 percent of the AFE countries have policies to improve affordability of household electricity connections and 38 percent of the AFE countries have policies to improve affordability of household electricity tariffs, only eight percent of the countries have policies or national strategies to improve affordability of connections and tariffs for specifically female-headed households[11].

Gender Capacity Gaps at ASCENT Regional Implementing Agencies: Since the ASCENT MPA will utilize regional implementing agencies, the Common Market for Eastern and Southern Africa (COMESA) and Trade and Development Bank (TDB), preliminary gender assessments have also yielded specific gender gaps that could affect project implementations as follows:

COMESA: Currently, COMESA has a Gender and Social Affairs Division which is staffed with a director and two staff members as well as a comprehensive Gender Policy with gender actions in energy among others; however, the department lacks capacity to implement gender actions for the energy sector stipulated by the policy to ensure equitable access, usage, and supply of energy among women and men in the ASCENT-targeted member States. Further, COMESA member states lack gender-responsive data that could be used to design effective interventions and policies that could close gender gaps in the energy sector.

Trade and Development Bank (TDB) As the financial arm of COMESA, the preliminary assessment has also identified gender gaps pertaining to the regional financing facility's capacity to address gender issues at institutional and project level. TDB has limited capacity for gender integration at institutional level and no budget to bring a gender and social inclusion focal point.

3. Gender Actions

The ASCENT MPA plans to integrate gender-transformative approaches to close gender gaps related to energy access, including interventions that will accelerate the economic empowerment of women in the AFE energy sector. Due to the structure of the MPA, the note intends to provide a menu of gender

[10] World Bank.2019. *Energy Access and Gender: Getting the Right Balance*. Special Feature SEA
[11] RISE Gender Module

interventions that could be utilized at regional level and country level to close existing gender gaps pertaining to energy access at regional and country level as follows:

a) Regional Approach Interventions

At regional level, the interventions would focus on boosting the capacity to implement the ASCENT project gender action plan though the regional implementation agencies as follows:

COMESA: The ASCENT MPA will include technical assistance focusing on integrating gender in different aspects of project and support the building of gender capacity in the COMESA PIU for the implementation of gender commitments under the COMESA regional implementation facility. By providing technical assistance, this will ensure that COMESA has adequate support to strengthen the technical capacity of the Gender and Social Affairs Division to successfully coordinate and implement the MPA's gender action plan and to lead the closing of gender gaps in the energy sector of COMESA Member States. Based on the findings from the PIU Capacity Needs Assessment, the project will include hiring of a gender specialist with experience in the energy sector who will support the project implementation in the PIU under the supervision of the Director of Gender and Social Affairs. Activities under the TA will include audits of gender policies on energy access in COMESA Member States with the purpose of harmonizing the policies to accelerate closing of gender gaps related to energy access in the region, development of programs that attract women with STEM backgrounds to energy sector in COMESA member states, and the development of a regional Women's Leadership Institute and a regional STEM Skills Accelerator Institute to support skills development of women in leadership positions and prospective women leaders within the sector as well as address the skills gap women experience to be employed in the energy sector. The technical assistance will also include promoting women's participation in the energy sector as entrepreneurs, champions, and role models. Further, the TA will include a monitoring and evaluation component of gender commitments under the MPA and documentation of good practices. The terms of reference for the gender specialist will be developed in collaboration with COMESA's Gender and Social Affairs Division.

Trade Development Bank: With Trade and Development Bank (TDB) as the regional financing facility, ASCENT will include technical assistance to increase TDB's capacity to integrate gender at institutional level. In addition, the project will include hiring a gender and social inclusion specialist who will support the gender capacity assessment of TDB and TDF, and develop a gender action plan to close gender gaps at institutional level At project level, the ASCENT project will utilize strategies such as results-based financing (RBF) with gender-targeted incentives to increase the employment of women with STEM backgrounds in Distributed Renewable Energy (DRE) and to increase the number of women-owned/led enterprises with access to energy resulting in improved productivity of their enterprises.

