Meeting of the Board
28 June – 1 July 2021
Virtual meeting
Provisional Agenda Item 11

GCF/B.29/02/Add.04

7 June 2021

Consideration of funding proposals – Addendum IV

Funding proposal package for FP168

Summary

This addendum contains the following six parts:

a) A funding proposal summary titled "Leveraging Energy Access Finance ("LEAF") Framework" submitted by the African Development Bank (AfDB);
b) No-objection letters issued by the national designated authorities or focal point(s);
c) Environmental and social report(s) disclosure;
d) Independent Technical Advisory Panel's assessment;
e) Response from the accredited entity to the independent Technical Advisory Panel's assessment; and
f) Gender documentation of the funding proposal.

These documents are presented as submitted by the accredited entity and the national designated authority(ies) or focal point(s), respectively. Pursuant to the Comprehensive Information Disclosure Policy of the Fund, the funding proposal titled titled "Leveraging Energy Access Finance ("LEAF") Framework" submitted by the African Development Bank (AfDB) is being circulated on a limited distribution basis only to Board Members and Alternate Board Members to ensure confidentiality of certain proprietary, legally privileged or commercially sensitive information of the entity.

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Funding Proposal

Project/Programme title:	**Leveraging Energy Access Finance (LEAF) Framework** Unlocking Local Currency Debt Capital to Scale up Decentralized/Distributed Renewable Energy in Africa
Country(ies):	Nigeria, Kenya, Ghana, Tunisia, Ethiopia, Guinea
Accredited Entity:	African Development Bank
Date of first submission:	2020/12/27
Date of current submission	2021/05/20
Version number	V8

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]"

A. PROJECT/PROGRAMME SUMMARY			
A.1. Project or programme	Programme	**A.2. Public or private sector**	Private
A.3. Request for Proposals (RFP)	Not applicable Not applicable		
A.4. Result area(s)	*Check the applicable GCF result area(s) that the overall proposed project/programme targets. For each checked result area(s), indicate the estimated percentage of GCF budget devoted to it. The total of the percentages when summed should be 100%.*		
	Mitigation: Reduced emissions from: ☒ Energy access and power generation: ☐ Low-emission transport: ☐ Buildings, cities, industries and appliances: ☐ Forestry and land use: Adaptation: Increased resilience of: ☐ Most vulnerable people, communities and regions: ☐ Health and well-being, and food and water security: ☐ Infrastructure and built environment: ☐ Ecosystem and ecosystem services:		GCF contribution: 100% 0% 0% 0% 0% 0% 0% 0%
A.5. Expected mitigation impact	28.8 million tCO2e	**A.6. Expected adaptation impact:**	N/a
A.7. Total financing (GCF + co-finance)	959.9 USD	**A.9. Project size**	Large (Over USD 250 million)
A.8. Total GCF funding requested	170.9 USD *For multi-country proposals, please fill out annex 17.*		
A.10. Financial instrument(s) requested for the GCF funding	*Mark all that apply and provide total amounts. The sum of all total amounts should be consistent with A.8.* ☒ Grant 10.9 million US$ ☐ Equity Enter number ☒ Loan 80 million US$ ☐ Results-based payment Enter number ☒ Guarantee 80 million US$		
A.11. Implementation period	a) Disbursement/ commitment/ implementation period: 6 years b) Repayment period, if applicable: up to 12 years	**A.12. Total lifespan**	25 years

A.13. Expected date of AE internal approval	7/30/2021	**A.14. ESS category**	*Refer to the AE's safeguard policy and GCF ESS Standards to assess your FP category.* I-2
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	*If not the Accredited Entity, please indicate the full legal name of the Executing Entity(ies) and provide its country of registration and ownership type. Note that there can be more than one Executing Entity. Also indicate if an Executing Entity is the National Designated Authority. Refer to the definition of Executing Entity in the Accreditation Master Agreement.* The Accredited Entity, the African Development Bank, is the executing entity for the majority of the transactions under the LEAF Framework. For transactions whereby partner funds or financial institutions (FIs) finance a portfolio of DRE companies, the fund or FI will be the executing entity.		
A.21. Executive summary (max. 750 words, approximately 1.5 pages)			

Provide an executive summary of the project/programme including:

1. *Climate change problem*
2. *Proposed interventions*
3. *Climate impacts/benefits*

The Climate Change problem facing Africa is substantial, with over 570 million people lacking access to electricity, notably in Sub-Saharan Africa where the problem is particularly acute. Failure to address this situation will continue to undermine Africa's growth and stability as a continent. There exists a tremendous opportunity to make a tangible, sustainable difference to the people of Africa through the proposed LEAF Framework, which will deliver Distributed and Decentralised Renewable Energy (DRE) solutions to tackle the energy shortfall whilst dramatically reducing carbon emissions and simultaneously boosting local economies and businesses. Sub-sectors considered for LEAF financing include solar home systems, solar solutions for commercial and industrial use and mini-grids.

Proposed intervention

Levering Energy Access Finance (LEAF) is a US$ 900+ million[1] Framework with the overarching objective to unlock local currency debt and overcome market barriers to support the growth of DRE. In particular, the Framework, via a US$ 334.9 million funding contribution from the GCF and AfDB, aims to: (i) enhance local markets by de-risking the DRE space through guarantees and subordinated debt, unlocking local currency debt finance and scaling up investments; and (ii) create capacity within local banks and financial institutions to engage and finance DRE businesses, structure strong financing transactions, and support governments to create enabling policies for private investment. This Framework is part of the Bank's wider off-grid strategy which includes the SEFA Fund and the Green Mini Grid Programme. This proposal focuses on decentralised and distributed renewable energy generation in six countries: Nigeria, Kenya, Ghana, Tunisia, Ethiopia and Guinea, based on the market potential for renewables and project pipeline of DRE initiatives being developed by AfDB.

Climate change mitigation. Scaling-up renewable energy is a necessity to meet growing electricity demand while mitigating greenhouse gas emissions. Despite significant investment over the last decade in power generation and distribution, many African countries still face considerable challenges in achieving universal access to sustainable, clean, affordable, and reliable sources of electricity. Power distribution networks across Africa are unable to reliably serve the existing industrial, urban and rural customer base. Rural communities often rely on fossil-fuel based solutions such as kerosene and diesel as well as disposable batteries (lead acid batteries) as energy sources, all of which cause damage to humans, the climate and pollute the environment. According to IEA's 2020 Africa Energy Outlook report, Africa was the world's second largest diesel importer, and with burning of wood biomass accounting for over 80% of energy consumption in SSA, primarily for cooking. While African countries are facing growing demands for energy to meet their infrastructure deficit, doing so currently leads to an increasing emission trajectory as a result of use of fossil-based energy and biomass energy sources[2]. The countries have an opportunity to '"leapfrog' the fossil-fuel-based growth strategies of developed countries"[3] by investing in green energy. The LEAF Framework contributes to climate mitigation by promoting and supporting the transition from high-carbon electricity solutions to cleaner and more sustainable low-carbon technologies. It also contributes to clean energy solutions for rural populations who currently do not have access to electricity.

Climate change adaptation co-benefits. Increasing the access of a population to clean and reliable energy (mini-grid and off-grid technologies) and solar-powered productive assets is expected to strengthen households' adaptive capacity and resilience through economic, social and environmental co-benefits. The electricity systems and appliances can unlock access to additional income-generating activities, new businesses and foster economic growth, improving the people's socio-economic resilience impacted by such electrification. Access to knowledge and information via information technology enabled through electricity, helps communities connect with formal and informal support networks (government, aid agencies etc.) and recover faster from the impacts of disasters. Additionally, women and other marginalised groups such as young girls, children and the elderly are known to improve their circumstances and health from energy access, mainly through reduced vulnerability to pollution associated with charcoal and fuelwood consumption, increased security and learning time for schools.

Climate impacts/benefits

By unlocking local currency debt and increasing the availability of financing, the LEAF Framework will increase access to clean and reliable energy and support the diversification of renewable energy options, contributing to climate change mitigation and adaptation co-benefits in the selected countries. Direct mitigation benefits include an additional 386MW of generating capacity through renewable energy solutions, resulting in approximately 28.8 million tCO2 emission reductions over the lifetime of the systems. The Framework aims to provide 1.18 million households and businesses with green, reliable energy solutions and productive use appliances.

B. PROJECT/PROGRAMME INFORMATION

B.1. Climate context (max. 1000 words, approximately 2 pages)

Climate change problem

Climate change problem: Describe the climate change problem the proposal is expected to address. Describe the mitigation needs (GHG emissions profile) and/or adaptation needs (climate hazards and associates risks based on impacts, exposure, and vulnerabilities) that the proposed interventions are expected to address. Also describe the most likely scenario (prevailing conditions or other alternative) that would remain or continue in the absence of the proposed interventions. Include baseline information. The methodologies used to derive such information, including the mitigation and adaptation needs, should be included in the feasibility study.

Opportunity provided by decentralised renewable energy

Despite significant investment over the last decade in power generation and distribution, many African countries still face considerable challenges in achieving universal access to sustainable, clean and reliable sources of electricity. Africa's current electricity generation sources rely mainly on fossil fuel (79%) and hydro (16%)[4] (see Figure 1). Without a massive transformation to renewables, an increase in electricity demand would increase Africa's GHG emissions leading to an upward emission trajectory. The shortfall in generation capacity and access to the grid results in over 570 million people that lack access to electricity, mostly concentrated in rural regions in Sub-Saharan Africa. In these communities people often rely on a range of unsustainable, expensive, high carbon and harmful (to human health and the environment) energy sources to meet their power needs, including fossil-fuel based solutions such as kerosene and diesel as well as disposable batteries. Scaling-up renewable energy penetration is a necessity to meet electricity demand whilst reducing GHG emissions and ultimately promoting sustainable development.

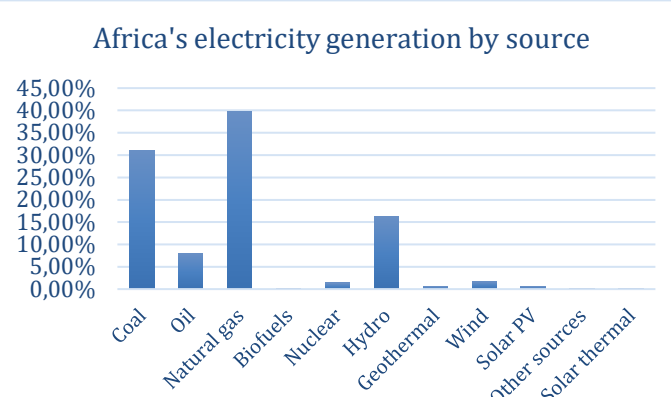

Figure 1: Africa's electricity generation by source (source, IEA, 2020)

[4] https://www.iea.org/data-and-statistics?country=WEOAFRICA&fuel=Energy%20supply&indicator=TPESbySource

While many African countries have targeted ambitious electricity access goals and a transition to renewable energy, the cost of grid extensions remains prohibitive. With Africa having abundant solar resources, the potential for solar solutions at different scales i.e. households, industrial and utility-scale is enormous (see figure 2). For rural populations distant from the grid, decentralized renewable energy solutions such as mini-grids and solar home systems represent cost-effective solutions to increase access to electricity. The IEA (2017) estimates that by 2040 approximately 25% of households' electricity access needs to come from off-grid solutions. With demand for these solutions increasing, technology advancing and innovative business and supply models being developed, the off-grid sector has attracted a considerable number of private developers. For example, MKOPA in Kenya has introduced the pay-as-you-go model, using mobile payments for solar home system (SHS) technology, a model that has disrupted the way payments are collected in rural areas; mini-grid developers are using smart technologies for energy efficient measures and pre-payments of electricity; and developers are exploring energy-as-a-service models to improve affordability of captive power for businesses. As a result of these dynamics, the off-grid sector has seen considerable growth in recent years, leading African countries to include off-grid solutions as part of their electrification strategies, with the aim of achieving SDG 7 and to reducing their carbon emissions.

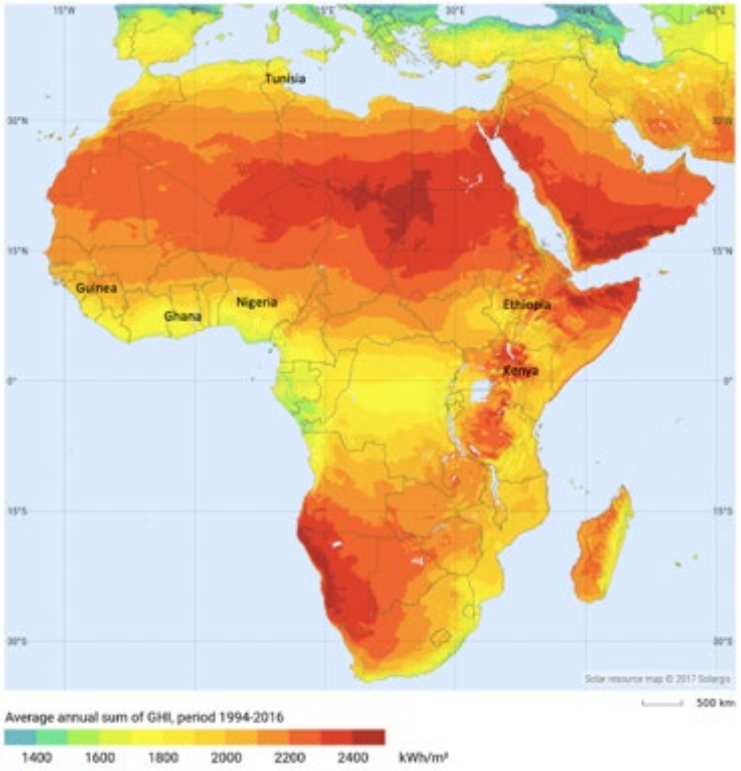

Figure 2 Solar potential Africa (Source: Solargis, 2019)

Green mini grids are the most effective and least-cost way to provide access to energy in off-grid areas with high levels of population density and economic activity. They can be easily deployed, they are flexible, scalable, and can connect to the main grid when the national grid expands. They contribute to carbon emission reductions, reduce pollution and environmental degradation, and create new jobs and business opportunities. Most mini grid systems have a productive life span of 15 to 25 years, which can be extended with new investments.

Solar Home Systems (SHS) provide rural, low-density populations with affordable and safe solar electricity. They usually span from basic packages, offering lighting and phone charging, to larger packages including solar powered appliances such as fans and TVs. SHS are usually paid on a pay-as-you-go basis (prepayment of electricity consumed through mobile money) allowing SHS companies to reduce the costs and risks associated with payment collection. SHS are equipped with remote controllers that can block electricity supply once prepaid electricity is consumed or a payment is missed. They present an electricity solution for sparsely populated areas and communities with low purchasing power. They provide a cleaner source of energy by replacing low-quality kerosene lamps with modern light and a proper electricity installation. SHS may support additional revenue-generating activities and small business activities.

Whilst **commercial and industrial solar** for businesses (C&I or captive power) is a nascent market in Africa, Bloomberg (2019) estimates that the sector is expected to grow considerably. A combination of falling solar module prices and high energy costs for both diesel generators and the grid in the focus countries are paving the way for solar systems for self-consumption. C&I solar presents a clean electricity solution for businesses that currently rely on diesel generators for electricity access or as backup power in case of power cuts. Solar C&I helps to displace diesel generators in Sub-Saharan Africa and support businesses to transition to clean electricity and reducing electricity costs.

Despite market growth, cost reduction in technologies and improved policies, there remain challenges related to access to private capital and a lack of a conducive enabling environment that are hindering the deployment at scale of DRE.

Access to finance needs

Scaling DRE solutions requires significant private sector investment. Most African countries rely on hard currency debt for the financing of energy infrastructure, typically creating significant exchange rate risks (especially as most of their revenue from consumers' payments is in local currency) that are difficult to hedge and which can have profound implications for

energy costs if they crystallize. The SHS, Green Mini-Grid (GMG)[5] and C&I sub-sectors have different financing requirements, for instance in terms of scale, working and investment capital, tenor or term; and represent different risk profiles from a debt provider perspective. The growth in the SHS market has led to the emergence of established players operating at a scale that requires access to local currency and commercial finance to support the sustainable growth of their organisations, rather than just raising more equity. In particular, these companies are looking to leverage the value of their consumer receivable assets - the bundle of loans that they have given to their customers to buy their products. They can either do this by borrowing on-balance sheet, using the value of the receivables as collateral, or by applying an off-balance sheet securitisation approach involving the creation of an SPV. Most of the transactions in the C&I space have involved businesses making outright purchases of solar equipment, which is prohibitive to scaling up the sector. With the emergence of leasing and solar-as-a-service business models by C&I providers, these companies seek to raise local currency financing from local/ regional banks. The green mini-grid market is at early stages of development and the viability of the projects vary significantly based on technology, consumption and location. GMG developers require longer tenor loans to scale their operations and to complement commercial equity. GMG projects often require grants or subsidies to improve the viability of the project.

There is a strong case for developing the capacity and capabilities of local financial intermediaries to provide competitively priced term credit products. Despite the potential of DRE solutions and growing market demand, there are particular market hurdles currently preventing local financial intermediaries from engaging the sector. The risks associated with renewables projects are perceived to be high by commercial investors and financial institutions, mainly due to a lack of capacity to assess such projects and a lack of historical track record. In particular, financing of DRE projects has been limited given a variety of factors including: (i) limited access to private capital and local currency financing; (ii) tenor mismatch; (iii) high costs of capital and collateral requirements which impact the affordability of proposed energy solutions; (iv) risk related to consumers' default payments; and (vi) the high transaction costs for financiers and developers, including development finance institutions. Low savings rates across the region and capacity limitations at local financial institutions also restrict the availability of finance (especially in local currency). These market barriers have so far prevented the participation of local financial intermediaries to finance DRE businesses.

Credit enhancement instruments can play an instrumental role in increasing the supply of finance from local banks and commercial investors by derisking and strengthening the bankability of projects, thereby catalysing the participation of commercial investors in the sector. Guarantees and subordinated debt will mitigate the risk of payment defaults for LFIs and commercial investors, allowing for lower collateral requirements and tenor extensions and, where possible, improving the financing terms on offer from lenders and investors.

Mitigation and Adaption Needs and Benefits

The Framework will contribute to climate change mitigation and reduced carbon intensity through scaling-up renewable energy to meet the growing electricity demand. LEAF will mitigate greenhouse gas emissions in the selected countries through enabling the deployment of SHS and green mini-grids at scale, providing households and small businesses with emissions-free access to energy and displacing fossil fuel energy solutions. Captive power solutions will displace diesel generators and the fossil fuel-based grid for commercial and industrial use, helping businesses transition to clean electricity, reducing over time their electricity bills when systems are paid back, and promoting DRE in each country. The Framework is expected to establish 386MW generating capacity through off-grid renewable energy solutions, thereby avoiding a total of 28.8 million tCO2 (over the lifetime of the DRE equipment installed as a result of the LEAF projects).

The first phase of the Framework focuses on six countries – Nigeria, Kenya, Ghana, Tunisia, Ethiopia and Guinea. Climate observations and projected changes in these countries include rising temperatures and evaporation rates, increased interseasonal and unpredictable rainfall patterns, more severe dry seasons and rising sea levels. This leads to increased droughts, floods, landslides, storms, and wildfires in the countries. In Kenya, Nigeria, Ghana, Guinea and Ethiopia, agriculture is dominated by small-scale subsistence farmers who remain heavily dependent on rain. Only 1-3 percent of cultivated land is irrigated in these countries. This leaves the sector, that is the primary livelihood for the majority of households, highly vulnerable to changing climate and weather patterns, including severe climate induced drought and shorter rainy seasons. Furthermore, increased evaporation rates and more severe droughts threaten hydropower production in Kenya, Nigeria, Ghana and Guinea. Hydro production, which accounts for about one-half of domestic electricity production in Kenya, reduced e.g. by up to 40 percent in drought years, leading to persistent power outages and reliance on more expensive petroleum-based thermal generation. Lastly, climate change will likely exacerbate health issues related to respiratory infections (already responsible for 19 percent of deaths in Nigeria) as air pollution is expected to worsen with rising temperatures.

[5] Green mini grids are mini-grids that generate their power from renewables using battery storage

By increasing access to electricity and solar powered productive tools and appliances, the LEAF framework is expected to provide adaptation co-benefits by: i) increasing economic and educational opportunities, and enabling the creation of new livelihood strategies, diversifying and increasing income streams; ii) encouraging more active engagement in society and access to information related to climate, agro-climate and early warning information through solar powered communications and ICT (radios, TVs, and mobile devices); iii) improving health by displacing harmful fossil-based solutions with clean energy solutions, thereby eliminating indoor pollution; and iv) providing affordable, reliable and clean energy, reducing dependence on hydropower production that is sensitive to climate change. Depending on opportunities in the countries, LEAF may in particular provide adaptation co-benefits to farmers through: v) improved crops processing or use of drip irrigation powered by solar pumps to improve crop production and/or diversify livelihood options (gardening and horticulture); and vi) improved food and nutrition through refrigeration and small agro-processing opportunities at various scales - household to industrial (e.g. drying, packaging, cooling, crushing, and processing).

Considering that most projects target off-grid and climate-vulnerable communities, adaptation benefits are expected as a result of LEAF. The LEAF Framework is a mitigation programme, as opposed to crosscutting, given is not possible to quantify adaptation impact at this stage given that underlying projects are unknown at the time of submission of the funding proposal and lack of data. To increase understanding of adaptation benefits of DRE projects, the Programme will conduct a comprehensive study/assessment per country, focused on the relevant technologies targeted in the countries by LEAF. These assessments will confirm climate change hazards in the geographic areas based on science, climate vulnerabilities and exposure, and the link between these climate vulnerabilities and energy access to reduce vulnerability of beneficiaries. The reports are expected to include (guidelines on) indicators to measure adaptation impact in the DRE sector. These knowledge documents and information can be used to confirm potential adaptation impacts of LEAF sub-projects, as well as provide guidance to the GCF, AfDB and other stakeholders when designing DRE projects with integrated adaptation benefits in the future.

The Do-Nothing Option

In order to understand the most-likely outcome should the LEAF Framework not be pursued to conclusion, it is necessary to appreciate the market barriers (see section B2) limiting investments from the private sector, especially local financial institutions and commercial investors in DRE solutions highlighted above. LEAF will address the high perceived risk, high costs of capital, high collateral requirements and tenor mismatch by providing credit enhancement instruments, while it addresses the lack of capacity of LFIs to assess and engage DRE projects through the TA component. In the absence of the LEAF Framework, these existing market barriers will continue to inhibit the successful deployment of DRE at scale, resulting amongst others in limited green energy access offers in off-grid areas where the population will continue relying on fossil fuel and disposable batteries for electricity, overall leading to approximately 28.8 million tCO2e of GHG emissions that could otherwise be avoided. Public policy instruments in the program countries are being used to try to, directly and/or indirectly, help promote DRE (e.g. gradually phasing out electricity price subsidies, partial grants for equipment purchase, etc.) but are not considered enough for it to happen at scale without support from the private sector (e.g. thanks to concessional finance, de-risking instruments and capacity building by LEAF). Energy sector investments will need to more than double from today's level in order to achieve universal electricity access by 2030, requiring an annual average investment of USD 51 billion (IEA, 2018). In addition to public financing, significant private financing is required to address energy needs and climate change.

Methodologies Used

To quantify the mitigation impact of the LEAF Framework (accumulated baseline emissions avoided) the following indicators are used, and steps followed:

- Estimated RE capacity (MW) to be installed in each country;
- Estimated annual production per technology / RE system (MWh);
- Assumptions made to establish baseline emission factors according to different methodologies / baseline sources;
- Estimated annual million tCO2e avoided by the implementation of the Framework per country and RE system;
- Estimated the lifetime of the three different RE systems (5 years for SHS, 25 years for mini-grids and captive power); and
- Total avoided GHG emissions during the lifetime of the different RE systems.

Country-specific context

Context: In describing the mitigation and/or adaptation needs, briefly describe the target region/area of the proposed interventions including information on the demographics, economy, topography, etc.

The first phase of the Framework focuses on six countries - Nigeria, Kenya, Ghana, Tunisia, Ethiopia and Guinea – with proven market potential and where the Bank is actively pursuing investment opportunities. Specifically, LEAF will play an instrumental role in supporting the Bank's business development efforts in these countries, including financing leading

market players in the SHS and C&I space, greenfield initiatives in Tunisia with local banks, and SEFA-supported mini-grid acceleration programmes in Nigeria, Guinea and Ethiopia. This country diversity will enable the Bank to explore differentiated market development strategies, from first generation mini-grid scale-up programmes (Ethiopia and Guinea), to expansion of established SHS and C&I companies (Kenya, Nigeria and Ghana), and acceleration of renewable energy transition of businesses (Tunisia). The focus on the different sub-sectors in the countries is based on market potential and enabling regulatory framework, however, the programme can support all subsectors in the 6 countries pending opportunities and state of the market.

Ghana. Ghana is a low-middle income country of 30.4 million, with a GDP per capita of $US 2,202. Its main productive sectors are services (44% of GDP), industry (32% of GDP) and agriculture (17% of GDP). The country has an overall electrification rate of 82%, leaving 6 million people without energy access. It relies on hydro and thermal power for its energy, with contributions of 38% and 61% of installed capacity respectively and produces 49% of its electricity from Hydropower and 51% from natural gas (IEA, 2018). Its overdependence on hydro sources for electricity generation leads to significant generation capacity variation due to its uncertain rainfall pattern and inflows into the hydropower facilities (Trading Economics, 2020).

Scaling up renewable energy is one of the key objectives of the country's Nationally Determined Contributions (NDCs) with a target to increase penetration by 10% by 2030. The enabling environment for off-grid solar in Ghana is seen as highly supportive. Established PAYGO SHS companies include PEG, Zola, Azuri and Translight Power, seeking growth capital to expand their businesses. With tariffs for C&I customers being relatively high, by Sub-Saharan African standards, currently US$0.25/kWh for commercial and US$0.16/kWh for industrial use, the commercial case for renewables captive power solutions is strong (see Figure 3). Key players in the C&I space include Daystar Power, Yingli Namene and Translight Solar. Ghana's total GHG emissions in 2017 were 53.3 MtCO2e, with energy being a predominant source of emissions, accounting for 50%. Ghana's emission reduction goal is to unconditionally lower its GHG emissions by 15 percent relative to a business-as-usual (BAU) scenario emission of 73.95MtCO2e 2 by 2030. Through the LEAF's proposed interventions, a reduction in GHG emissions is estimated of approximately 1.6 MtCO2e, which would be over 14% of the unconditional emissions reduction target. LEAF will thus contribute substantially towards the national emission reduction target.

Nigeria. Nigeria has a population of 201 million and a GDP per capita of US$ 2,230. Its main productive sectors are services (50% of GDP), industry (27% of GDP) and agriculture (22% of GDP). Nigeria's overall electrification rate is 54%, leaving over 92.4 million people behind. Nigeria produces approximately 82% of its electricity from fossil fuels and the remainder primarily from hydro (IEA, 2018). As a result of inadequate supply, households, companies, and industries have resorted to purchasing self-generation technologies, predominantly in the form of small-scale diesel and petrol generating sets. It is estimated that consumers spend between US$14 billion and US$30 billion each year on such solutions. Poor grid reliability and falling costs of solar technology compared to back-up diesel generators contribute to making the Nigerian C&I market the largest in SSA. Key players in the segment include Daystar Power, Consistent Energy and Crossboundary Energy, all of which require significant investments to grow their businesses.

13.2 million people in Nigeria would be best served by mini-grids, representing an annual mini-grid market size of USD $994 million. Mini-grid regulations introduced in 2017 pave the way for the sector with a robust Multi-Year Tariff Order policy supporting isolated and grid-connected mini-grids. Key players in this sector include Green Village Energy (GVE), Blue Camel Energy and Arnergy. The Nigerian SHS market is well established through companies such as Lumos, Azuri, D.Light and Greenlight Planet. SHS companies have expressed interest in trying to adopt the consumer receivables financing model, offering opportunities for (local currency) investment. High collateral requirements (as high as 120%), high interest rates and short tenors are some of the challenges in accessing financing from LFIs. Credit enhancement products and concessional debt can play an instrumental role in crowding-in local financial markets.

LEAF complements the Bank's and other partners' efforts in developing the DRE market in Nigeria, including the Nigeria Electrification Project initiative (financed by AfDB and the Worldbank) that seeks to provide electricity access to off grid communities through renewable power sources and the Bank's established efforts in building the mini-grid industry, including AMAP, which aims to transform the scale of public and private investments in mini-grids and the Green Mini-Grid Market Development Programme. Nigeria's total GHG emissions in 2017 were 483.2 MtCO2e, with the energy sector accounting for 37% of emissions. Through the proposed interventions of the LEAF, a reduction in GHG emissions is estimated of approximately 10.5 MtCO2e**.** Therefore, LEAF will provide additionality by addressing some of the market barriers facing rapid deployment and uptake of mini grids. It will compliment ongoing effort to use a systemic approach to increase electricity access in off-grid communities. LEAF will support capacity strengthening of regulatory activities to scale up of private investments through the deployment of innovative business models and financing that focuses on achieving cost reductions in mini grids.

Kenya. Kenya has a population of 52.5 million and a GDP per capita of US$ 1,820. Its main productive sectors are services (43% of GDP), agriculture (34% of GDP) and industry (16% of GDP). Kenya's economy is highly dependent on climate sensitive sectors such as agriculture, energy, manufacturing and tourism. Climate change impact has caused considerable losses across the country's different sectors over recent years; economic losses resulting from droughts and floods are estimated at 3% of Kenya's Gross Domestic Product (GDP) (Kenya, 2015). Kenya has a 75% electricity access rate. Production of electricity mainly comes from geothermal (44%), hydro (34%) and fossil fuel (18%). In 2018, Kenya launched its 5-year national electrification strategy to increase access to energy in the country and achieve 100% of energy from renewable sources. In the plan, the Government of Kenya has recognized the importance of leveraging private sector capital and innovative DRE models. The plan includes expansion of the grid (3 million connections), additional mini-grids (35,000 connections) and SHS (2 million connections) (Kenya, 2018). To achieve universal access to electricity, the plan estimates that Kenya requires USD 458 million of private sector investment in solar home systems. However, lack of incentives for private sector participation is identified as one of the barriers that limit universal access. LEAF's interventions will therefore provide the needed incentives to enhance private sector investments and supporting governments to create the enabling policies needed for private investment.

Kenya is the birthplace place of pay-as-you-go SHS models, that are being rolled out across Africa, and has one of the most developed SHS markets on the continent. SHS companies have been mainly financed through equity and hard currency loans. As the sector continues to mature, the larger companies will need to apply consumer receivables financing models to free up the working capital required to support expansion and sustainable growth. Although there are some examples of companies raising local currency debt, e.g. Mkopa, challenges persist with local banks not willing to lend on reasonable terms, contributed to by their lack of understanding of the business model and the perceived credit risk of SHS providers. C&I presents an opportunity for Kenyan businesses to significantly reduce their energy costs going forward. Access to debt finance is noted as a main constraint of C&I developers seeking to expand operations. The C&I market is relatively new market, which is why local banks have yet to build up an understanding of it.

Kenya's total GHG emissions in 2017 were 49.7 MtCO2e, with the energy sector being a predominant source of emissions, accounting for 63% of emissions. In its updated Nationally Determined Contributions (NDC), submitted in December 2020, the country increased its ambition to abate emissions by 32% (up from 30%) by 2030 relative to the business as usual (BAU) scenario. Among the priority mitigation activities include use of clean, efficient and sustainable energy technologies to reduce over reliance on fossil and non-sustainable biomass fuels. Through the proposed interventions of the LEAF, a reduction in GHG emissions is estimated of approximately 1.2 MtCO2e, which will contribute to emission reductions that arise from energy demand.

Tunisia. Tunisia has a population of 11.7 million and a GDP per capita of US$ 3,320. Its main productive sectors are services (59% of GDP), agriculture (23% of GDP) and industry (16% of GDP). Tunisia is a lower-middle income country that has been pursuing economic liberalisation policies since the 1980s. In more recent times, growth has been averaging at 2% over the last ten years (World Bank, 2020). In Tunisia, the growing economy and rise in living standards has contributed to a significant increase in electricity consumption leading to frequent grid saturation. Tunisia has an electricity access rate of 99%. Approximately 94% of the installed electricity capacity in the country comes from natural gas, with renewable energy sources accounting for the remaining 6% of the country's energy mix (wind power, solar and hydro) (Tunisia Ministry of Energy, 2019). Tunisia's total GHG emissions amounted to 40.73 MtCO2e in 2017, with the energy sector representing 69% (28.16 MtCO2e).

Facing a political and economic crisis as a result of the 2011 revolution and accompanying political instability, Tunisia is phasing out electricity subsidies, affecting businesses already under strain due to the economic crisis and now the COVID-19 pandemic. Solar installations are becoming more attractive to C&I customers considering the reduced cost of solar technology and expected reduction in tariff subsidies (increasing the electricity price, with all subsidies expected to be eliminated by 2022). Most systems are currently bought upfront, which is prohibitive for scaling up the sector. C&I companies are seeking capital for leasing models. High collateral requirements have been prohibitive for businesses to obtain finance from LFIs. Guarantees can alleviate the credit risk to financial institutions and encourage them to offer loans to customers to support renewable energy or energy efficiency projects.

The Tunisian Nationally Determined Contributions (NDCs) establish an overall goal of a 41 per cent reduction in the country's GHG emissions intensity by 2030 (compared to 2010 levels). The energy sector is responsible for more than half of Tunisia's emissions and Tunisia aims to reduce its carbon intensity by 46 per cent compared to 2010 levels. To meet its mitigation goals, the government aims to increase the share of renewable energy against total electricity generation to 30 per cent by 2030 as per the Tunisian Solar Plan (TSP). To attain this, target the GoT set a target capacity of power production of 3,815MW, comprising of wind (1,755MW), solar PV (1,610MW), concentrated solar power (450MW) and biomass resources (100 MW). The Framework intends to contribute to mitigation impact in Tunisia by a

total of an estimated 1.5 million tCO2e, through captive power solutions which would approximately amount to 6% of the 2017 energy sector emissions.

The TSP is the main element of public policy to promote and scale up clean energy in Tunisia, including DRE. However, the country's track record as well as the opinion of the private sector stakeholders (LFIs, project developers) confirms that the incentive mechanisms thus far put in place (limited grants for equipment purchase, RE power purchase at subsidised prices by STEG) are not enough to enhance the scaling up of renewable energy development in the C&I sector (particularly both SMEs and small IPPs). PST structures the legal framework into three categories: (i) Authorization for smaller IPPs of up to 10 MW for solar and up to 30 MW for wind; (ii) Concessions for power plants over 10 MW for solar and over 30 MW for wind; and (iii) Self-consumption that allows any public or private local body to produce electricity from DRE for self-consumption (Law Nr 2015-12 Art. 5), the sale of electricity surplus to the national utility company STEG (Decree Nr 2016-1123) and the supply of DRE from a third party to businesses for a capacity of above 2 MW (Decree Nr 2020-15). This regulatory framework had an initial target capacity of 180 MW by 2020. However, only 30 MW of DRE has been developed to date mainly due to a lack of access to finance. In Tunisia, LEAF will support the energy diversification and security, accelerating the country's transition to renewable energy.

Ethiopia. Ethiopia has a population of 112 million and a GDP per capita of US$ 858. Its main productive sectors are services (37% of GDP), agriculture (34% of GDP) and industry (25% of GDP). The overall electrification rate in Ethiopia is 44%. Ethiopia's current energy profile reflects a staggering dominance of bioenergy. Biomass constitutes approximately 90% of total final energy consumption, fossil fuels account for 8.5%, and renewable electricity accounts for only 1.5%. Ethiopia currently consumes an estimated 0.1 MWh per capita per year, half as Kenya and Nigeria (each 0.2 MWh per capita) and only 7% of Tunisia's per capita consumption as a comparison. However, current electricity demand growth is more than 25% per annum, one of the highest growth rates in Africa.

The electric grid system consists almost entirely of hydropower, with wind and geothermal completing the mix. Given the country's heavy reliance on hydropower, climate change and climate variability are key concerns for the reliability and consistency of power generation and supply (Cities Alliance, 2017). Climate change models suggest a future increase in variability of hydro resources. Substantial legislative changes are being implemented to promote private sector off-grid solutions under the second Growth and Transformation Plan (GTP II) (Ethiopian Energy Authority, 2020). There is a significant potential for mini-grids to increase electrification rates. 13 million people would be best served by mini-grids, requiring a total CAPEX investment of US$ 2.581 million. Significant policy and market reforms are required to foster growth in mini-grid sector especially through private sector investment, whose participation in the country remains limited due to factors such as lack of access to affordable debt finance. The LEAF programme interventions will address this challenge and enable the scaling up of investments from private sector in the mini-grid sector, subsequently reducing the use of diesel generators and resulting emissions. As the national utility does not operate mini-grids at a large scale as they tend to be too small and scattered for efficient management the private sector's role is important in filling that gap. Ethiopia's National Electrification Program 2.0 targets to achieve 35% of electricity access by 2025 from off grid solutions. Total GHG emissions in 2017 were 193.6 MtCO2e, with energy accounting for 26% of emissions. Through the proposed interventions of the LEAF, a reduction in GHG emissions is estimated of approximately 11 MtCO2e.

