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Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 27-Oct-2023 | Report No: PIDA0187

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BASIC INFORMATION

A. Basic Project Data

Project Beneficiary(ies)	Operation ID	Operation Name	
EASTERN AND SOUTHERN AFRICA, null, null, null, null, null, null	P181328	Accelerating Sustainable and Clean Energy Access Transformation - Regional Energy Access Financing Platform	
Financing Instrument	**Estimated Appraisal Date**	**Estimated Approval Date**	**Practice Area (Lead)**
Investment Project Financing (IPF)	24-Oct-2023	30-Nov-2023	Energy & Extractives
Borrower(s)	**Implementing Agency**		
Trade and Development Bank	Trade and Development Bank		

Proposed Development Objective(s)

The Project Development Objective is to accelerate access to and financing of sustainable and clean energy in Eastern and Southern Africa.

Components

Debt financing for DRE and clean cooking companies
Result based financing for frontier markets
Technical assistance, tools and innovation

PROJECT FINANCING DATA (US$, Millions)

Maximizing Finance for Development

Is this an MFD-Enabling Project (MFD-EP)?	Yes
Is this project Private Capital Enabling (PCE)?	Yes

SUMMARY

Total Operation Cost	**594.00**
Total Financing	**594.00**

of which IBRD/IDA	**275.00**
Financing Gap	**0.00**

DETAILS

World Bank Group Financing

International Development Association (IDA)	275.00
IDA Credit	275.00

Non-World Bank Group Financing

Trust Funds	19.00
Energy Sector Management Assistance Program	19.00
Commercial Financing	300.00
Unguaranteed Commercial Financing	300.00

Environmental And Social Risk Classification

Substantial

Decision

The review did authorize the team to appraise and negotiate

B. Introduction and Context

1. This Project Information Document (PID) is a part of Phase 1 of the Accelerating Sustainable and Clean Energy Access Transformation (ASCENT) in Eastern and Southern Africa Multiphase Programmatic Approach (MPA) (P180547).

2. **ASCENT MPA Program Development Objective is to increase access to sustainable and clean energy in Eastern and Southern Africa**. It will be implemented via three Pillars, which provide the comprehensive 'menu of options' to meet each country's individual needs: (i) energy access acceleration platforms to set comprehensive frameworks for energy access expansion, harmonize policies and regulations, align approaches and pool procurements, mobilize funding, monitor results, promote knowledge exchange and build skills; (ii) investments in grid connections through grid densification, extension and reinforcement, including targeted support to strengthening utilities to increase reliability and affordability of service; (iii) investments and private capital mobilization to scale up distributed renewable energy (DRE), including mini grids, off-grid solar systems, productive uses of energy, electrification of public institutions, grid-edge innovations, as well as clean cooking solutions.

3. The proposed Project is a part of Phase 1 of ASCENT, which also includes the ASCENT Regional Acceleration Platform, implemented by COMESA, and four country programs: Rwanda, Sao Tome and Principe, Somalia and Tanzania.

Country Context

4. **The steady progress in reducing poverty and boosting shared prosperity of the past decades has been upended by a series of recent global shocks**. The Eastern and Southern Africa (AFE) region, which is home to 656 million people, was on its way toward recovery from the turbulence of the COVID-19 pandemic, but Russia's invasion in Ukraine created a new daunting set of woes. The GDP growth in AFE is projected to slow down to three percent in 2023 and poverty reduction is expected to remain sluggish.[1] Soaring energy prices and food shortages resulting from the war in Ukraine come on top of already worsening food security and devastating climate shocks that the AFE region has experienced, including the worst drought in the last four decades and the longest-lasting tropical cyclone ever recorded in the Southern Hemisphere.