b) Country Approach Interventions

The country specific interventions will complement the ASCENT MPA Gender Action Plan. Rwanda, Sao Tome and Principe, Somalia, and Tanzania will employ gender interventions appropriate for the respective country context in alignment with the regional approaches to ensure the acceleration of clean energy access to female headed households and women-owned/women-led enterprises, as well as work towards increased percentage in the share of the employment of women with STEM backgrounds in the OGS, private sector, and utilities of the respective countries. For instance, gender-responsive consumer awareness and education campaigns at country level will be critical to reaching the intended beneficiaries. In addition, the country approaches to increase women's employment in the energy sector, particularly women with STEM backgrounds will vary as to whether the implementor is public or private sector. In the case of Somalia where electricity service providers (ESP) in the private sector play a critical role in providing electricity services, the interventions will include technical

assistance to the private sector to create work environments conducive to women's employment. The summary of the gender action plan is provided in the **Table 1** below.

4. Monitoring and Evaluation (M&E)

The effectiveness of the project gender actions in narrowing gender gaps addressed in the MPA will be monitored through indicators which will have preliminary baselines and targets, as some baselines are dependent on additional assessments, for instance, Somalia. Given that the project seeks to accelerate access to sustainable, reliable, and affordable energy in the AFE region, the indicators will measure the increase in the share of female-headed households and women-owned/women led enterprises with access to electricity. The project will also track women's employment in the energy sector (grid, DRE, and clean cooking), in particular women with STEM backgrounds. Since the indicator will measure the percentage change in the share of women employed, the baseline has been set "0" and a target of 10 percent increase. At regional level, the project will track the efforts to increase gender capacity of the regional implementing agencies including hiring of gender specialists with experience in the energy sector at COMESA and TDB/TDF. Further, country-level projects will also include other gender-linked indicators depending on the scope of the project. It is important to note that the impact of actions related to clean cooking will be assessed through impact evaluations included in the ASCENT MPA; areas to be evaluated will include time savings experienced by women as a result of connections to electricity or access to clean cooking technologies. The summary of the MPA's gender action plan including a summary of indicators is provided below (See **Table 1**).

Table 1: ASCENT Project Gender Action Plan

Gender Gap	Gender Actions	M&E	Implementors
1. Access to Electricity and Clean Cooking Technologies for Female headed households			
Regional Access to electricity is limited due to the high cost of electricity rendering access highly unaffordable for many female-headed households. *Country level* ***Rwanda:*** 25% male headed households and a18 percent female-headed households. **Somalia**: 30% access but sex disaggregated data not available. **Tanzania:** 27.9% male headed households and 11.9% were female headed households have access to electricity.	*Regiona*l: Gender-targeted consumer awareness and education campaigns on access to clean energy to ensure information and services on connections and clean cooking reach vulnerable female-headed households. ***Rwanda:*** Gender-responsive consumer awareness and stakeholder consultations ***Somalia****:* The gender-targeted consumer campaigns will be developed in collaboration with the ESPs, to ensure female-headed households have information on electricity access from network reinforcement grants given to ESPs through the MPA to connect vulnerable households. ***Tanzania***: Community level electrification awareness program targeting female-headed households.	Percentage increase in the share of female headed households provided with new or improved access to grid, off-grid electricity, and clean cooking solutions.	COMESA, Rwanda Somalia Tanzania
2. Access to electricity/energy for Women-owned/women led enterprises			
Regional Women-owned/women led enterprises face more barriers to running successful enterprises than their counterparts including limited access to finance and resources, limited access to markets, limited agency to switch between care work and productivity roles, inequality in education and skills as well as patriarchal structures that enforce rigid social and cultural norms. Limited access to finance affects affordability of inputs such as access to electricity. Country level data on Women-owned/women led enterprises and access to electricity not available.	*Regiona*l: Market assessments that identify gender barriers to productive uses of energy in the AFE Region Results based financing (RBF)targeting access/connections to Women-owned/women led enterprises. ***Rwanda:*** The revision of clean cooking policy from gender perspective, development of gender checklist to be used by RBF facility, assessment to identify constraints and opportunities by women owned/led enterprises or women entrepreneurs in off-grid sector. ***São Tomé and Príncipe***: Targeted connections will be provided to women-led enterprises and collectivities having lower access and benefitting less from electrification, in order to increase their opportunity and ability to launch income-generating activities.	Increase in the percentage of Women-owned/women led enterprises with access to clean energy. Share of Women-owned/women led enterprises provided with access to Productive Uses of Energy (PUE)	COMESA, TDB, Rwanda, São Tomé and Príncipe, Somalia, Tanzania