Guinea. Guinea has a population of 12.8 million and a GDP per capita of US$ 1,064. Guinea's economy was badly hit by the 2014–2015 Ebola outbreak and recent commodity price shocks resulting from weak global economic growth, appreciation of the dollar, and rising borrowing costs. 70% of Guineans earn their living in a climate-sensitive sector, growing crops such as rice and cocoa which are highly vulnerable to changes in climate. Guinea is known as Africa's "water tower", the country's highlands being home to the headwaters of three major river systems, the Gambia, the Niger, and the Senegal. Guinea produces 67% of its electricity from hydro and the remaining 33% from fossil fuels (Indexmundi, 2020). Guinea suffers from recurring floods and climate change is exacerbating this challenge. Given that several dams along the rivers provide much of the country's hydropower, climate change is expected to reduce flows of northern rivers, such as the Milo, by up to 70 percent by 2100 (USAID, 2018), negatively impacting energy supply.

Guinea's electricity access rate is 44%. It is estimated that 5.94 million people in Guinea would be best served by mini-grids. The AfDB, through SEFA, has provided financial support to the Guinean government to finance pre-feasibility studies targeting the construction of 57 green mini-grids in rural areas. LEAF will support these efforts and the scaling of GMG by providing guarantees and subordinated debt at concessional rates to unlock debt and local currency financing. Total GHG emissions in 2017 were 44.8 MtCO2e, with the energy sector accounting for 13% of emissions. Based on its Nationally Determined Contributions (NDC), Guinea intends to produce 30% of its energy (excluding wood-energy) from renewable energy sources. Through the proposed interventions of the LEAF, a reduction in GHG emissions is estimated of approximately 2.9 MtCO2e.

Considering the specificities of the focus countries, LEAF's strategy is therefore to finance a series of markets at different maturity levels so that the experience can be widely shared for the future pathways of diverse countries facing similar challenges.

Whilst SHS and mini-grids support energy access, the rationale for C&I is highlighted by the potential of solar technology as a cheaper and cleaner technology than current solutions as demonstrated by the following diagram that provides a comparison of C&I and grid tariff in Nigeria, Kenya and Ghana:

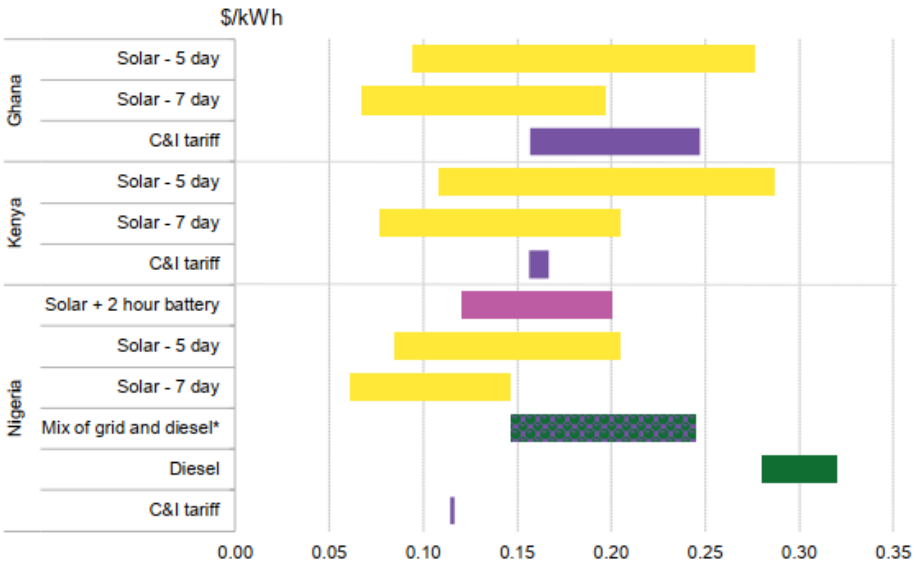

Figure 3: Economics of grid and C&I tariffs in selected focus countries (source: BNEF, 2019)

Related projects/interventions
Related projects/interventions: Also describe any recent or ongoing projects/interventions that are related to the proposal from other domestic or international sources of funding, such as the Global Environment Facility, Adaptation Fund, Climate Investment Funds, etc., and how they will be complemented by this project/programme (e.g. scaling up, replication, etc.). Please identify current gaps and barriers regarding recent or ongoing projects and elaborate further how this project/programme complements or addresses these.

Complementarity with other GCF initiatives. The LEAF Framework will complement existing GCF projects that support DRE, including the Universal Green Energy Access Programme (FP027), Transforming Financial Systems for Climate (FP095), KawiSafi Venture Fund (FP005), and EBRD SEFF Co-financing Programme (FP025), by deploying credit enhancement instruments, such as first loss guarantees, partial credit guarantees, tenor extension guarantees and subordinated debt. Additionally, LEAF will support larger projects (greater than $US 20 million project size), develops receivables-backed financing structures and has a different geographical coverage than other proposals. The Framework will unlock local currency and commercial financing and crowd in local financial institutions and private investors to scale DRE.

Complementarity with other AfDB initiatives. LEAF will play an instrumental role in supporting the Bank's business development efforts in these countries through a number of programmes with targeted finance and technical assistance including: the Sustainable Energy Fund for Africa (SEFA provides financing for the design and preparation of bankable projects, investment capital for small and medium sized sustainable energy projects, technical assistance for capacity building in enabling environment for green energy), the Green MiniGrid Market Development Programme (that supports the scale-up of investments in GMG projects through a broad range of interventions to improve the enabling environment, including market intelligence, business development support, policy and regulatory support, access to finance, and quality assurance), the Facility for Energy Inclusion's On-Grid Window (a USD 400 million debt fund to provide flexible, sustainable, and efficient financing to support the expansion of energy access through the development of small-scale renewable energy generation and mini-grids) and SEFA's support for the development and launch of the Nigeria Energy Access Fund (NEAF), a new private equity fund developed by All On, a Nigerian impact investment. The LEAF Framework will support a larger scope of DRE compared to the DESCO Financing Framework, including SHS, captive power and mini grids. Its value proposition compared to other AfDB initiatives are the credit enhancement instruments (subordinated

debt and guarantees), which allow for de-risking the sector and enhancing local currency financing to scale up DRE initiatives and programmes.

Framework relevance in light of Covid-19
The LEAF Framework is particularly relevant in light of the Covid-19 crisis and the emerging needs of the energy access sector. Due to reduced budgets and increased debt, country governments are refocusing priorities and resources towards their Covid-19 response and the emerging strained economic realities, potentially threatening their ability to reach ambitious national energy transition goals. LEAF supports access to finance which is expected to become scarcer in future years as a result of the economic impacts of the crisis, and it will accelerate the achievement of SDG 7: Access to affordable, reliable, sustainable and modern electricity for all. The following points summarize the Framework's contribution to Covid-19 response:

- The Framework pipeline includes the COVID-19 Off-grid Recovery Platform (CRP), a cornerstone operation of the AfDB's response to the COVID-19 pandemic in the energy access sector. The main objective of the Platform is to support DRE companies' resilience amid the pandemic shock. Access to finance for DRE is likely to become more challenging. Uncertainties arising from the impact of the pandemic and the resulting economic downturn are likely to make local FIs even more risk averse leading to them suffering higher credit losses and a resultant negative impact on overall asset quality, capital and liquidity. The Framework's de-risking instruments will address this by relieving local financial institutions from additional risks.
- Access to energy is critical to the provision of healthcare services for the powering of lighting, refrigeration, medical equipment, and other appliances. In sub-Saharan Africa, an estimated 30% of healthcare facilities have access to energy. A key challenge precluding healthcare identification is the definition of viable business models that can ensure the long-term delivery of energy services. LEAF may finance DRE companies that provide electricity for health centers.

B.2. Theory of change (max. 1000 words, approximately 2 pages plus diagram)

Market Barriers

Limited access to finance and de-risking instruments:
Private investment in the DRE space has historically been limited due to questions concerning the commercial viability of such projects. The DRE business model relies mainly on an income stream from consumer payments as a result of their energy consumption. In this case consumers play the role of multiple off-takers. Whilst a multiple off-takers model reduces the concentration risk of payments, there are new challenges to secure steady revenue as target consumers in remote off-grid areas have low-incomes, low purchasing power, and seasonal revenues, mainly from the agriculture sector. The commercial viability of mini-grids is affected by non-cost reflective tariffs which reduces electricity prices for consumers. Households and small businesses in rural areas limit their consumption of electricity due to affordability issues. Companies often rely on equity investment and venture capital to finance their projects, types of capital which are often unsuited to longer tenors.

Commercial banks prefer to provide short-term loans at high rates, and, in some cases, they refuse to finance DRE businesses as this is the case with some banks in Kenya and Nigeria. For Development Financing Institutions such as AfDB, financing the sector is often challenging as many DRE businesses are small-scale and DFIs are not designed to finance small projects. DFIs often rely on financial intermediaries such as funds and local banks to finance portfolios of these small-scale projects. De-risking instruments such as guarantees are also limited as these have been traditionally used for large investment projects and less for projects which rely upon consumers' revenue.

Scarce affordable capital in the context of the COVID-19 pandemic:
To respond to the COVID-19 pandemic, African governments have refocused their priorities and resources towards their Covid-19 response and the emerging strained economic realities. As such, countries have increased debt, potentially threatening their ability to reach ambitious national energy transition goals. The lack of access to finance for DRE companies has been exacerbated by the pandemic and is expected to become scarcer in future years following the economic crisis created by the pandemic. With the lockdown limiting sales activities and limited access to capital, DRE companies are particularly hit by the pandemic and are struggling to mobilise capital to survive the crisis and grow. Furthermore, DRE solutions are critical for off-grid healthcare facilities as they present a faster solution to ensure delivery of essential energy services. Both relief and recovery capital are much needed to safeguard the sector and continue the green electrification agenda of African countries.

Limited access to local currency finance:

As mini-grid, SHS and C&I businesses rely on consumer payments, local currency debt plays a crucial role to finance growth and expansion of DRE companies. It reduces the risk of currency mismatch between loans and revenues. In countries with volatile currency such as Kenya, Nigeria, Ghana and Tunisia, the currency risk leads to significant increase of the financing costs. However, despite the growing demand for local currency financing, local banks have been largely absent in the DRE sector.

Lack of local FI capacity and market data:
According to the market assessment study (CEPA, 2019), local financial institutions (FIs) including banks and leasing companies lack the required experience and financial capacity to assess and develop robust financing structures to finance and mitigate key risks of DRE. The lack of capacity is often justified by the relatively nascent nature of the market and the resulting limited market information. Furthermore, data and benchmarking studies are required to increase investors' confidence in the sector.

Enabling Environment:
Although the private sector plays an important role in the DRE sector, enabling policies are often designed to enable public investments and often fail to address the key regulatory challenges of private stakeholders. Mini-grid investments often face a lack of licensing frameworks for private mini-grids and cost-reflective tariffs, like in Ghana and Ethiopia. In the C&I space, few countries are adopting net metering regulation. In Ghana, the net metering regulation, which allows consumers to sell the surplus of electricity produced to the grid, has been put on hold following a pilot conducted by the national utility company. In Tunisia, sales of surplus electricity have been capped to ensure utility revenue. Licensing processes are unclear and lengthy, leading to additional risks in investments. Finally, regulation is often inefficient and complex and, in some countries, for example in Tunisia, requires an independent regulator to support private investments. By addressing financing and policy barriers in the focus countries, the Framework will harness the potential of DRE to accelerate access to electricity and enable businesses transition to clean electricity.

Without addressing these barriers, private investments will remain limited to international and impact investors and the broader pool of commercial investors will not be able to invest, limiting the deployment of DRE solutions.

The following table summarises the key barriers and how they will be addressed by the Framework.

Type of barrier	Barrier	Area of intervention	Programme activities that address the identified barrie
1. Financial	- Limited access to finance and de-risking instruments - High capital cost - Tenor mismatch between available loans and required DRE capital terms - A large market of small-scale DRE businesses	1.1 mobilise and de-risk commercial investment in SHS, mini-grids, C&I	Activity 1.1.1: provide concessional guarantees to unlo commercial investment Activity 1.1.2: provide subordinated concessional debt instruments to cover commercial investors risk and ma concessional capital available Activity 1.1.3: Develop structured facilities and receiva backed financing transactions to mitigate consumers c risk Activity 1.1.4: Deploy concessional sub-debt and guar finance a portfolio of DRE businesses through Financi Intermediaries (holding company, Fund, multi DRE co SPV – aggregators) Activity 1.1.5: Deploy tenor extension guarantees to LI
	Limited access to local currency finance	1.2. mobilise local currency finance in SHS, mini-grids, C&I	Activity 1.2.1: Provide concessional guarantees (first lo passu) to local currency funding provided by commerc investors
2. Covid-19 crisis	Scarce affordable capital for growth	2.1 deploy and mobilise COVID-19 recovery funding for DRE companies in mini-grid, C&I, SHS	Activity 2.1.1: Provide concessional debt to DRE comp through the Covid-19 Off-grid Recovery Platform or an intervention of similar nature
3. Lack of capacity	Lack of local FI capacity to engage DRE	3.1 provide TA support to LFIs to increase their investment in the DRE space	Activity 3.1.1: Capacity building of FIs to increase their understanding of the market and identify, assess and f DRE companies Activity 3.1.2: Support the structuring of strong and via innovative financing structure

	Unclear/complicated/ licensing framework, Lack of independent regulator, High VAT and import duty, Prohibitive net metering (C&I) and tariff (mini-grid) regulations	3.2 support governments in enabling policies for private investment in SHS, Mini-grid, C&I	Activity: 3.2.1: TA to focus countries to support the development of enabling policies and frameworks
	Existing gaps in the interlinkages between energy access and adaptation	3.3 country level adaptation assessments	Activity 3.3.1: A country-level assessment will be undert for each country to determine the link between energy ac and adaptation and confirm potential adaptation impact.
	Remaining gender gaps and inequalities in the DRE sector leading to lower share of women as customers and employees	3.4 Address existing gender gaps and inequalities in the DRE sector	Activity 3.4.1: Conduct national gender assessments an refine gender action plans for each country Activity 3.4.2: Support the development of strategies an marketing campaigns for DRE companies to increase sh female customers Activity 3.4.3: Develop gender inclusive recruitment and policies to increase women at the workforce of DRE companies

Through the LEAF activities listed above, the framework intends to create the following outcomes:

- Establish 386MW generating capacity through off-grid renewable energy solutions, of which some may also feed into the grid, generating annually 1.2 million MWh energy.
- Reduced emissions by 28.8 million tCO2 over the lifetime of the equipment implemented by the sub-projects.
- Increased access to electricity to over 5.9 million people, including 50% women.
- Improved ability of an estimated number of 20 local FIs[6] to self-support future lending activities once the Framework period is complete.
- The development of stronger country-level DRE policies, enabling further private sector investment as DREs become more attractive.

LEAF theory of change diagram.

Energy is responsible for a large proportion of emissions in the target countries, where fossil fuel-based energy sources dominate the market. As energy demand rapidly increases in the target economies (electricity demand is expected to be more than double by 2040 compared to today[7]), increasing the proportion of RE sources will become urgent, if development is to follow a low-carbon pathway. Use by vulnerable households of renewable energy powered productive tools and appliances, is expected to strengthen their adaptive capacity and reduces exposure to climate risks through adaptation co-benefits. To support these countries in their energy transition plans, key barriers must be lifted, including first and foremost, the provision of additional capital to support private sector investment in renewable energy, but also barriers related to risk perception attached to DRE investments among local Fis and commercial investors. The Framework will facilitate private sector access to commercial and local currency financing, building the capacity of local stakeholders to deploy DRE at scale. The key proposed solutions to address the barriers are: (i) deploying de-risking concessional financing instruments (first loss guarantee, subordinated and concessional debt); and (ii) capacity building and technical support to financial institutions and governments. Without addressing these barriers, the market for DRE investments is likely to remain limited in the focus countries and commercial and local investors will not be willing to bear the associated risks. Cost of capital will remain high as the perception of high-risk will remain and access to local currency finance will remain either unavailable or too expensive. In lifting the market barriers, DRE companies will gain access to additional commercial capital, enabling them to grow and expand their businesses, resulting in additional clean energy connections and reducing and/or avoiding GHG emissions.

Assumptions underlying the theory of change include a continued rate of rapid growth in demand for renewable energy solutions to address lack of energy or obtain reliable, clean and cost-efficient energy. The decentralized renewable energy sector is growing with an increasing number and size of private sector companies in Africa, and examples of profitability even under current policy conditions are available. The project also assumes that to expand business operations, DRE

[6] The estimated number of 20 LFIs is indicative as it is based on the current indicative pipeline
[7] IEA (2019). Africa Energy Outlook 2019.

companies will continue to seek to raise local currency financing from local banks and that there will be an increasing number of operations who can absorb the finance provided under LEAF. It is also assumed that local financial institutions will be willing to lend to the DRE sector, once appropriate de-risking instruments and capacity building support are provided, enabling them to engage the sector. Finally, the project is based on existing country governments' willingness to develop enabling policies to support DRE and encourage greener energy solutions to diversify the energy mix in their countries.

The theory of change diagram in the figure below details how the Framework activities lead to achieving program goals based on activities, results, and outcomes.

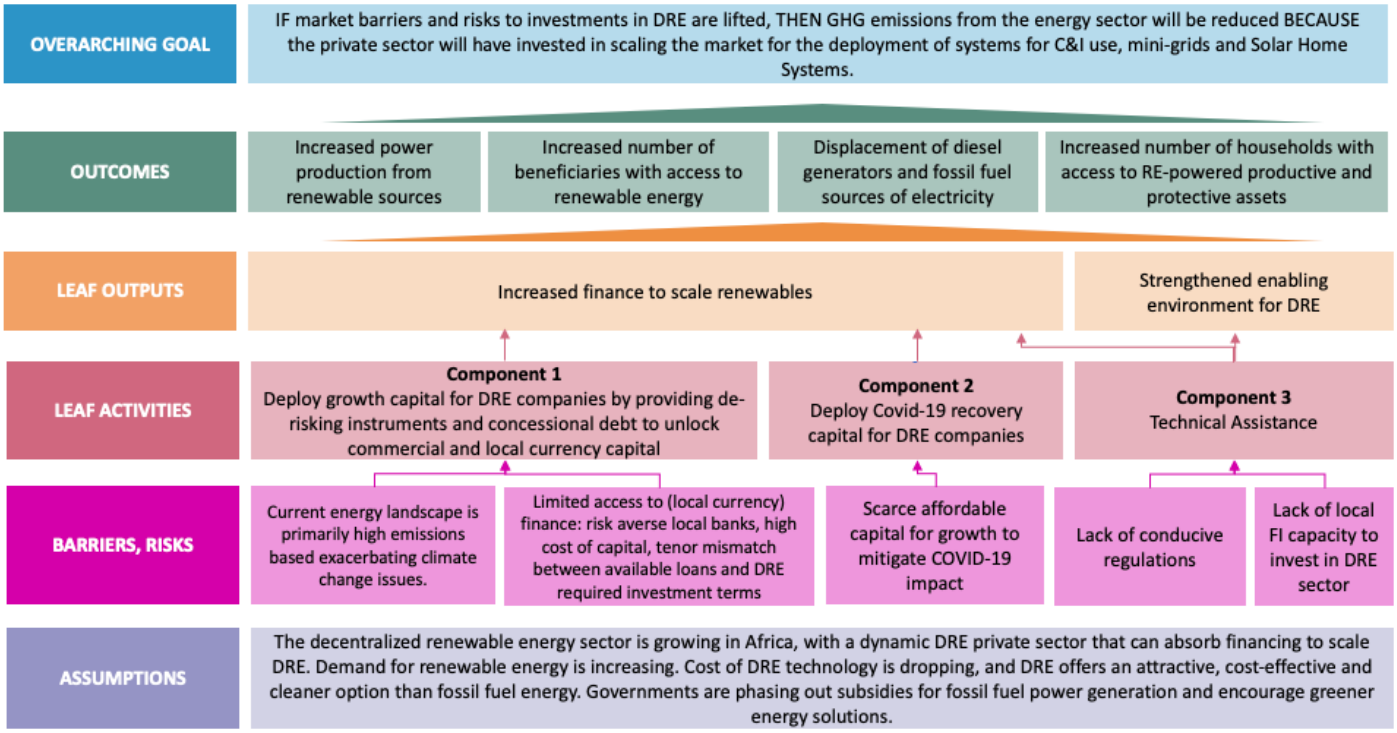

Figure 4: Theory of Change of the LEAF Framework

B.3. Project/programme description (max. 2000 words, approximately 4 pages)

Definition of the project/programme

Define the project/programme. Describe the proposed set of components, outputs and activities that lead to the expected Fund-level impact and outcome results. Components should reflect the project/programme level outcomes. This should be consistent with the financing by component in section C.2, the results and performance indicators provided in section E.5, and the implementation timetable in annex 5.

The LEAF Framework has the overarching goal to **accelerate access to clean electricity whilst reducing GHG emissions.** It will achieve **this by unlocking access to finance and local currency debt by de-risking investments for the private sector** to support the growth of DRE businesses offering solar home systems (SHS), green mini-grids and captive commercial and industrial (C&I) solutions. Specifically, the programme will avail credit enhancement instruments, including GCF concessional partial credit guarantees (PCG) and concessional subordinated debt, to strengthen bankability and catalyse the participation of commercial investors in the sector, including local financial intermediaries such as local banks and leasing companies (LFIs) for local currency finance. LEAF seeks a contribution of US$ 160 million from the GCF for de-risking and blending with AfDB projects in the form of concessional credit enhancement instruments, including: (i) PCGs to mitigate the risk of payment defaults for LFIs and commercial investors, allowing for lower collateral requirements and tenor extensions; (ii) subordinated debt to mitigate the risk of payment defaults and improve the financial profile of projects crowding in LFIs where possible. PCGs and subordinated debt will cover innovative financing structures such as receivables-backed facilities for lease-to-own business models for households and businesses; and (iii) concessional debt funding to reduce cost of capital and improve the bankability of projects, particularly in the context of COVID-19 recovery. AfDB will contribute with US$ 160 million in Partial Credit Guarantees and debt provided at market rate. The programme is expected to leverage financing from local financial institutions, funds, commercial investors or developers worth US$ 625 million. In addition to the finance provided, the Framework will provide technical assistance

– US$ 10.9 million provided by GCF and US$ 4 million by AfDB[8] – to enhance local financial institutions capacity for DRE investments, support governments in creating an enabling environment for private investment, establish financially sound financing facilities and transactions, confirm adaptation impact through project-level adaptation assessments, and address existing gender gaps and inequalities in the DRE sector.

The Framework focuses on off-grid renewable energy generation in six priority countries: **Nigeria, Kenya, Ghana, Tunisia, Ethiopia and Guinea.** The rationale for these countries is based on: (i) the existing DRE market size; (ii) these countries possess active energy transition programs; iii) the countries are aligned with business development efforts and complement investment opportunities pursued by the Bank; and (iv) although access to finance and local currency capital remain key hurdles to unlock the full DRE growth potential, local financial institutions, including local banks and leasing companies, are willing to invest in the market providing they have access to de-risking instruments and capacity building. The country diversity will enable LEAF to explore differentiated market development strategies. Based on the state of the market and regulatory framework, LEAF is looking to play an instrumental role in financing the expansion of leading market players in the SHS and C&I space (Kenya, Nigeria and Ghana), accelerating energy-efficiency focused businesses and greenfield initiatives in Tunisia, and support mini-grid acceleration programmes in Guinea, Nigeria and Ethiopia. However, the programme may invest in all subsectors in the countries, given opportunities exist and and pending supportive regulatory framework; which may develop during the 6 year implementation period. To maintain a country diversified portfolio and based on potential and opportunities in the countries, LEAF will invest between 5% to 30% of GCF resources in each country.

Market studies conducted by AfDB (CEPA, 2019) (AfDB GMG, 2017) (AfDB GMG, 2020) confirm a market potential of close to US$ 7.2 billion in the 6 countries with potential for growth. This is an estimate largely based on development plans of leading DRE companies, and when including potential DRE market growth, it is even larger. In terms of demand for local currency funding, the feasibility study confirms that the amount of resources, including technical assistance, dedicated to developing the pipeline and transactions is an important factor for the successful deployment of local currency guarantees. Capacity of local financial institutions needs to be strengthened to identify and assess the financing opportunities in the DRE space, highlighting the importance of the technical assistance component of LEAF.

In summary, the Framework aims to enhance local markets by de-risking the DRE space, unlocking local currency debt finance, and scaling up investments; and provide technical assistance to (i) strenghten capacity within local banks and financial institutions and structuring financially sound transactions; (ii) supporting enabling policies and frameworks; (iii) confirm the adaptation impact; and (iv) address existing gender gaps and inequalities in the DRE sector. This Framework is the first phase of the Bank's wider DRE strategy.

Figure 5: Focus countries of the LEAF Framework

[8] AfDB is providing the TA financing in collaboration with partners and by mobilizing TA funding from other funds

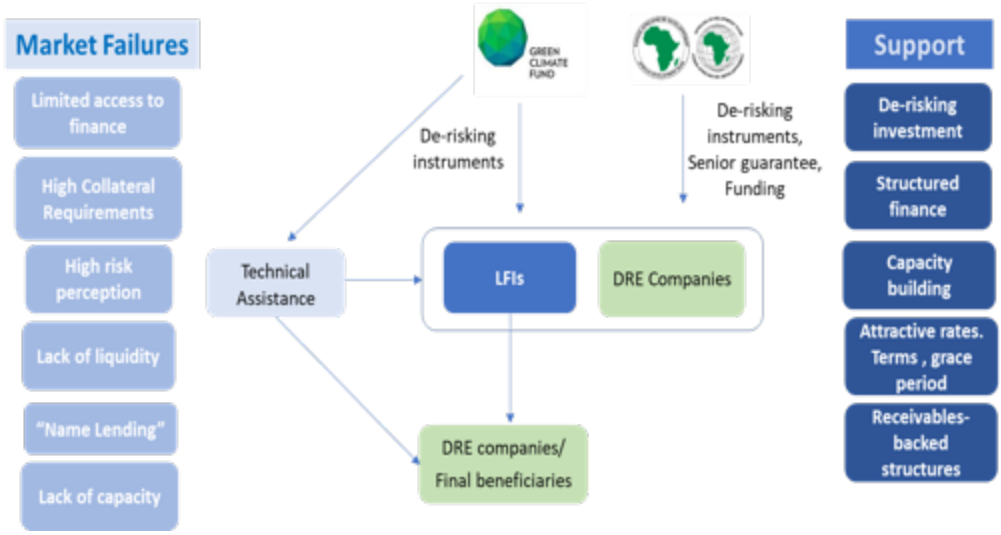

Figure 6: LEAF high-level Framework Structure

Framework approach

LEAF is a long-term initiative, consisting of financial support for DRE projects that aim to achieve large-scale impacts. Its Framework approach will enable:

- Continuous engagement with the different countries and strong country ownership;
- Support for a sector-wide transformation, to up-scale DRE investments. A Framework approach is required since a single project will have neither the scale or the profile to galvanise the necessary sector transformation and the essential paradigm shift towards DRE.
- A demonstration effect across the continent (Kenya, Ethiopia in East Africa, Ghana, Nigeria and Guinea in West Africa, and Tunisia in North Africa) enabling stakeholders to learn to further develop, apply and commercialize sustainable DRE projects; and
- Increase implementation efficiency (time and resources) where the cost of the Framework's support team is spread across multiple projects.

Structure of the proposed Framework:

Component 1: De-risking

The feasibility report confirms both the advantages of local currency debt and the demand for commercial and local currency financing for DRE projects. De-risking instruments will unlock commercial capital and may reduce overall project capital costs. GCF's support will primarily take the form of an envelope for **concessional credit enhancement instruments**, including: (a) Subordinated Debt[9] and (b) Partial Credit Guarantees[10] (PCG). These will be co-invested on pari-passu and pro-rata risk sharing terms with the exception of pricing with AfDB investments, including PGCs and debt in compliance with AfDB's financing instruments guidelines and pricing framework for non-sovereign operations. This will provide the level of de-risking and blending required to crowd-in private sector investors and developers into the sustainable energy space. Additionally, LEAF will support structured transactions such as receivables-backed financing structures to mitigate the risk of payment defaults of consumers. While the proposed instruments aim to provide a credit enhancement solution, their diversification is required because: (i) it addresses the specificities of the business models. For example, SHS and C&I solutions are based on future cashflow of receivables, whilst mini-grids may rely on subsidies (provided by the government or other institutions); and (ii) it creates flexibility to address the different credit risk profiles experienced by projects and underlying country risks. In general, investors (i.e. GCF and AfDB) in sub-tranches and first loss tranches will accept the higher levels of risk associated with these tranches. This supports the objective of attracting commercial investors, who are prepared to finance the lower-risk senior tranches.

Output 1.1: USD 575 million additional capital deployed for SHS, captive power and green mini-grid businesses as a result of GCF and AfDB funding

[9] This instrument corresponds to AfDB instrument Standard Subordinated Debt: This form of debt typically makes interest and principal payments on a mandatory basis. However, the right to receive payment is subordinated to the prior payment of senior creditors of the borrower. Therefore, standard subordinated debt will absorb losses in the event of liquidation.

[10] As per AfDB Guidelines of PCG instruments

- Activity 1.1.1: provide concessional guarantees to unlock commercial investment: GCF and AfDB will provide (concessional) partial credit guarantee instruments (first loss and others) to share the risk of underlying debt transactions with FIs and commercial investors so that they can provide funding with attractive terms. For developers, the provision of a guarantee will enable them to access loans from banks in cases where they might otherwise be unable to meet the collateral and guarantees requirements (such as the parent company or shareholders guaranteeing the loan) of the banks (i.e. the guarantee would substitute for part of the collateral requirements). The underlying risk, or part thereof, of the underlying borrowers (DRE developers) will be borne by GCF and AfDB. GCF provides guarantees in USD, the Bank can provide guarantees in either USD or local currency. The guarantees cover principal and/or interest or other forms of exposure. GCF and AfDB will participate in the guarantees pro rata and on the same terms, with exception of pricing. The guarantees will partially cover loans provided by commercial investors or LFIs and their associated risk exposure to the underlying DRE projects.

  Activity 1.1.2: provide concessional subordinated debt instruments: Subordinated debt (Sub-debt) can help to insulate senior debt investors from unacceptable risks and reduce the cost of capital in cases where equity is too expensive. This can be especially important where senior debt investors (e.g., commercial banks) are unfamiliar with the risks inherent in renewable energy projects. Sub-debt will also address lack of projects' liquidity while providing the level of de-risking required for commercial investors to invest in the DRE space. AfDB will be a direct lender to the projects both in its own right and in its capacity as an Executing Entity. AfDB and GCF will participate in the same tranches and on pari-passu risk sharing terms (with the exception of pricing), aligning interests between GCF and AfDB.

- Activity 1.1.3: LEAF will support where possible the structing of the debt facilities in the form of receivables-backed financing structures (RBS). GCF and AfDB will provide either sub-debt or a guarantee to unlock commercial investment into the RBS. In RBS structures, a DRE company (originator) originates assets of receivables contracts of solar home or C&I systems to consumers. The contracts entail energy-as-a-service or lease-to-own service against future regular payments of consumers.. In order to achieve the credit quality of the receivables and to mitigate the risk related to consumers' non-payments, adequate credit enhancement levels are required. These can be in the form of partial credit guarantees. In general RBS structures present a strong instrument to reduce losses as they exclude operating and sales risk and limit the risk to payment defaults, which are mitigated through the *cushion layer* created through excess spread.
- Activity 1.1.4: support transactions that finance a portfolio of DRE companies. As mentioned above, due to the small-scale of most of DRE companies, the market is increasingly seeing 'aggregator' companies financing a portfolio of DRE businesses across various countries. These aggregators are usually in the form of a holding company, for example, a debt fund or an SPV that channels debt to the companies. Whilst the programme will target larger DRE companies with larger financing needs, these are limited to a handful of companies at this stage of the market. Financing aggregators will support market growth and prepare strong small, local companies for future financing for larger tickets. As such, LEAF will support 'aggregator' structures to scale-up investments and address this untapped market segment. The proceeds of the GCF and AfDB funding, though either subordinated debt or guarantees, will be used to de-risk DRE investments and crowd in local financial institutions and private capital to finance a portfolio of DRE businesses. The financial model will be similar to that of solar home systems, mini-grid or C&I projects, but at portfolio level.

- Activity 1.1.5: The facility will support longer tenors through tenor extension guarantees. Where lenders (local FIs and commercial investor) cannot, or are not willing to, offer long term debt that matches the needs of a renewable project, a credit guarantee can be used to cover credit risk on the longest instalments, allowing lenders to provide longer tenor loans while meeting their prudential requirements and risk appetite. Tenor extension guarantees aim to extend the terms of financing by guaranteeing payments at the longer end of the debt facility, thus incentivizing private lenders to bridge any gap. These two variations of credit guarantees can be combined for greater impact. In general, guarantees help access markets, extend debt maturities, and lower borrowing costs for projects.

Output 1.2: Within the overall additional commercial debt mobilised, there is USD 100 million local currency debt for SHS, captive power and green mini-grid companies deployed

- Activity 1.2.1: Provide guarantees to and subordinated debt alongside local commercial banks or commercial investors to mobilise local currency funding: Local financial institutions (FIs) in Africa represent a considerable potential source of local currency funding for the DRE space. However, they often require the financial credit worthiness of sponsors which comes in form of collaterals or other non-recourse structures that need de-risking measures for projects to achieve financial close. In this activity, AfDB can raise local currency funding for DRE companies on attractive terms. GCF co-investment will be delivered in the form of guarantees or sub-debt that

share the risk of the facility (for DRE companies) with AfDB, local banks and commercial investors. GCF provides guarantees or sub-debt in USD, the Bank can provide in either USD or local currency.

Component 2: Covid Recovery Support – concessional debt

In the context of the COVID-19 pandemic, concessional capital is required to support viable energy access businesses, ensure business continuity and the delivery of essential energy services, and to enable economic recovery of those companies and the sector.

Output 2.1: USD [70 million] capital deployed and mobilised for COVID-19 recovery in the DRE space

- Activity 2.1.1: Provide concessional debt to DRE businesses through AfDB SEFA Covid-19 Off-grid recovery Platform: GCF and AfDB will provide concessional debt[11] to support DRE companies impacted by the pandemic, ensure business continuity, the delivery of essential energy services and safeguarding the sector and green recovery. The COVID-19 Off-Grid Recovery Platform (CRP) unlocks commercial capital to mitigate the negative impacts of the COVID-19 pandemic in the energy access sector, while advancing access to clean electricity and ensuring a green economic recovery.

Component 3: Technical Assistance

The technical assistance component, will support: (i) local banks and other financial institutions for enhancing their ability to appraise and lend to DRE businesses and projects, including trainings, appraisal toolkits, standardized loan document templates; And support the development and structuring of innovative and financially sound receivables-backed and other financing facilities; (ii) the DRE sector by reinforcing enabling policies, supporting the digitalisation of licensing, operational optimization, market data and assessments of solar solutions for businesses for auto-production and business plan support; iii) country level adaptation assessments to increase understanding of the link between DRE and adaptation and confirm potential adaptation impact ; and iv) address existing gender gaps and inequalities in the DRE sector. The GCF proceeds under this component will be used by AfDB for providing TA directly to beneficiaries and does not involve on-granting. LEAF will support governments in the policies space to include off-grid solutions and self-generation power into their electrification strategy. It is also essential that countries identify and address regulatory gaps to scale up DRE. The regulation needs to create the private sector's enabling environment to generate, distribute, and sell DRE electricity. With the adequate legal and financial framework, countries will set the right path to scale up DRE. Capacity building and training of key stakeholders will also build an essential element of the program's success.

The below diagram depicts the three key pillars of the TA grant.

[11] Mobilized from concessional funds

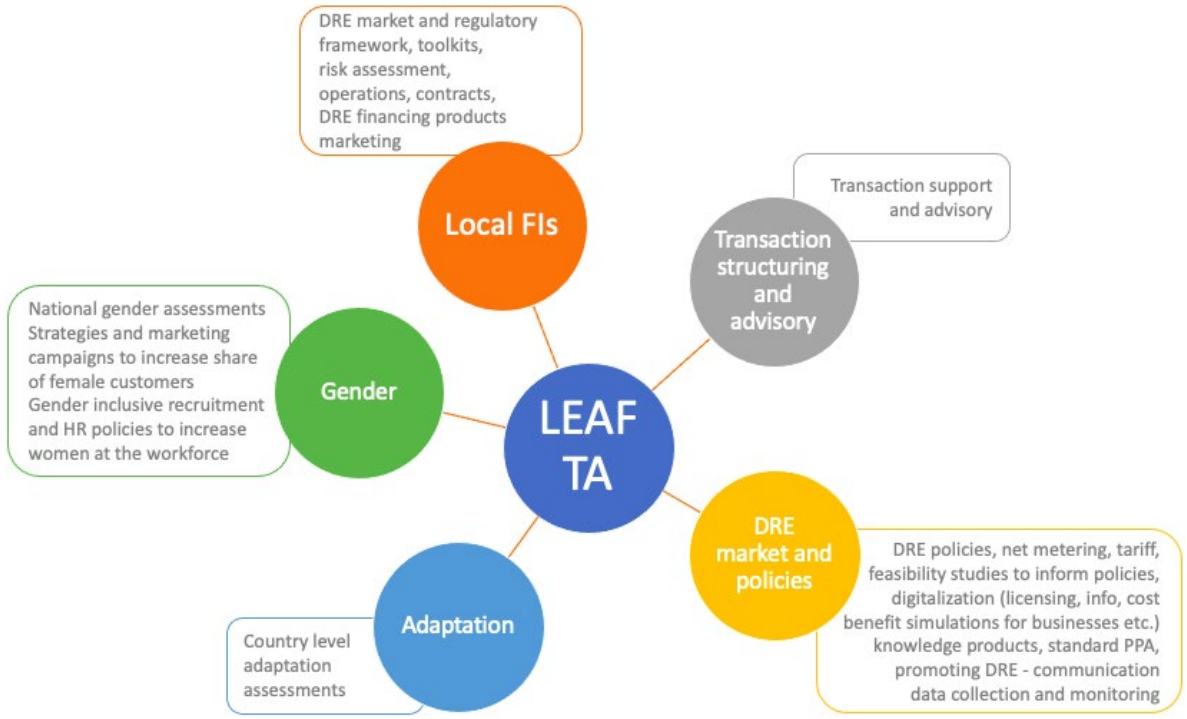

Figure 7: LEAF TA components

AfDB will mobilize donor funds towards the AfDB portion of the TA.