5. **AFE region's economic recovery, resilience and faster progress towards poverty reduction is held back by the lack of energy access**. Less than half the AFE population has access to electricity (48 percent), a figure that drops precipitously in rural areas (26 percent)[2]. It is estimated that more than one third of all food production in Sub Saharan Africa (SSA) is lost to spoilage on the way to market, in large part due to lack of refrigeration[3]. Fewer than half of critical public institutions, including schools and health facilities, have access to electricity. Moreover, more than 80 percent of all people in the AFE region lack access to clean cooking technologies and fuels.[4] Traditional cooking fuels expose them to severe health risks, which disproportionately affect women and children and contribute to land and forest degradation and climate change, resulting in an estimated annual cost of $169 billion to the region in terms of health, gender and climate impacts.[5]

6. **The AFE region has made tremendous progress in closing gender gaps in the last decade; however, the evidence shows that that the energy sector is lagging behind, especially in terms of access to clean and modern energy**. Women in the energy sector play a significant role as users, entrepreneurs, employers, employees and as decision makers, however they face discrimination and other barriers which limit their potential contributions to the energy sector. At the household level, women in East and Southern Africa region are the primary users and producers of energy, however the sources of energy for most of rural AFE are more likely to be unclean biomass and fossil fuels. Traditionally, women in Africa are more likely to be assigned the role of searching for cooking fuels and water, resulting in women working longer hours to complete household chores and care roles, which in turn, inhibits women from pursuing economic empowerment activities. Further, women are underrepresented in the energy sector as entrepreneurs, as energy service providers, as well as in employment especially those with science, technology, engineering, and mathematics (STEM) backgrounds.

Sectoral and Institutional Context

7. **The pace of electrification needs to triple for the AFE region to achieve universal electricity access by 2030:** Despite major efforts to accelerate electrification over the past decade, which have brought electricity access to over 20 million people per year, this pace is not nearly sufficient to close the electricity access gap. The number of people living without electricity went down only from 380 million in 2010 to 365 million today, as the population growth cancelled most of the energy access gains. Based on the current pace, the AFE Region will still have over 300 million people without electricity access by 2030. AFE region's energy access progress is uneven across countries, between urban and rural areas

[1] World Bank: Africa's Pulse, No. 27, April 2023
[2] World Bank: trackingsdg7.esmap.org (2023 update; data as of 2021)
[3] Global Center on Adaptation, State and Trends in Adaptation Report, 2021
[4] WHO: trackingsdg7.esmap.org (2023 update, data as of 2021)
[5] World Bank: ESMAP Clean Cooking Planning Tool: energydata.info/cleancooking/planningtool

and across income quintiles. Half of population without electricity access resides in countries in fragile, conflict and violence situations (FCV) [6]. Female-headed households also tend to have lower access to electricity, as well as lower electricity consumption.[7] There is also a growing disparity between electricity access and clean cooking access: the AFE region's population without electricity is decreasing (albeit not fast enough) while the number of people without clean cooking access continues to grow. As of 2021, 555 million people had no access to clean cooking fuels and technologies in the region. Twelve IDA countries in the AFE region have a clean cooking access rate of less than 10 percent.

8. **The rise of distributed renewable energy (DRE) technologies and business models provides energy access acceleration opportunities.** Technology developments resulting in falling costs of solar energy and battery storage, increased energy efficiency and smart digital applications have made modular, distributed renewable energy (DRE) an increasingly attractive complement to centralized grid systems, giving rise to innovative, private sector-driven business models. This has revolutionized energy access in SSA, a vast continent with sparsely populated areas with low-income populations, for many of whom traditional grid expansion would not be economically viable. With cost-competitive, consumer-centered models and consumer financing options, the (mostly) start up DRE companies have brought much needed innovation to the energy access space, otherwise dominated by state-owned utilities.

9. **DRE electrification progress is now also opening opportunities to start addressing clean cooking access**. Result-based financing (RBF) and other forms of impact-driven finance, including carbon finance are gaining ground as a way to pay for the expected public-goods benefits from clean cooking interventions. There have been growing synergies with electricity sector, in particular on cooking with electricity (eCooking). New-generation, high-efficiency eCooking appliances and induction cookers are especially promising — by reducing the amount of electricity required for cooking, they can dramatically lower its costs. Many mini grid developers are exploring eCooking as a way to increase demand (and revenues) from mini grid customers. In addition, most of the large (and some smaller) off-grid solar (OGS) companies have integrated clean cooking in the offering to their customers.