Gender Gap	Gender Actions	M&E	Implementors
	***Somalia**:* Gender-targeted consumer awareness and education campaigns with ESPs will be implemented to ensure information and services on connections reach Women-owned/women led enterprises through the network reinforcement grants given to ESPs to connect Women-owned/women led enterprises. **Tanzania:** Gender responsive consumer awareness and stakeholder consultation targeting women-owned enterprises		
3. Women's employment in the AFE energy sector			
Regional: Women with STEM backgrounds are underrepresented both in public utilities and the private sector. *Country level* **Rwanda:** 35.4 percent of females and 64.6 percent of male have STEM degrees (2023 Global Gender Gap Report) **São Tomé and Príncipe** Women represent 8 percent of technical and management jobs at the utility and are not represented in RE activities within the sector. **Somalia**: Women with STEM backgrounds are underrepresented in the private sector (ESPs)**.** Underlying constraint include rigid cultural and social norms. **Tanzania**: REA's 2022 HR data shows a wide employment gender gap with women workforce at 26.5 percent and male workforce at 73.5 percent	*TDB*: Results-based financing **(RBF)** to OGS targets to include increase in the number of women in employed in technical and engineering positions. *COMESA*: Conduct a skills gap assessment of STEM graduates to identify gender barriers that hinder girls and women to pursue careers in STEM fields relevant to the energy sector. Implement a Skills Accelerator for women with STEM backgrounds to facilitate employment of women's employment in the energy sector. ***Rwanda***: The country's actions will benefit from the regional implementing agencies gender actions plans. ***São Tomé and Príncipe***: Implement activities to improve the pipeline of female engineers and technicians with STEM background and their integration in the solar plant construction, operation, and maintenance as well as in technical and leadership positions at the utility. ***Somalia***: Technical assistance provided to ESPs to support gender integration in the private sector to create a work environment conducive for the employment of women with STEM backgrounds.	Increase in the share of RBF-supported DRE, clean cooking companies and utilities that have increased the share of female employment in technical/STEM and managerial positions by at least 10 percent	TDB, COMESA**,** Rwanda, São Tomé and Príncipe, Somalia, Tanzania

Gender Gap	Gender Actions	M&E	Implementors
	Tanzania: REA to develop A five-year gender action plan upon the approval of the MPA to guide implementation of gender interventions including reaching 35 percent overall female employment and 20 percent share of female in STEM background in REA.		
4. Institutional Capacity Building and gender-targeted technical assistance			
Regional (TDB and COMESA) Regional implementing agencies TDB and COMESA do not have adequate capacity to implement gender commitments under the ASCENT MPA Only eight percent of AFE countries have policies or national strategies to improve affordability of connections and tariffs for specifically female-headed households. *Country level* **Somalia**: Private sector (ESPs) lack capacity to integrate gender especially in women's employment and to monitor gender commitments under ASCENT MPA	*COMESA/TDB*: Hire a gender and social inclusion specialist to implement the project's gender action plan (COMESA, TDB) *COMESA:* Conduct gender audit for the energy sector including policies and data and develop a gender strategy for harmonization of policies and implementation of the project's gender actions plan in member states. *COMESA*: Establishment of a Women's Leadership Institute target women with STEM backgrounds. (COMESA) ***Somalia***: Technical assistance to support gender integration in all aspects at ESPs (private sector) including creating a conducive work environment for the employment of women with STEM backgrounds	Gender and Social Inclusion Specialist hired. (Yes/No) Gender Audit of Member States conducted. (Yes/No) Regional Gender Action Plan for implementation of MPA gender commitments developed. (Yes/No)	COMESA/TDB, Somalia