Output 3.1: Approximately 20 FIs and Banks with increased capacity to assess and finance DRE solutions. Eligible banks and institutions for TA support include institutions with local presence in the targeted countries and interest in exploring financing options in the DRE sector.

- Activity 3.1.1: Support local lenders and intermediaries to boost their technical capacity to engage in the DRE sector - i.e. capture market opportunities, assess the investment attractiveness of opportunities and lend to DRE projects, including the structuring/ participation in off-balance financing, securitisation and other financing mechanisms

- Activity 3.1.2: Structuring strong and viable innovative financing structure**.** Given the innovative nature of the targeted transactions, such as receivables backed structures, this TA component will support the development and structuring of financially sound and attractive receivable-backed and other structured financing facilities and transactions for mainly SHS and C&I businesses.

Output 3.2: Technical assistance deployed to support governments of the focus countries in creating enabling policies

- Activity 3.2.1: This activity will include three subcomponents related to policies and regulatory framework, technology and social inclusion.
    - Policies and regulatory framework. This subcomponent will support governments to develop enabling regulatory instruments such as licensing, tariff frameworks, and net metering policies and fiscal incentives for private sector investments in DRE. Effective policy and regulatory reforms are also needed to unlock domestic and commercial finance, including raising awareness and capacity-building among local institutions.
    - Technology. This subcomponent will leverage technology and digitalization to develop and improve (digital) systems and frameworks for licensing, data collection, and electrification progress monitoring. It will also advocate and support simplified licensing processes and digitalization of services, and the dissemination of information.
    - Social inclusion. Addresses some of the gender-related barriers identified in the target countries, by ensuring gender-inclusive capacity building by providing awareness and develop gender responsive policies and frameworks.

Output 3.3: Country-level adaptation assessment completed for each country.

- Activity 3.3.1: To increase understanding of adaptation benefits of DRE projects, a comprehensive study/assessment will be undertaken for each country, focused on the relevant technologies targeted in the countries by LEAF. These assessments will confirm i) climate change hazards in the geographic areas based on science, ii) climate vulnerabilities and exposure, and iii) the link between these climate vulnerabilities and energy access to reduce vulnerability of beneficiaries and (guidelines on) indicators to measure adaptation impact in the DRE sector

Output 3.4: Technical assistance deployed addressing existing gender gaps and inequalities in the DRE sector

- Activity 3.4.1: Conduct national gender assessments and refine gender action plans for each country
- Activity 3.4.2: Support the development of strategies and marketing campaigns for DRE companies to increase share of female customers
- Activity 3.4.3: Develop gender inclusive recruitment and HR policies to increase women at the workforce of DRE companies

These above activities and interventions were selected as they, collectively, form the most sustainable market approach. Other alternatives were rejected, such as:

- Providing grants or increasing concessionality: as this would distort the market and replace private sector investment as opposed to encouraging it through risk-sharing.
- Direct AfDB funding of projects to DRE: which must be limited to where it is essential, i.e., where no alternative exists rather than it being seen as a primary course of action. Instead, the Framework builds capacity with local FIs to mobilize local currency funding, introduce new FIs to the DRE market sector, and build sustainable infrastructure and policies for the future.

LEAF, therefore, supports facilities that finance a DRE company or a portfolio of DRE companies through funds or financial institutions including local banks or leasing companies (aggregator facilities). Interventions will be in the form of private sector projects (i.e. framework sub-projects) where AfDB will be the executing entity, the lender of record or guarantor of record for the projects' transactions. However, in transactions that involve aggregators (i.e. Funds, FIs, leasing companies) that provide financing for a portfolio of DRE companies, the aggregator will be the executing entity. For aggregator structures, GCF proceeds will be used for subordinated loans or guarantees on a DRE companies portfolio, which includes developed and executed transactions by the aggregator.

GCF proceeds will be used in the focus countries for guarantees (partial credit guarantees – PCG), subordinated loans and TA Grant. The maximum amount of funds to be disbursed by the GCF under LEAF is USD 170.9 million for the financing of the Programme, which includes (i) Component 1: USD 70 million to be disbursed as subordinated, concessional loans and 80 USD million as guarantees; (ii) Component 2: USD 10 million to be disbursed as concessional loans for COVID-19 recovery for component 2; and (iii) Component 3: USD 10.9 million for TA grants.

Selection criteria and project types

For Enhanced Direct Access (EDA) proposals and projects/programmes with financial intermediation (loans or on-granting), describe the selection criteria of the sub-project and types.

The below table provide the eligibility criteria for LEAF's underlying transactions supported by component 1 and 2 of this proposal. These eligibility criteria are in line with AfDB eligibility criteria for private sector transactions. The eligibility criteria will be further specified in the term sheet.

LEAF Eligibility Criteria	
Borrower	• **DRE Companies (developers)**: Viable early to growth stage non-sovereign DRE companies that have robust business models focusing on the distribution and financing of Solar Home System, Green Mini-Grid and Captive Power solutions and a demonstrated need for capital to extend their business. • **Aggregators**: Holding company/Fund financing portfolio of energy companies and other qualifying borrowers meeting AfDB Non-Sovereign guidelines
Beneficiaries	• Households, businesses, commercial and industrial sector (captive power)
Geography	• Borrowers registered in a member country of AfDB, and operating in Kenya, Nigeria, Tunisia, Ghana, Ethiopia, and Guinea. Borrowers registered in non-regional member countries of AfDB, and operating in Kenya, Nigeria, Tunisia, Ghana, Ethiopia and Guinea may also be considered on a case-by-case basis.

General investment criteria	• Legal Entity registered and licensed for its corporate purpose • In compliance with the local banking or other applicable regulations/laws • Demonstrated track record of good operational and financial performance and successful commercial development with unqualified audit opinions and/or[12] good prospects for meeting all its financial obligations and generate adequate surpluses to sustain its long-term viability • Sound management, accounting and corporate governance systems that: (i) provide effective protection of the interests of all investors (shareholders and creditors); and (ii) maintain an environment that is favourable and conducive to efficient and sustainable growth of the company • Demonstrable developmental impact through activities focused on improving access to sustainable energy for households and businesses • Borrowers are not in default on any debt service obligations • Environmental and Social Assessments (e.g. ESIA, ESMP, RAP) aligned with national, AfDB and MDB requirements • Compliance with national and AfDB's E&S requirements • Gender and climate change mainstreaming in operations • Compliance with AfDB policies and procedures		
	Solar Home System	**Mini-Grid**	**Captive Power**
Technology	• Plug and play individual electrification solutions that can power small appliances such as lights, phone charger, TV, fan, SHS kits that includes appliances (TV, radio, fan, smart phones for payments) • Minimum Tier 2 products of the multi-tier matrix for access to household electricity supply (Multi-Tier Framework, 2020) • International quality standard systems	• Collective electrification solutions that connect multiple end beneficiaries or power small and medium sized businesses, social infrastructure (hospitals, schools etc.) • Minimum Tier 3 service level delivery • Hybridization of existing fossil fuel fired mini-grids will not be part of the Framework • Smart metering Grid compatibility in hardware & software	• Captive power solutions tailored to the needs of customers, businesses etc. • Solar PV with or without storage • Size of up to 25 MW • Industries involved in the production of fossil fuels and mining are excluded
Business models	• Pay as you go/lease to own • Energy as a service: Under this model, customers contract a company to install a renewable energy system and pay rent for the system or a fixed price per kilowatt-hour (kWh) generated over a period of time • Other emerging models that are assessed to be viable by AfDB	• Energy as a service • Leasing • Other emerging models that are assessed to be viable by AfDB	• Energy as a service • Lend/Rent/Lease to own • Other emerging models that are assessed to be viable by AfDB

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

[12] "And" for corporates and "or" for off-balance sheet project finance like projects (starts-ups fall under corporate loan assessment) to align with minimum information required to initiate adequate assessment.

Provide a description of the project/programme implementation structure, outlining legal, contractual, institutional and financial arrangements from and between the GCF, the Accredited Entity (AE) and/or the Executing Entity(ies) (EE) or any third parties (if applicable) and beneficiaries.

- *Provide information on governance arrangements (supervisory boards, consultative groups among others) set to oversee and guide project implementation. Provide a composition of the decision-making body and oversight function, particularly for Enhanced Direct Access (EDA) proposals.*
- *Provide information on the financial flows and implementation arrangements (legal and contractual) between the AE and the EE, between the EE or any third party and beneficiaries. For EEs that will administer GCF funds, indicate if a Capacity Assessment has been carried out. Where applicable, summarize the results of the assessment.*
- *Describe the experience and track record of the AE and EEs with respect to the activities (sector and country/region) that they are expected to undertake in the proposed project/programme.*

Provide a diagram(s) or organogram(s) that maps such arrangements including the governance structure, legal arrangements, and the flow and reflow of funds between entities.

Institutional background. The African Development Bank, established in 1964, is a pan-African development institution, promoting economic growth and social progress across the continent. The Bank's development agenda is delivering the financial and technical support for transformative projects that will significantly reduce poverty through inclusive and sustainable economic growth. The Bank's commitment to climate and green growth is rooted in its Ten Year Strategy prioritizing inclusive and green growth, its High Five development priorities including "Light up and Power Africa" and the "New Deal on Energy for Africa" strategy focused on contributing to energy security, energy access, transition to cleaner energy paths and the promotion of innovation to increase financial flows. The New Deal on Energy for Africa is built on five inter-related and mutually reinforcing principles: (i) raising aspirations to solve Africa's energy challenges; ii) establishing a transformative partnership on energy for Africa; (iii) mobilizing domestic and international capital for innovative financing in Africa's energy sector; (iv) supporting African governments in strengthening energy policy, regulation and sector governance; and (v) increasing African Development Bank's investments in energy and climate financing.

AfDB has established itself as a leading DFI in the energy sector in Africa and has committed UA 13.8 billion to energy sector projects since 2000, of which UA 2.7 billion for the private sector. The different initiatives and projects have resulted in more than 3.7 million connections to the grid since 2000, 560,000 off-grid connections since 2018, +18.5 GW of additional installed energy, of which 5.4GW from renewable energy resources, +22,500 kilometers of transmission lines constructed, and +102,000 kilometers of distribution lines constructed. The Zola Electric Cote d'Ivoire (ZECI) transaction closed in 2019, pilots a local currency receivables-backed financing structure as targeted under LEAF. The project was one of the first large-scale local currency financing structures using securitization techniques for the off-grid renewable energy sector in Africa. AfDB provides a partial credit guarantee along with Credit Agricole Corporate and Investment Bank (CACIB) covering part of the guaranteed loan facility as catalyst. AfDB and CACIB guarantees enabled the mobilization of a local currency loan from Societe Generale Ivory Coast, a local bank.

Implementation arrangements. The AfDB will be responsible for the overall oversight and delivery of the Framework implementation, including identifying, structuring, arranging, and co-financing transactions. AfDB will implement the Framework following the terms and conditions agreed under the Accreditation Master Agreement (AMA) and the Funded Activity Agreement (FAA). The FAA will include the eligibility criteria that determine the inclusion of projects within the Framework. Having both AfDB and GCF participating in the same tranches, AfDB will align its interests to those of the GCF in each tranche which benefits from GCF funding or guarantee. This section highlights the implementation arrangements for LEAF, which are elaborated further in the term sheet.

With LEAF being a Framework, details of underlying pipeline transactions are indicative at the proposal submission date, and pipeline development continues during the implementation phase. In addition to the African Development Bank, GCF proceeds will be channelled via the Bank to local financial institutions, including commercial banks and leasing companies, as well as specialized renewable energy investment funds and DRE companies to execute the funded activities and unlock local currency financing. Processing and implementation of the Framework will be integrated within AfDB's processes/governance structures. Each sub-project under the Framework will be processed individually by the Bank subject to AfDB's credit evaluation, due diligence and approval procedures for committing funds to the private sector. Only those projects qualified under AfDB's internal criteria and criteria outlined in the FAA will be eligible for further processing under the Framework.

AfDB's policies and processes include an assessment of risks, additionality and development impact, E&S, and due dilligence of the counterparty or significant related party, including Know-Your-Customer (KYC), Anti-Money Laundering (AML) and Combating the Financing of Terrorism (CFT) procedures and operational safeguards. The Bank has strong

fiduciary safeguards and internal controls to ensure that its lending is used for its intended purposes. Project assessments includes i) identification and verification of beneficial ownership, ii) criminal, civil, and regulatory history, iii) investigations or sanctions by international organisations and regulatory bodies, and iv) Politically Exposed Persons and high-risk relationships. Based on the assessment, an Integrity Risk Opinion will be prepared and where required a mitigation strategy developed. The Bank will not finance a project where the counterparty or significant related party, or any of their beneficial owners are on the United Nations Security Council sanctions list. At the time of submission of the funding proposal, conversations are taking place with a number of potential companies/sponsors as part of the pipeline development efforts, however these are initial conversations, of which some are entering the project concept note stage, after which with project appraisal will follow – following AfDB's processes and procedures.

AfDB will be signatory to the financing documents, both in its own right and on behalf of the GCF, in its capacity as an Accredited Entity of the GCF.

In transactions where the Bank is not the EE, the specific implementation arrangements and investment criteria governing the funding provided will be confirmed in an agreement signed between the Bank and the EE. The agreement will define the key investment eligibility criteria (e.g. technologies, geographies, business viability, and other criteria) and terms of the sub-investments to be supported by EE (e.g. tenor, pricing, repayment, currency hedging, security, fees, and other terms). The Agreement will also define the compliance and reporting requirements of the funding. Where AfDB is not the EE, it will enter into an subsidiary agreement with the relevant EE, in accordance with the provisions agreed and detailed in the Term Sheet..

For managing GCF resources, the GCF Trust Account for AfDB will be used and the Bank's role will be to administer the funds. Under this scheme, AfDB will be a direct lender or guarantor to the projects in its capacity as an Accredited Entity (as well as in its own right for its own contribution). Interests between GCF and AfDB are aligned through AfDB and GCF participating in the same tranches and on parri-passu risk sharing terms, with exception of pricing.

For the TA grants component, the Bank will be the Executing Entity whereas the activities will be implemented in partnership with consultants and service providers. TA fund management and procurement will follow relevant policies and rules of the AfDB, guided by the grant agreement to be signed between the consultant/service provider and the AfDB. The AfDB will hold and manage the grant resources and make a direct payment to consultants/service providers.

The diagram below (Fig. 5) depicts the overall LEAF implementation arrangement

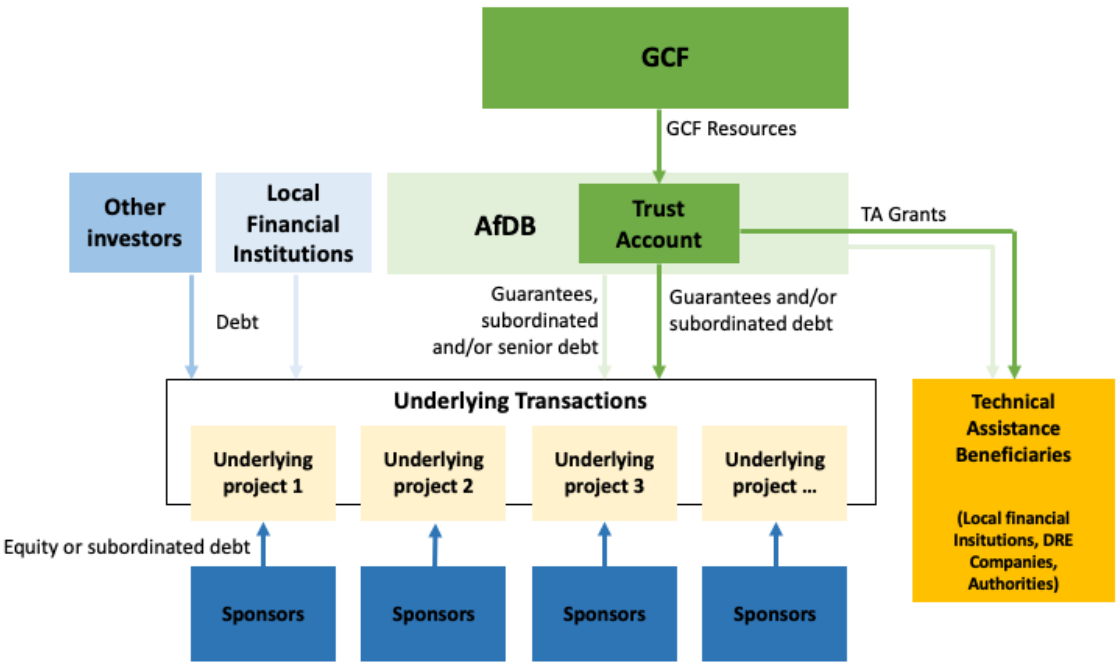

Figure 8: Overall structure of the AfDB/GCF Framework

Typical LEAF financing structures and implementation arrangements

The following describes the typical financing structures that will be covered by the Framework and their implementation arrangements.

Component 1:

- Partial Credit Guarantee for a facility: an LFI provides local currency debt, GCF and AfDB share pari-passu the risk through a PCG. In this structure a local FI provides the funding and it is covered by a first loss or pari-passu guarantee from the AfDB and GCF. The facility (off-balance sheet or corporate loan) finances the DRE project.

- Sub-ordinated debt for a facility**:** GCF and AfDB provide sub-ordinated debt pari-passu to create a facility to unlock co-financing from senior commercial lenders. The facility is an SPV, corporate loan or a receivables-backed financing structure.

Component 2:

COVID-19 Off-grid recovery Platform: (see description above- section B3, activity 2.1.1)

The role of local commercial financial banks in the underlying transactions. The LEAF Framework is designed considering the market prevailing in the targeted countries where banks are not inclined to assume the risk of the underlying DRE companies (developers). As such, they mainly play a role as a financing party in a structured facility, without assuming 100% of the risk of DRE companies. In summary, commercial banks may take the following roles:

- As a financing party in a structured finance project, such as financing receivables-backed and off-balance sheet structures.
- As a provider of local currency funding to a project. In this case AfDB and other financial parties will share the risk of the project with the local bank.

In none of these cases does AfDB or GCF assume the risk of the commercial bank but rather that of the borrower (developer/DRE business) and therefore is essentially obligor risk not FI risk.

Aggregation:
Although most of the projects are expected to be structured debt facilities where the borrower is a DRE company, there are some pipeline projects which will be developed in the form of facilities to specialist FIs (holding company) such as debt funds investing in a portfolio of DRE businesses. This type of structure (aggregation) pools financing into a facility that channels large volumes of funding into DRE businesses that have smaller financing needs. The facility covers an aggregated portfolio of mini-grid, captive power projects, and similar DRE businesses. The role of both GCF and AfDB is to de-risk the facility through a guarantee or sub-debt covering the portfolio of DRE businesses. GCF and AfDB will participate in the facility with GCF and AfDB taking (partial) risk exposure for the DRE companies. The aggregator will be the executing entity for the portfolio deals. Aggregation can reduce risk by spreading investments across projects and portfolios whilst supporting smaller companies.

Excluded facilities:

- Lines of credit whereby AfDB and GCF have full recourse to the local FI and do not take the project risk

Currency hedging strategies
To the extent possible LEAF will seek to avoid currency mismatches in the operation. The Bank can provide local currency debt or a partial credit guarantee (PCG) where appropriate. Currency hedging strategies to mitigate against foreign exchange risk will be elaborated on a project-by-project basis by the AfDB transaction team for transactions where the instruments are provided in USD, and the underlying loans are denominated in another local currency.
The best suitable hedging strategy will be firmed up in each respective project's term sheet.

Flow of Funds:
In line with the activities defined in section B3, LEAF will seek different instruments to address the market barriers mentioned above. (**Concessional) guarantee instruments** (PCGs) are proposed to unlock commercial investment, making debt more accessible for DRE companies whilst addressing perceived risk associated with DRE solutions and target consumers segments. Guarantees will also help to unlock local currency financing from local FIs, reducing currency risk and the cost of debt. For mini-grids and C&I, guarantees support long-term debt capital backing-up longer repayment periods for DRE systems, thus making the amounts to be paid on a monthly basis by consumers more affordable. (**Concessional) Subordinated debt** (Sub-debt) will inject additional capital in the sector, reduce cost of debt and help improve access to capital for DRE businesses. Particularly for mini-grids, sub-debt can play a catalytic role to improve the risk profile of investments whilst making loans more accessible. **TA grants** will play an important role to remove market

barriers related to lack of capacity of local commercial investors as well as gaps in the enabling environment. TA grants will flow for activities that are geared to open the market for private investments in order to achieve the main goal of LEAF. Whilst the GCF will provide concessional guarantee and debt instruments, AfDB will participate mainly with non-concessional instruments from its private sector window. However, a portion of AfDB sub-debt will be provided by concessional debt mobilized from other donors and channeled through AfDB investments. The flow of funds will be further specified in the Termsheet.

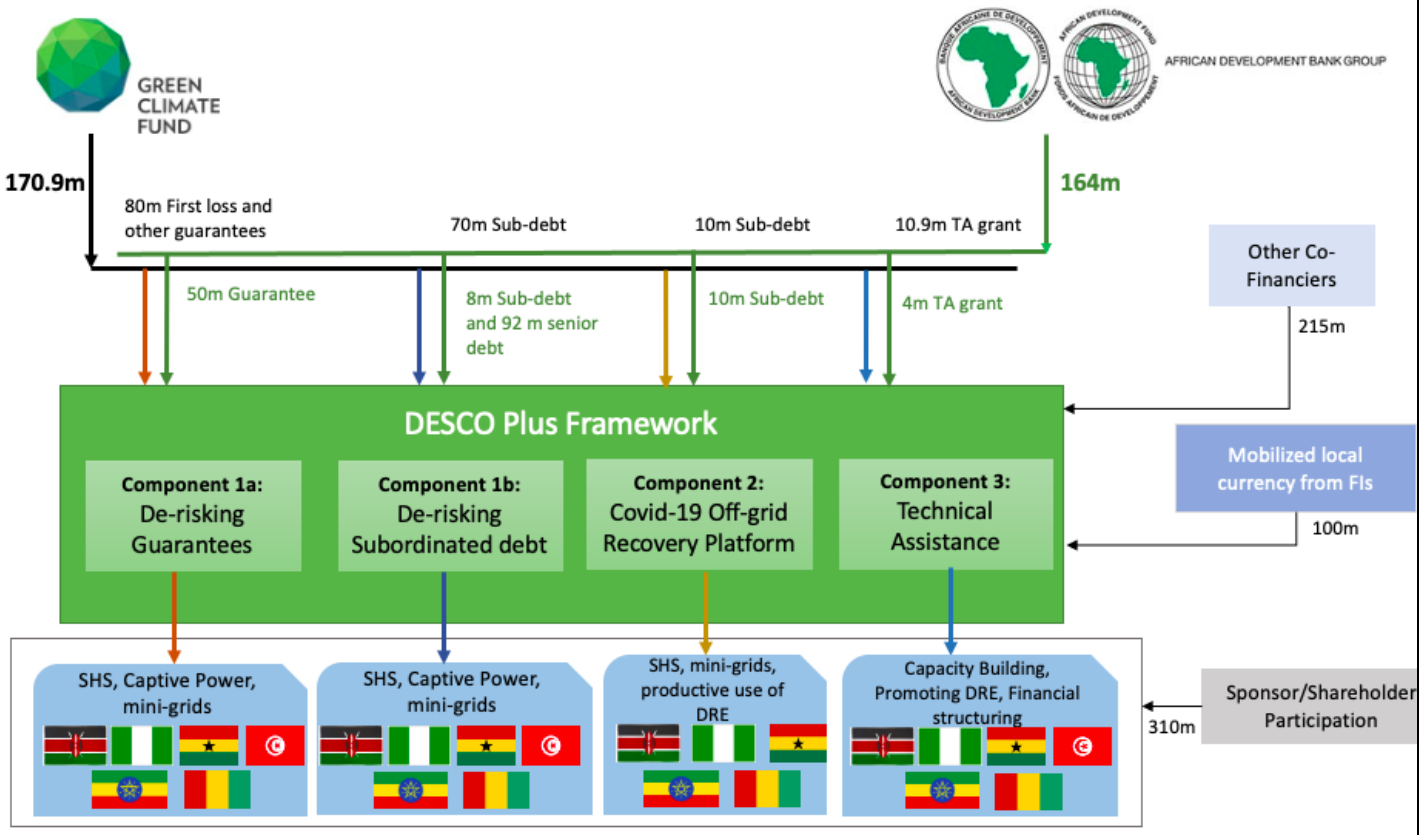

Figure 9: Diagram of flow of funds

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

Why the project/program requires GCF funding

Explain why the project/programme requires GCF funding, i.e. Why is the project/programme not currently being finance d by public and/or private sector? Which market failure is being addressed with GCF funding? Are there any other dome stic or international sources of financing?

DRE businesses have struggled to attract commercial local currency finance, and instead rely on foreign currency finance, particularly US dollars or euros. If the local currency depreciates – or is devalued in the case of fixed / managed FX regimes – the businesses either must raise tariffs to end users or bear the risk itself to account for the effective fall in the revenue that it receives relative to its costs, with the latter often rendering a project or business unbankable. These risks demonstrate the benefits and growing need for local currency solutions for businesses and confirm a clear rationale for exploring options to increase local currency finance as a contribution to the overall debt financing component of a transaction.

In Kenya, only three out of 43 Kenyan commercial banks have financed a C&I solar initiative. In Nigeria, banks are largely absent from the DRE market, debt is too costly, tenors are too short (up to 2 years), solar assets are not considered as collateral as there is no market for used solar assets and project finance products are not available for companies to borrow against future cashflows. As a result, most companies borrow hard currency debt on their own balance sheet, taking additional risk in a new market. Like Kenya and Nigeria, in Ghana and Tunisia local banks have been absent from financing DRE companies or projects. Yet, despite these developments, across the different market segments there are a few examples of local currency finance being provided and financing solar assets is slowly gaining traction as more and more DRE projects have proven to be commercially viable (BNEF, 2019).

There is a strong case for developing the capacity and capabilities of local financial intermediaries to provide competitively priced local currency term credit to reduce reliance on hard currency financing. To help meet the demand for finance from the renewables sector with the supply of finance from local credit, guarantees and subordinated debt can strengthen the bankability of projects and catalyse the participation of commercial investors in the sector, including LFIs to unlock local currency for business growth. Guarantees and subordinated debt will mitigate the risk of payment defaults for LFIs and commercial investors, allowing for lower collateral requirements and tenor extensions, and where possible improve the financing terms on offer from lenders and investors. Furthermore, subordinated debt will be required where lenders require liquidity to provide finance to the off-grid sectors or to improve terms of the loan to the underlaying borrower.

There are a few examples of facilities that currently provide guarantees in the renewables sector in Africa – such as GuarantCo, InfraCredit and the Africa Guarantee Fund (AGF). These have confirmed challenges to operating on a fully commercial basis. There are some examples of successful credit enhancement platforms outside of Africa as well, however, these are in countries with more developed financial markets. AfDB closed a first transaction of the DESCOs financing programme for Zola Electric Cote d'Ivoire (ZECI) in 2019, piloting a local currency receivables-backed financing structure to allow ZECI to provide access to approximately 100,000 rural households with pay-as-you-go solar home systems. The project is one of the first large-scale local currency financing structures using securitization techniques for the off-grid renewable energy sector in Africa. AfDB provides a partial credit guarantee along with Credit Agricole Corporate and Investment Bank (CACIB) covering part of the guaranteed loan facility as catalyst and enabling the mobilization of a local currency loan from Societe Generale Ivory Coast, a local bank.

The proposed de-risking instruments and the level of concessionality provided by the GCF are expected to enable and attract local financial intermediaries, decrease the cost of local currency debt for DRE companies, while possibly extending the tenor at which financing is provided. In turn, eligible DRE companies will have access to financing that: (i) is affordable, (ii) matches the currency of their revenues and (iii) accommodates the length of the payback periods on the solar equipment they lease to their customer base.

By addressing challenges related to the deployment of local currency financing for DRE solutions, GCF funding contributes to:

- Increasing local investment through increased lending to new business models in a nascent sector
- Unlocking substantial private capital through credit-enhancement and structured finance
- Building stakeholders' capacity in capital market products such as securitization structures. The transactions in the program lay the ground for subsequent securitization notes issuance on capital markets
- Increasing capacity of LFIs to recognize the opportunity of the distinct and growing investment opportunity of the DRE market
- Attractive yield for local markets and portfolio diversification for local banks
- Creating a conducive environment for private investment in DRE will encourage business model innovation in DRE
- Enhancing financial capacity and diversifying investment opportunities for local banks
- Private sector development through increased competition in the SHS sector as well as local linkages
- Fiscal benefits in the form of tax revenues to the Governments of the target countries

Without GCF de-risking instruments:

- Local banks will be reluctant to invest in DRE due to a perceived high risk of this relatively new business with innovative technology or on terms not matching the need of the underlying projects.
- Preventing DRE growth as finance supply is limited
- Miss the opportunity of accelerating DRE growth and supporting the transition to green businesses
- Market kick-off in new countries will be slowed down and SDG 7 will be more difficult to achieve as we remain in a business as usual scenario
- It would take considerably longer for the existing market barriers to be removed.
- Access to finance for climate investments would remain limited to few large borrowers/project sponsors and remain too costly for many others

The Framework thus aims to demonstrate the attractiveness and potential of the DRE sector. The demonstration effect is expected to attract and increase future financing from local banks and private investments in the DRE market. GCF's ability to invest in riskier tranches catalyses AfDB's co-investment and allows the combined funding approach of LEAF to address the market barriers and attract participation from local banks in the transactions. GCF's instruments priced on a concessional basis and blended with AfDB funding reduce the financing cost and improve the bankability of the projects.

Furthermore, dedicated, enabling DRE policies are required to allow C&I, mini-grid and SHS to grow. For example, the C&I solar market in Sub-Saharan Africa has mostly developed without regulatory support, buoyed by competitive economics and unreliable electricity grids (BNEF, 2019). Besides net metering, DRE companies request that the regulatory environment could focus on better enforcement of existing import duty and VAT exemptions on solar modules and associated equipment to promote DRE. With the TA grant, the Framework aims to support an enabling regulatory environment to respond to the market demand and growth prospects.

Why the proposed financial instruments were selected

Explain why the proposed financial instruments were selected in light of the proposed activities and the overall financing package. i.e. What is the coherence between activities financed by grants and those financed by reimbursable funds? How were co-financing amounts and prices determined? How does the concessionality of the GCF financing compare to that of the co-financing? If applicable, provide a short market read on the prevailing of the pricing and/or financial markets for similar projects/programmes.

The proposed instruments and financing package are selected to provide the level of de-risking necessary to unlock local currency financing from commercial banks and local financial institutions, while seeking minimum level of concessionality (to limit market distortion) and risk sharing with local financial institutions. The instruments will provide both credit enhancement and liquidity.

The instruments were selected to address the market barriers identified for the countries. A table describing each barrier, proposed solution, and instrument is presented in section B.3.

Level of concessionally

Justify why the level of concessionality of the GCF financial instrument(s) is the minimum required to make the investment viable. Additionally, how does the financial structure and the proposed pricing fit with the concept of minimum concessionality? Who benefits from concessionality?

In your answer, please consider the risk sharing structure between the public and private sectors, the barriers to investment and the indebtedness of the recipient. Please reference relevant annexes, such as the feasibility study, economic analysis or financial analysis when appropriate.

Whilst businesses are in theory able to make a simple choice on whether to apply local currency, the market realities make it a more complicated issue. The pricing is often expensive, sometimes with rates similar to rates of return on equity with a volatility driven by limited ability to fix rates. Collateral requirements are high and tenors often short and not meeting project needs. A key finding from the market assessments is that if guarantees were applied, banks would only make minimal, if any, reduction to the interest rate charged. As a result, unless the de-risking instrument (guarantees and subordinated debt) fees are subsidised, the all-in cost to the borrower would be prohibitive to obtain local currency debt. Concessional rates are required at this stage of the market to improve the bankability of transactions, increase participation of LFIs in the financing deals and the ability of local projects and businesses to borrow in local currency.

Projects under the Framework will be financed using the minimum level of concessionally to make the project viable to incentivize private sector lenders and equity investors to participate. Lending rates will be benchmarked for each project based on country risk and typical returns for these countries; interest rates on loans will be set against the LIBOR or whatever the equivalent government T-bill plus a margin. The level of concessionality will be based on the minimum level required to make the project bankable and obtain a reasonable return on equity and debt to attract financiers. The level of concessionality may further be based on consumer affordability (concessionality to be reflected in consumer prices) and to support market penetration (enabling expansion and increase access to DRE solutions. The level of concessionality required for each underlying transaction will be assessed during the due diligence phase. The concessionality will be passed on to end-beneficiaries by enabling increased access to DRE solutions (and consumer financing) and where possible consumer prices. The level of concessionality will improve bankability of the project through risk sharing, enabling financing to the DRE companies to expand its operations.

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

Long-run programme sustainability

Explain how the project/programme sustainability (financial, institutional, social, gender equality, environmental) will be ensured in the long run after project closure, including how the project's results and benefits will be sustained.

Sustainability will be achieved through the execution of the Framework by:

- **Increasing private sector investments**: The key principle of the Framework is to unlock private sector investment through de-risking and blended finance instruments with a minimum level of concessionality. This approach will reduce the reliance on donor funding and uses de-risking and risk-sharing instruments in partnership with the private sector resulting in the support of commercially viable projects and robust financing structure *People with access to renewable energy* s given that the private sector will have 'skin in the game' for each project being considered.
- **Developing local capital markets:** Currently across the different market segments in the renewables sector, the level of participation by local commercial banks and institutional investors is very limited. Increasing the involvement of more local financing institutions has important benefits, including: i) increasing investment options to promoting diversification of portfolios; ii) promoting alternative sources of finance for renewable projects; iii) facilitating greater involvement of local developers (local developers can find it more difficult to access finance from international sources relative to international developers); and iv) supporting credit markets mature; there are significant spill-over benefits to economies of having wider, deeper, and therefore more efficient, longer term credit markets.
- **Building confidence and lending experience in the DRE finance market**: According to a UN SDG report: "Adopting comprehensive regulatory Frameworks, leveraging private sector financing, and harnessing the potential of decentralised renewable energy solutions are three priority actions that could foster electrification in the remaining period" (UN, 2019). The financing provided under the LEAF Framework will focus on: (i) leveraging private sector financing; and (ii) harnessing the potential of DRE. Through the Framework, local FIs will increase their capacity to capture market opportunities and assess DRE projects, enabling them to recognize the investment attractiveness of DRE projects. By de-risking the DRE sector, the Framework unlocks and increases local currency finance and builds lending experience and confidence in the DRE market. This is something most local financial institutions currently lack due to both their high-risk perception and inexperience in financing DRE. Local financial institutions are more likely to continue investing in the DRE sector beyond the Framework once having gained necessary capacity and lending experience, potentially contributing to sustainability of access to finance.
- **Framework approach**: LEAF interventions aim to share risk with the private sector and at the same time look at markets for a greater impact. The approach is to look at the risk from a broader perspective, value the financial return in a consistent way looking across a portfolio of projects and the objectives to achieve. Having a portfolio with a mix of countries from East, West and North Africa will allow us to take more risk in lower-income countries and at the same achieve portfolio diversification. The objective is to think beyond project levels and think in more global and systemic terms, moving away from a project by project approach, thereby enabling countries to create their own DRE frameworks in the future.
- **Developing enabling policies and frameworks at a country level:** The Framework will work closely with and build the capacity of institutional stakeholders (ministry of energy, rural electrification agencies, renewable energy agencies, utility companies and regulators) in technologies and enabling policies for DRE and private sector investments. It may also advocate and support simplified licensing processes and digitalization of processes and the dissemination of information to improve preparation and processing times of projects. As a result, countries will be better positioned and enable future DRE projects and investments.
- **Gender mainstreaming to increase women economic empowerment and reduce gender gaps:** The framework emphasizes empowering women as consumers, producers and agents of change in the renewable energy sector. The sustainability of the positive gender impacts of the programme will be supported by DRE companies implementing gender-responsive policies and gender mainstreaming being part of training and capacity building efforts where appropriate. Interventions under LEAF will enhance access to finance for women for investing in DRE solutions, create jobs for women with DRE companies and enables the DRE environment with gender-responsive trainings of local banks and financial institutions. LEAF will contribute to women economic empowerment and reducing gender gaps in the energy sector.
- **Increasing access to clean, reliable and affordable energy.** Decentralized and distributed renewables bring power generation closer to the consumer, building resilience, increasing access to energy and reducing exposure to power outages, and building greater flexibility into power generation.
- **Structuring and supporting robust financial transactions**: The TA component plays an important role in building a healthy, sustainable market as well as robust financial structures to build the confidence of the private sector in the market. Providing capacity building to different stakeholders will ensure the benefits to continue beyond the life of the project. The TA will be contributing to the LFIs' becoming greener banks and to increase the portion of their portfolio on such projects. By combining both financing and technical skills, the framework

crowds in private capital, gives and strengthens LFIs' capacity to elaborate more complex products needing to be commercially viable to be implemented in the market.

- **Demonstration effect.** Finally, by demonstrating the potential and success of local currency financing facilities in the DRE sector, sharing lessons learned and the development of standardized agreements, the Framework aims to attract other local banks and other financial institutions to finance DRE projects.

The LEAF Framework is a timely initiative to increase involvement of the private sector and building on the momentum that exists to grow and transform the energy sector to a clean and sustainable energy model.

Long-term ownership and exit strategy

Include information pertaining to the longer-term ownership, project/programme exit strategy, operations and maintenance of investments (e.g. key infrastructure, assets, contractual arrangements). In case of private sector, please describe the GCF's financial exit strategy through IPOs, trade sales, etc.

Provide information on additional actions to be undertaken by public and private sector or civil society as a consequence of the project/programme implementation for scaling up and continuing best practices.

Due to its nature as a Framework agreement, information pertaining to the long-term ownership, operations, maintenance, and contractual arrangements of the infrastructure will be developed on a per-project basis, following best practices in project structuring and risk management as well as relevant AfDB policies and guidelines. The Framework approach enables sustainability, allowing exit from the Framework itself with local countries positioned to identify, formulate, fund and implement future DRE projects.

The Framework will promote innovative financing structures such as securitization structures, particularly for solar home systems to tap into local institutional investors. The transactions may be structured as receivables-backed financing facilities. A local bank will provide local currency funding for financing new solar assets once they are sold to a consumer. Repayments are tied to the cash receivables due from consumers. These structures reduce the transaction's risks as it is not exposed to the origination risk of new consumer contracts or operating risk. All elements of these structures can be perpetuated by each country beyond the lifetime of the Framework.

The debt facilities are expected to have tenors of between 5-7 years, although a maximum tenor of 12 years can be considered depending on the transaction. The disbursement period of LEAF is 6 years, with a total Framework financial cycle of 18 years.

C. FINANCING INFORMATION

C.1. Total financing

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

GCF financial instrument		Amount	Tenor	Grace period	Pricing
(i)	Senior loans	Enter amount Enter amount			
(ii)	Subordinated loans	80 million USD	Up to [12] years	Up to [3] years	As agreed in termsheet
(iii)	Equity	Enter amount			
(iv)	Guarantees	80 million USD	Up to [12] years		As agreed in termsheet
(v)	Reimbursable grants	Enter amount			
(vi)	Grants	10.9 million USD			
(vii)	Results-based payments	Enter amount			

(b) Co-financing information	Total amount	Currency
	789	million USD ($)

Name of institution	Financial instrument	Amount	Currency	Tenor & grace	Indicative Pricing	Seniority
AfDB	Guarantees	50	million USD ($)	Up to 12 years	market rate	pari passu
AfDB	Subordinated Loans	18	million USD ($)	Up to 12 years Up to 3 years	market rate	pari passu
AfDB	Senior Loans	92	million USD ($)	Up to 12 years Up to 3 years	market rate	senior
AfDB	Grant	4	million USD ($)	Enter years Enter years	N/A	Options
Local financial institutions	Senior Loans	100	million USD ($)	Enter years Enter years	market rate	senior
Other co-financiers	Senior Loans	215	million USD ($)	Enter years Enter years	market rate	senior
Sponsor/shareholder	Equity	310	million USD ($)	Enter years Enter years	equity return	junior

(c) Total financing (c) = (a)+(b)	Amount	Currency
	959.9	million USD ($)

(d) Other financing arrangements and	*Please explain if any of the financing parties including the AE would benefit from any type of guarantee (e.g. sovereign guarantee, MIGA guarantee).*

contributions (max. 250 words, approximately 0.5 page)	*Please also explain other contributions such as in-kind contributions including tax exemptions and contributions of assets.* *Please also include parallel financing associated with this project or programme.* GCF investment will leverage an estimated US$ 625 million from the private sector and local markets, including US$ 310 million of equity from shareholder or sponsor contribution. The Framework size is estimated at US$ 959.9 million, including AfDB, GCF and other investors' participation.

C.2. Financing by component

Please provide an estimate of the total cost per component and output as outlined in section B.3. above and disaggregate by source of financing. More than one co-financing institution can fund a single component or output. Provide the summarised cost estimates in the table below and the detailed budget plan as annex 4. This table should match the one presented in the term sheet and be consistent with information presented in other annexes including the detailed budget plan and implementation timetable.

In case of a multi-country/region programme, specify indicative requested GCF funding amount for each country in annex 17, if available.

The focus of the Framework is on mid-to-large sized transactions (starting from USD 20m total capital cost). For each transaction, AfDB will ensure that GCF and AfDB exposure are pari-passu in the considered debt tranche to ensure alignment of interest.

The debt facilities are expected to have tenors of between 5-7 years, although there may be exceptional circumstances where a maximum tenor of up 12 years may be granted (mini-grid or C&I).

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 ☒

If the project/programme is expected to support capacity building and technology development/transfer, please provide a brief description of these activities and quantify the total requested GCF funding amount for these activities, to the extent possible.

The TA component will support: (i) local banks and other financial institutions for enhancing their ability to appraise and lend, including trainings, appraisal toolkits, standardized loan document templates. It will as well provide transaction advisory for structuring financially sound and strong receivables-backed and other financing facilities (ii) the DRE sector by reinforcing enabling policies and frameworks; (iii) increase understanding of adaptation impact of DRE projects through country-level assessments; and iv) address gender gaps and inequality within the DRE sector.

In addition to 'hard' constraints of local currency financing, such as interest rates, collateral requirements and short tenors, the banks have limited capacity to provide local currency finance to the sector. Local banks have limited experience executing these types of deals, making it time consuming and difficult to complete transactions involving them. There is limited understanding of certain segments of the market. Banks are not yet able to appraise the nature of the credit risk posed by the companies' consumer receivables. The technical assistance support from the GCF will strengthen the capacity of local banks and other financial institutions to identify, assess and finance DRE projects.

Receivables-backed financing structures are still fairly novel in the continent. The TA component will support support the structuring of strong innovative financing facilities, building capacity of DRE companies and LFIs to participate.

To address existing regulatory challenges impacting the scaling of the DRE sector, the TA component will support the development of enabling policies in the countries.

D. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

This section refers to the performance of the project/programme against the investment criteria as set out in the GCF's Initial Investment Framework.

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

Describe the potential of the project/programme to contribute to the achievement of the Fund's objectives and result areas. As applicable, describe the envisaged project/programme impact for mitigation and/or adaptation. Provide the impact for mitigation by elaborating on how the project/programme contributes to low-emission sustainable development pathways. Provide the impact for adaptation by elaborating on how the project/programme contributes to increased climate-resilient sustainable development. Calculations should be provided as an annex. This should be consistent with section E.2 reporting GCF's core indicators.

Impact for Mitigation

The Framework will contribute to climate change mitigation and carbon intensity reduction in the selected countries through enabling the deployment of green mini-grids and DRE solar products at scale, providing households and small businesses with emissions-free access to energy and displacing fossil fuel energy solutions. Captive power solutions will displace both diesel generators and fossil fuel-based power from the grid for commercial and industrial use, helping businesses and farmers transition to clean electricity, reduce over time their electricity bills when systems are paid back, and promote DRE in the country. The Framework is expected to establish 386MW generating capacity through off-grid renewable energy solutions, of which some may also feed into the grid, resulting in approximately 28.8 million tCO2e emission reductions over the lifetime of the equipment.

Increased financing available for low-emission energy access and power generation

The GCF contribution in subordinated debt and guarantees of US$160 million will leverage US$ 785 million financing from AfDB, commercial investors and local banks and financing institutions. GCF's ability to invest in riskier tranches catalyses AfDB's co-investment and additional commercial financing required for the growth and expansion of DRE companies.

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

Describe the degree to which the proposed activity can catalyze impact beyond a one-off project or programme investment. Describe the following, if applicable:

- *Potential for scaling up and replication*
- *Potential for knowledge sharing and learning*
- *Contribution to the creation of an enabling environment*
- *Contribution to the regulatory Framework and policies*
- *Overall contribution to climate-resilient development pathways consistent with relevant national climate change adaptation strategies and plans*

In line with the sector market dynamics related to the development of new technologies and innovative business models for DRE initiatives, the Framework aims to promote a paradigm shift from centralized energy solutions to decentralized ones. DRE solutions offer a clean, reliable and sustainable solution contributing and key to industrialize and power Africa. Over USD 1.1 billion has been invested in Sub-Saharan Africa and nearly 200 million off-grid solar products have been sold in the rapidly emerging energy access industry in the last decade. As it is expected that future technology will make the sector even more attractive, the trend towards DRE will continue. Countries and consumers are also increasingly aware of the pressing climate change threat and the need for sustainable energy solutions. Energy access companies are capital intensive companies that require substantial grant, equity, and debt investments. Due to a growing debt weight, particularly as a result of the COVID-19 pandemic, countries may reduce subsidies and financing to the energy sector and plans, further increasing the need for private sector contribution.

Potential for scaling up and replication

Through the Framework, the capacity of local FIs to capture market opportunities and assess DRE projects will be strengthened, enabling them to recognize investment attractiveness of DRE projects.

By de-risking the sector, using guarantee and concessional debt instruments, the Framework makes it possible for FIs to invest in the market. This increases local currency investments in DRE initiatives. Local financial institutions are more likely to continue investing in the DRE sector beyond the program having gained necessary capacity and lending experience, potentially contributing to sustainability of access to finance for DRE.

The Framework aims to demonstrate that the proposed innovative securitization structure, which has become common in more sophisticated financial markets over the last 20 years, does work and can be applied in developing financial markets and the energy sector as well. It lays the ground for replication in other countries increasing future private sector financing in the off-grid sector and development of the financial market.

Potential for knowledge sharing and learning

The experience gained from the first projects within the Framework will be shared via sector workshops and dedicated webinars to discuss the results and lessons learned with a view to improving the Framework's performance. The experience from the different target countries will be shared between them, and other African countries, creating a regional knowledge sharing platform around DRE and the key subjects – such as, how to unlock private investments, local currency financing, the key market hurdles for a deployment at scale, and so on, supporting DRE companies to develop and grow the market. The objective of knowledge sharing is to galvanize the key stakeholders around the potential of DRE to transition to low carbon electricity and how countries can harness this opportunity by 'rethinking the way how to electrify the country' with a more flexible private sector driven approach.

Contribution to the regulatory framework and policies

The TA component will support the 6 countries in developing enabling policies and frameworks at a country level that enable investments in the sector and scaling of the DRE sector. This can take the form in enabling regulatory instruments such as licensing, feed-in tariff and net metering policies and fiscal incentives for private sector investments in DRE. Contributing to improving the enabling environment in the countries, aims to create a sustainable finance market, enabling growth of C&I, mini-grid and standalone solar systems. The focus of the TA will differ from country to country depending on the current regulation and the DRE solution. In Tunisia, it will focus on strengthening the self-consumption regulation in place, for example collective energy self-generation and consumption should be allowed and specially facilitated/promoted in small industrial parks. In the other countries, a conducive mini-grid regulation for private investment will be improved to attract private capital.

Adaptation Assessments

The literature on energy access and adaptation to climate change is vast and diverse with often inconclusive findings. However, recent studies confirm synergy between energy access and adaptation to climate change. Although qquantifying adaptation benefits for LEAF is challenging due to the lack of data to confirm adaptation impact in the six countries and LEAF being a Framework with underlying projects being unknown at this stage, the programme is committed to record the potential impact and increasing information and data on adaptation and energy access. The knowledge documents and information developed by LEAF will be used to confirm potential adaptation benefits and impact of LEAF sub-projects, and can as well support the GCF, AfDB and other stakeholders when designing DRE projects with integrated adaptation benefits in the future.

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

Describe the wider benefits and priorities of the project/programme in relation to the Sustainable Development Goals and provide an estimation of the impact potential in terms of:

- *Environmental co-benefits*
- *Social co-benefits including health impacts*
- *Economic co-benefits*
- *Gender-sensitive development impact*

Environmental co-benefits. By replacing polluting energy sources with renewable energy solutions, the Framework will contribute to reduced air pollution (with the ensuing health benefits for the population), reduced demand on water for hydro, and reduced deforestation.

Social co-benefits. Approximately 5.9 million people are expected to directly benefit from increased access to renewable energy. Social benefits from access to energy through DRE solutions include healthier living conditions (polluting energy sources are replaced by a clean solution), safer living environments (longer hours of light in and around the house) and increased opportunities (such as allowing children to study longer or running a small business).

Economic co-benefits. Scaling up DRE activities under the LEAF Framework will result in the 52,000 direct job opportunities and 29,000 direct informal jobs, increasing income of approximately 81,000 people. Most direct jobs emerge from downstream activities, including sales, installation, operation and maintenance. However, the facility aims to also support DRE companies with local upstream activities, such as assembling and manufacturing of systems.

Furthermore, power distribution networks across Africa are notoriously unreliable. Frequent power interruptions can be enormously costly for factories and SMEs. Small-to-medium scale grids, captive power, and off-grid solutions contribute to the electrification and industrialization in these countries and present a cost effective, low carbon and a reliable alternative to the grid. Through the provided energy solutions, LEAF will contribute to an increase in productivity, efficiency and energy security to 395 factories and SMEs.

Gender-sensitive development impact. The benefits of access to clean energy are felt most keenly by women, who often spend more time in the home. Through the Framework, 2.95 million women will benefit from increased access to energy. Furthermore, the Framework is expected to increase access to clean energy to 800,000 beneficiaries living below the poverty line and who are the most vulnerable to climate change. The programme will also create additional jobs in the DRE sector for 15,600 women, and 413,000 women including 48,000 poor and female-headed households will enter into new SHS, mini-grid and captive power contracts. Through TA, LEAF aims to remove existing gender gaps and inequality by working closely with DRE companies, developing policies focused on increasing outreach to women as customers and women as part of the workforce.

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

Describe the scale and intensity of vulnerability of the country and beneficiary groups and elaborate how the project/programme addresses the issue (e.g. the level of exposure to climate risks for beneficiary country and groups, overall income level, etc.). Describe how the project/programme addresses the following needs:

- *Vulnerability of the country and/or specific vulnerable groups, including gender aspects (for adaptation only)*
- *Economic and social development level of the country and the affected population*
- *Absence of alternative sources of financing (e.g. fiscal or balance of payments gap that prevents government from addressing the needs of the country; and lack of depth and history in the local capital market)*
- *Need for strengthening institutions and implementation capacity*

Countries and beneficiaries context. The focus countries are facing various challenges on their way towards adopting a low emission path and in providing reliable and efficient energy. Economies in these countries are dependent on climate sensitive sectors such as agriculture, energy, tourism, water and health. Hydro-electricity is also a dominant form of energy on many of the countries' grids, and increases in drought caused by climate change can threaten electricity security. With limited (cash) reserves and coping mechanisms, climate change-induced economic shocks often hit low income household hardest, and these groups struggle most to recover from such shocks.

The six countries are classified as lower-middle income countries and millions of people lack access to (reliable) energy, especially in rural areas. The overall electrification rate in the focus countries is 75% in Kenya, 54% in Nigeria, 82% in Ghana, 44% in Guinea and 44% in Ethiopia (AEP, 2020), with lower energy access rates for rural areas. Market studies conducted by AfDB estimate the combined existing DRE market size to be approximately US$ 7.2 billion in the focus countries. Renewable energy technologies represent a huge opportunity to electrify and boost economic growth in a cleaner, more affordable and sustainable way. Off-grid solutions offer poor-middle income households, previously without electricity, the opportunity to incorporate affordable lights and basic appliances into their daily lives, especially in remote communities and in many cases, reach people faster and in a more targeted way than grid-expansion alone. Captive renewable energy solutions present a cost effective, low carbon, reliable alternative to the grid, particularly in the Commercial and Industrial (C&I) sectors.

Financial, economic, and institutional needs. Most households cannot afford to pay the full cost of available renewable energy solutions/systems upfront and require a loan or financing plan to pay for them. Limited collateral and income levels limit financing to lower income potential customers.

The aforementioned financial market barriers have so far prevented the successful deployment at scale of DRE solutions in the focus countries despite a high market demand, limiting the sector's growth potential. Energy access companies are capital intensive companies that often include inventory and receivables financing and require substantial financing to expand and scale operations. Most companies are highly leveraged, borrowing in USD or Euro, while their revenues are collected in local currencies, making them vulnerable to FX risk. LEAF will unlock local currency and commercial debt financing for DRE businesses through 15-20 transactions including local banks/FIs to provide DRE investments.

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

Please describe how the beneficiary country takes ownership of and implements the funded project/programme. Describe the following:

- *Existing national climate strategy*
- *Existing GCF country programme*

- *Alignment with existing policies such as NDCs, NAMAs, and NAPs*
- *Capacity of Accredited Entities or Executing Entities to deliver*
- *Role of National Designated Authority*
- *Engagement with civil society organizations and other relevant stakeholders, including indigenous peoples, women and other vulnerable groups*

Existence of and coherence with national climate strategies and policies. Tunisia, Ghana, Nigeria, Kenya, Ethiopia and Guinea have strong energy transition policies, climate objectives and targets for reducing emissions (see table below). The main challenge is the capacity required to meet these goals and to ensure that energy supply is reliable and adequate. LEAF is well aligned and contributes to the countries' priorities for low-emission and climate-resilient development as identified in national climate strategies and plans and contributing to the following carbon emission reductions: 1.6 million tCO2e in Ghana, 10.5 million tCO2e in Nigeria, 1.2 million tCO2e in Kenya, 1.5 million tCO2e in Tunisia, 11.0 million tCO2e in Ethiopia and 2.9 million tCO2e in Guinea. Furthermore, LEAF will engage and strengthen local ecosystems and stakeholders, including local banks and other financial institutions and off-grid energy companies to further scale DRE.

Tunisia
Confirmed in its NDC, Tunisia seeks to reducing its greenhouse gas emissions across different sectors including energy, industrial processes, agriculture, forestry and other land use, and waste, in order to lower its carbon intensity by 41 per cent in 2030, relative to the base year 2010. Mitigation efforts will particularly center on the energy sector, which alone accounts for 75 per cent of the emissions reductions contributing to this decrease in carbon intensity. As part of the energy transition policy advocated by the State, it is estimated that the energy sector will reduce its carbon intensity in 2030 by 46 per cent compared with 2010. This will be done unconditionally and through its own efforts by 13 per cent compared to 2010, i.e. by around 1/3 of its INDC. To achieve the rest of its objective, an additional drop in carbon intensity of 28 per cent in 2030 compared to 2010, Tunisia is relying on the support of the international community for funding, capacity building and technology transfer. The national effort exclusively concerns the energy sector, which accounts for the most significant part of the investment needs.

In response to the energy challenges the country faces and to harness its renewable potential, the Government of Tunisia launched the Tunisia Solar Plan ("Plan Solaire Tunisien" – PST). The Tunisian Solar Plan is a major program within the energy transition strategy which was launched in 2018 and has the objective of increasing the share of RE in the energy mix. The PST targets to increase energy efficiency and the implementation of policies to diversify its energy mix, with a strong focus on the development of renewable energy. In particular, the program includes the following objectives by 2030[13]: i) Reduce primary energy demand by 30%; ii) Increase the share of renewable energies in the electricity mix to 30%; and iii) Reduce carbon intensity by 41%.

Ghana
Sustainable energy security is one of the priorities. Ghana's emission reduction goal in its NDC is to unconditionally lower its GHG emissions by 15 percent relative to a business-as-usual (BAU) scenario emission of 73.95MtCO2e2 by 2030 (by 12 percent in 2025). An additional 30 percent emission reduction is attainable on condition that external support is made available to Ghana to cover the full cost of implementing the mitigation action (finance, technology transfer, capacity building). With this external support, a total emission reduction of 45% below the BUA emission levels can be achieved by 2030 (by 27 percent in 2025).

The Government of Ghana launched in 2019 its Renewable Energy Master Plan (REMP) with the goal to provide an investment-focussed framework for the promotion and development of renewable energy resources for sustainable economic growth, contribute to improved social life and reduce adverse climate change effects. The REMP aims to achieve the following by 2030: i) Increase the proportion of renewable energy in the national energy generation mix from 42.5 MW in 2015 to 1363.63 MW (with grid connected systems totaling 1094.63 MW); ii) Reduce the dependence on biomass as main fuel for thermal energy applications; iii) Provide renewable energy-based decentralised electrification options in 1,000 off-grid communities; and iv) Promote local content and local participation in the renewable energy industry.

Nigeria
The government has made access to energy for all Nigerians a priority. At present, a significant share of demand for energy, and electricity in particular, remains unmet and the grid is unable to reliably serve the existing industrial and urban customer base. A shortfall in generation capacity has led to the proliferation of small generators, which are inefficient and polluting. Most rural communities remain off the grid, about 60% of the population lack access to electricity. At the current rate of grid expansion, they will largely remain under-served. The potential to both provide

[13] http://www.anme.tn/?q=fr/content/notre-vision

energy access and to reduce emissions is enormous. Under a BAU scenario (5% GDP growth) annual emissions are projected to grow 114% by 2030 to around 900 million tonnes – around 3.4 tonnes for every Nigerian. Under a high growth scenario, with economic growth at 7%, this climbs to over one billion tonnes. In its NDC, Nigeria made an unconditional contribution of 20 per cent below BAU that is consistent with the current development trends and government policy priorities. Moreover, Nigeria can make a significant additional contribution with international support, in the form of finance and investment, technology and capacity building. The combined policies and measures can deliver in a cost-effective manner direct development benefits to the country and reduce emissions 45 per cent below BAU.

The rural electrification goal of the Government of Nigeria is to increase access to electricity to 75% and 90% by 2020 and 2030 respectively, and at least 10% of renewable energy mix by 2025. REA'S off grid electrification strategy includes the following objectives for 2023: i) Promote the use of decentralised energy solutions to power households, communities & businesses; ii) Develop 10,000 mini grids which will provide power to 14% of the population; iii) Provide reliable power supply for 250,000 SMEs; iv) Deploy 5 million solar standalone systems for residential and SMEs; and v) Support the FGN's climate change obligations under the Paris Agreement, with respect to promoting renewable and reducing carbon emissions.

Kenya
Kenya strives to be a newly industrialized middle-income country by 2030. This development is expected to increase emissions from the energy sector. The current energy mix, however, is mainly clean with deliberate efforts by Government towards enhancing geothermal, wind, solar and other clean energy development. Kenya seeks to abate its GHG emissions by 30% by 2030 relative to the BAU scenario of 143 MtCO2eq and in line with its sustainable development agenda. This is also subject to international support in the form of finance, investment, technology development and transfer, and capacity building.

To attain universal electricity access by 2022, the National Electrification Strategy and the Least Cost Geospatial plan estimate that over US$ 2.6 billion is required to be invested in order to reach the unconnected households. The plan includes: (i) extension of the grid to reach 2.3 million households; (ii) establishment of mini grids to serve population clusters that are too distant from the network and where it is not economical to extend the existing grid to reach over 35,000 households; and (iii) 1.96 million households to be served by solar home systems.

Ethiopia
Ethiopia intends to limit its net greenhouse gas (GHG) emissions in 2030 to 145 Mt CO2e or lower. This would constitute a 255 MtCO2e reduction from the projected 'business-as usual' (BAU) emissions in 2030 or a 64% reduction from the BAU scenario in 2030. At 1.8 tCO2e, Ethiopia's per capita GHG emissions are insignificant compared to total global emissions. If Ethiopia's contribution is fully implemented, it would reduce per capita emissions to 1.1 tCO2e by 2030. The plan to mitigate GHG emissions is built on the following four pillars: i) Improving crop and livestock production; ii) Protecting and re-establishing forests; iii) Expanding electric power generation from renewable energy; and iv) Leapfrogging to clean and energy efficient technologies in transport, industry and building sectors. Ethiopia has already removed fossil fuel subsidies to enable enhanced generation and use of clean and renewable energy. 76.7% of Ethiopia's population currently lacks access to clean and reliable energy sources, relying on wood for fuel. The National Electrification Program, launched in 2017, outlines a plan to reach universal access by 2025, aiming to supply 35% of the population with off-grid solutions.

Guinea
The inventory of greenhouse gases made for the Initial National Communication (based on emissions for 1994) shows that the energy, land-use change and forestry (LUCF) and agriculture sectors are the main emitters. As they therefore represent a strategic priority for Guinea in terms of mitigation, they have been included in the INDC. The emissions growth rate is taken as 4.4% per year over the period, with emissions rising from 2.1 to 2.7 tonnes CO2eq per capita. In total, that would mean a doubling over 20 years and emissions of some 55m tonnes CO2eq in 2030. In its NDC (Guinea, 2015), Guinea pledged to undertake GHG mitigation actions, conditional upon receipt of international support. Mitigation actions include producing 30 percent of its energy from renewable energy sources, creating an enabling environment for energy efficiency measures, improving the energy performance of the Guinean economy, making exploration of mineral resources climate-compatible, and implementing sustainable forest management. In order to fight energy poverty, the government of Guinea has put in place ambitious policies to expand access to electricity to reach 35% electrification by 2020 and 100% by 2030, as well as increasing the share of renewables.

Engagement with NDAs
As part of the requirement for national ownership and alignment with national needs, the AfDB team shared the funding proposal with the National Designated Authorities in Nigeria, Kenya, Ghana, Tunisia, Ethiopia and Guinea. The AfDB

presented LEAF, its objectives and anticipated impact to the Technical Committee of the NDAs and key relevant stakeholders. Presentations were followed by discussions on the programme, including feedback from stakeholders and clarification of any questions. In order to obtain NOLs, AfDB has had calls as well with the rural electrification agencies (REA) in Nigeria, Ghana and Guinea. The programme was presented and alignment of objectives and complementarity to existing initiatives were discussed. The programme received endorsement from the three rural electrification agencies. For the implementation of the Framework, AfDB will work closely with the NDAs in the 6 countries and other relevant institutions, such as the rural electrification Agencies, to align the targeted transactions with other initiatives and with identifying potential pipeline projects and participation of LFIs. It further will support these institutions with TA to support an enabling environment for DRE investments and scaling of the sector.

Engagement with LFIs
Key to the success of this Framework is the participation of LFIs. The TA component plays a critical role in increasing the understanding of local banks and financing institutions of the DRE sector and financing of DRE projects and their participation in the targeted transactions. During the market assessment, some banks have shown an interest in exploring products that could help to unlock more local finance for the renewables sector and interest to increase their capacity to identify, assess and therefor finance DRE opportunities. LEAF offers support to these institutions to strengthen and develop their in-house capacity and the development of potential financing products and credit policies with regard to DRE. The AfDB team has also engaged local banks for potential pipeline projects under LEAF and other transactions. As of today, without the availability of de-risking instruments and the ability to improve pricing through some level of concessionally, it has proven difficult to include local FIs in the intended transactions. The identification of FIs for LEAF will happen through: i) AfDB's network and relationships with local financial institutions in the countries; ii) recommendations and relationships provided by the NDAs, REAs other country institutions; iii) the consultants involved in the implementation of the capacity building component; iv) potential FIs identified in the market assessment; and v) recommendations from DRE companies or other stakeholders of the targeted transactions.

Engagement of other stakeholders.
AfDB is an important partner in developing the renewable energy sector, through originating, designing & implementing energy projects, supporting resource mobilization and providing climate finance, as well as policy dialogue. LEAF will from AfDB's extensive network and relationships in the sector – including DRE companies, financial institutions, sponsors and arrangers, industry organizations etc – to identify potential projects in alignment with the programme. Furthermore, LEAF will build on and is expected to complement established efforts by the Bank, such as interventions supported by the Sustainable Energy Fund for Africa (SEFA) such as the Mini-Grid Market Development Programme.

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

Describe how the financial structure is adequate and reasonable in order to achieve the proposal's objectives, including addressing existing bottlenecks and/or barriers, and providing the minimum concessionality to ensure the project is viable without crowding out private and other public investments. Refer to section B.5 on the justification of GCF funding requested as necessary.

Please describe the efficiency and effectiveness of the proposed project/programme, taking into account the total financing and mitigation/ adaptation impact the project/programme aims to achieve, and explain how this compares to an appropriate benchmark.

Please specify the expected economic rate of return based on a comparison of the scenarios with and without the project/programme.

Please specify the expected financial rate of return with and without the Fund's support to illustrate the need for GCF funding to illustrate overall cost effectiveness.

Please explain how best available technologies and practices have been considered and applied. If applicable, specify the innovations/modifications/adjustments that are made based on industry best practices.

Financial adequacy and appropriateness of concessionality. The Bank conducted market diagnostic studies on the financing needs for renewable energy including DRE in Kenya, Tunisia, Nigeria and Ghana to understand the market size of this opportunity.

In addition to this analysis, the Bank through the Sustainable Energy Fund for Africa (SEFA), has conducted green mini-grid market studies in various Sub-Saharan countries in the context of its Green Mini-grid Market Development Program (GMG MDP). The GMG MDP initiative supports the scale-up of investment in commercially viable green mini-grid projects through a broad range of interventions to improve the enabling environment, including market intelligence,

business development support, policy and regulatory support, access to finance, and quality assurance. The studies estimate the green mini-grid market financing need in Ethiopia, Guinea and Nigeria at approximately US$ 5.4 billion. Besides regulatory hurdles, the main barriers in the sector relate to limited access to finance, high costs of capital and challenges in the investment climate.

Despite the combined existing DRE market size of US$ 7.2 billion in the six countries, access to finance and local currency capital remain key hurdles to unlock the full DRE growth potential. The perceived risk of the sector, inability to assess attractiveness of DRE investments, lack of lending experience and local currency capital, are key limiting factors.

The concessional debt and guarantee instruments in the Framework are required to enhance local markets through de-risking the DRE sector and unlocking local currency debt to scale up decentralized renewables. GCF's ability to invest in riskier tranches catalyzes AfDB co-investment and allows the combined funding approach of LEAF to address the market barriers mentioned in this proposal. LFIs have showed some willingness to invest in the market providing they have access to de-risking instruments and capacity building. The Framework provides least concessionality needed to make the targeted transactions viable and will crowd in private investment. The principle of minimal concessionality will be applied for all considered Framework's projects. By de-risking the sector, the Framework unlocks and increases local currency finance and builds lending experience and confidence in DRE initiatives, demonstrating the opportunity and potential of DRE financing.

The financial models demonstrate that the concessionality will reduce the all-in cost of debt, resulting in acceptable debt service coverage ratios (DSCR). Without the concessionality, the DSCR will be too low to support commercially viable project.

E. LOGICAL FRAMEWORK

This section refers to the project/programme's logical Framework in accordance with the GCF's Performance Measurement Frameworks under the Results Management Framework to which the project/programme contributes as a whole, including in respect of any co-financing.

E.1. Paradigm shift objectives

Please select the appropriated expected result. For cross-cutting proposals, tick both.

☒ Shift to low-emission sustainable development pathways

☒ Increased climate resilient sustainable development

E.2. Core indicator targets

Provide specific numerical values for the GCF core indicators to be achieved by the project/programme. Methodologies for the calculations should be provided. This should be consistent with the information provided in section A.

E.2.1. Expected tonnes of carbon dioxide equivalent (t CO_2 eq) to be reduced or avoided (mitigation and cross-cutting only)	Annual	1.207.250 t CO_2 eq
	Lifetime	28.862.364 t CO_2 eq
E.2.2. Estimated cost per t CO_2 eq, defined as total investment cost / expected lifetime emission reductions (mitigation and cross-cutting only)	(a) Total project costs	959,900,000 USD
	(b) Requested GCF amount	170,900,000 USD
	(c) Expected lifetime emission reductions	28.862.364 t CO_2eq
	(d) Estimated cost per t CO_2eq (d = a / c)	33.26 USD **/ t CO_2eq**
	(e) Estimated GCF cost per t CO_2eq removed (e = b / c)	5.92 USD **/ t CO_2eq**
E.2.3. Expected volume of finance to be leveraged by the proposed project/programme as a result of the Fund's financing, disaggregated by public and private sources (mitigation and cross-cutting only)	(f) Total finance leveraged	789,000,000 USD
	(g) Public source co-financed	- USD
	(h) Private source finance leveraged	789,000,000 USD
	(i) Total Leverage ratio (i = f / b)	4.62
	(j) Public source co-financing ratio (j = g / b)	-
	(k) Private source leverage ratio (k = h / b)	4.62
E.2.4. Expected total number of direct and indirect beneficiaries, (disaggregated by sex)	Direct	
	Indirect	
	For a multi-country proposal, indicate the aggregate amount here and provide the data per country in annex 17.	
E.2.5. Number of beneficiaries relative to total population (disaggregated by sex)	Direct	
	Indirect	
	For a multi-country proposal, leave blank and provide the data per country in annex 17.	

E.3. Fund-level impacts

Select the appropriate impact(s) to be reported for the project/programme. Select key result areas and corresponding indicators from GCF RMF and PMFs as appropriate. Note that more than one indicator may be selected per expected impact result. The result areas indicated in this section should match those selected in section A.4 above. Add rows as needed.

Expected Results	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term	Final	

M1.0 Reduced emissions through increased low-emission energy access and power generation	*M1.1 Tonnes of carbon dioxide equivalent (t CO2eq) reduced or avoided - gender-sensitive energy access power generation*	Bank supervision reports, reports	0	523.877	4.1 million	Demand for renewable energy is increasing. Beneficiaries have the resources necessary to conduct maintenance of RE assets.
M3.0 Increased financing available for low-emission energy access and power generation	*M3.1Volume of finance leveraged by Fund funding (USD, million)*	Bank supervision reports, reports	0	473	789	There is a dynamic DRE private sector in place that is able to absorb the financing. FIs are willing to enter DRE sector, given derisking is provided and capacity is strengthened to engage the sector.

E.4. Fund-level outcomes

Select the appropriate outcome(s) to be reported for the project/programme. Select key expected outcomes and corresponding indicators from GCF RMF and PMFs as appropriate. Note that more than one indicator may be selected per expected outcome. Add rows as needed.

Expected Outcomes	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term)	Final	
M6.0 Increased number of small, medium and large low-emission power suppliers	*M6.3 MWs of low-emission energy capacity installed, generated and/or rehabilitated as a result of GCF support*	Bank supervision reports Reports, industry reports	0	118	386	The decentralized renewable energy sector is growing with an increasing number and growing private sector companies.
M6.0 Increased number of small, medium and large low-emission power suppliers	*M6.2 Number of households and individuals (males and females) with improved access to low-emission energy sources, of which % women*	Bank supervision reports Reports; industry reports	0	646.000 households, 3.32 million beneficiaries, of which 50% women	1.18 million households, 5.9 million beneficiaries, of which	Demand for renewable energy is increasing.

					50% wome n	
M5.0 Strengthened institutional and regulatory systems	*M5.1 Institutional and regulatory systems that improve incentives for low-emission planning and development and their effective implementation (Number of countries that have updated regulations, systems or frameworks at (sub-)national level supporting DRE development)*	Bank supervision reports Reports, publication, Policy documents, national regulations, fiscal instruments	0	3	6	Governments are encouraging greener energy solutions to diversify the energy mix and looking to develop enabling policies to support the DRE sector.

E.5. Project/programme performance indicators

The performance indicators for progress reporting during implementation should seek to measure pre-existing conditions, progress and results at the most relevant level for ease of GCF monitoring and AE reporting. Add rows as needed.

Expected Results	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term	Final	
Output 1.1. Deployment of SHS systems, C&I Systems and mini-grid connections	Amount of local debt financing deployed through the Framework (US$ equivalent)	Bank supervision reports Reports	0	45 million	100 million	DRE companies require local currency financing. DREs having sufficient technical capacity to develop bankable projects rapidly.
	# of DRE companies with increased access to finance through the Framework	Bank supervision reports Reports	0	10	20	
	# of (asset-backed) facilities reaching financial close through the Framework	Bank supervision reports Reports, Bank reporting	0	10	15-20	Although more complex and still novel, DRE companies are looking at securitization structures to leverage receivables and obtain off-balance sheet financing.
	# of new SHS, mini-grid and captive power contracts entered into with customers, of which % women	Bank supervision reports Reports, Industry reports (GOGLA off-grid solar market reports)	0	SHS: 606,400 MG: 39,638 CP: 78	SHS: 936,000 MG: 243.556 CP:395	Demand for renewable energy is increasing.