Gender Sections from ASCENT Country Technical Notes

1. **ASCENT- Rwanda (P180575)**

The GoR's Vision 2050 focuses on high-quality living standards including the provision of affordable, reliable, and clean energy to men and women. Under the Energy Sector Strategic Plan for 2018/19 - 2023/24, the target is to achieve 100% household electricity access and to reduce the number of households using traditional cooking technologies to 42% by 2024. Also, the Vision 2050 strategy document aims to reach an upper middle-income level by 2035 and a high-income level by 2050. Regardless of this, still gender equality gaps exist in Rwanda's energy sector, and this was considered as one of the key cross-cutting issues of Rwanda's NST1. For example, EDCL HR Data (2023) shows the overall percentage of the female workforce at EDCL is only 17 percent though the Global Gender Gap Report 2023 shows the current women STEM graduates in Rwanda is 35.36 percent. Gender gaps in electricity access persist, as female-headed households have lower access both to grid and off-grid electricity.[12] Also, access to clean cooking solutions is still a challenge in Rwanda since household cooking practices are still based on traditional fuels and stoves. The gender gap is reflected in the primary cooking fuels used by households, with female-led households relying more on firewood (85%) than male-led households (78%). In addition, only 2% of the population has access to modern cooking fuels and technologies[13], in urban areas and 76% of Rwandan households spend more than 7 hours per week acquiring and preparing fuel, posing a high burden on women and girls.[14] As a result, women and children are more susceptible to Household Air Pollution (HAP) and associated adverse health effects, and chores relating to cooking take a considerable amount of their time, which otherwise could have been used for other productive areas such as education or employment.[15] Also, availability, distribution and access to PUE solutions especially that meets the needs of women-owned/led enterprises is not yet at the level of their demand. Identifying this challenge, actions were integrated under the World Bank EAQIP project and BRD has taken additional steps to address gender inequalities, recognizing the importance of clean cooking in providing a healthy and pollution-free cooking environment for women and set gender balance requirements for companies applying for its RBF schemes, on top of the existing guarantee scheme which promotes female-owned projects (75% guarantee level provided) against (50% guarantee level provided) male-owned ones. Also, a quota for the employment of female technicians and professionals was set for OSCs and CCCs to close the gender gap in employment in the energy sector.

Some of the gender actions are:

- Organize community outreach program targeting FHH and run public awareness campaign as well as stakeholder consultations.
- Develop a gender responsive tool to be used during data collection and reporting on the access/ connection of male and female headed households.
- Revise existing clean cooking policy from gender perspective to ensure the needs and interests of FHH and women owned/led enterprises are included and conduct sensitization training on the revised CCS policy to relevant stakeholders.

[12] Modern Energy Cooking Services. 2021.Policy and market review for modern energy cooking in Rwanda
[13] World Bank. 2022. RISE 2022. Sustaining the Momentum
[14] Modern Energy Cooking Services. 2021.Policy and market review for modern energy cooking in Rwanda

[15] World Bank. 2020. Rwanda - Energy Access and Quality Improvement Project.

- Develop gender checklist for RBF facility provider to provide need-based services for female beneficiaries and conduct sensitization training for RBF responsible staff on how to use the checklist (including for PUE RBF facility provider)
- Conduct gender assessment on the constraints and opportunities as perceived and experienced by women entrepreneurs in the OGS sector, women (in households) as consumers of off-grid solar solutions and developing/reviewing off-grid gender strategy for Rwanda energy sector.

The gender-related intermediate result indicators to be included in the Result Framework to track progress towards closing the gender gap in Rwanda's energy sector as follows:

- Women led/owned enterprises access to grid electricity,
- Share of female workers under contracts financed by Components 1 and 3
- Women led/owned businesses benefiting from distributing PUE technologies.

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2. ASCENT São Tomé and Príncipe - Access to Clean Resilient Electricity Project (P177099) (ACRE)

Gender gaps were identified in São Tomé and Príncipe with regards to women's employment in the labor market and specifically in the energy sector and at the utility (EMAE), as well as to their access and use of electricity. The ACRE project therefore plans to implement targeted activities focused on: (i) strengthening local capacity to increase women's participation in the energy sector and in particular solar generation; and (ii) ensuring their access to electricity for productive uses. Solar generation, and particularly utility-scale solar generation, remains an incipient sector in São Tome and Principe and thus local capacity needs to be reinforced. The project, following the collection of additional qualitative and quantitative data that will yield a Targeted Electricity Sector Gender Assessment, will enable the identification and implementation of the best approaches to facilitate the development of skills, STEM knowledge and creation of domestic employment in the energy sector for women. It will implement activities to improve the pipeline of female engineers and technicians and their integration in the solar plant construction, operation, and maintenance phases as well as in leadership positions. Furthermore, the project will increase access to and use of electricity by women-owned/led enterprises and collectivities having lower access and benefitting less from electrification initiatives, by promoting activities that directly address the gender gaps and livelihood constraints faced by women in São Tome e Principe and encourage income-generating activities.

Three gender-related intermediate result indicators are proposed to be included in the Result Framework to track progress towards closing the gender gap in Sao Tomé's energy sector. The indicators are:

- Targeted Electricity Sector Gender Assessment completed to strengthen the STEM talent pipeline.
- Women-owned/led enterprises and women beneficiaries provided with new or improved access to PUE.
- Increased number of women employed at the energy utility in technical and leadership jobs.

3. ASCENT Somalia (P181341)

The gender commitments of the ASCENT Somalia will build upon gender action plan under the*P173088 Somalia Energy Sector Recovery Project (SEPRP)*. Somalia has approximately 16 million people, of which about 50 percent are women and girls. According to the *Somali High Frequency Survey*, the proportion

of women-headed households ranges from 47 percent to 66 percent and are prevalent in rural areas, borderland areas and among internally displaced population (IDP). Access to electricity in vulnerable households is constrained due to the high cost of electricity from the private sector through electricity service providers (ESPs) in Somalia as it is highly unaffordable for most of low-income households particularly women-headed households[16]. Even when electricity is accessible in households, supply tends to be highly unstable and unreliable partly due to the poor electricity infrastructure[17]. The provision of electricity services to vulnerable households such as female-headed households and women-owned enterprises is also considered a risk that could affect the profit margin of ESPs because such vulnerable households are unable to pay their tariffs on time. Further, payment options offered to women-owned enterprises and vulnerable households for tariff payment tend to focus on reducing the risk of losing customers which tends to be unsustainable in the long run for the ESPs because many vulnerable households are unable to utilize that window of opportunity due to persistent poverty[18]. In addition, the preliminary assessment on employment gender gaps under SESRP showed that women with STEM backgrounds are less likely to be employed in the private sector due to various factors including rigid social and cultural norms that define traditional jobs for women.

The project will utilize the findings of the National Diagnostic Gender Assessment currently being conducted under SESRP to identify gender gaps pertaining to electricity access at household and enterprise level. Interventions to close the identified gender access gaps will include gender-responsive consumer awareness and education programs to ensure female-headed households and women-owned enterprises have necessary information to access electricity connections. The consumer awareness programs will also highlight how access to electricity can reduce drudgery and enable women to engage in economic empowerment activities which could lead to sustainable incomes for tariff payments. The project will also provide public street lighting which is expected to reduce gender-based violence especially at night. In order to increase the employment of women with STEM backgrounds in the sector, the project will include technical assistance to the private sector through the SEPRP incubator to sensitize management and staff on the importance of creating a conducive work environment for women's employment. Evidence shows that attainment of gender balance in energy enterprises contributes to enhanced financial performance, stimulates innovation, increases employee retention, and improves service delivery due to wider customer outreach that includes female customers[19]. The incubator will also support the employment pipeline at ESPs by providing technical and soft skills that women with STEM backgrounds need to succeed in the energy sector. The incubator will also offer specialized training and gender capacity building workshops to improve the technical and operational skills of the already existing women employees within the electricity service providers to ensure a highly skilled workforce.

The gender gaps will be tracked using the following indicators: the share of women headed household; the share of women owned enterprises with electricity connections and the share of women with STEM backgrounds employed in the energy sector. Since the NGDA is underway, targets for connections will be

[16] *P174175 Horn of Africa Regional Integration of Sustainable Energy Supply* (RISES) Gender Equality and Social Inclusion (GESI) Assessment (to be published by ESMAP)
[17] Ibid.
[18] Ibid.
[19] ILO study on Women in Business and Management: The business case for change

established upon completion of the assessment; however, the share of women with STEM backgrounds employed at ESPs will have a target of 10 percent.