	# of jobs created in DRE companies, of which % women	Bank supervision reports Reports	0	16,600, of which 30% women	52.000 , of which 30% women	Additional financing will expand business operations. Profits will be invested into operations scale-up.
Output 2.1 DRE companies benefiting from C-19 recovery finance	Amount of C-19 recovery finance provided through the Framework (US$ equivalent)	Bank supervision reports	0	70	70	
	# of DRE companies accessing C-19 recovery finance	Bank supervision reports	0	15	15	
Output 3.1 Increased capacity of local banks/FIs to engage and finance DRE	# FIs that received training	Bank supervision reports Reports	0	10	20	Banks are interested to finance to DRE sector provided they have increased capacity required to do so.
Output 3.2 Laws, policies, fiscal instruments and/or regulations are adopted to facilitate DRE private sector development and investment	# of new laws, policies, fiscal instruments and/or regulations are adopted in target countries	National policy documents, fiscal policies/regulations, decrees, legal texts	0	3	6	Governments are encouraging greener energy solutions to diversify the energy mix and looking to develop enabling policies to support DRE development.
Output 3.3 Adaptation impact potential is validated	# of adaptation assessments conducted	Bank supervision reports, adaptation reports	0	6	6	

E.6. Activities

All project activities should be listed here with a description and sub-activities. Significant deliverables should be reflected in the implementation timetable. Add rows as needed.

Activity	Description	Sub-activities	Deliverables
1. Mobilise and de-risk commercial investment in SHS, mini-grids, C&I	Derisk DRE projects by providing guarantees and subordinated debt instruments	Activity 1.1.1: provide concessional guarantees to unlock commercial investment Activity 1.1.2: provide subordinated concessional debt instruments to cover commercial investors risk and make concessional capital available Activity 1.1.3: Develop structured facilities and receivables-backed financing	7-10 transactions benefitting from a guarantee, and 7-10 transaction benefitting from sub-ordinated debt provided by the GCF and AfDB; including securitization structures.

		transactions to mitigate consumers default risk Activity 1.1.4: Deploy concessional sub-debt and guarantees to finance a portfolio of DRE businesses through Financial Intermediaries (holding company, Fund, multi DRE companies SPV – aggregators) Activity 1.1.5: Deploy tenor extension guarantees to LFIs	
2 Deploy and mobilise COVID-19 recovery funding for DRE companies in mini-grid, C&I, SHS	Provide concessional financing to unlock additional commercial funding to support COVID-19 recovery plans of DRE companies	Activity 2.1.1: Provide concessional debt to DRE companies through a co-financing Platform with debt funds (Covid-19 Off-grid Recovery Platform) or the Energy for Healthcare Programme to scale-up electrification of health infrastructure.	USD 50 million commercial capital leveraged 1 transaction benefitting from concessional debt to support DRE recovery plans
3.1.1 Provide TA support to LFIs to increase their investment in the DRE space 3.1.2 Support structuring of financially sound and strong receivables backed and other financing facilities 3.2 Support governments in enabling policies for private investment in SHS, Mini-grid, C&I 3.3 Conduct country-level adaptation assessments 3.4 Support gender assessment and gender action plans, indicators and monitoring & evaluation activities	The capacity building effort will support LFIs in engaging the DRE sector and the development of enabling environments in the target countries to increase access to finance to DRE. Assess adaptation impact potential DRE Development of a gender action plan at project level – monitoring & evaluation of the implementation of the plan	Activity 3.1.1: Capacity building of FIs to increase their understanding of the market and identify, assess and finance DRE companies Activity 3.1.2: Support the structuring of strong and viable innovative financing structure Activity: 3.2.1: TA to focus countries to support the development of enabling policies and frameworks Activity 3.3.1: Conduct country level adaptation assessment for each country Activity 3.4.1: Conduct national gender assessments and refine gender action plans for each country Activity 3.4.1: Support the development of strategies and marketing campaigns for DRE companies to increase share of female customers Activity 3.4.3: Develop gender inclusive recruitment and HR policies to increase women at the workforce of DRE companies	TA provided to 20 FIs TA support to 10-15 transactions TA support to 6 country governments/REA/related agencies and to strengthen systems and frameworks, including digitalisation of licensing, data collection and real time monitoring of electrification progress 6 adaptation assessments conducted 6 national gender assessments and refined action plans developed 5-10 strategies and marketing campaigns developed for DRE companies to increase share of female customers 5-10 gender inclusive recruitment and HR policies developed to increase women at the workforce of DRE companies

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

Besides the arrangements (e.g. annual performance reports) laid out in AMA, please give a summary of the project/programme specific arrangements for monitoring and evaluation. Please provide the types of interim and final evaluations. Describe Accredited Entity (AE) project reporting relationships, including to the NDA/Focal Point and between AE and Executing Entity (EE) as relevant, identifying reporting obligations from the EE to the AE. This should relate to the frequency of reporting on project indicators, implementation challenges and financial status.

Monitoring and Reporting
AfDB – as the accredited executing agency – will be responsible for the overall monitoring of the Framework and reporting periodically to the GCF under the terms to be agreed between the AfDB and GCF.

Monitoring and reporting of the Framework will be guided and managed by the AfDB project lifecycle management Framework and relevant internal policies and procedures. The monitoring and reporting will comprise of two segments: operational and financial. The operational monitoring will be based on the Framework level performance indicators, including sex-disaggregated indicators where appropriate and possible, and the period reporting will consist of:

(a) Progress towards results reports;
(b) Monitoring reports;
(c) Mid-term review; and
(d) Implementation completion report.

Operational monitoring will be done by the Renewable Energy Department whereas he financial monitoring of underlying transactions will be the responsibility of the Portfolio Management department of the AfDB. The Bank will carry out country level annual supervision missions to assess the performance of the sub-projects including gender and inclusion targets and progress towards results. The reporting requirements will be built into the financing agreements for the sub-projects. For lending done by local FIs/ Banks, each financial intermediary will be responsible for collecting and reporting the operational and financial monitoring data.

The Framework level targets are indicative; the eventual targets will depend on the sub-projects approved under the Framework. The targets will be updated based on the actual portfolio and reporting to GCF in the annual reporting cycle.

Evaluation
The end of Framework evaluation of the LEAF Framework will comply with the AfDB and GCF evaluation policy. An independent evaluation of the projects will track key performance indicators and results, as well as gender and other inclusion targets will be carried out after the completion of implementation period of the Framework. In addition, the Bank will consider deploying qualitative evaluations through surveys, for example, during implementation to collect stakeholder and beneficiary feedback on the outcomes of the facility.

F. RISK ASSESSMENT AND MANAGEMENT

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

Please describe financial, technical, operational, macroeconomic/political, money laundering/terrorist financing (ML/TF), sanctions, prohibited practices, and other risks that might prevent the project/programme objectives from being achieved. Also describe the proposed risk mitigation measures. Insert additional rows if necessary.

For probability: High has significant probability, Medium has moderate probability, Low has negligible probability
For impact: High has significant impact, Medium has moderate impact, Low has negligible impact
Prohibited practices include abuse, conflict of interest, corruption, retaliation against whistleblowers or witnesses, as well as fraudulent, coercive, collusive, and obstructive practices

Selected Risk Factor 1: Framework delivery risk

Category	Probability	Impact
Technical and operational	High	Medium

Description

Please describe the risk to the best of your knowledge at this point in time.
The Framework needs to generate a sufficient pipeline of viable transactions to fully consume the GCF funding. Due to the nascent aspect of the DRE / energy access market, the projects may take time to develop.

Mitigation Measure(s)

Please describe how the identified risk will be mitigated or managed. Do the mitigation measures lower the probability of risk occurring? If so, to what level?

A pipeline of projects amounting to approximately one-third of the total Framework (~ US$ 259 million) is already identified prior to inception. The Framework can start deploying funds from inception while further developing the pipeline. It is expected that the facility will have a ramp-up period to catalyze additional projects. This risk will be further mitigated via heightened Framework visibility and pro-active engagement with the sector to identify and nurture transaction opportunities. Despite uncertainty in the sector, the rapid development of solar technology highlights that there is a high potential for renewable energy solutions, not only for off-grid areas but also for 'unreliable-grid' areas.

Selected Risk Factor 2: Repayment Risk

Category	Probability	Impact
Credit	Medium	Medium/ (very) High risk

Description

Please describe the risk to the best of your knowledge at this point in time.
The expected losses for each layer will be determined at project level. First loss and sub-tranche layer will potentially be between the high-risk category and very high risk category, depending on the underlying project dynamics.

Mitigation Measure(s)

Please describe how the identified risk will be mitigated or managed. Do the mitigation measures lower the probability of risk occurring? If so, to what level?

The selection of beneficiaries will be done through detailed assessment criteria. Each financing will be approved after comprehensive due diligence and through the internal credit approval process of AfDB. The Bank will evaluate each sponsor's and FIs' execution capability to service loans. Transactions benefit from a specialist in financial transaction advisory to ensure included transactions meet eligibility criteria, financing structures are solid and financially sound and assess risks and proactive mitigation strategies. Further, the blended finance products offered by the Framework will be priced to keep the loans affordable and sustainable for borrowers. Lastly, the financing in local currency will shield the projects from forex risks.

Selected Risk Factor 3: Financing Risk

Category	Probability	Impact
Credit	Medium	Medium

Description

Please describe the risk to the best of your knowledge at this point in time.
Inability to mobilize sufficient local currency financing, as local banks and FIs face high cost of borrowing, high collateral requirements, tenor mismatches or limited willingness or ability to take risk exposure. The deteriorating credit conditions of Banks due to the impact of the COVID-19 pandemic has made local FIs even more risk averse.

Mitigation Measure(s)

Please describe how the identified risk will be mitigated or managed. Do the mitigation measures lower the probability of risk occurring? If so, to what level?
The local currency financing is the critical for the success of the Framework. The revenue stream of the projects is specified in local currencies of their country. The local Banks / FIs face interest rate and macroeconomic risks in the markets. To ensure risk coverage, they have high collateral requirements. The credit enhancement products in the Framework are specifically designed to alleviate the constraints of local banks and FIs.

Selected Risk Factor 4: Implementation risk

Category	Probability	Impact
Technical and operational	Medium	Medium

Description

Please describe the risk to the best of your knowledge at this point in time.
Weak government commitment and regulatory changes/ challenges may impede the delivery of the Framework.

Mitigation Measure(s)

Please describe how the identified risk will be mitigated or managed. Do the mitigation measures lower the probability of risk occurring? If so, to what level?
Successful Framework implementation depends on the technical & operational capacity of the local FIs and regulators. The Framework includes TA to develop the capacity of local FIs and developers. Moreover, the TA will also support development standardized PPAs, concession agreements, receivable backed financing documents, and sound underwriting Frameworks for DRE businesses.

Selected Risk Factor 5: Regulatory risk

Category	Probability	Impact
Governance	Medium	Medium

Description

Please describe the risk to the best of your knowledge at this point in time.
Poor regulatory framework to deploy DRE at scale and support private investments may impede the delivery of the Framework. Mini-grid, C&I and SHS projects are exposed to regulatory risk. For example, if the government decides to increase the import duty of solar systems or to reduce the net billing tariff for C&I.

Mitigation Measure(s)

Please describe how the identified risk will be mitigated or managed. Do the mitigation measures lower the probability of risk occurring? If so, to what level?
Successful Framework implementation depends on the capacity of regulators. The Framework includes TA to develop the capacity of sector regulators and support them in developing an enabling environment for private sector investments.

Selected Risk Factor 6: FX risk

Category	Probability	Impact
Forex	Low	Medium

Description

Please describe the risk to the best of your knowledge at this point in time.
GCF and AfDB provide guarantees and sub debt in USD, while the underlying loan might be in local currency.

Mitigation Measure(s)

Please describe how the identified risk will be mitigated or managed. Do the mitigation measures lower the probability of risk occurring? If so, to what level?
To the extent possible LEAF will seek to avoid currency mismatches in the operation. While the GCF instruments are always provided in USD, the Bank can provide local currency debt or PCG where appropriate. Currency hedging strategies to mitigate against foreign exchange risk will be elaborated on a project-by-project basis by the AfDB transaction team for transactions where the instruments are provided in USD, and the underlying loans are

denominated in another, local currency. For debt provided in USD, the currency risk is to be borne by the borrower, and the borrower will develop a hedging strategy, which could include a hedging counterparty with FX forwards, swaps etc. The exposure for PGCs will be capped to the maximum guarantee amount in USD (spot the guarantee at the FX rate).

Selected Risk Factor 7: Environmental and Social Risk		
Category	Probability	Impact
Other	Low	Low

Description
Please describe the risk to the best of your knowledge at this point in time. Environmental and Social risks relate to the failure to identify and assess potential impacts and implement and monitor plans and systems intended to avoid, minimize and mitigate negative impacts. Not all underlying projects are known at inception. The beneficiaries may fail to comply with AfDB or GCF E&S requirements.
Mitigation Measure(s)
Please describe how the identified risk will be mitigated or managed. Do the mitigation measures lower the probability of risk occurring? If so, to what level? As an integral part of the Bank's due diligence process, potential Framework beneficiaries, including DRE companies, and FIs, will be assessed based on their commitment and capacity to manage and/or improve their E&S management and performance. The ESS category of the projects will be confirmed based on the outcome of the E&S assessment. The financing will be extended to projects limited to ESS Category B. The projects will also be required to obtain local ESIA approval and provide an ESMP plan to maintain compliance with AfDB, GCF and local E&S requirements prior to approval. E&S monitoring and reporting from the beneficiaries and intermediary FIs/Banks will be included as covenant to the financing agreements.

G. GCF POLICIES AND STANDARDS

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

Provide the environmental and social risk category assigned to the proposal as a result of screening and the rationale for assigning such category. Present also the environmental and social assessment and management instruments developed for the proposal (for example, ESIA, ESMP, ESMF, ESMS, environmental and social audits, etc.). Provide a summary of the main outcomes of these instruments. Present the key environmental and social risks and impacts and the measures on how the project/programme will avoid, minimize and mitigate negative impacts at each stage (e.g. preparation, implementation and operation), in accordance with GCF's ESS standards. If the proposed project or programme involves investments through financial intermediations, describe the due diligence and management plans by the Executing Entities (EEs) and the oversight and supervision arrangements. Describe the capacity of the EEs to implement the ESMP and ESMF and arrangements for compliance monitoring, supervision and reporting. Include a description of the project/programme-level grievance redress mechanism, a summary of the extent of multi-stakeholder consultations undertaken for the project/programme, the plan of the Accredited Entity (AE) and EEs to continue to engage the stakeholders throughout project implementation, and the manner and timing of disclosure of the applicable safeguards reports following the requirements of the GCF Information Disclosure Policy and Environmental and Social Policy.

Describe any potential impacts on indigenous peoples and the measures to address these impacts including the development of an Indigenous Peoples Plan and the process for meaningful consultation leading to free, prior and informed consent, pursuant to the GCF Indigenous Peoples Policy.

Attach the appropriate assessment and management instruments or other applicable studies, depending on the environmental and social risk category as annex 6.

An Environmental and Social Management Framework (ESMF) is being developed for the LEAF Framework. All underlying projects are expected to comply with the do-no-harm principles such as adherence to applied Environmental and Social safeguard practices (E&S) to be managed through the implementation of the ESMF. Potential projects and sponsors will be assessed on the compliance with the ESMF and requirements of the Bank's Integrated Safeguards Systems to ensure they meet the requirements in terms of policies, procedures and organizational structure for the implementation and monitoring of the projects. The ESMF will outline eligibility criteria and ensure that underlying projects are all limited to Category B.

Underlying projects will be assessed by the Bank's Environmental and Social Safeguards team. Specifically, the Environmental and Social Management Frameworks of each sponsor will be evaluated and assessed to meet the lending requirements of the AfDB and Framework ESMF. The Bank's requirements are contained within the Integrated Safeguards System (ISS) (AfDB, 2013).

A summary of the potential negative E&S impacts for each type of technology (i.e. SHS, GMG and C&I solutions) has been included in **ESMF**. In summary, negative impacts relate to:

- **Social:** Physical presence of workers, equipment and materials on site; health and safety issues; and social conflicts. Mitigation: Environmental and Social Management Systems (ESMS) will be required for all underlying projects; detailed and step by step E&S responsibilities for key players for each project component
- **Land acquisition, resettlement, livelihood restoration**. Physical and economic displacement of people, property, assets and resources; waste handling and disposal, wastewater effluent management and disposal; air emissions (from vehicles/machinery and dust), water and soil contamination, accidents, noise and vibration, impacts on resources, degradation on items of cultural heritage significance etc. Mitigation: DRE companies will be required to prepare resettlement, livelihood restoration measures where applicable in line with the Resettlement Policy Framework (RPF).
- **Lack of awareness on E&S risks and impacts**. Mitigation: Sensitization and dialogue via various methods of stakeholder engagement
- **Battery disposal and recycling** (lead-acid and lithium ion). Mitigation: Require SHS, GMG, Captive Power companies and other Private companies to put in place policies and procedures with regard to battery storage, collection, recycling, and disposal practices.

The stakeholder Engagement Plan & Grievance Mechanism confirmed in the ESMF provides the process to be followed for stakeholder engagement and disclosure for each underlying project; the categorisation of the subproject will determine the nature and level of environmental and social investigations, information disclosure and stakeholder engagement required. Through stakeholder identification and engagement, the project will establish which

organizations and individuals may be directly or indirectly affected (positively and negatively) or have an interest in the projects. An example for stakeholder groups is confirmed in the ESMF, however this list should be adapted to fit the specific project and updated and modified over the course of the project.

DRE companies will be required to set up a Grievance Redress Mechanism (GRM) to ensure that all complaints from local communities are dealt with appropriately, with corrective actions being implemented, and the grievant being informed of the outcome. The objective of the GRM is to provide a platform for project affected persons to voice their concerns and opinions related to the project, in particular with regard to land acquisition and resettlement, as well as to address and resolve grievances promptly, fairly and transparently.

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

Provide a summary of the gender assessment and project/programme-level gender action plan that is aligned with the objectives of GCF's Gender Policy. Confirm a gender assessment and action plan exists describing the process used to develop both documents. Provide information on the key findings (who is vulnerable and why) and key recommendations (how to address the vulnerability identified) of the gender assessment. Indicate if stakeholder consultations have taken place and describe the key inputs integrated into the action plan, including: how addressing the vulnerability will ensure equal participation and benefits from funds investment; key gender-related results to be expected from the project/programme with targets; implementation arrangements that the AE has put in place to ensure activities are implemented and expected outcomes will be achieved, monitored and evaluated.

Provide the full gender assessment and project-level gender action plan as annex 8.

The gender aspects of the LEAF aim to address and reduce gender inequality, strengthen stakeholder commitment and deliver better accountability to both men and women. The Framework will especially contribute at the sector level to high-quality, more comprehensive, systematic and participatory sex-disaggregated data collection, as well as to qualitative and quantifiable gender analysis and action plans prior to the implementation of its activities. Therefore, the gender assessment and gender action plans are aligned with the objectives of GCF's Gender Policy.

The gender focus and activities of the LEAF are based on the Bank's previous work in the renewable energy access sector and gender asessments conducted for the countries targeted. As we are at the early stage of the Framework, local consultations with national stakeholders involved in the gender and renewable energy thematic will be further conducted by a dedicated gender expert recruited for LEAF. Meanwhile, the country strategic papers, country gender profiles, and the database of the countries, of the Multilateral Development Banks and UN agencies were consulted to compile current gender gaps in each of the 6 countries selected for the LEAF. The LEAF will strive for equal participation and benefits from funds investment for women and men by supporting the collection of sex-disaggregated data, by including sex-disaggregated indicators and targets as well as sub-categories of women in the gender action plans.

Key findings of the gender assessments reveal that although the LEAF countries have different national electrification rates, there are similar remaining gender gaps in access to and control over energy. For the many women living in non-central areas of the countries targeted by LEAF, promoting decentralized affordable, and reliable renewable energy is crucial to improving girls' and women's living conditions. The gender action plan includes specific interventions to increase women as customers and women in the DRE workforce.

According to the gender assessment, women from the countries selected for the LEAF are suffering from the indoor air pollution, the lack of data, and from the lack of economic empowerment due to difficult access to finance and absence of appropriate education on business expansion management. Women are little involved in the energy sector as consumers, as well as producers and agents of change.

The gender action plan includes specific activities focused on increasing access to renewable energy for women and girls, including FHHs and poor households, benefiting their health, safety and productive activity. This impact will be achieved by targeting gender specific activities dedicated to: (i) increasing access to DRE solutions, (ii) fostering job creation; (iii) generating data, and (iv) building or reinforcing the gender-responsive capacities of DRE companies.

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

Describe the project/programme's financial management including the financial monitoring systems, financial accounting, auditing, and disbursement structure and methods. Refer to section B.4 on implementation arrangements as necessary.

Articulate any procurement issues that may require attention, e.g. procurement implementation arrangements and the role of the AE under the respective proposal, articulation of procurement risk assessment undertaken and how that will be managed by the AE or the implementing agency. Provide a detailed procurement plan as annex 10.

Due Diligence. Each sub-project under the Framework will be processed individually by the Bank. Any funding commitment to an underlying transaction will be subject to AfDB's credit evaluation, due diligence and approval procedures. Findings and recommendations undergo a rigorous internal review process before they are cleared by Senior Management to be presented to the Bank's Board of Directors for approval, including various interdepartmental committee reviews.

AfDB will apply its diligence policies including Know-Your-Customer (KYC), Anti-Money Laundering (AML) and Combating the Financing of Terrorism (CFT) procedures and operational safeguards, and other evaluations to sponsors. The Integrity Due Diligence (IDD) analysis will be carried out on underlying projects to identify, assess, mitigate, manage and monitor potential loss from integrity risks and to ensure that funds are used for their intended purposes. The analysis includes identification of beneficial ownership, assessment of civil and regulatory backgrounds, identification of sanctioned persons and entities, and identification of Politically Exposed Persons (PEPs) and other high-risk relationships. Furthermore, through the bank's established guidelines on anti-fraud, anti-corruption and anti-money laundering policies, the AfDB ensures that its financing operations and investments are not used for illegal or tax evasion purposes.

Financial Management. Financial management will follow the AfDB's Guidelines for Financial Management and Financial Analysis of Projects, which describes the Banks' policies and procedures with regard to financial management and analysis of projects and programs. The implementation of the grants will follow the AfDB's financial management system, which covers budget planning and implementation, procurement, financial statement preparation and reporting, as well as audit. The AfDB will conduct an assessment of financial management of the executing agencies during the final appraisal. The purpose of this assessment is to evaluate the executing agencies' accounting systems and internal control systems and verify that their standards are adequate for effective implementation of the transactions.

Supervision and Portfolio Management. All funding commitments will be monitored for compliance and eligibility by the Bank. AfDB is responsible for and will undertake monitoring and reporting activities of the underlying transactions following Bank policies and procedures, and ensuring that it monitors and reports on development, climate change, and other relevant indicators/outcomes. The AfDB will ensure that the project portfolio are diligently managed, through close dialogue with clients and periodic monitoring and evaluation to enhance the prospects of: i) delivering expected development outcomes; ii) minimizing harmful environmental and social impacts over the course of projects' economic life; iii) meeting debt repayment obligations for the loans and iv) successful implementation of the Framework. At least, annual supervision missions will be organized to review implementation progress and performance of the activities under the Framework.

Procurement. The selection and engagement of consultants and the procurement of services for the Technical Assistance component will be carried out according to AfDB's "Procurement Policy for AfDB Funded Operations" (dated August 2015). The objective of the AfDB procurement policy is to maximize development effectiveness while ensuring fair, transparent, competitive, and value for money in the use of funds. The policy sets out principles that apply to procurement of goods, works, and services by the recipient of the funds from the Bank.

A procurement plan has been developed for the services to be delivered under the TA component of the LEAF Framework in accordance with its specific context and requirements. The procurement plan will be approved along with project appraisal document. The beneficiary of Framework funding will be required to follow the approved procurement plan. Any deviations from the procurement policy will be dealt according to Bank policies and procedures. The AfDB will sign the contract with the services providers for the TA.

Audit
The underlying TA projects which benefit government institutions will be subject to AfDB's audit policies and will be audited annually by external auditors acceptable to the Bank and at the completion of projects for which TA support has been provided.

G.4. Disclosure of funding proposal

Note: The Information Disclosure Policy (IDP) provides that the GCF will apply a presumption in favour of disclosure for all information and documents relating to the GCF and its funding activities. Under the IDP, 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. Information provided in

confidence is one of the exceptions, but this exception should not be applied broadly to an entire document if the document contains specific, segregable portions that can be disclosed without prejudice or harm.

Indicate below whether or not the funding proposal includes confidential information.

☐ 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.

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MINISTÈRE DE L'ENVIRONNEMENT,

DES EAUX ET FORETS

.....

Point Focal du Fonds Vert pour le Climat

.....

No.....35.....**/MEEF/PFFVC/2021**

RÉPUBLIQUE DE GUINÉE

Travail-Justice-Solidarité

.....

Conakry, le 02 /02/ 2021

Le Point Focal

To Mr. Yannick Glemarec
Executive Director, Green Climate Fund
Songdo, Republic of Korea.

Re: Funding proposal for the GCF by African Development Bank regarding Leveraging Energy Access Finance (LEAF) Framework.

Dear Madam, Sir,

We refer to the project: Leveraging Energy Access Finance (LEAF) Framework as included in the funding proposal submitted by African Development Bank to us on 2020/ 10 /14.

The undersigned is the duly authorized representative of The National Directorate for Environment, focal point of Guinea.

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: Leveraging Energy Access Finance (LEAF) Framework as included in the funding proposal.

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

(a) The government of Guinea has no-objection to the project Leveraging Energy Access Finance (LEAF) Framework as included in the funding proposal;
(b) The project: Leveraging Energy Access Finance (LEAF) Framework as included in the funding proposal is in conformity with Guinea's national priorities, strategies and plans;
(c) In accordance with the GCF's environmental and social safeguards, the project: Leveraging Energy Access Finance (LEAF) Framework 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 Leveraging Energy Access Finance (LEAF) Framework as included in the funding proposal has been duly followed.

Lansébounyi – Coléah Commune de Matam BP : 3118 Conakry – Rép. De Guinée
Tel : (+224) 622 21 31 51 / 657 54 54 93 – Email : dml54@live.fr

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the: Leveraging Energy Access Finance (LEAF) Framework.

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

Kind regards,

Fonds Vert Pour le Climat (FVC) Le Point Focal République de Guinée

Mohamed Lamine DOUMBOUYA

Lansébounyi – Coléah Commune de Matam BP : 3118 Conakry – Rép. De Guinée
Tel : (+224) 622 21 31 51 / 657 54 54 93 – Email : dml54@live.fr

REPUBLIC OF GHANA

MINISTRY OF FINANCE

In case of reply, the
number and date of this

Our Ref: MOF/ESRD/NREC/GCF/04/21
Your Ref:
Tel No:

9TH **APRIL, 2021**

Dear Mr. Yannick Glemarec

RE: LEVERAGING ENERGY ACCESS FINANCE FRAMEWORK

We refer to the "**Leveraging Energy Access Finance (LEAF) Framework**" funding proposal submitted by AfDB to the National Designated Authority (NDA), Ghana, on 23rd February, 2021 to replace the DESCO Plus Framework which had already receive No-objection Letter from the NDA.

2. The undersigned is the duly authorized representative of the Ministry of Finance, the National Designated Authority/Focal Point of the Republic of Ghana.

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

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

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

5. We confirm that our national process for ascertaining no-objection to the Leveraging Energy Access Finance Framework project as included in the funding proposal has been duly followed.

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

7. This No-objection replaces the earlier one which was issued by the NDA in December 2020 when the name of the proposal was "DESCO Plus Framework".

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

DR. ALHASSAN IDDRISU
DIRECTOR, ESRD/NDA, MOF

THE EXECUTIVE DIRECTOR
GREEN CLIMATE FUND ("GCF")
G-TOWER, 24-4 SONGDO-DONG,
YEONSU-GU INCHEON CITY,
REPUBLIC OF KOREA.

Cc: The President's Representative, MoF
The Chief Director, MoF
The Director, CC & GG Dept., AfDB

FEDERAL MINISTRY OF ENVIRONMENT

HEADQUARTERS, MABUSHI, ABUJA.

Ref. No. FMENV/DCC/GCF/029/58 Date 29 January, 2021

The Green Climate Fund("GCF")
Songdo International Business District,
175, Art Centre- Daero,
Yeonsu-gu, Incheon 406-840
Republic of Korea

Re: Funding proposal for the GCF by African Development Bank regarding "Leveraging Energy Access Finance LEAF – Framework"

Dear Madam, Sir,

We refer to the programme **Leveraging Energy Access Finance LEAF – Framework** in the Federal Republic of Nigeria as included in the funding proposal submitted by African Development Bank to us on 12th December 2020.

The undersigned is the duly authorized representative of Federal Ministry of Environment, the National Designated Authority/focal point of the Federal Republic of Nigeria.

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 Federal Republic of Nigeria 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 Federal Republic of Nigeria's national priorities, strategies and plans;
(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,

Halima Bawa-Bwari
GCF Focal Person Nigeria,

በኢትዮጵያ ፌዴራላዊ ዲሞክራሲያዊ ሪፑብሊክ
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The Federal Democratic Republic of Ethiopia
Environment, Forest and Climate Change Commission

ቁጥር Ref. No. 2/12.1/9430/13
ቀን Date 20/4/2021

To: The Green Climate Fund ("GCF")
Songdo International Business District
175, Art Center-Daero
Yeonsu-gu,Incheon 22004
Republic of Korea

Re: Funding proposal for the GCF by Africa Development Bank Unlocking Local Currency Debt Capital to Scale up Decentralized/Distributed Renewable Energy in Africa

Dear Madam/Sir,

We refer to the programme **Unlocking Local Currency Debt Capital to Scale up Decentralized/Distributed Renewable Energy in Africa** as included in the funding proposal submitted by the Africa Development Bank to us on October 12, 2020.

The undersigned is the duly authorized repress entative of Environment, Forest and Climate Change Commission, the National Designated Authority of the Federal Democratic Republic of Ethiopia.

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 Democratic Republic of Ethiopia 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 Ethiopia's national priorities, strategies and plans;

(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,

Tirhas Mebrahtu
Resource Mobilization Project
Monitoring &Evaluation
Directorate Director

CC : Honourable Commissioner
: General Directorate, Resources mobilization and Project Administration
EFCCC

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Addis Ababa-Ethiopia
✉12760
Website: www.efccc.gov.et

Ministère des Affaires Locales
et de l'Environnement

Tunis: April 21, 2021

To: The Green Climate Fund ("GCF")

Re: Funding proposal for the GCF by the African Development Bank (ADB) regarding « Leveraging Energy Access Finance (LEAF) Framework »

Dear Madam, Sir,

We refer to the programme "Leveraging Energy Access Finance (LEAF) Framework" in Tunisia as included in the funding proposal submitted by the ADB to us on 02 April 2021.

The undersigned is the duly authorized representative Chokri MEZGHANI, of the National Designated Authority/focal point of Tunisia.

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 Tunisia 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 Tunisia's national priorities, strategies and plans;
(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,

Dr. Chokri MEZGHANI

Nfp – GCF (TUNISIA)

Chokri MEZGHANI
National Focal Point for the
Green Climate Fund

REPUBLIC OF KENYA

THE NATIONAL TREASURY AND 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 (72) **Date: April 13, 2021**

Mr. Yannick Glemarec
Executive Director
Green Climate Fund
G-Tower, 24-4 Songdo-dong
Yeonsu-gu
Incheon City, Republic of Korea

Dear Yannick

Re: Funding Proposal for the GCF by African Development Bank regarding 'Leveraging Energy Access Finance (LEAF) Framework'

We refer to the programme ***"Leveraging Energy Access Finance (LEAF) Framework"*** as included in the concept note submitted to us by African Development Bank as the Accredited Entity on 25th February 2021. The overarching objective of the proposed programme is to accelerate access to clean electricity whilst reducing Green House Gas (GHG) emissions. It will achieve this by unlocking access to finance and local currency as well as de-risking investments for the private sector

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

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 Kenya 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 Kenya's national priorities, strategies and plans;
(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. Further, we 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.

Yours Sincerely

JULIUS M. MUIA, PhD, CBS
PRINCIPAL SECRETARY/NATIONAL TREASURY

Copy to:

Hon. (Amb.) Ukur Yatani, EGH
Cabinet Secretary
The National Treasury and Planning
NAIROBI

Dr. Eng. Joseph K. Njoroge, CBS
Principal Secretary
Ministry of Energy
NAIROBI

Dorsouma Al Hamndou
OIC Director
Climate Change and Green Growth Department
African Development Bank
ABIDJAN

Environmental and social safeguards report form pursuant to para. 17 of the IDP

Basic project or programme information	
Project or programme title	Leveraging Energy Access Finance (LEAF) Framework
Existence of subproject(s) to be identified after GCF Board approval	Yes
Sector (public or private)	Private
Accredited entity	African Development Bank (AfDB)
Environmental and social safeguards (ESS) category	Category I-2
Location – specific location(s) of project or target country or location(s) of programme	Ethiopia, Ghana, Guinea, Kenya, Nigeria, and Tunisia
Environmental and Social Impact Assessment (ESIA) (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
Environmental and Social Management Plan (ESMP) (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
Environmental and Social Management (ESMS) (if applicable)	
Date of disclosure on accredited entity's website	Wednesday, May 26, 2021
Language(s) of disclosure	English and French
Explanation on language	English is the working language of Nigeria, Kenya, Ghana, and Ethiopia. French is the working language for Tunisia and Guinea.
Link to disclosure	Ethiopia English: https://www.afdb.org/en/documents/multinational-leveraging-energy-access-finance-framework-leaf-programme-p-z1-ff0-020-esmf-report Ghana English: https://www.afdb.org/en/documents/multinational-leveraging-energy-access-finance-framework-leaf-programme-p-z1-ff0-020-esmf-report

	Guinea English: https://www.afdb.org/en/documents/multinational-leveraging-energy-access-finance-framework-leaf-programme-p-z1-ff0-020-esmf-report French: https://www.afdb.org/fr/documents/multinational-programme-de-financement-de-lacces-lenergie-leaf-p-z1-ff0-020-rapport-cges Kenya English: https://www.afdb.org/en/documents/multinational-leveraging-energy-access-finance-framework-leaf-programme-p-z1-ff0-020-esmf-report Nigeria English: https://www.afdb.org/en/documents/multinational-leveraging-energy-access-finance-framework-leaf-programme-p-z1-ff0-020-esmf-report Tunisia English: https://www.afdb.org/en/documents/multinational-leveraging-energy-access-finance-framework-leaf-programme-p-z1-ff0-020-esmf-report French: https://www.afdb.org/fr/documents/multinational-programme-de-financement-de-lacces-lenergie-leaf-p-z1-ff0-020-rapport-cges
Other link(s)	N/A
Remarks	The Environmental and Social Management Framework (ESMF) provides in Appendix J guidance on the preparation of an ESMS in accordance with the requirements for Category I-2 programme (equivalent to AfDB category 2)*.
Any other relevant ESS reports, e.g. Resettlement Action Plan (RAP), Resettlement Policy Framework (RPF), Indigenous Peoples Plan (IPP), IPP Framework (if applicable)	
Description of report/disclosure on accredited entity's website	Wednesday, May 26, 2021
Language(s) of disclosure	English and French
Explanation on language	English is the working language of Nigeria, Kenya, Ghana, and Ethiopia. French is the working language for Tunisia and Guinea.
Link to disclosure	Ethiopia English: https://www.afdb.org/en/documents/multinational-leveraging-energy-access-finance-framework-leaf-programme-p-z1-ff0-020-esmf-report

	Ghana English: https://www.afdb.org/en/documents/multinational-leveraging-energy-access-finance-framework-leaf-programme-p-z1-ff0-020-esmf-report Guinea English: https://www.afdb.org/en/documents/multinational-leveraging-energy-access-finance-framework-leaf-programme-p-z1-ff0-020-esmf-report French: https://www.afdb.org/fr/documents/multinational-programme-de-financement-de-lacces-lenergie-leaf-p-z1-ff0-020-rapport-cges Kenya English: https://www.afdb.org/en/documents/multinational-leveraging-energy-access-finance-framework-leaf-programme-p-z1-ff0-020-esmf-report Nigeria English: https://www.afdb.org/en/documents/multinational-leveraging-energy-access-finance-framework-leaf-programme-p-z1-ff0-020-esmf-report Tunisia English: https://www.afdb.org/en/documents/multinational-leveraging-energy-access-finance-framework-leaf-programme-p-z1-ff0-020-esmf-report French: https://www.afdb.org/fr/documents/multinational-programme-de-financement-de-lacces-lenergie-leaf-p-z1-ff0-020-rapport-cges
Other link(s)	AfDB Involuntary Resettlement Policy: https://www.afdb.org/en/documents/document/bank-group-involuntary-resettlement-policy-11342
Remarks	The Environmental and Social Management Framework (ESMF) provides in Appendix B guidance on the Resettlement Policy Framework (RPF), in accordance with the requirements for Category I-2 programme (equivalent to AfDB category 2)*.
Disclosure in locations convenient to affected peoples (stakeholders)	
Date	Wednesday, May 26, 2021
Place	African Development Bank Ethiopia Country Office Get House Building, Bole Road Addis Ababa, Ethiopia

	African Development Bank Ghana Country Office No. 2 A2 Rangoon Lane Rangoon House, (3rd Floor), Cantonments, Accra P.M.B. MB 59, Ministries Accra, Ghana African Development Bank Guinea Country Office 2emeAvenue, Villas n° 3 & 4, Cités des Nations, Boulbinet, Commune de Kaloum BP 6347, Conakry, République de Guinée African Development Bank East Africa Regional Hub Khushee Tower Longonot Road, Upper Hill Nairobi, Kenya African Development Bank Nigeria Country Office 1521 Cadastral Zone A0 Off Memorial Close Central Business District Abuja, Nigeria African Development Bank Tunisia Country Office Immeuble Zahrabed Avenue du Dollar, Les Berges Du Lac II Tunis 1053, Tunisia *Due to the COVID-19 pandemic and measures to contain the virus, AfDB offices are temporary closed. The documents are available at the given locations as soon as the situation allows.*
Date of Board meeting in which the FP is intended to be considered	
Date of accredited entity's Board meeting	Wednesday, October 20, 2021
Date of GCF's Board meeting	Monday, June 28, 2021

Note: This form was prepared by the accredited entity stated above.

*Subsequent to the disclosure of this form to the Board and active observers on Friday, 28 May 2021, the following text has been added: "(equivalent to AfDB category 2)".

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Independent Technical Advisory Panel's assessment of FP168

Proposal name:	Leveraging Energy Access Finance (LEAF) Framework
Accredited entity:	African Development Bank (AfDB)
Project/programme size:	Large

I. Assessment of the independent Technical Advisory Panel

1.1 Impact potential *Scale: High*

1. Access to energy is a critical challenge in much of Africa, and access to clean energy even more so. While considerable progress has been made over the last decade, lack of energy access continues to hold back the economic and social development of the continent, while also contributing to continuing environmental degradation. In the commercial and industrial sector, where grid-power is available, it is often unreliable and expensive.

2. Systematically addressing these challenges needs to involve the private financial sector, as they is of a scale that goes beyond what development finance institutions and governments can achieve on their own. Nevertheless, there are considerable barriers to delivering the required finance through commercial financial institutions, related to actual and perceived risk, lack of familiarity with the sector and clients, lack access to dedicated wholesale finance, currency mismatch lack of capacity in the financial institutions and a lack of demonstrated scaleable business models.

3. The LEAF programme will address these challenges in six African countries, Ethiopia, Ghana, Guinea, Kenya, Nigeria and Tunisia, through investments in distributed renewable energy (DRE) installations, including minigrids, solar home systems (SHS) and renewables for commercial and industrial (C&I) sites. It takes advantage of recent cost reductions in solar energy which have created the possibility for DRE installations to compete on a favourable basis with grid-delivered electricity as well as diesel gensets.

4. The programme is expected to directly deliver close to USD 1 billion in total financing, financing 386 MW of much-needed new capacity, leading to almost 29 $MtCO_2eq$ of emissions reductions over its lifetime, compared to the business-as-usual delivery of power. It is expected that financial institutions will continue to invest in the new DRE business lines created by the programme even after its end, and the total impact should therefore be considerably higher.

5. Following discussions with the independent TAP, the AE revisited cost assumptions about the average capital requirements for all three forms of DRE proposed to be supported under the programme, and decreased these assumptions, leading to a substantial increase in expected generation capacity added. The TAP welcomes this engagement from the accredited entity (AE), which has increased the ambition level of the programme, and thereby also allowed the TAP to increase the impact rating.

Operations and maintenance

6. The TAP is concerned about the assumptions being made regarding operations and maintenance (O&M) funding, which is presumed to be a given, with no further involvement from the programme. While it is correct that operators and service providers will normally ensure the upkeep of their operations, which is required to be able to continue to service the loans they have received, experience from the target countries indicates that this may not always be the case, in particular in mini-grid applications.

7. The TAP therefore requests that, as part of the operations manual of the programme, and to support the knowledge transfer to local financial institutions and final beneficiaries, a set

of principles for sustainable O&M for DRE operations is developed as part of a knowledge/technical assistance (TA) package, to be utilized, for example, by local financial institutions during their credit assessment process.

8. Overall, notwithstanding the observations on O&M, the independent TAP considers the mitigation impact of the programme to be HIGH.

1.2 Paradigm shift potential *Scale: High*

9. The paradigm shift of the programme derives from two key sources:

(a) the intervention through local financial institutions, which is expected to deliver lasting changes to the business models of these financing institutions which in turn should lead to sustainability of DRE financing even after the end of the GCF intervention; and

(b) the substantial scaling up of DRE investment activity in the target countries which will in itself ensure that a vibrant and sustainable DRE market is being created, barriers to entry are lowered and a thriving DRE eco-system can evolve.

10. In combination, these two elements should be a powerful driver for lasting change in the target markets, delivering long-term benefits to the communities and clients of the local financial institutions who are investing in DRE. At present, in a range of markets in Africa, DRE is on the cusp of entering the markets, but has not achieved the scale that is required, while investment plans for the continent are lacking the required funds to truly make a difference.

11. This programme therefore has the potential to deliver a substantial lift to the DRE market in the target countries, encouraging investments from local financial institutions rather than relying on development finance and foreign investors, who are unlikely to be as familiar with the markets, and therefore will consider them more risky and require higher returns.

12. This is therefore a well-targeted programme, combining deftly the strength of the AE in understanding the local markets with the concessional financial instruments of GCF. The focus on the private sector and financial intermediation has to be applauded, as it will lead to further, systemic impacts that will generate paradigm shift, such as reducing the exposure of these local financial institutions to transition risk, by providing them with clean tech investment opportunities, and allowing them to build new lines of DRE business made possible by this programme.

Risks to paradigm shift

13. The key risks relate to the overall economic cycle and the impact of the COVID-19 pandemic on the target markets. They will need to be closely managed throughout the implementation by the AE, as they can be both, country-specific but also regional.

14. Further risk relates to the potential of failure by the local financial institutions to fully integrate DRE finance into their business models. This will need to be addressed through the provision of high-quality technical assistance to the participating financial institutions.

Replicability and monitoring, reporting and verification for knowledge creation

15. The project is highly replicable, and capacity-building activities are integrated that will ensure knowledge and learning are achieved.

16. To further enhance these replicability aspects, the TAP is requiring the AE to report annually on clean power production from the programme and to provide publicly available assessments on the impact of:

(a) Local currency finance;

(b) Adaptation co-benefits;

(c) Costs and barriers of minigrid projects at country level; and

(d) Stakeholder engagement.

17. The AE has proposed a target of 386 MW of newly installed renewable energy capacity. While not separately identified as a target, the programme also provides the opportunity to track closely the actual energy production from the financed installations. The TAP is therefore requiring energy production to be measured during the loan operation lifespan, and reported to GCF for publication, to provide valuable data to other developers and policymakers. This data should be grouped by country and generation technology/project type.

18. Local currency finance is a critical element in the de-risking of the energy transition in the poorest countries, where hedging instruments, for example, are either unavailable or unaffordable. The AE is congratulated for recognising this and integrating a local currency element into the programme. The TAP is requesting that a special report on its impact is developed and provided for publication at the time of the mid-term evaluation.

19. The programme will include a component to allow the systematic assessment of adaptation co-benefits in a systemic manner in each project, enabling the validation and estimation of these benefits. This will materially add to develop a specific understanding of these benefits in the context of each country, region and sector. The TAP welcomes the inclusion of these assessments.

20. Stakeholder engagement is a critical element in development finance. The AE is requested by the TAP to provide continuous updates on its stakeholder engagement and the results thereof to GCF, to enable intervention by GCF should risks to communities emanate from the project.

21. It is also expected that the requested waste management plan for battery waste, and the requested tool kit for assurance of good quality O&M will have market-level benefits.

22. In view of the above-mentioned discussion, and balancing the overall impact potential and the risks, the TAP finds paradigm shift potential to be HIGH.

1.3 Sustainable development potential *Scale: High*

23. The sustainable development potential of the programme is substantial, even though it is also considered high risk and will need to be carefully managed during implementation to ensure the achievement of the potential outcomes.

Economic co-benefits:

24. The programme will deliver secure, clean and often cheaper power to people and businesses or institutions that currently lack access to power or are exposed to high power prices for often low-quality and highly polluting power delivered over centralised networks. Providing access to low-cost clean power will enable additional productive activities, new business opportunities and will support additional economic growth.

25. The programme will also provide local financial institutions with an entry point into a new market, financing DRE, which is fully aligned with the climate and energy transition. It will therefore de-risk the portfolio of these financial institutions, while providing them with new capabilities and a new line of business.

26. The programme also has a substantial net present value (NPV), leaving the direct beneficiaries considerably better off compared to the counterfactual situation.

Social co-benefits:

27. In social terms, the ability to provide power to non-connected areas and people, and to reduce the cost of this power, has important benefits for communities. New businesses raise economic activity and provide employment and income opportunities, while lighting enables children to study for longer periods. The ability to provide power however does not only expands the range and scale of productive activities that can be undertaken, it also provides the beneficiaries with more time to spend with their families and in their communities, by providing relief from basic tasks such as collecting fuel.

Environmental co-benefits:

28. Providing clean and affordable energy to communities will reduce environmental pressures leading to deforestation, and it will also reduce noise and air pollution from diesel, while reducing health risks from unsafe indoor air pollution.

29. While there is a risk associated with the disposal of end-of-life batteries, the TAP has raised this with the AE and requires mitigating measures to be put in place through the environmental and social management framework of the programme.

Gender-related co-benefits:

30. The programme is expected to have considerable gender benefits, by providing access to clean and affordable power to households, thereby relieving pressure on women and girls. It is also expected that the social and environmental benefits will predominantly benefit women and girls, while there will be large-scale new employment opportunities based in communities. A dedicated gender expert will help to reinforce these benefits by intervening along the supply and finance chain.

31. Considering the important sustainable development benefits and the close attention to stakeholder involvement in the development of the project, the TAP finds the sustainable development potential to be HIGH.

1.4 Needs of the recipient *Scale: High*

32. African countries continue to suffer from lack of access to energy, which is holding back economic and social development and exposing energy users to health and safety risks. Over 1 billion people in Africa do not have energy access, and without investments in DRE many of them will not be able to gain energy access. Commercial and industrial power consumers are often exposed to very high costs for grid-delivered power, making them less competitive and encouraging high-value activities related to agricultural products to be undertaken outside the zone where they are grown, or even outside Africa. The provision of low-cost DRE can change this.

33. Local financial institutions in Africa often lack the knowledge and capacity to assess the risks of investing in the nascent DRE sector, which lacks a track record and poses highly technical risks that, for example, credit officers are often unfamiliar with. Furthermore, the currency mismatch, of having to pay hard currency for DRE equipment while receiving income in local currency, substantially increases the risk and/or of borrowing for these projects for the final beneficiary.

34. Providing the local financial institutions with finance dedicated to investment in DRE, including loans, guarantees, local currency lines, and technical assistance, is a critical element of the paradigm shift potential of the programme.

35. This programme will address these urgent needs through the delivery of a high volume of DRE, dedicated finance and technical assistance, in a manner that is appropriate to local needs, working with local financial institutions who know the markets best.

36. Considering the above, the independent TAP rates the needs of the recipient as HIGH.

1.5 Country ownership *Scale: High*

Alignment with national climate strategy and policies

37. The project is fully aligned with the nationally determined contributions (NDCs) of the participating countries, as well as global policy directions relating to energy access. It thus supports the achievement of global mitigation as well as of national energy policy objectives.

Capacity of accredited entities or executing entities to deliver

38. The AE for the project is the African Development Bank (AfDB). AfDB has substantial experience in implementing DRE projects in Africa, as well as a long history of supporting local

financial institutions. The combination of these two lines of investment in this programme is not expected to pose a major challenge to the AE.

39. The structure of the programme requires AfDB to also be the executing entity (EE) for the major part of the programme. This means that AfDB will be responsible for project execution, management of loan operations, reporting to GCF, and entering into a variety of agreements (including sub-grant agreements, services agreements, and memoranda of understanding) for this programme.

40. AfDB has relevant experience and expertise in the sector as well as in the region in the implementation of projects related to renewable energy. AfDB has already implemented similar GCF projects, on which this programme is building. There are therefore no concerns in this regard.

Engagement with civil society organizations and other relevant stakeholders

41. AfDB has built this programme on continuing engagement with its clients and stakeholders and its understanding of the markets it will invest in. Given the nature of the programme, downstream stakeholder engagement is forward-looking and based on a robust plan and assessment of the interest and ways to engage the stakeholders. AfDB has a strong network through which it will carry out this stakeholder engagement.

42. The TAP acknowledges that the timing of the stakeholder engagement is not ideal, but given the structure of the programme it is an unavoidable shortcoming, which will need to be addressed through close stakeholder engagement at the point of developing the subprojects. Recognising this, a covenant is being imposed to ensure continuous reporting on this stakeholder engagement by the AE, thus ensuring that even though the programme is financially intermediated, best practice is being applied with regard to this important safeguard.

43. The above considerations lead ITAP to assess that the country ownership for the programme is HIGH.

1.6 Efficiency and effectiveness *Scale: High*

Overview

44. The programme expects to generate investments of USD 960 million of which USD 171 million (i.e. just under 18 per cent of the total) is requested from GCF in the form of grants, loans and guarantees. The accredited entity is providing USD 164 million of cofinance in the form of grants, loans and guarantees. The balance of investments of USD 625 million is expected from the private sector in the form of bank lending and investor equity and additional grant support from other donors. This gives a ratio of 1:4.6.

45. The climate objective of the project is to achieve mitigation outcomes through investments in renewable energy at household, community and business level in six countries, namely Ethiopia, Ghana, Guinea, Kenya, Nigeria and Tunisia. This requires the participation and active support of GCF, as the conditions to make the investments feasible for the private financial institutions in the participating countries cannot be met in the absence of GCF support.

46. Instead, absent the requested GCF financing, the available financing would continue to be constrained to a sub-optimal level not adequate to the needs of the participating countries by the limited ability of development finance institutions and governments to provide it, together with some small-scale developers. This would lead to a more disjointed effort that would not address the urgent energy access needs, and would continue to delay the urgently needed energy transition away from diesel generators and traditional fuels.

Cost of CO_2 abatement

47. The average cost per MW installed is USD2,111/MW for 386 MW of new DRE capacity expected to be financed by the project, once guarantees and technical assistance are accounted for. This is reasonable given the mix of generation technologies and in line with current market expectations.

48. The funding proposal will reduce CO_2 emissions by almost 29 $MtCO_2eq$ over the lifetime of the project. Given the GCF investment of USD 171 million this equates to a cost of USD 5.9 per tCO_2 for the GCF alone and USD 33.1 per tCO_2 for the funding proposal investment volume of USD961 million as a whole. This is well within the expected range of a large-scale climate finance programme, and in fact at the low range of estimations for the social cost of CO_2 emissions, and therefore indicates that the programme will add value globally.

Economic analysis

49. The funding proposal identifies the following streams of potential benefits from the programme:

(a) Access to clean energy leading to healthier environments at home, education and business opportunities and increased safety during dark hours, in particular for women and children;

(b) Environmental benefits through reduced pollution; and

(c) Economic benefits by providing income opportunities for up to 70,000 people.

50. The project is highly beneficial in terms of its economic impact and has a very high rate of return, justifying the choice of loan/guarantee as GCF financial instruments and the high leverage on GCF funds. It is expected that this will lead to higher replicability than would otherwise be the case, by enabling participating financial institutions to continue supporting DRE investments in the future also in the absence of GCF support.

51. Of particular value is the offer of local currency finance, which will prevent exposure of the final beneficiaries to the risk of currency fluctuations, which they are least capable of bearing.

52. In view of the above considerations, the effectiveness and efficiency of the project is rated as HIGH.

II. Overall remarks from the independent Technical Advisory Panel

53. The development of a programme providing scaled-up finance for DRE in Africa is highly welcome, and fully aligned with the objectives of the Fund and the needs of the countries participating in the programme.

54. The initial assessment of the independent TAP critically considered the question of whether the project would generate adaptation impacts instead of co-benefits, the very conservative approach to estimating installed cost, environmental considerations related to battery disposal, provisioning of operations and maintenance, and the potential overlap with auction PPAs in Tunisia and another AfDB project in Ethiopia and Guinea.

55. The AE addressed these matters to the full satisfaction of the TAP and the TAP therefore recommends this funding proposal for approval with the following conditions and covenants:

Conditions to be met prior to the first disbursement:

56. Delivery of a comprehensive waste management plan to the satisfaction of the Secretariat to ensure appropriate, best practice disposal of end-of-life items, in particular batteries.

Conditions to be met prior to the second disbursement:

57. Development of a comprehensive tool kit, to the satisfaction of the Secretariat, to ensure that the principles of O&M requirements in subprojects, in particular in mini-grids, are well understood by participating local financial institutions.

Interim independent evaluation report shall include :

58. A dedicated section on the adaptation co-benefits from the investments made with a particular focus on mini-grids and solar home systems;

59. A dedicated section providing an overview of the installed cost and barriers encountered in each country to the delivery of new minigrid capacity; and

60. A dedicated section on the impact of local currency finance.

Throughout the term of the funded activity agreement:

61. A report summarizing the stakeholder engagement (at sub-project level) to be submitted alongside the annual performance report (APR).

62. Consolidated report on MWh produced by projects financed through the programme through the lifetime of the operation to be included as part of the annual performance report (APR).

Reply to the Independent Technical Advisory Panel assessment findings (FP168)

Proposal name: Leveraging Energy Access Finance (LEAF) Framework

Accredited entity: African Development Bank

Impact Potential
The AfDB notes the iTAP's positive review that the overall impact potential is high and confirms that it accurately reflects the Programme, including the context and barriers addressed. The AfDB notes that operation and maintenance of the technology deployed under the sub-projects is an integrated part of the due diligence process. AfDB reviews O&M processes of sub-projects to ensure quality and consistency in the planning and delivery by the company, including monitoring of system performance, repair and replacement, and contract compliance. The technical assistance component of the LEAF Programme will produce a knowledge package that can be utilized, for example, by local financial institutions during their credit assessment process to ensure product quality and maintenance.
Paradigm shift potential
The AfDB notes the iTAP's positive assessment that the Programme's paradigm shift potential is high and appreciates the recognition for the required involvement of local financial institutions for local currency financing. The AfDB notes that in order to increase understanding of adaptation benefits of DRE projects, the Programme will conduct comprehensive country-level studies/assessments, focused on the relevant technologies targeted in the countries confirming the impact of energy access on the adaptive capacity of communities to climate vulnerabilities.
Sustainable Development potential
The AfDB notes iTAP's positive assessment of the Programme's sustainable development potential as high by delivering secure, clean and affordable power to people and businesses that currently lack access to clean, affordable and/or reliable power, fostering economic growth.
Needs of the Recipient
The AfDB notes iTAP's positive assessment of the needs of the recipient as high, considering the need for energy access, the need of DRE companies to scale the deployment of DRE technology and that of FIs to finance the sector. The AfDB notes that the currency mismatch is largely driven by DRE companies being financed in hard currency to date, while receiving revenues in local currency, typically creating significant exchange rate risks.
Country Ownership
The AfDB notes iTAP's positive assessment of country ownership as high and notes that it accurately reflects the status of the national climate strategies of participating countries, and the AfDB's capacity and track record to deliver the Programme.
Efficiency and Effectiveness
The AfDB notes iTAP's positive assessment of the Programme's efficiency and effectiveness. In addition to the economic benefits mentioned, the AfDB notes that increasing the access of a population to clean and reliable energy and solar-powered productive assets is expected to unlock additional income-generating activities, new businesses and foster economic growth.

Overall remarks from the independent Technical Advisory Panel:

The AfDB notes the overall positive remarks from the iTAP and also notes with thanks the positive recommendation from iTAP to the GCF Board, in particular that the Board support the Programme.

Finally, the AfDB notes the conditions that include a waste management plan, tool kit on O&M in subprojects, dedicated sections in the interim evaluation on adaptation co-benefits, installed cost and barriers for the delivery of new mini-grid capacity and local currency financing, and reporting on stakeholder engagement and MWh produced by the projects.

Annex 8

Gender Assessment and Programme-Level Action Plan LEAF Framework

28 April 2021

African Development Bank

Contents

1. Introduction

The Leveraging Energy Access Finance (LEAF) Framework offers an important opportunity to apply a gender lens and amplify the impact of energy access for women. The positive impact of the energy access sector on women is experienced in their multiple roles as customers, entrepreneurs, and agents of change.

Impact of access to energy on women

The countries targeted by LEAF – Nigeria, Kenya, Ghana, Guinea, Ethiopia and Tunisia – count approximately 90 million women and girls that currently have no access to clean and reliable energy. Many of these women live in rural areas. Promoting access to decentralized affordable and reliable renewable energy and contributing to women's social and economic empowerment are essential for the overall improvement of people's living conditions. The social, economic and health benefits of access to renewable energy include:

- Increased opportunities for income generating activities: Access to energy increases opportunities for women to start small businesses or support new income generating activities. Small businesses are able to stay open later at night. In addition, saved time by replacing manual labor and reducing the drudgery of fetching fuel wood and water, tasks that usually fall to women, increases their engagement in income-generating activities. Furthermore, access to energy offers greater flexibility in the organization of everyday chores. Finally, women are more likely to become wage earning workers outside the home when they have access to electricity.
- Financial independence: additional income generated as a result from access to clean energy or employment within the DRE sector, allows women to contribute to household earnings and gain financial independence.
- Tackling gender stereotypes: businesswomen benefit from increased status at home and in their communities.
- Strengthening household economic resilience: Income generated as a result of access to clean energy (and money saved that would previously have been spent on expensive fuel, such as kerosene) increases household economic stability.
- Creating safer communities: access to lighting creates safer communities: households avoid dangerous kerosene lighting that can cause damage to property and, in some cases, even death; and community members experience enhanced safety as they are able to move freely at night.
- Creating a ripple effect: putting income and energy in women's hands can have powerful economic and social benefits for their families and communities.
- Increased study hours: Solar lighting allows students to reliably study during evenings.
- Improved health: access to clean energy improved women's health through reduction of indoor air pollution levels.
- Reduced violence: the energy sector contributes to efforts to combat Gender-Based Violence. Evidence demonstrates that women in electrified households report significantly lower acceptance of domestic violence[1].

[1] This came to light during a live discussion on linkages between GBV and energy, entitled: "GBV and Electricity: What's Light Got To Do With It?" This broadcast forms part of the Africa Energy Forum's Energy&Her series during the current Digital Energy Festival for Africa, November 4, 2020

By unlocking local currency debt capital to scale up decentralized and distributed renewable energy in Africa, the LEAF Framework contributes to empowering women and reducing gender gaps in the selected countries.

Energy and gender inequality

The countries selected by LEAF have different national electrification rates, however they share similarities in terms of access to and control over energy, as well as persistent gender gaps.

Women in the selected countries for LEAF, especially those living in rural areas, are disadvantaged with respect to energy as compared to their male counterparts. Overall, women tend to have less influence than men at the household level during energy purchase and use decisions, despite having different preferences. Agricultural yields of female farmers often are adversely impacted by the inability to mobilize sufficient labour and energy efficient equipment when needed.

On average, female-headed businesses have a reduced ability to invest in productivity enhancing energy assets. In addition, women energy entrepreneurs have been shown to have more limited information about distant markets and opportunities, constrained business networks, and consequently smaller businesses. Conditions of energy poverty foster a distinctly gendered experience with regards to energy needs, access and use that is not present at higher income levels. Addressing these differences, as well as women's overall lagging levels in access to clean energy, is critical to advancing development objectives.

Gender inequalities and underlying issues are further addressed in the country-level assessments. This information feeds into the gender action plan for LEAF to support gender equality and addressing some of the remaining gender caps that can be addressed by LEAF.

Important gender aspects for LEAF

- Energy access preferences**:** Both women and men desire improved access to energy. There are minor differences related to their respective preferences for particular types of lighting products and appliances.
- Entrepreneurship**:** Access to renewable energy provides a range of options and economic opportunities for both women and men. In the small business sector, there are indications that women who use off-grid energy solutions have slightly different preferences than men; the types of businesses women tend to operate drive these preferences.
- Key buyers**:** Women have significant weight in household decisions related to the purchase of off-grid energy technologies (~35% of energy access customers is women), which underscores the importance of reaching women with marketing and educational messages.
- Health concerns**:** Increased awareness of the indoor air pollution health risks caused by fuel-based lighting is stimulating demand for clean alternatives in many countries. Women are most affected by this phenomenon as they typically spend more time at home.

- Financing gap: Access to finance, particularly for women, is critical to the development of the DRE market. Financing opportunities and frameworks are often different for women and men, with women's opportunities often relying more on informal networks and lending groups.
- Workforce**:** Increasingly, women are skilled workers and decision-makers in the energy sector, where companies with a more gender-balanced leadership team have demonstrated stronger performance. Despite this, the proportion of women working in the DRE sector remains relatively low at around 30%.
- Manufacturers and distributors: Women represent a significant portion of the market and have decision-making power in buying this technology. However selling to women requires sometimes a different approach.
- Governments and development institutions**:** It is important to effectively track gender data as part of day-to-day operations, including market surveys, consumer outreach, and program monitoring and evaluation. At the policy level, governments can identify practical solutions to women's constraints in accessing off-grid solutions, and in parallel access to the grid. Policies may help support women's access to electricity (grid and off-grid).
- Financial institutions**:** Financial institutions play an important role in reaching the women's market through targeted products and services, specific outreach strategies, and possibly financial and management skills courses. Mobile banking and the potential added value of linking mobile technology with off-grid products that can charge mobile phones support access to finance for off-grid purchases.
- Female-headed households**:** The feminization of poverty – a phenomenon that is said to exist if poverty is more prevalent among female-headed households than among male-headed households – has been the focus of many recent studies. Reasons advanced for the existence of feminized poverty (ie lower salaries for women) include discrimination against women in the labor market; women's lower levels of education compared to men. However, the markets and states are affected by the current disruptions which present risks of heightened gender inequalities and greater feminized poverty. An understanding of gendered poverty is a precondition for effective pro-poor development strategies. The determinants of gendered poverty are not only complex but also multidimensional, including but not limited to, age, location, education, and occupation. To reduce poverty among women, it is important for LEAF to target women, girls, and particularly female-headed households in each country.

COVID-19 and gender equality

The gender lens is in particular relevant in light of the Covid-19 pandemic. The crisis is creating a significant setback to gender equality. As a result of the pandemic, women's share in unpaid care and domestic work has increased, due to heightened care needs of older and sick people, school closures/home schooling and cooking more meals at home. The lockdown has also resulted in an increase of gender-based violence[2]. Women's jobs are 1.8 times more vulnerable to this crisis than men's jobs. In addition to increased uncertainty in the labor-market, women are having to drop out of the workforce as a result of increased unpaid care responsibilities at the home.[3] Access to energy for women and gender inclusive policies at DRE companies are instrumental to mitigate the disproportionate negative impact of Covid-19 on women.

[2] https://www.weforum.org/agenda/2020/07/gender-equality-women-employment-covid19/
[3] https://www.mckinsey.com/featured-insights/future-of-work/covid-19-and-gender-equality-counteringthe-regressive-effects#

Gender assessment methodology

The gender focus and activities incorporated under LEAF are based on the country-level assessments and the Bank's previous work in the renewable energy access area in the countries targeted by this program. Country strategic papers, country gender profiles, the database of the main Multilateral Development Banks and UN agencies are assessed to compile the current gender gaps in each of the 6 countries selected for the LEAF Framework.

The country level gender assessments form the basis for the gender action plan. Each country of LEAF has unique features as well as similar characteristics. The analysis reveals common persistent gender gaps that can be addressed in similar ways by the LEAF program, highlighted in the programme-level gender action plan. Country specific activities / action plan will be developed for unique issues in the countries.

The gender gaps identified are directly linked to the energy, agriculture, health, education, and employment sectors. These development areas are intrinsically linked with the energy sector and energy access is a catalyst to advance gender equality. LEAF is largely focused on rural areas in the selected countries where the interdependence of the development goals benefit from a systemic approach to achieve SGD5 on gender equality and women’s empowerment.

2. Country-level Assessments

Nigeria Gender Assessment

Gender and Energy

Despite Nigeria's abundance of fossil and renewable energy resources, Nigerians still experience acute energy poverty; they either lack access to modern energy sources or have to cope with inadequate supply and poor quality. About 80.6% of Nigerians use solid fuel for cooking made up of 69.2% wood, 12.7% kerosene and 6.0% of charcoal, among others. In Nigeria, electricity access stands at 54%, with 87% of urban areas and 23% of rural areas with access[4].

As a member of ECOWAS, Nigeria adopted a concerted approach to the implementation of the Sustainable Energy For All (SEforAL) Action Agenda. This included the development of the Action Agenda alongside the Renewable Energy and Energy Efficiency Action Plans, and their formal adoption. In this process, the country set the following targets: to increase electricity access to 75% (urban up to 90%, and rural up to 60%) by 2020 and to 90% by 2030. The installed electricity generation capacity is expected to increase from 7500 MW in 2015 to 115,000 MW by 2030 and energy efficiency will increase by at least 20% by 2020 and 50% by 2030.

Women and girls are disproportionately and more severely affected by the lack of access to energy. Nigeria's 2013 National Energy Policy includes as one of its primary objectives, the promotion of gender sensitivity and a special attention to rural needs, although women's needs are defined as primarily related to their care economy tasks in the household (Energy Commission of Nigeria, 2013).

The use of traditional woodstoves for cooking at more than 69% has an impact on women, who are mostly involved in collecting woods and domestic work. Increasing degradation of these natural resources causes them to spend more time and physical effort finding and bringing home the wood they need.

There are also serious health impacts associated with burning traditional biomass fuels. Open fires in the home produce unventilated smoke as well as a high concentration of carbon monoxide and other pollutants, which women and children, who are most often inside the house, are exposed to. The exposure increases the risk of diseases, burns to children and injuries to women from carrying wood.

Limited access to energy has consequences to the agricultural sector and living conditions of households, especially those headed by women. For instance, rice production and processing in Nigeria, is typified by small local farmers operating primitive basic processing technology. Typical issues limiting economies of large-scale rice production include: lack of access to improved technologies, high costs of energy for parboiling and lower output quality (post processing). Most women especially in the western part of the country are into rice farming, but they have major issues regarding processing since the machinery for processing is not always available.

[4] https://www.get-invest.eu/market-information/nigeria/energy-sector/#energy_statistics

Although women benefit directly from clean energy connections at household level, reaching women as customers is important. To increase women share of customers, gender responsive credit procedures and loan products (e.g. with flexible payment terms) are critical, as well as outreach to women to share of information and knowledge and training for them to understand the payment plans and options[5]. Most DRE companies in Nigeria offer pay-as-you-go models, that allow customers to pay off the system or products over a period of time. This allows access to clean energy products for low income households that are not able to purchase a system upfront.

Additionally, women are severely underrepresented in upper management and decision-making and technical positions in both the public and private energy sectors despite official calls and commitments to a more balanced participation to ensure women's voices and needs are reflected in national policies. There are only few female mentors, sponsors, and role models in the sector. Factors contributing to unequal participation in the energy sector as employees include lack of interest of women in technical subjects, lack of technical knowhow and poor academic foundations, societal influence, as well as religious and cultural backgrounds. At the level of junior and senior secondary schools, efforts are underway by the Federal and State Governments to improve the quality of technical education and increased admission of women[6]. Labor conditions, such as long working days and site visits to distant locations put a strain on personal and family relations, particularly for those–whether women or men–who are also household caregivers. In addition, gender-based discriminatory practices (e.g. related to salary, benefits) persist in the workplace. Gender-disaggregated employment data is not typically tracked by companies, utilities, developers, or energy regulators. This lack of data limits the types of interventions (e.g. improving gender diversity among employees or measuring productivity and women's impact as employees) within the sector[7]. Further assessments to understand the gender inequality and affirmative action policies to encourage the recruitment of women in the energy sector would support the increase of women as employees in the DRE sector[8].

Key data on gender equality

Nigeria was ranked 100 out of 120 in the 2019 Social Institutions Gender Index (SIGI) and Africa Gender Index (AGI) with a score of 0.460, and 128 out of 153 in the 2020 Global Gender Gap Index with a score of 0.635. All indices are on a 0-1 scale. For the AGI and the Global Gender Gap Index, 0 points to complete inequality and 1 to complete equality, for the SIGI, the opposite holds true.

Indicator	Result	Source
Maternal mortality rate (2017)	917 per 100,000 live birth (2017)	World Bank
Infant mortality rate	75.7‰ (2018)	World Bank
Adult literacy rate	52.7% female, 71.3% male (2018)	World Bank
Employment to Population Ratio, age 15+	43.6% female, 53.6% male (2019)	World Bank
Unemployment Rate (% of	8.9% female, 7.4% male	World Bank

[5] https://pdf.usaid.gov/pdf_docs/PA00WQSC.pdf
[6] http://www.ecreee.org/sites/default/files/documents/news/nigeria_country_presentation.pdf
[7] https://pdf.usaid.gov/pdf_docs/PA00WQSC.pdf
[8] http://www.ecreee.org/sites/default/files/documents/news/nigeria_country_presentation.pdf

respective labor force)	(2019)	
Life Expectancy	55.2 years (female), 53.5 years (male) (2018)	World Bank

Categories	Female (%)	Male (%)
Labor Force Participation (ILO, 2016)	48.8	56.4
Unemployment (ILO, 2016)	6.5	6.0
Bank Accounts (WEF-GGGI, 2018)	33.6	54.3
Literacy Rate (UNESCO, 2008)	41.39	61.25
Entrepreneurship (Infomineo, 2017)	41	59

Female-headed households (% of households with a female head) in Nigeria were 14.6% as of 2015. In 2019, 46.4% of the Nigerian population suffered from multidimensional poverty. Among them, we can estimate that over 51% of them are women and girls.

Political participation

Women and men have the same rights to vote and run for election, and the Constitution guarantees equal participation in politics. Despite this, the participation of women at the national level remains very low: 7.3% of senators (8 out of 109) are women, 3.6% of members of the House or Representatives (13 out of 358) are female, and 7 out of 43 ministers in the national cabinet are women. Nigerian women have been perpetually marginalized in the political sphere due to a combination of social, cultural, and economic forces (Uwa et al., 2018). In 2019, 77% of the population believed that men make better political leaders.

Education

One in every five of the world's out-of-school children is in Nigeria. Even though primary education is officially free and compulsory, about 10.5 million of the country's children aged 5-14 years are not in school. Only 61 percent of 6-11 year-olds regularly attend primary school and only 35.6 percent of children aged 36-59 months receive early childhood education. In the north of the country, the picture is even bleaker, with a net attendance rate of 53 percent. Getting out-of-school children back into education poses a massive challenge.

Gender, like geography and poverty, is an important factor in the pattern of educational marginalization. States in the north-east and north-west have female primary net attendance rates of 47.7 percent and 47.3 percent, respectively, meaning that more than half of the girls are not in school. The education deprivation in northern Nigeria is driven by various factors, including economic barriers and socio-cultural norms and practices that discourage attendance in formal education, especially for girls.

Health

Women's estimated life expectancy for 2015-2020 is 55 compared to men's at 54. A 34% decrease was observed in the maternal mortality rate between 2000 and 2015 from 1,170 deaths per 100,000 live births to 814 deaths in 2015. The total fertility rate per woman in 2018 stood at 5.4 children, and the adolescent birth rate for women aged 15-19 years over the same period was 145 births per 1,000 women.

The proportion of women who received antenatal care at least once from trained medical providers is estimated at 43% between 2006-2017. Nigeria's HIV epidemic affects all population groups, and it is the second largest epidemic globally. In total, Nigeria had 3,200,000 people living with HIV in 2016, and 32% of pregnant women living with HIV were on antiretroviral to contain transmission from mother-to -child. Nigeria is a Fast- Track country, and its response is guided by the National Strategic Framework 2017-2021, which aims at ending AIDS by achieving, zero new infections, zero AIDS-related deaths, and zero discrimination. Elimination of mother to child-transmission is a priority.

Gender-based violence (GBV)

Referred to as the *Shadow Pandemic*, the rise of GBV in Nigeria during the COVID-19 crisis will have life threatening consequences for women and girls and a profound impact on their opportunities and life trajectory. These impacts will have consequences that will ripple across communities and the whole country as Nigeria begins to recover from the detrimental economic and health impacts of the crisis.

Globally, it is estimated that one in three women experience either physical or sexual intimate partner violence or non-partner sexual violence in their lifetime. These figures are mirrored in Nigeria, with 30 per cent of girls and women aged between 15 and 49 reported to have experienced sexual abuse. Insurgency and protracted conflict have only served to exacerbate the occurrence of GBV in the North East. Harmful practices such as child marriage are prevalent in Nigeria, with 43 per cent of girls married before the age of 18,5 while 20 per cent of women aged 15 to 49 have undergone. Once girls in Nigeria are married, only 1.2 per cent of those aged 15 to 19 have their contraception needs met, leading to high levels of early and teenage pregnancy.

Division of labour and women's Economic participation

According to the World Bank, 44.9% of the labor force is female. Nigeria is the most populous country in Africa, and the 24th largest economy in the world by GDP. It has a middle-income, mixed economy, with high export earnings from oil and gas, but also a large, subsistence agricultural sector. 48% of adult women are employed (57th out of the 98 middle income countries reporting data in 2019), and women make up 44.9% of the overall labor force. They are most likely to work in low-income, informal occupations. 24% of employed women work in agriculture, compared to 44% of all men. One in six women work in public administration, community, social, or other services jobs. Only 0.3% of women hold management positions. Nigeria's statutes generally grant women full legal rights before the law, however parallel customary and religious legal regimes do not always recognize the rights of women to own or inherit land and other assets. According to the National Employment Policy 2017, the rising unemployed in the country revealed the high representation of women in precarious, informal, and less remunerated employment.