4. ASCENT Tanzania (P179361)

The recent Global Gender Gap Index 2023 ranked Tanzania 48th out of 146 countries. The national access rate to clean cooking in 2020 was 8.1%, with majority of Tanzanians (89%) still relying on biomass energy (charcoal and firewood) for cooking.[20] In 2020, it was reported that 39.9% of households countrywide were connected; out of which 27.9% were male headed households and 11.9% were female headed households. In urban areas, connection rate was reported at 72.9% of all urban households, upon which 48.9% were male headed households and 23.9% were female headed households. In rural areas, the overall number of households connected to electricity was 24.3%, of which 17.9% were male headed households and 6.3% were female headed households.[21] Rural Energy Agency (REA) 2022 HR data shows a wide employment gap where the percentage of women workforce are only 26.5 percent and male workforce are 73.5 percent. The proposed program will build on the efforts made under TREEP and delve into strategic programs and actions to close the gender equality gaps in Tanzania's energy sector by ensuring equitable participation and benefit of women in the energy value chain. It envisions addressing these identified gender equality gaps in the energy sector through availing reliable, affordable, and clean electricity access to female headed households and women owned/led enterprises. It also designs a program to attract more female professionals to the energy sector in line with REA's Strategic Plan 2022-2026 (RESP) promotes gender inclusion in workplace and outlines gender mainstreaming indicators on female recruitment under the strategic objective "**B**". The strategic plan has set a target of 30 percent women to benefit from modern energy systems (baseline was 22 percent) and to reach 35 percent female employment in REA by 2026. Systemic sex-disaggregated data collection and reporting will be strengthened based on sectoral gender responsive M&E framework that is established under Tanzania Rural Electrification Expansion Program (TREEP). A five-year gender action plan will be developed by REA upon the approval of the MPA to guide implementation of gender interventions under the scope of the abovementioned gender entry points. Some areas of the gender action plan include:

- Community level electrification awareness program targeting FHH.
- Development of women employment program with strategic actions
- Strengthening sectoral and institutional gender responsive planning, reporting monitoring and evaluation framework (to ensure systemic collection and reporting of sex disaggregated data)

Three gender-related indicators proposed for the Intermediate Result Framework to track progress towards closing the gender gap in the energy sector include:

- Number of women owned/led enterprise businesses provided electricity.
- Increased percentage of women with STEM background employed in REA (percentage) and
- Number of female-headed households provided with electricity.

5. ASCENT Regional Energy Access Financing (REAF) Platform (P181328)

The proposed Regional Energy Access Financing Platform project, implemented by TDB, will play a critical element in ASCENT's overall gender strategy, particularly in closing gender gaps in employment within the

[20] National Five-Year Development Plan 2021/22–2025/26: Realizing Competitiveness and Industrialization for Human Development, URT-MFP, 2021.

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DRE sector and in electricity access to women owned and led enterprises. While the off-grid solar (OGS) sector has made strides in closing gender gaps globally as women make up 40 percent of the employment, only 32 percent are in science, technology, engineering, and mathematics (STEM) positions, 58 percent are in administrative jobs and 35 percent are in non-STEM technical position. Further, women-owned and women-led enterprises in AFE region face more barriers to running successful enterprises than their male counterparts including limited access to finance and resources, limited access to markets, limited agency to switch between care work and productivity roles, inequality in education and skills as well as patriarchal structures that enforce rigid social and cultural norms[22]. Due to operating low productivity enterprises, most women-owned enterprises cannot afford electricity connections or tariffs, which has the potential to increase income generation capacity and improve productivity. Therefore, the project will utilize RBF with gender-targeted incentives to increase the employment of women with STEM backgrounds by DRE and clean cooking service providers and for women-owned and/or women-led enterprises to have access to energy resulting in improved productivity of their businesses. The project will include in its Monitoring and Evaluation indicators i) the share of women owned/led SMES provided with access to clean energy in the AFE regions and ii) the increase in the share of women employed in technical and managerial positions by DRE and clean cooking companies. The project will provide comprehensive capacity building to TDB and TDF on gender, including for developing and implementing a project's gender action plan, which will include additional indicators tracking the narrowing of various regional and country -level gender gaps through the regional financing facility. TDB will also strengthen its capacity by hiring a gender and social inclusion specialist.

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[22] Pueyo, A. and Maestre, M. (2019) 'Linking energy access, gender and poverty: A review of the literature on productive uses of energy', Energy Research & Social Science 53: 170-181