Employment and Economic Activities

Categories	**Female (%)**	**Male (%)**
Unemployed	6.5	6.0
Part time	14.1	8.9
Employment	49.1	52.9
Mean Monthly Earns	391.0	453.4
Labor force participation rate	48.8	56.3

Entrepreneurship

Female entrepreneurs account for 41% of the total number of entrepreneurs in Nigeria. They are 20% less likely to have a bank account and 17% not likely to have borrowed formally. As per a 2016 World Bank report on female entrepreneurship, it was stated that Nigerian women entrepreneurs opened 162,372 new limited liability companies compared to 332,884 opened by men. In addition, women owned 33.6% (37,188) of new sole proprietorship enterprises compared to male ownership of 66.39% (73,478). Micro, small medium enterprises (MSMEs) employ 84% of Nigeria's labor force and contribute 48.47% to the country's GDP. Furthermore, 54% fewer MSMEs have female ownership than the entire sub-Saharan Africa (SSA). In comparison to SSA, Nigerian women owned 16.8% small enterprises and 12.2% of medium enterprises compared to the SSA average of 35% and 29% respectively. Additionally, while women own almost half of the existing microenterprises, their ownership of SMEs is far less.

In 2003, FMWSAD in collaboration with the Bank of Industry and the Bank of Agriculture established two women-only microcredit funds: the Business Development Fund (BUDFOW) and the Women Fund for Economic Empowerment (WOFEE). As of 2012, these initiatives have provided funding support to an estimated 6,200 women business cooperative groups. In 2012, the Central Bank of Nigeria (CBN) set up a N200 billion MSMEs Development Fund to provide cheap and long-term financial resources for the development of the sector. The CBN proposed that 60% of this fund will target women entrepreneurs. The Small Holders Women Farmers' Organization of Nigeria (SWOFON) was established by ActionAid in response to the demand for women to participate in emerging reforms and opportunities. SWOFON has enabled over 300,000 women to access agricultural inputs.

Summary

Many women, especially in rural and poor environments, lack access to clean energy solutions. Decentralized energy solutions provide affordable, clean and simple technology that can be easily installed at rural households. By providing financing, LEAF supports the expansion of DRE companies to reach the many underserved communities and increase access to clean energy for women.

Key issues identified related to gender and energy include: 1) gender responsive credit procedures and loan products to increase women as customers and 2) addressing gender inequality at the workforce and support affirmative action policies to encourage the recruitment and carreer of women in the energy sector to support the increase of women as employees.

Kenya Gender Assessment

Gender and energy

With only 75% of the population having access to electricity, at least 55% is dependent on wood as their main source of cooking fuel – access to clean energy services is still a major issue in Kenya. In rural areas, 84% of households use wood as the source of energy for cooking and 11,6% use charcoal.

The recent 13.7% increase in power production capacity to 2712MW in 2018 has reduced the shortfall and allowed more households to be connected. Renewable energy sources currently provide 78% of the total electricity generated in Kenya. The recent increase in installed capacity, with 310MW from Lake Turkana wind power plant and 50MW solar capacity from the Garissa solar power plant, has provided a pivotal contribution to the increase in electricity generation (NBS ES, 2019, Africa Energy Portal). Off-grid systems such as mini-grids and stand-alone solar systems are an essential element in the country's plans to achieve access to clean energy sources for all citizens by 2022 (Kenya National Electrification Strategy 2018).

In Kenya, as of 2018 access to electricity was available to 75% of the population with 72% energy access rate in rural areas and 84% in urban areas[9], Over 80% of Kenyans relied on the traditional use of biomass as the primary source of energy for cooking and heating. Kenya set a 100% access target to be reached by 2022 for both electricity and clean cooking solutions, while further improving the share of renewable energy sources up to 80%.

There is general progress in adopting clean energy for cooking in Kenya. A growth in the uptake of liquefied petroleum gas (LPG) and a simultaneous drop in the use of charcoal stoves is evident. Likely contributing factors to these trends are the pricing levels and availability of LPG cylinders in various sizes, and regulations that have largely restricted, and in some counties even banned, charcoal production. The remaining challenges to the adoption of clean cooking solutions include cultural mind sets, the high cost of available technologies and limited distribution networks.

Kenya has one of the most developed SHS markets on the continent and is the birthplace of the PAYGO business models that are being rolled out across Africa. The high mobile penetration and use of mobile money contributes to the success of the PAYGO model in Kenya. The Kenya Government's Communications Authority confirmed a 119.9% mobile penetration as of June 2020[10]. Kenya leads the world in the use of mobile money services, which enables sending and receiving money through mobile-based accounts. 79% of all Kenyan adults have registered a mobile money account[11], with 96% of households having at least one account.

Some of the more established market players include d.light, Sunking, Mkopa and BBOXX. These companies target off the grid households, of which the majority is in rural areas. Their targeted customers earn on average USD150 per month[12] and typically spend around USD 10 per month on energy for lighting and phone charging[13]. This is similar compared to the monthly cost of USD 8-15/month for basic solar home systems. Purchasing a SHS furthermore may eliminate other expenses such as transportation to buy energy sources or to charge phones. Access to electricity also offers an opportunity to diversify and increase income generating activities. An estimated 20% of customers that purchase a SHS increase their income by an average USD 475 per year[14].

[9] https://africa-energy-portal.org/country/kenya
[10] https://ca.go.ke/wp-content/uploads/2020/10/Sector-Statistics-Report-Q4-2019-2020.pdf
[11] http://www.fsdkenya.org/wp-content/uploads/2019/07/Inclusive_Finance_headline-findings-from_FinAccess.pdf
[12] GDP per capita Kenya: $1,455 (World Bank Data, 2018)
[13] https://www.gogla.org/sites/default/files/resource_docs/gogla_powering_opportunity_report.pdf
[14] https://www.gogla.org/sites/default/files/resource_docs/gogla_impact_metricsv4.pdf.pdf

Kenya recognizes that women and men experience energy poverty differently. Women and girls are forced to travel long distances to collect fuelwood. Additionally, the cooking takes place in poorly ventilated rooms. In rural and peri-urban areas, women and girls are mainly responsible for procuring and using cooking fuels; they are disproportionately affected by the negative effects of limited access to clean and modern forms of energy. Some of the challenges faced by women and girls include: (i) time poverty – time that could be used for educational or productive ventures; (ii) adverse health effects – exposure to respiratory diseases (as a result of indoor air pollution from cooking with traditional biomass); and (iii) safety issues encountered while gathering fuelwood. Rural women and girls are especially affected as the majority of energy is derived from traditional biomass fuels such as wood, charcoal and agricultural waste.

Gender matters are strongly recognized in Kenya's energy sector . The Kenyan Ministry of Energy launched a national gender policy for the energy sector in 2019. The document provides a framework for mainstreaming gender in policies, programmes and projects in the energy sector and commits to:

- Strengthening institutional frameworks for the employment of women in energy
- Ensuring compliance with the Constitution of Kenya on gender: such as by engendering all energy policies, plans, budgets, strategies and programme
- Increasing awareness on gender in the energy sector
- Integrating gender in programmes, and in monitoring and evaluate
- Promoting clean cooking solutions and environmental sustainability

For each of the outcome areas, measures have been identified to address gender imbalances and questions related to access, participation and benefits by both men and women, thereby enhancing inclusivity in access to energy services. Key issues to further increasing access to energy includes affordability, reliability, and capacity of energy services and clean cooking solutions. Cultural norms influence and shape the participation of women, youth and marginalized groups in the supply energy chain, particularly in remote areas. Examples of measures include increasing the gender balance in senior positions, promoting women and girls' participation in science and technolical education and gender-responsive planning, budgeting and policy.

Gender is furthmore included in Kenya's Public Procurement Act of 2015 that reserves 30% of public procurement opportunities for women, youth and persons with disabilities (PWD). As at September 2016, the category attracted USD 436m worth of public procurements distributed between 54% women, 44% youth and 2% PWDs.

Gender-disaggregated data on the energy sector in Kenya is very limited. There is a need for data that estimates e.g. the differentiated energy needs of both rural and urban males and females at individual and household level, as well as income generation and sustainable impacts as a result of energy access. Furthermore, data on representation, employment and decision-making in the sector is limited[15]. Ministry of energy confirmed that 35% of the total staff and 15% of the technical leadership positions in the Ministry of Energy's headquarters are filled by women. A study by ESMAP confirms women to make up 21% of the workforce

[15] https://www.climateinvestmentfunds.org/sites/cif_enc/files/knowledge-documents/gender_and_energy_country_brief_-_kenya.pdf

in the companies it surveyed[16]. This share falls below that of the economy at large whereby 49% of the labor force is female. The study furthermore confirmed that the energy companies surveyed had non-discrimination and anti-harassment policies with grievance mechanisms in place, flexible work options were generally not available, the energy companies had gender committees established with focal points, however not all staff were aware of them, and mentoring programs were limited or non-existent (for men and women).

Kenya Key Data on Gender Equality

Kenya terms of the Africa Gender Index (AGI), Kenya scores 0.522 (1.00 is gender parity). This is above the 0.484 average of African countries. Within this overarching AGI score, Kenya performs very well on the social and economic dimensions of the index (1.001 and 0.703 respectively), compared to the average in Africa (0.949 and 0.608 respectively), but scores poorly on the empowerment and representation dimension (0.203) compared to the average of 0.224 across the continent. Female-headed households (% of households with a female head) in Kenya were 32.4 % in 2015[17].

Political Participation

Women and men have the same rights to vote and run for election in Kenya. However, women often face resistance and hostility. Despite the same rights, only 21.8% of the members of the National Assembly of Kenya (76 out of 349) and 30.9% of Senators (21 out of 68) are women. To increase these numbers and encourage women's political participation, quotas have been legislated at the national and sub-national levels, and several of the main political parties have enacted voluntary quotas that reserve one-third of the seats for women. Despite this, implementation of these policies is inadequate and women's participation in political life remains poor. Public surveys confirm that the majority of Kenyans believe that men and women are equally capable as political leaders.

Education

According to the *Status of Women in Kenya Report* (2016), gender equality in education has been effected mainly through the free primary education and affirmative action policies for university admissions. Other targeted interventions to increase enrolment and retention of girls in school include: the creation of boarding schools for nomadic communities, free day secondary education, provision of sanitary towels and activities aimed at preventing early child marriage.

While there is near gender parity in primary school enrolment, disparities still remain in education. Boys out number girls in enrolment at all levels of education, with gender disparity in-creasing as the level of education increases especially for Science, Technology, Engineering and Mathematics (STEM) courses. The tertiary level has the highest level of inequality regarding the ratio of girls to boys, and in national examinations performance, boys overall perform better than girls.

Kenya has achieved gender parity in primary education with the gross enrolment rates for primary schools increasing to 86.6% for boy and 82.3% for girls. More than half enrolment for secondary school 55% of female and 57.4% of male. However, there is a huge disparity

[16] file:///Users/LZ/Downloads/ESMAP_Closing%20Gaps%20in%20Women%E2%80%99s%20Employment%20in%20the%20energy%20sector.pdf

[17] https://www.climateinvestmentfunds.org/sites/cif_enc/files/knowledge-documents/gender_and_energy_country_brief_-_kenya.pdf

female and male pursuing college and university education with female comprising of only 41% of those in private and public universities.

Health

Health indicators highlight gender disparities in Kenya with statistics on access to health showing mixed results. While males do better than females in infant mortality and HIV/AIDS, women do better than men in the other indicators. More female than male children below one year are likely to die before their first birthday, but for the under-five mortality rates, more male than female children are likely to die before their fifth birthday. Life expectancy has also improved since 2008 for both sexes: women are likely to live longer than men. The maternal mortality rates have reduced from 488 per 100,000 live birth in 2008 to 362 in 2014. Also, antenatal care, modern contraceptive prevalence rate, birth attendance by skilled provider, and overall numbers of births occurring in a health facility have improved over the period 2003 to 2014. With respect to HIV/AIDS, the prevalence is higher among females compared to males. Teenage pregnancy has remained un-changed over the period 2008 and 2014, with 18% of adolescents aged 15-19 years having begun child bearing. The national averages on the health of women however tend to mask huge regional disparities in statistics between women in different geographical localities.

Gender-Based Violence

High levels of sexual and gender-based violence persist in Kenya. According to the Status of Women in Kenya Report, 2016, the Government has made major achievement in its efforts to eliminate Female Genital Mutilation (FGM), which has resulted in declining prevalence rates. The 1998 KDHS reported 38 percent of women were circumcised, which fell to 32 percent in 2003, 27 percent in 2008-09, and was reported at 21 percent in 2014. Illustrating the declining prevalence rates, only 11% of women aged 15-19 years have been subjected to FGM, whereas these figures increase to 22.9% among those aged 30-34 years and to 40.9% among those women aged 45-49 years.

In 2020, a study by the Kenya National Bureau of Statistics showed that 23.6 per cent of Kenyans have witnessed or heard cases of domestic violence in their communities since the introduction of COVID-19 containment measures. According to UNOCHA, the national GBV Hotline 1195 received 810 cases in September (as of 29 September 2020) compared to 646 cases in August, an increase of 25 per cent. All cases received psychosocial first aid (PFA) and referral services. A study undertaken by the Ministry of Health and Population Council (April 2020) on COVID-19 Knowledge, Attitudes, Practices and Needs which showed that 39 per cent of women and 32 per cent of men were experiencing tensions in their homes. About 12,000 women and girls displaced and affected by floods need GBV-related services and psychosocial first aid, according to GBV partners. About 650,000 women and girls in urban informal settlements need access to basic household supplies and dignity kits to reduce the risk of GBV.

Division of labour and women economic participation

According to the World Bank, 49% of the labor force is female. Kenya is Africa's 9th largest economy, with a GDP of over US$ 200 billion (PPP). It is a lower middle-income country with an economy dominated by agriculture, including the export of tea, coffee, flowers and vegetables. The country also has a sizable services sector (35.1%), notably tourism and financial services, amongst others. 72.51% of adult women are employed (20th out of the 118 low and middle-income countries reporting data in 2019), and women make up 49% of the overall labor force. They are most likely to work in informal occupations. 60% of employed

women work in agriculture, compared to 48% of all men. Around 19% women and 14% men work in wholesale or retail trade and the female share of management positions is around one-fourth.

While formal inclusion for men has risen steadily since 2006, for women, formal inclusion leapt between 2009 and 2013 driven by the spread of mobile financial services (MFSs). This has lessened women's exclusion reliance on the use of informal services. Compared to men, however, women still have lower access to formal prudentially regulated services such as banks (35% for women compared to 50% for men).

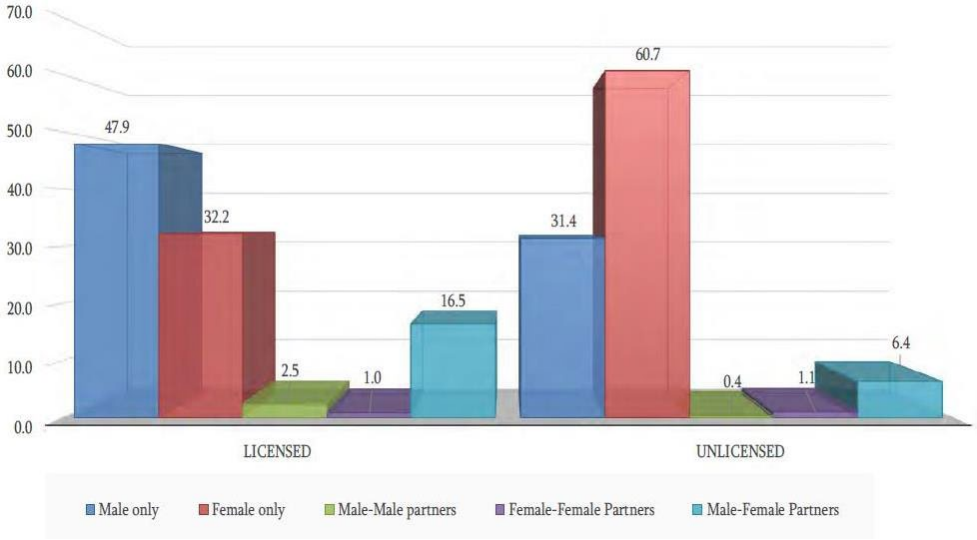
Although women are major actors in Kenya's economy, particularly in agriculture and the informal business sector, men tend to dominate in the formal sector. Most women (58%) in the formal sector are employed in service industries, mainly education, and they typically occupy the lower-paid jobs. But the labor market is changing: higher-skilled women are increasingly being employed—including at senior levels—in high-growth sectors such as telecoms and mobile phones.

Entrepreneurship

Kenyan women constitute almost half of micro and small business owners, according to KNBS 2016 MSME survey (micro-enterprises less than 10 employees; small enterprises , 10 to 49 employees; medium-sized enterprises, 50 to 99 employees). The survey established that:

- There were about 1.56 million licensed MSMEs and 5.85 million unlicensed businesses;
- Most of the unlicensed establishments were being operated at the household level;
- MSMEs engaged about 14.9 million persons;
- MSME contribute 28.5% of the total economy;
- Key issue: data are not sex-disaggregated except the distribution of MSMEs by Owners.

MSME: Ownership of Establishments by Licensing Status: KNBS 2016 MSME survey



Summary

A significant number of households and women, especially in rural areas, lack access to clean, affordable and reliable energy. PAYGO businesses models offer an affordable and clean

solution to providing energy access. High mobile penetration and use of mobile money support the offerings of payment plans to low income customers.

Gender-disaggregated data on the energy sector in Kenya is limited. Additional and improved data collection will support closing gender relates inequalities and may support the need and inclusion of women.

Women are underrepresented at the workforce in the DRE sector. Whereby cultural influence and shape the participation of women in the supply energy chain, particularly in remote areas. Gender responsive hiring and HR policies are needed to increasing the gender balance in senior and technical positions.

Ghana Gender Assessment

Gender and energy

Ghana's electricity access rate is 82%, with rates of 94% and 67% in urban and rural areas respectively. The country's targets for electricity access are to provide universal access to electricity for Ghana's island and riverside communities, to increase the productive use of electricity in both on and off-grid electrified communities through targeted interventions, and to provide universal access to clean cooking solutions. Renewable energy is currently contributing 0.3% to the electricity generation mix, but the National Energy Policy (2010) has a goal of reaching a 10% contribution of renewable energy in the electricity generation mix by 2020.

Ghana has made major strides over the years in increasing access to grid electricity in the country. This has however not been achieved without challenges, and the remaining communities that are yet to be electrified pose increasing challenges of cost-effectiveness. The country is an ECOWAS member and, with the rest of the region, adopted a concerted approach to the implementation of the SEforALL Country Action, with the development of the Action Agenda alongside the Renewable Energy and Energy Efficiency Action Plans, and their formal adoption.

As of today, a large number of women and men – particularly those with low incomes or those living in rural areas – are even more disadvantaged in terms of their ability to access modern energy, which depresses the overall economy and, more importantly, deprives them of their right to enjoy a better standard of living. Energy poverty, defined as the lack of adequate modern energy for the basic needs of cooking, heating and lighting as well as the provision of basic energy services for schools, health centres and income generation, is limiting human development and women are the most affected.

Women are the most important actors in the renewable energy sector due to their reliance on energy in the households and communities. Biomass, primarily wood fuel and charcoal, constitutes 67% of the total energy consumed in Ghana, which women rely on for cooking and heating. Without access to modern energy services, rural women spend hours performing basic subsistence tasks, which constrains them from accessing decent wage employment, educational opportunities and livelihood enhancing options, and also may lead to illnesses from indoor air pollution caused by the biomass fuels.

As for gainful employment in the energy sector, women are primarily active in the lower-paid, non-technical fields such as administration, finance, marketing and public relations. Women's economic contribution (ex. woodfuel collection) to the energy sector is usually unaccounted for as it is unpaid, unrecognized and undervalued. Therefore, women's production and consumption patterns of energy are often not accurately reflected in national statistics.

However, companies in Ghana are realizing the benefits of workforce diversity and efficiencies in performance and management resulting from having more women on staff and at higher levels in management. Nevertheless, last-mile connections remain challenging in some remote and rural communities, thus compromising the efficient provision of electricity services to customers. Expanding access to solar home systems, could address the energy shortcoming.

ENERGIA study highlights that involving women in the renewable energy-system supply chains is a win-win situation. Despite the key barriers for greater women participation in the renewable energy sector and the means to overcome them, women engaging in renewable energy businesses is not only good for women, their families but also communities, and the business itself.

Key data on gender equality

The Gender Africa Index 2019 ranked Ghana 20th out of 51 countries, reflecting gender disparities in the economic, political, education, and social dimensions. The majority of women's economic participation is in self-employment and the informal sector, where they engage primarily in catering and lodging, food services, textile, garment and beauty industries. The self-employed women lack adequate finance and assets to expand their working capital. In addition, they have less education and inadequate skills in entrepreneurship and business management to grow their businesses, which lands them into vulnerable employment. Of the Ghanaian active female population, 84 percent are engaged in vulnerable employment including unpaid family work or self-employment (MoGCSP, 2018). For wageworkers, only 3.4 percent of females compared to 6.6 percent of men are professionals. Whether as self-employed or wage workers, women tend to work in less productive activities and earn less than men across different levels of education.

Female-headed households (% of households with a female head) in Ghana were 31.4% as of 2016. In 2019, 30.1% of the Ghanaian population suffered of multidimensional poverty. Among them, we can estimate that more 51% of them are women and girls.

Political participation

In politics, the 1992 Constitution guarantees universal adult suffrage including women, but few women actively participate in and hold political positions compared to men. As such, Ghana is currently ranked 72nd on the most recent Global Gender Gap Index (2017), but 112th when it comes to political empowerment. The proportion of women's seats in parliament is currently 12.7% (35 seats out of 275) as of 2018, showing a very modest progress in the last 30 years (as in 1996 the proportion was 9%). The Affirmative Action policy that was formulated by Government in 1998 set a target of 40% representation of women at all levels of governance, but it is yet to be passed into law.

Education

The MOE consists of four headquarter divisions and 20 agencies in charge of implementing policies and delivering education. To achieve efficiency in service delivery in education, the

Government of Ghana (GoG) has initiated a series of policies. The Education Strategic Plan (ESP) 2018–2030 is Ghana's third long-term education-sector development plan, developed alongside the Education Sector Analysis 2018 and the Education Medium-Term Expenditure Framework 2018–2021. Reforms focusing on primary education and increasing teacher training have led to improvements. Currently, there are two other policies in final drafts (the Gender in Education Policy and the Girls' Education Strategy) that are awaiting MOE and GES validation.

The GoG has achieved gender parity in primary education and junior high school (JHS), and much progress has been made in closing education gaps between girls and boys and increasing enrollment and completion rates. In 2017–2018, the gender-parity index at the primary level and JHS level was 1.0. Ghana had close to a 100 percent primary-school completion rate (99.2 percent for boys and 100 percent for girls), meaning the country is on track to achieve universal primary enrollment. Parity in school participation at basic levels, however, has not been achieved in all regions and many districts. In addition, the gender-parity index in deprived districts declined from 0.93 in 2016–2017 to 0.89 in 2017–2018. In tertiary education, the ratio of female to male enrollment is only 0.77. There are also higher completion rates among boys compared to girls at the secondary and tertiary levels. While basic education is free in Ghana, access to higher learning can be challenging, especially for girls. Girls have greater dropout rates in higher levels of education as a result of teenage pregnancy and child marriage. In addition, menstruation can impact girls' school attendance, due to a lack of adequate WASH facilities at school, fear of staining their clothes due to inadequate menstrual materials, or not having pain relief medicine to soothe cramps.

Moreover, access to education and secondary school enrollment rates remain low among the poor, with large regional and gender disparities. Tuition fees and other costs (such as uniforms and school supplies) continue to pose a challenge for poor families. Women's financial constraints and workload burdens influence decisions to enroll children in school. Children whose parents have migrated in search of work sometimes are sent to live with grandparents or another caretaker, many of whom are unable to provide adequate support or structure.

Health

The GoG has passed a wide range of sector-specific policies aimed at improving the health of men, women, boys, and girls. In 2009, the Health Sector Gender Policy and corresponding strategic plan and guidelines for operationalizing gender mainstreaming in the GHS were developed. The policy's objective is to promote healthcare delivery, particularly for maternal and reproductive health. The recent Newborn Care Policy (2019–2023) aims to guide the delivery of neonatal and child health services in Ghana by offering timely and quality health services and preventing neonatal and child mortality. The GoG also has instituted treat-all guidelines that call for treatment for all persons living with HIV regardless of CD4 count or stage. And the government enacted a robust 2016–2020 National HIV and AIDS Strategic Plan that includes specific interventions for key populations. These efforts have been bolstered by the 2016 Ghana AIDS Commission Act and the 2016 National Antiretroviral Guidelines, which reflect the national commitment to providing quality HIV services.

Gender-based violence

Despite supportive legal and policy frameworks, gender inequalities in Ghana persist due to economic and social problems where gender norms and expectations have wide-reaching implications for community and public life across sectors and populations. Restrictive social norms and stereotypes make women more vulnerable to discrimination and sexual violence.

Cultural norms in Ghana make it acceptable for men, but not women, to have multiple partners: 14 percent of men reported having multiple sexual partners in the past 12 months compared to 1 percent of women. Women often are blamed for HIV acquisition, even though their male partners more often put them at risk. Women also face exploitation and sexual harassment, especially in search of employment opportunities and accessing public services. In general, while no structural discrimination on the basis of ethnicity exists, northern Muslims are regarded as less capable of skilled employment. Even well-qualified individuals from the north face discriminatory practices in government institutions, and the majority of people migrating to the south are limited to menial jobs with low incomes.

Women and men report experiencing intimate partner violence (IPV), although women and girls are more often victims. Tolerance for and attitudes toward violence, however, are changing. For example, the proportion of women who agreed that wife beating is justified for at least one of the reasons specified in the Demographic and Health Survey (DHS) decreased from 37 percent in 2008 to 28 percent in 2014, with women who are married or living together, rural women, and women in the Northern region more likely than their counterparts to agree. This positive trend also can be seen in men: only 13 percent of men in 2014 agreed that wife beating is justified for at least one specified reason, down from 22 percent in 2008. Nevertheless, women sometimes are discouraged from reporting cases of GBV due to physical and cultural barriers and attitudes, administrative and legal delays, and a lack of legal and technical knowledge about the justice system.

Division of labour and women economic participation

Labour-force participation is 74.1 and 65.5 percent respectively for men and women aged 15 years and older (2018). A large percentage (86.1 percent) of this employment is in the informal economy, characterized by engagement in low-skilled work and self-employment with low productivity and high vulnerability. Vulnerable employment is highest among women (68.2 percent or 3.4 million women). In addition, more than one-quarter of youth (25.9 percent) are unemployed or underemployed, more than double the national average (11.9 percent).

Most women earn less than men, regardless of education and occupation. There are also major disparities in wage employment and in the formal sector. Women are much less likely than men to be engaged in professional, technical, and managerial fields: only 3.4 percent of females are professionals, compared to 6.6 percent of males. The under-representation of women and girls in tertiary education and in STEM subjects (for example, only 22.5 percent of graduates from science, technology, engineering and mathematics (STEM) programs in tertiary education are female) affect their ability to secure employment in the formal sector, especially in traditionally male-dominated fields.

Entrepreneurship

A few large businesses combined with many MSMEs characterizes Ghana's private sector. The MSME segment comprises about 85 percent of businesses and is pivotal to employment creation in the formal and informal sectors. Women are more likely to operate in the informal economy. In 2019, Ghana ranked second in the world for the highest percentage of women's business ownership, with women owning nearly four in every ten businesses (37.9 percent). While this prevalence is laudable, it also suggests women tend to face greater constraints than men in securing other types of jobs and formal employment opportunities.

Women entrepreneurs in Ghana face constraints contributing to large gender gaps in profits, ranging from 23 to 73 percent. Recent evidence suggests self-employed women tend to

operate in more-crowded markets with reduced opportunities for growth when compared with self-employed men. They also are less willing to compete (especially in stereotypically male-dominated domains) or adopt advanced business practices. And they tend to express a lack of confidence in their abilities and leadership. In addition, self-employed women often lack access to capital, credit, and long-term assets, which are necessary to grow their businesses. Informants note women tend to be risk averse and are reluctant to seek financing from banks or credit unions, which may require their husbands to cosign the loans. Women also struggle with an unequal care burden that reduces available time and opportunities for building their businesses and skills. Women in Ghana spend more than triple the amount of time on unpaid work as men.

In Ghana, women's business income can be a critical source of household earnings, accounting for as much as 33 percent of household expenditures. More than three-quarters of women micro-entrepreneurs in urban Ghana agree their household would have a hard time paying for food or school-related expenses without income earned from their business. This finding counters the popular narrative that men are the primary breadwinners and responsible for the payment of housing, school fees, food, and medical expenses.

Income transparency tends to not be expected nor practiced between marital partners. Ghanaian women entrepreneurs manage their income to meet both household and enterprise needs, with household expenses prioritized. Recent research provides evidence that gendered intrahousehold relationships and marital insecurity constrain business decisions and capital investments. Rather than investing in their enterprises, women hide income to reinforce the husband's responsibilities as a primary provider and to cover shortfalls in this financial support to meet daily household needs and provide for other expenses or longer-term investments (for example, property and children's education). They do so out of fear their husbands would reduce contributions to the household or end the relationship if their income was known. While this research focused on urban women, rural women entrepreneurs expressed similar considerations.

Policies and approaches that create openings for greater security in land use or property rights can incentivize women to increase their core skills and personal initiative. In addition, policies encouraging marital partners to share financial and care responsibilities would help women prioritize investments to expand employment and business opportunities. Research suggests women lack confidence and find accessing business-development services difficult given their household responsibilities as well as distance and time constraints. Government agencies and business associations should support women and women's impact businesses to improve access to credit; expand business networks and market links; and increase participation in training on business-development services, financial management, public speaking, personal initiative or confidence, and leadership.

Summary

Ghana is making noticeable progress towards the achievement of electricity access nationwide. Despite this progress, to date, 6 million people, including 3 million women and girls, live without access to clean energy. Decentralized renewable energy technologies offer an solutions to increase access and reach these rural communities. Increasing access to clean and affordable energy, directly contributes to inclusion, sustainable economic growth and improved living conditions The LEAF project can also make an impact for women in the workforce to ensure that women are considered in the recruitment, training and business-development opportunities, especially in rural areas. Most women in Ghana earn less than

men, regardless of education and occupation and are much less likely to be engaged in professional, technical, and managerial fields.

Tunisia Gender Assessment

Gender and energy

Tunisia's electrification rate is 99%, some remote areas remain with lack of energy access. Nevertheless, the energy deficit (gap between energy needs and resources) is widening, with a marked dependence on imports of fossil fuels and direct energy subsidies that weigh heavily on the state budget (about 10%). From 2001, Tunisia became a net importer of primary energy. Over the past nine years, the trade energy deficit has increased 11-fold.

- 32% of the overall trade deficit is due to energy
- 49% energy independence rate in 2019 (vs 93% in 2010)
- 30% of renewable energy in electricity generation targeted by 2030

Tunisia's national energy control policy focuses on: (i) reducing the country's energy dependence on fossil fuels through demand control and supply diversification and the use of other resources such as renewable energy; (ii) improve energy security by reducing the energy dependency rate currently estimated at close to 10%, but which remains on an upward trend; and (iii) improve the competitiveness of the economy and economic operators by reducing their energy bills. Renewable energy accounted for 4% of all energy used in 2019. Tunisia could reach 22% by 2030 compared to an expected target of 30% thanks to the installation of photovoltaic panels, despite political instability. Tunisia is on the right track with great untapped potential.

As part of the development of the Energy Sector Support by the World Bank, in 2019, the Bank has carried gender-sensitive surveys on: (i) the public perception of the energy sector and subsidy reform; and (ii) Société tunisienne de l'électricité et du gaz (STEG)quality of service among its customers.

The results indicate that: (i) men seem to have more control than women over how energy is used and how the costs of energy are met within the household (only 26 percent of respondents declaring to be responsible for energy use and expenditure within the household are women); (ii) women seem to suffer from restrained access to information on energy services as they encounter more difficulties in understanding electricity bills (63 percent of men declare that they understand the bills, compared with 57 percent of women) and billing methods (52 percent of men, 48 of women); and (iii) women tend to be less informed on on-going energy sector reforms and their consequences (85 percent of women declare that they are unaware of the reforms, compared to 80 percent of men). As a result, women tend to have a worse overall perception of the energy sector compared to men (only 21 percent of women declare that they have a good perception of the energy sector, compared to 27 percent in the case of men), which may hinder their demand for, and access to, energy services.

Building on the actions by the World Bank in closing the information gaps between women and men in the energy related services and promoting equal participation of women in the decision making at public and households levels, will serve as platform which can be used by the LEAF in Tunisia.

Key data on gender equality

Tunisia's Human Development Index (HDI) value for 2019 is 0.740— which put the country in the high human development category— positioning it at 95 out of 189 countries and territories. The 2019 female HDI value for Tunisia is 0.689 in contrast with 0.766 for males, resulting in a GDI value of 0.900. This reflect steady progress in reducing gender equality.

Political participation

Following electoral changes in 2017 that mandated vertical and horizontal parity for municipal elections, 2018 saw a significant spike in female political participation. Nearly 27,000 women ran in the 2018 municipal elections. Women-led lists comprised 30 percent of the total going into the election. Many of these women candidates ran as independents, as women only compose 23 percent of party membership. The elections were a major step forward for women's political representation: 47 percent of the winners were female. However, those who ran as independents faced special challenges once in power:

Without party support, many of the newly elected female councilors have struggled to gain access to political support and resources needed to realize their full potential and achieve tangible results in office. Overall, while the quotas have succeeded in electing more female officials, more needs to be done to empower women once in office. This new generation of female elected officials, who are overwhelmingly young, are at a disadvantage in terms of political experience, resources, and standing compared to their male counterparts. The mean age for female candidates was 36, compared to 45 for men, and only a small minority of female candidates had previous political or governing experience. Once in office, women continue to experience high levels of discrimination within the political establishment and receive more pushback from members of the public than their male counterparts.

Education

Primary education is universal in Tunisia for both boys and girls, as its net enrolment in primary education is 100% for both boys and girls, and the completion rate of primary education is 97% for boys and 98% for girls. Girls' completion rate of lower secondary education is 78% and is higher than that of boys (61%). According to the EU Gender Profile report in 2014, it is known that there are more dropouts among boys than girls while there is no sufficient data on the factors causing dropouts. While youth literacy rate (15-24 years old) is 98% for both young men and women, women's adult literacy rate (75%) is 15% lower than that of men (90%), which implicates that older women faced more difficulty in receiving sufficient education.

The EU Gender Profile report states that women's share in tertiary education is high in areas such as social science, human science, language studies, economics, journalism, law and agriculture. Women are less represented in areas such as engineering (29%), architecture (34%), and veterinary (36%), while their share is not very small as it is at least about 30% in these traditionally masculine areas.

Health

According to the MDG monitoring report, Tunisia introduced the National Perinatal Programme in 1990, which aims at the reduction of maternal mortality ratio through the improvement of the key activities such as review of maternal death cases in the public health facilities, coordination between universities and local health facilities, pre-and post-natal care, family planning, and prevention of infant deaths. In 2014, 98% of pregnant women took prenatal care at least once, and 85% took it at least four times. Family planning was introduced

in Tunisia in the 1960s in collaboration with health facilities and midwives. Contraceptives are widely used even in the religious and cultural constraints, and contraceptive prevalence among married women was as high as 63% in 2014. The percentage of delivery not attended by skilled health workers largely declined throughout the country.

Gender-based violence

The Personal Status Code (Code du Statut Personnel: CSP) and the Penal Code were revised in 1993, which value human rights including women's rights. Spouses are required to respect each other, and domestic violence is considered a crime. However, many cases of domestic violence are invisible, and it is reported that 48% of women between 18 and 64 years old have experienced domestic violence according to the EU Gender Profile report. The Ministry of Women, Family and Children developed a national strategy to fight against violence on women, during their life cycles in 2013, which prioritizes four actions: data collection and analysis about gender-based violence, provision of adequate and diverse services for the victims, awareness-raising in the society, and enforcement of related laws.

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Division of labour and women economic participation

According to the EU Gender Profile report, two thirds of women workers are in service, industrial and agricultural sectors (sectors in narrow sense). There are about 15,000 women top executives of enterprises, which account for 6.5% of the total.

It is estimated that informal sector employs about 40%-50% of workers outside of the agricultural sector. While there are no specific statistics on the informal sector, it is considered that there is a high participation of women in the sector.

Indicator	Men	Women	Data year
Labour force participation rate (15-64 years)	77%	65%	2013 (*1)
Unemployment rate (total)	12.5%	21.6%	2015 1st quarter (*2)
Unemployment rate (university graduates)	20.8%	39.0%	2015 1st quarter (*2)

The objectives of the "National Employment Strategy 2013-2017" are to create employment, to reduce the unemployment rate, and to develop competitive and productive labour force. It lists up actions to achieve these goals: to improve employment policies, to develop sectors which would create many employments, to develop private sector including small and medium-sized enterprises (SMEs) and self-employment, to improve vocational trainings and the function of the labour market. According to the EU Gender Profile report, the Tunisia General Labour Union created the women committee in 2000, but there were only 13 women among 511 participants in its central committee in 2011. There are no women among 13 board members of UGTT central bureau. Women account for only 8% in UGTT governorate office staff. The women committee has proposed that all sections of UGTT should have at least two women.

Entrepreneurship

According to JICA's report titled "Study of gender mainstreaming in private sector development: Final report" (2015), women entrepreneurs are found in service (41%), manufacturing and sales of consumables (food and garments) (25%), and retail/wholesale (22%) among others. Their businesses are concentrated in the large cities such as Tunis and Sousse. Sixty-two percent of women entrepreneurs either import or export, and their major

clients of export are in the countries such as France, Italy, Gulf States, United States and Malaysia. More women entrepreneurs than men work from home. Their annual sales in average is about 50,000 dinars (approximately US$24,000 or JPY2.9million), which is about the same as male entrepreneurs in the similar businesses. Eighty percent of women entrepreneurs are graduates of upper secondary education or above, and more women than men start business for self-realization rather than economic reasons. Fifty-five percent of women entrepreneurs have work experience in other companies before they start their own businesses.

Women entrepreneurs face difficulties in various aspects such as access to finance, building networks, knowledge in management and business (about sector and products), access to the market, and work-life balance. There are no women specific policies or schemes of SME development.

Summary

The increase in renewable energy will provide households with affordable access to energy. The LEAF programme will build ongoing efforts by other development partners i.e. World Bank in reducing information gap, in increasing women participation in decision making, and in promoting women enterprises. The detailed national action plan activity will build as well on the feasibility study conducted by the African Development Bank in 2018[18]

Ethiopia Gender Assessment

Gender and energy

Ethiopia has a strong urban and rural divide in terms of energy access. 45% of the Ethiopian population is connected to energy sources, with 92% in urban areas and only 32.7% in rural places.

- 65% of Ethiopia's population lives within 1.5 miles (2.5 kilometers) of medium-voltage transmission lines, but only about one-third of households, one-quarter of primary schools, and only one-third of health clinics have access to grid electricity.
- Ethiopia has set a 2025 target of universal electricity access, as well as 100% access for primary and secondary schools, hospitals, and primary health centers.

The Alternative Energy Directorate of the Water, Irrigation and Sanitation Ministry, is undertaking activities in order to improve access to alternative sources of energy. Under the Climate Resilient Green Economy (CRGE) action, efforts are underway to mainstream gender through the preparation of a National Gender Action Plan for the Energy Sector. This is expected to bring gender into the forefront of climate and green initiatives, and to enhance the collection of sex-disaggregated data.

The quality of women and men's life is affected by the availability of energy and distance to a source of energy for lighting and cooking in the households. The distance to source of energy for cooking specifically impacts women's life quality, since women are usually the ones

[18] Feasibility study for a Centre of Excellence for the Promotion of Entrepreneurship in Support of Employability in North Africa to promote women entrepreneurship in the renewable energy sector.

responsible for collecting firewood. According to the 2011 Welfare Monitoring Survey, nationally, 23 percent of the households used electricity as a source of lighting, while 52 percent used kerosene, 13 percent electricity from battery and 11 percent firewood. More households in the urban areas (88 percent) used electricity as a source in comparison to the 5 percent of households in the rural areas. Ethiopia recognizes that

- Lack of access to electricity affects women and girls most; electrification can facilitate labor participation as well as economic productivity at home.
- Ethiopia is pioneering a first-of-a-kind model to achieve gender equality across the energy sector, shifting from ad-hoc interventions to a transformational, programmatic approach.
- Gaps between men and women are especially prevalent in infrastructure sectors such as energy, where the roles and responsibilities of women and girls in the household, market, and community can affect their access, control, and use of electricity services.

The DRE sector is a male dominated space. Women share of the DRE workforce is approximately 20%. This is lower than the average participation of women in the DRE sector in Africa (30%) and Ethiopian's workforce. Awareness needs to be created among management and technical teams, of the benefits of having a conducive environment for all. Furthermore inclusive HR policies need to be developed including the recruitment and carreer development of women, and prevention of, and response to, GBV in the work place.

With the help of the World Bank Group, the country is pioneering a new model to promote equality between men and women while it works toward universal electricity access. This involves shifting from ad-hoc and disconnected interventions to a programmatic approach with investments in technical staff, and an earmarked budget to support gender equality across the entire energy sector.

Key Data on Gender Equality

- Women make up 43,128,000 (49.74 percent) of the Ethiopian population in 2014, among the estimated population of 86,707,000.
- 27 percent of women aged 15-49 have never been married, while 58 percent are married, 4 percent are living with a man, and 11 percent are divorced, separated or widowed. A very small proportion of women aged 45-49 (1 percent) have never been married
- As compared to men aged 15-49, the proportion of women who have never married is lower at 44 and 27 percent respectively
- 5 percent of men aged 15-49 have two or more wives. The highest proportion of men with more than one wife was found in Somali and Benishangul-Gumuz Regions, at 14 percent in both of the regions.
- A large proportion of women marry when they are age 25 or younger, in contrast to the majority of men who marry at or after 25. In 2011, the median age at first marriage among women aged 25-49 was found to be 16.5 years. In comparison to the 2005 national statistics, very little difference was observed in the marital status of women and men.

Female-headed households (% of households with a female head) in Ethiopia were 25.4% as of 2016. In 2019, 83.5% of the Ethiopian population suffered of multidimensional poverty. Among them, we can estimate than 51% of them are women and girls.

Political participation

Ethiopia achieved significant gains in advancing gender equality and women's empowerment in various fronts. Significant achievement has also been made in promoting women's political participation - women occupy 50% of the cabinet of ministers and 38.8% of seats of the House of Peoples' Representatives. However, significant gender inequalities persist in Ethiopia depriving women of rights and opportunities and hampering their participation in development endeavors

Sahle-Work Zewde is Ethiopia's first female president. Since coming to power in 2018, Prime Minister Abiy Ahmed has reorganised the cabinet to ensure that 50 percent of the government's top ministerial positions have been given to women. Never before in Ethiopia have so many high-ranking government positions been held by women.

Education

The government of Ethiopia (GoE) has progressed in the provision of primary education. Primary education is measured in various ways by the GoE, the Net Enrollment Rate, the Gross Enrollment Rate, and the Primary Completion Rates at Grades 5 and 8. The Net Enrollment Rate (NER) measures students' enrolment in respective grade levels at the appropriate school age. The net enrollment rate for primary education (Grade 1-8) has increased from 77.5 percent in 2005/06 to 85.4 percent in 2011/12. NER in the lower primary school cycle (Grades 1 to 4) has increased from 77.5 percent in 2004/05 to 92.2 percent in 2011/12. In the upper cycle of primary education (Grades 5 to 8), growth over the same period was achieved from 37.6 percent to 48.1 percent. As noted previously, the GPI at Primary Cycle 1 has reached 0.92, and at Primary Cycle 2, 0.98 indicating greater parity between boys and girls over the past five years Secondary education in Ethiopia is divided into a First Cycle (Grades 9-10), a Second Cycle (Grades 11-12) and additionally may be supplemented by Preparatory Secondary Education, which covers Grades 11 and 12. Two main forms of assessment of secondary are analyzed for the Preliminary Gender Profile, namely, enrollment rates and national examination results.

At grades 9 to 10 the gross enrollment rate reaches 38.4 percent of the age cohort, of which 39.9 percent are male and 36.9 percent female. In Preparatory Secondary Education, Ministry of Education data for the 2012/13 school year shows that 358,493 students were admitted to these schools, of which 44.4 percent are females and 55.6 percent males. Nevertheless, the gross enrollment ratio in this sector is still low for both, girls and boys, with little improvement from the 7 percent in 2009/10 to 9.5 percent in 2012/13.

The MoE indicates the following as the major reasons for lower enrolment rates of girls in secondary education:

- Gender roles and related household tasks which results in time poverty for girls
- Unfavorable cultural environment which include negative parental or community attitudes towards girl's education
- Harmful traditional practices, including early and child Marriage, and physical and psychological harm during marriagei
- Migration and trafficking
- Infrastructure, the distance between homes and secondary schools, placing girls at risk of violence or unaffordable expense for transport or housing.

Health

The National Health Account (NHA IV) shows a significant improvement in financing health in Ethiopia. Total per capita health spending grew almost four-fold between NHA I and NHA IV to 16.10 USD in 2007. The World Bank reports that per capita health expenditure had risen again to USD 18 in 2012. The health sector in Ethiopia operates in line with the National Health Policy (1993) and the subsequent Health Care and Financing Strategy (1998) which gave direction to the national five year Health Sector Development Strategies leading from HSDP I to the current HSDP IV. The major aim of the HSDP is to reduce maternal, newborn and child morbidity and mortality, and malnutrition as well as to control infections with TB, malaria, and HIV. In addition to this, the country developed an innovative approach to address basic health service needs of communities, the Health Extension Program (HEP) starting from 2002/03.

For the three years preceding the 2014 MEDHS, the national total fertility rate was 4.1 children per woman, a reduction from the 5.4 children per woman recorded in 2005. Same of the reasons for high fertility rates include early age sexual intercourse and low rates of contraceptive use by men and women. In Ethiopia, as of 2011, the median age at first intercourse among urban women aged 25-49 was 17.8 years, and 16.4 years among for rural women. This indicates that half the rural girl's experience first intercourse before the age of 16 years and 3 months. The median age at first sex for men age 25-49 is 21.2 years. Central Statistical Agency (2014), Ethiopia Mini Demographic and Health Survey (EMDHS) shows that women's self-image and sense of empowerment as well as resulting intra-household dynamics have a strong effect on their ability to use and negotiate the use of contraceptives as well as the method contraceptive used and the number of children. For example, in 2011, more women who participate in some decision-making in their households used contraceptives than those women who did not participate in any household decision-making.

EDHS (2011) The Maternal Mortality Ratio (MMR) in Ethiopia has decreased from 673 deaths per 100,000 births in 2000-2005 to 420 deaths per 100,000 in 2013. Even though numbers show progress, the country still has one of the highest maternal mortalities on the continent and is very unlikely not reach the MDG target of 267 per 100,000 by 2015. Analysis of the 2000-2011 EDHS shows that there are regional variations in MMR, ranging from a high in Somali Region at 747 per 100,000 births to a low in Addis Ababa at 234 per 100,000. Various factors contribute to higher levels of MMR in rural areas, including mothers' delays in seeking skilled emergency obstetric care, reaching health facilities, receiving timely care, and the presence of unmet family planning needs among girls of child-bearing age. Other contributing factors include high-risk pregnancies, closely spaced births and older maternal age, especially in rural, uneducated and poor households.

Division of labour and women economic participation

According to the 2016 Labor Force Survey of CSA, of the estimated 80,444,148 population of Ethiopia, 55,629,497 individuals (69.2 percent) were aged 10 years and above, and therefore fall into the potentially economically active part of the population. From this group, 42,403,876 persons or 76 percent were employed in 2016. The employment to population ratio in the study shows that the proportion of employed males from the economically active male group is 82.7 percent and higher than that of employed females, which is at 69.8 percent. Nonetheless, the disparity by sex is still visible across the data from 2005 to 2016, where male employment has always been significantly higher and the gap has essentially remained unchanged. Male employment declined slightly from 84.7 percent in 2005 to 82.7 percent in

2016 while female employment increased very slightly, from 69.0 percent in 2005 to 69.8 percent in 2016.

Overall, national figures show that agriculture is one of the most important sectors in Ethiopia, which engages the majority of women and men. The level of education is closely linked to occupation and women with secondary or higher education qualifications are more likely to be in sales or services, and in professional, technical, and managerial occupations 96 with women in agriculture tending to have less education. The Demographic Health Survey of 2017 further shows that the proportion of women engaged in sales and services is lower among higher age groups, and increases among those women who were never married, have no living children, live in urban areas, and those in the higher education and wealth quintiles. The smallest portion of the population is engaged in trade in both study periods (2005 and 2016).

Despite the fact that the majority of women are engaged in agriculture work, they are more likely to get paid when employed in the nonagricultural sector which resulted in 56 percent of women engaged in agricultural work unpaid workers in 2017. A determinant in this case could be the presence of large number of women in the agriculture sector (65 percent) who engage in subsistence farming and work for a family member. Studies show that 30 percent of women were not paid at all for their work in 2017, and only 39 percent were paid in cash. This indicates that a large number of women are denied their rights to their wages, which can be attributed to different factors including assumptions about what women. It is recommended that reasons behind women's low representation in the economy and in waged employment should be further explored in order to address the root causes of the problem.

Only 36 percent of the women said they have decision- making power over the use of their own cash earnings while 55 percent jointly decide over the use of their income with their spouses. For 8 percent of the women, the decision is being made by their husbands. With regards to the relative amounts paid to women and men, while 2 percent of the women's husbands have no earnings, 10 percent of the women said they earned more than their husbands, 67 percent earn than their husbands and 20 percent earn the same amount. The study also suggested that women who have more children, who are in the highest wealth quintile, who live in the urban areas and who are older have more decision-making power over the use of their cash earnings than women in the other circumstances.

Entrepreneurship

Bridging gender gaps through empowerment programs promoted by both governmental and non-governmental actors at the national level have started showing results. According to a MoFED and United Nations Country Team (UNCT) report of 2016 on the MDGs, such government actions focused on promoting women's entrepreneurship development by providing various trainings to women involved in micro and small businesses, and also creating access to credit and markets for this group. As a result of such interventions, many micro and small-scale businesses owned and operated by women were able to grow into medium-scale enterprises in 2015/16.

Women entrepreneurs in Ethiopia are disadvantaged from the start. They have less access to the finance, networks, and education which help their male counterparts advance. They face regular discrimination and harassment from society–sometimes even from their own families and communities. The challenges a woman entrepreneur in Ethiopia faces in growing her business are overwhelming. Women in Ethiopia are less likely to own assets which can serve

as collateral and are more likely to be excluded because of unequal property rights or discriminatory regulations, laws and customs.

Summary
Only 32% of households in rural areas have access to electricity. By supporting the deployment of SHS, mini-grid and C&I solutions, LEAF will directly benefit these rural communicates and women by increasing access to clean, reliable and affordable energy.

Participation of women in the workforce of energy access businesses is very low compared to the average in Africa and women's participation in Ethiopia's overall economy.

Guinea Gender Assessment

Gender and energy
Guinea's hydroelectric potential is estimated at 6000 MW, of which less than 3% is exploited. This potential could power the entire West African sub-region if it were actually exploited. Current projects, some of which are funded by the African Development Bank, will enable Guinea to play a major role in the regional energy market in West Africa. The GoG has several room for manoeuvre to undertake in-depth institutional and regulatory reforms in order to attract the private sector to finance the development of this sector and to reduce the share of biomass as the main source of energy. Already, the private sector's share of energy production has increased from 16% in 2000 to 31% in 2016.

The rate of access to electricity is 44% (including many illegal connections). The access rate is 20% in rural areas compared to 87% in urban areas. The country fell in terms of electricity connection from 119th in 2012 to 159th in 2018 according to Doing Business with a score of zero in terms of reliability of supply and transparency of tariffs. The electricity tariff does not cover operating expenses. Electricity is sold at a maximum price of 800 GNF (less than $0.1) per kWh, while the average cost is 2,700 GNF per kWh ($0.3).

Guinea is developing both the SEforALL Action Agenda and the Investment Prospectus in the framework of the SEforALL implementation in the ECOWAS region, coordinated by ECREEE. Before that, the main objectives of the government in terms of access were fixed by a 2012 Energy Policy document that envisaged an increase of the access rate to 50% in 2020, as well as improvements in energy efficiency, an increase in the share of renewables and a reduction in the local electricity tariffs. A 50% access to clean cooking to 2025 was also foreseen. These objectives are being revised in the Action Agenda.

Guinea has considerable renewable energy resources, particularly for hydroelectricity for which around 4740 MW of potential has been detected. The energy demand in Guinea is projected to raise considerably and – according to government forecast – additional capacity between 535 and 1838 MW would be necessary by 2025.

Overall, there is a low level of per capita energy consumption by any gender, about 500 kep (kilo oil equivalent). The specific situation of women is characterized by a decline in the connection to electricity, low access to electricity, and a quasi-dominant use of coal as an energy source. In rural areas, women and men are affected differently by the challenges of accessing modern energy sources. Indeed, in the absence of accessible alternative energy

sources and innovative practices, firewood and charcoal remain predominant, which affects women more in their cooking meals (as mothers or caregivers) exposing them to the harmful smoke of burning wood. Similarly, the search for firewood that is increasingly far from collection sites, and is costly in terms of time, increases women's exposure to the risk of gender-based violence in rural areas. This has a socio-economic impact on gender inequalities because, apart from energy, women are involved in the execution of heavy and repetitive tasks through their muscular strength alone.

Women and girls major responsibilities are to collect firewood, grind cereals, drudgery, work in the fields, prepare meals, etc. These tasks are unpaid and contribute to the lack of economic balance between the activities of men and women in society. The plight of women's activities leads to health problems in a context where the satisfaction of the health needs of populations is still very poorly managed. The lack of time and services to facilitate women's activities leads to her exclusion from local decision-making spheres and undermines the development of productive income-generating activities.

Key data on gender equality

The issue of gender equality and equity is still a concern in Guinea, although encouraging measures are being implemented. The National Gender Policy has been updated, validated and disseminated in 2017.

Guinea's HDI value for 2019 is 0.477— which put the country in the low human development category— positioning it at 178 out of 189 countries and territories. Between 1990 and 2019, Guinea's HDI value increased from 0.282 to 0.477, an increase of 69.1 percent. Between 1990 and 2019, Guinea's life expectancy at birth increased by 11.6 years, mean years of schooling increased by 1.6 years and expected years of schooling increased by 6.5 years. Guinea's GNI per capita increased by about 71.2 percent between 1990 and 2019.

With a gender index of 0.439 (OECD SIGI Index), Guinea is among the 8 countries (78 out of 86) with the greatest disparities between women and men in the non-OECD area. Guinea is also considered one of the ten African countries with the greatest gender disparities. The national gender context in Guinea is still characterized by too strong an influence of socio-cultural burdens and social norms, making it difficult to apply the legal framework and measures taken to promote gender equality. Indeed, the country has a valuable legal arsenal for the protection and promotion of women's rights, such as the Penal Code, the Code of Criminal Procedure, the Child Code, the Reproductive Health Act prohibiting female genital mutilation (or excision) and its implementing texts, the Joint Order to Ban Female Genital Mutilation in Guinea.

Female-headed households (% of households with a female head) in Guinea were 18.7% as of 2018. In 2019, 66.2% of the Guinean population suffered of multidimensional poverty. Among them, we can estimate than 51% of them are women and girls.

Political participation

There are no legal restrictions on women's access to the labour market, education and health. However, in March 2018, women represented only 22% in parliament, 18% of Supreme Court judges (3 women out of a total of 17 judges), 24% of councillors of the Economic and Social Council, 14% of heads of ministerial departments in 2017, 2% of mayors and 18% of heads of households. Only 26% of state employees are women, most with limited responsibilities.

The results of the 2014 RPGH indicate that early marriage (12 to 14 years) significantly affects girls regardless of their background of residence, with a prevalence of 5.5%.

Women have little presence in public administration, both centrally and locally. Despite a law establishing a 30% quota for women on all electoral lists, in 2015 women held 22% of parliamentary seats and 15% of ministerial positions (GGGR 2015).

The overall rate of women's representation in decision-making positions remains low. Women make up only 23% in municipal councils compared to 77% of men. With 18% women members of the government, 13% Governor of regions and 6% prefect, Guinea still seems far removed from the quota of 30% female representation.

Education

Guinea has the lowest literacy rate in the region, with percentages of 23% for women and 38% for men. Although significant progress has been made in education, especially in primary school and in technical and vocational education, much remains to be done. In Guinea, education is compulsory only at primary school level, with primary school enrolment in 2015 being 81% for boys and 69% for girls. Secondary and higher school enrolment is much lower, especially for women with percentages of 23% in secondary and 6% in higher secondary schools compared to 37% and 14% respectively for men.

Girls account for 46.21c/o of the total number of learners in technical education and public and private vocational training. However, there is a strong segregation by sector of activity: men are the majority in secondary sector training and women in tertiary sector training. Women account for 67% of learners in tertiary sector training and men account for 80% of learners in secondary education. Moreover, in 2012, public IES had only 22.11% female students compared to 37.09% in private IES.

Much remains to be done in education to develop skills for the socio-economic transformation of the country. The gross primary school enrolment rate rose from 81% in 2012 to 88.6% in 2017. However, this rate fell significantly in 2015 (79.8%) due to the Ebola epidemic, before gradually improving to 88.6% in 2017.The primary completion rate fell from 59.4% in 2016 to 52.2% in 2017. As for secondary school, the enrolment rate is increasing from 38% in 2016 to 42.5% in 2017.

With a Gross Primary Education Rate (GST) of 75.6% for girls and a still worrying dropout rate (9.0% for the whole, 10.1% for girls and 8.2% for boys), Guinea is facing low enrolment among women/girls. As the training curriculum progresses, there has been a decrease in the number of girls. In secondary school, women's GER is 28% compared to 49% for boys. The proportion of female female researchers in the 2014-2015 academic year was 6.2%, with an even lower proportion in the scientific and technical streams (2.36%).

Health

Guinean women, especially in rural areas, are struggling to access adequate health services, particularly obstetric care and family planning. In 2015, only 45% of births were attended by qualified health workers and only 6% of married or unioned women used any contraceptive method. While the maternal mortality rate has fallen by almost 34.7% over the past 20 years, from 1,040 maternal deaths per 100,000 live births in 1990 to 679 in 2015, Guinea's maternal mortality rate is one of the highest in sub-Saharan Africa (546/100,000 regional average). In addition, one in 26 women is at risk of dying in childbirth in her lifetime. The fertility rate is

4.9 children per woman. Early fertility varies depending on the level of education; 48% of girls aged 15-19 without education have already started their fertile lives, compared to 17% of those with a secondary education or higher.

Ebola: Guinea has been heavily affected by the Ebola outbreak. Because of the special role of women as a caregiver for the sick, both at home and in health centres, the epidemic affects women more (53%) men (47%). All deaths related to the Ebola outbreak increase the vulnerability of women and girls (following widowhood caused by the virus). In addition, the deaths of registered active women have exacerbated the vulnerability of girls and adolescents, who systematically become the successor to their deceased mothers, in the management of domestic work, including care for the sick, exposing them more to Ebola, precariousness and other forms of violence.

HIV/AIDS: Women remain the most affected by the AIDS virus in Guinea. According to a report by the National AIDS Committee (CNLS), the HIV/AIDS prevalence rate among women is 1.9%, compared to 0.9% for men. While in 2015 the prevalence rate was estimated at 1.7 among adults.

Gender-based violence

The status of women is a source of unequal social treatment. To this end, women experience various types of violence, including female genital mutilation, physical violence and psychological violence. Of all the violence, domestic violence is the most common. Almost two out of three women (63%) are the victims, with varying proportions depending on the region. Paradoxically, overall, only 6.6% of men and 5.1% of women complained after having a GBV and less than 5% of men, and 3% of women who complained received responses.

There is very little application of legal texts protecting and promoting women's rights. This is linked, among other things, to the juxtaposition of legal orders (religious, customary and modern) and to the difficult accessibility of courts in rural areas. What fosters sexist attitudes and practices, reinforces practices harmful to women/girls, hinders initiatives to accelerate the achievement of effective gender equality, and maintains the acceptance of gender inequalities by women themselves.

Division of labour and women economic participation

According to the National Gender Policy Document 2017, the working-age population in Guinea is 2,306,244, of whom 54% are men and 46% are women. In this workforce, 49% of men and 72% of women work for themselves. Despite their demographic weight (51.7%), Guinean women make up only 9.7% of the formal labour force (public and private). Overall, women make up less than 30% of the public service workforce. However, Guinean women are economically very active, even though the majority of them work in the informal sector.

Entrepreneurship

The private sector is characterized by a strong predominance of the informal sector, which accounts for about 95.2% of jobs in the economy, the majority of which are in the agricultural sector. The formal sector employs 4.8% of the labour force, mainly in public administration. Credit to the private sector remains modest, due to the tight liquidity conditions of banks and the predatory effect created by strong demand for public/private investment. In 2017, appropriations to the private sector reached US$912.7 million, compared to US$1.2 billion for the public sector. The World Bank's Doing Business 2018 report shows that Guinea has increased by 26 places in the rankings compared to the 2012 edition. The country occupies

the 153rd/ 190th. This is mainly the result of reforms in the obtaining of building permits and the facilitation of business creation. However, the business climate is still suffering from the decline in tax payments, electricity connection and cross-border trade. Transparency International's Corruption Perceptions Index is 27 in 2017 compared to 24 in 2012 and ranks Guinea 148th out of 180 countries.

Summary

Women, especially in the rural areas are facing tremendous challenges due to low energy access rate. They are primary actors and beneficiaries of energy projects given their traditional roles as managers of wood and biomass fuel suppliers and other environmental resources. Increased access to energy through renewable energy will provide a sustainable, affordable, and reliable supply. This will help in improving health system, providing secure environment, and increase women’s economic opportunity.

3. Conclusion

The gender assessment highlights the main gender gaps in the respective countries targeted by the LEAF programme, as well as important aspects and the impact related to increasing access to energy and women. While gender gaps are present in many areas, the LEAF programme will focus on addressing the disparities in the decentralized renewable energy sector.

There are some differences between the countries covered by LEAF, in terms of the mix of energy sources and level of women's participation. However, many of the core challenges linked to rural energy poverty and gender inequality are similar. Given the scope and interventions of the programme, we have identified two key areas where we can apply a gender-lens and develop specific activities to reducing some of the remaining gender gaps in the countries. Specific activities will be developed to promoting women's (economic) empowerment by 1) increasing women as consumers of energy access solutions, as well as 2) increasing their participation in the workforce and as leaders of energy access businesses.

Increasing access to clean energy for women

Over 90 million women and girls currently lack access to clean and reliable energy in the countries targeted by LEAF. By providing finance to DRE companies, LEAF enables expansion of their operation and increasing outreach to underserved and mainly rural areas, where energy poverty is most severe.

Country	Electrification rate (%)	Rural population with access to electricity (%)	Nr of women without access to clean energy
Nigeria	54%	23%	46.2 million
Kenya	75%	71%	6.6 million
Ghana	82%	67%	2.7 million
Guinea	44%	20%	3.6 million
Ethiopia	44%	32%	32.4 million
Tunisia	99%	99%	58,500

Although solar solutions provided to households benefit women directly, current customer base of DRE companies confirm a higher share of men versus women customers. Issues related to this inequality include lack of information about products, lack of decision making power and lack of access to finance.

As part of LEAF's investment strategy, the programme can influence corporate cultures and operations of the DRE companies supported, to increase outreach to women as customers. Although women represent an equal portion of the market and may have decision-making power in buying this technology, selling to women requires a different approach. Credit schemes and assessments require a different approach for women and men, in order to increase finance for women to purchase solar equipment. LEAF will require DRE businesses to confirm commitment and plans to increase outreach to women as customers. The programme will support businesses to develop gender responsive policies and campaigns to increase outreach to women. This could include gender responsive appraisal toolkits to increase access to finance for women, campaigns to share knowledge and information about products and financing plans etc. Based on the specifics related to the country and region, technology, financing options and targeted customers – further assessed in the country level assessments

and during the due dilligence stage of the underlying transactions to understand the DRE company outreach and specifics –, LEAF will design tailored support to the DRE companies to develop and implement strategies and plans to increase women as customers.

Through LEAF and the gender action plan, the programme aims to increase access to clean energy for households and productive use benefitting women and girls in all countries selected under the program. LEAF aims to provide access to clean and reliable energy for 1.18 million households. Based on an average household size of 5, of which on average 50% is women, LEAF will directly benefit 2.95 million women by unlocking financing for DRE companies to deploy SHS, GMG and C&I solutions. 413,000 female customers (35% of the total number of customers) are estimated to sign customer contracts for new energy access connections.

Enhancing access to finance and fostering job creation for women

Female participation in the labor force in the six countries lies between 40-50%, with the exception of Tunisia which is lower. The energy sector has still some steps to take, with only 30%, in some countries even lower, share of women in the renewable energy workforce[19].

According to the IRENA and the gender analysis, four categories of barriers exist with regards to employment of women in the DRE sector: 1) perceptions of gender roles and the nature of work in the sector; 2) participation of women in STEM (science, technology, engineering, math); 3) the lack of adequate information, and thus awareness, about career opportunities in renewable energy; and 4) prevalent hiring practices, as well as unequal access to employment entry points, such as apprenticeships.

By requiring DRE companies to demonstrate its commitment and approach to increasing their share of female employees, and providing support to DRE companies to develop gender inclusive recruitment and HR policies, and career plans, LEAF aims to enhance job creation for women and effectively address those barriers to reducing existing gender gaps.

Furthermore, LEAF aims to enhance access to finance and payment plans for women to purchase solar technology. The Framework will encourage DRE companies to provide financing schemes benefitting female customers.

In TA support provided to financial institutions, gender will be included in the training to enhance their ability to create gender-responsive appraisal toolkits or standardized gender-responsive loan document templates.

The Program aims to facilitate access to credit to women for SHS, green mini-grid and captive power solutions, and is estimated to create 15,600 jobs for women during the scale-up of DRE companies.

Gender mainstreaming

A gender lens will be part of the TA activities provided under the Framework where possible. This includes TA support provided to governments to make them aware of and stipulate activities supporting gender equality. The gender component of the TA activities to government will be developed and specified by the gender expert tailored to the needs, gender

[19] IRENA (2019). Renewable Energy: a Gender Perspective.

gaps, and objectives of the assignment. Support to governments on policies and frameworks may include gender to ensure the needs of women as consumers or customers are addressed. Given these TA assignments will be further developed with governments based on country specific gaps in enabling policies or frameworks, the gender expert will support the development of the assignment to address specific gender issues. The consulting firm contracted to implement the TA activities, will have to demonstrate gender expertise and the gender component will be part of the contract.

To address lack of sex-disaggregates data confirmed in the gender assessment and to measure LEAF impact on gender, all beneficiaries and sponsors of interventions under LEAF will be required to record and report on sex-disaggregated data.

Implementation of the gender action plan

The gender activities planned in the gender action plan will coordinated, implemented and monitored by a gender expert recruited by the AE through consulting services and funded by the TA budget. The gender expert will be in charge of: (i) conducting country-level gender assessments; (ii) developing and refining national gender action plans and activities; (iii) responsible for the implementation of gender related activities under the programme; (iv) supporting DRE companies and sponsors in reporting to the AE while respecting the gender indicators and targets of the national gender action plan approved by the AE; (v) monitoring and evaluating the gender activities implemented by the DRE companies; and (vi) preparing the annual LEAF gender reports. Most of the gender activities will be implemented by consultants or consulting firms – in some cases as part of a larger assignment. Consultants are required to demonstrate gender expertise and capacity to implement the gender component and activities. This will be an integrated part of the procurement process when selecting implementing partners.

The budget of the gender action plan is included in the overall technical assistance budget of the LEAF programme.

4. Gender Action Plan LEAF- Programme-level Framework

The gender action plan below is a framework plan at the programme level which will be detailed during the programme implementation phase into national gender action plans at the country level. National gender assessments will be conducted in year 1 of the programme to refine national gender action plans by the gender expert coordinating this programme, funded with the TA budget of the LEAF.

Activities	Indicators	Baseline	Target after completion	Timeline	Responsibilities	Budget estimation in USD ($)
Impact statement: Unlock local currency financing to scale DRE, increasing access to renewable energy for women and girls, including poor households, benefitting their health, safety, productive activity and reducing greenhouse gas emissions. **Outcome statements:** I. Increased access to renewable energy to 2,95 million women and girls beneficiaries (50% of total beneficiaries), including 160,000 poor households; II. Reduction in green house gas emissions of 22.9 million tCO2eq within households to preserve and improve health of women and girls, and poor households; III. Additional jobs created in the DRE sector for 15,600 women (30% of total jobs created).						
Output Statements: **I.** New SHS, mini-grid and captive power contracts entered into with 1.18 million customers, including 413,000 (35%) women and 48,000 poor and female-headed households; **II.** 20 Local banks/FIs capacitated.						
Activity 3.4.1: Conduct national gender assessments and refine gender action plans for each country						
Recruitment of one full time gender expert responsible of the following tasks					Implementation, coordination and supervision by the gender expert recruited by the Accredited Entity AfDB	**$500,000** (unit: $7000/month)
3.4.1.1 Conduct gender assessment at country level	Number of country level gender assessments	0	6 (1 per country)	Year 1		
3.4.1.2 Refine national gender action plans for each country, based on	Number of country level gender action plans developed	0	6 (1 per country)	Year 1		

the programme-level gender action plan, including timeline and budget						
3.4.1.3 Monitor and evaluate the gender activities implemented by the DRE companies and consultants	Number of gender logical frameworks and GAPs supervised	0	6 (1 per country)	Year 1-6		
3.4.1.4 Prepare annual LEAF gender reports.	Number of annual LEAF gender report to the AE	0	6	Year 1-6		
Activity 3.4.2: Support the development of strategies and marketing campaigns for DRE companies to increase share of female customers						
3.4.2.1 Support the development of strategies, (credit) policies and marketing campaigns for DRE companies to increase their share of female customers	Number of strategy/policy documents/ campaigns developed	0	+5-10 additional plans	Year 1-6 (based on pipeline development of DRE companies supported by LEAF)	Coordination and supervision by the gender expert recruited by the Accredited Entity AfDB Implementation by gender consultant.	**$150,000**
	Number of contracts entered into with female customers for new DRE connections (including 25% of FHHs and number of low-income women)	0	413,000	Year 1-6 (deployment by DRE companies)		Programme-related
3.4.2.2 Require DRE companies to collect and report customer data disaggregated by sex to ensure gender impact and reporting and to communicate it to the programme gender expert	Nr of DRE companies collecting disaggregated by sex and female-headed households (FHHs)	Tbc at project level	15-20 (all supported DRE companies)	Year 1-6	Implementation, coordination and supervision by the gender expert recruited by the Accredited Entity AfDB	Programme-related

3.4.2.3 Increase financial access through credit/Pay-as-you-go (PAYG) solutions to women customers/or FHH for SHS, green mini-grid and captive power solutions	N° of women who benefitted from PAYG or other financial solutions	Tbc at project level	+5% of women customers at completion[20]	Year 1-6	Implementation, coordination and supervision by the gender expert recruited by the Accredited Entity AfDB	Programme activity, gender component already included in the TA activity in the general LEAF Framework budget
3.4.2.4 Provide gender-responsive trainings to women and men staff of local banks and financial institutions by enhancing their ability to i) appraise and lend to DRE businesses (ii) creation of gender-responsive appraisal toolkits; (iii) standardized gender-responsive loan document templates	Number of trainings provided	0	15-20	Year 1-6	Coordination and supervision by the gender expert Consulting firm will be contracted by AfDB for implementation of capacity building of FIs – gender component will be included in the contract.	The gender component is included in the TA budget activity for support to FIs
	Number of staff that participated in trainings, of which % women	0	75, of which 30% women			
Activity 3.4.3: Develop gender inclusive recruitment and HR policies to increase women at the workforce of DRE companies						
3.4.3.1 Support the development of gender sensitive and inclusive recruitment and HR policies to increase DRE	Number of companies that include an internal gender-responsive policy	Tbc at project level	+5-10 companies equipped with improved gender-	Year 1-6 (based on pipeline development of DRE companies supported by LEAF)	Coordination and supervision by the gender expert recruited by the Accredited Entity AfDB	**$150,000**

[20] The 5% target is the minimum increase of access to finance for women to be achieved. There are certain barriers to access credit (such as e.g. a stable income to be demonstrated, which has been challenging for women) that might continue limiting this objective, and out of influence/ difficult to be removed by the programme. The target therefor is conscious of the need, as well as the credit risk of private sector companies.

companies share of women at the workforce			responsive recruitment and HR policies		Implementation by gender consultant.	
	Number of jobs created for women	Tbc at project level *or* % women working in DRE sector in the countries	15,600 (at least 30% of the new jobs created)	Year 1-6		Programme-related, gender component already included in the TA activity in the general LEAF Framework budget
Activity 3.4.4 Support the development of a gender inclusive and enabling DRE environment						
3.4.4.1 Support governments and related entities (e.g. REA) to develop and/or improve gender-responsive (digital) systems and frameworks for licensing, data collection and real time monitoring of electrification progress and simulations, and energy audits for auto-production taking into account the WMSMEs and women consumers needs.	Improved gender-responsive systems and frameworks for licensing, data collection and real time monitoring of electrification progress and simulations, and energy audits for auto-production taking into account the WMSMEs and women consumers needs through TA	0	6 systems and frameworks improved enhancing gender equality on the DRE access (1 per country)	Tbc by the gender expert coordinating the programme and based on engagement with Governments in the countries during the implementation phase and adapted to each country	Coordination and supervision by the gender expert Consulting firm will be contracted by AfDB for implementation of capacity building of Government and agencies – gender component will be included in the contract.	The gender component is included in the TA budget activity for support to governments
TOTAL cost estimation of the Gender Action Plan						**$ 800,000**