10. **Private sector financing needs to increase.** Some DRE segments (such as those serving commercial and industrial (C&I) customers) are now fully or nearly commercial, and increasingly attracting larger amounts of private sector funding. The energy access DRE segments (those delivering new connections, such as mini grids, OGS, as well as clean cooking – which are the segments to be supported by ASCENT), however, are still largely dependent on development finance institutions (DFI) financing and they face challenges in attracting private capital at scale. Financing is, in addition, highly concentrated in just a few key markets and a handful of companies. Seven largest OGS companies have captured 69 percent of all equity and debt financing mobilized for SSA to date. Similarly, 79% of commercial financing in the mini grid sector has been deployed in six companies[8]. While financing for scale up companies has started to grow (albeit not fast enough), start-up financing has been stagnating and seed financing has been decreasing. The growth of the DRE/clean cooking sectors is held back by affordability constraints of their end users, inadequate policy and regulatory frameworks, fragmentation and inefficiencies of public funding, and both real and perceived risks deterring commercial investors.

11. **Despite many challenges, the mini grid, OGS and clean cooking companies in the AFE region have already mobilized about US$2 billion equity and debt for their growth[9]**. In several key markets in AFE, every second or third person who has electricity access is served by DREs.[10] ASCENT aims to unlock the DRE and clean cooking sector potential

[6] World Bank: trackingsdg7.esmap.org (2023 update, data as of 2021)
[7] World Bank/ESMAP: Beyond energy multi-tier framework surveys in multiple AFE countries
[8] As per ASCENT market sounding activities, based on ESMAP, AMDA, GOGLA and other databases
[9] Ibid
[10] For example, in Uganda, there are about as many off-grid as grid connections.

through its comprehensive, phased approach, leveraging one World Bank approach through collaboration with IFC and MIGA, as well as external partnerships. This includes:

- Improve planning and increase the scale and efficiency of deployment of public funding in the form of RBF and other performance-based grants, implemented in a consistent and predictable manner, to bridge the affordability gap and incentivize service provision in unserved and underserved areas;
- Improve enabling environment, including regulatory frameworks and contractual terms to support bankability;
- Build capacity and skills, including in Government agencies and the private sector, especially local companies and suppliers and potential workforce (especially women and youth);
- Fill in financing gaps in the current financing infrastructure, including access to equity and patient capital for smaller companies, local currency and long-term debt, in particular for mini grids, and the overall lack of risk mitigation instruments, tailored to specific characteristics of DREs;
- Build platforms and partnerships to improve coordination and provide transparency and predictability of deployment of public resources, including by expanding use of digital platforms;
- Enable development of larger DRE portfolios, including via aggregation platforms and leveraging regional approaches;
- Demonstrate approaches that will open new avenues for private sector mobilization, including bringing new (larger) companies to the market and/or opening up to the private sector those segments that were previously in the public sector domain, such as electrification of schools and health clinics.
- Enable new sources of finance, in particular those related to climate (both mitigation and adaptation), starting with augmenting carbon revenues for energy access in AFE.

12. **The World Bank has been supporting regional DRE electrification efforts via the Regional Infrastructure Financing Facility Project (RIFF, P171967).** Approved in FY20, RIFF's objectives are to expand finance to private firms in selected infrastructure sectors. Implemented by the Common Market for Eastern and Southern Africa (COMESA) and Eastern and Southern African Trade and Development Bank (TDB), the two institutions have successfully supported developments of off-grid solar markets in the AFE region via provision of financing and mobilization of additional commercial finance for off-grid solar companies (via TDB-implemented RIFF's Component 2), and actions to reduce barriers to trade and investments in the off-grid solar sector (supported by COMESA via RIFF's Component 3). The proposed Project builds on RIFF positive experience while introducing additional innovations incorporating RIFF lessons.

13. **TDB is one of the leading development banks in Africa**. TDB was established in 1985 with a charter under Chapter 9 of the Treaty for the establishment of the Preferential Trade Area (now known as COMESA), and its mandate is to advance growth and regional integration in the COMESA's sub-region. Its membership covers 25 countries. While it is considered a development bank, TDB operates according to commercial principles. TDB lends to public sector, large, small, and medium corporations, and other Financial Intermediaries (FIs). Traditionally, its main lending activity has been trade finance, but as of recent years, TDB has been advancing its infrastructure lending, including under RIFF, with an increasing focus on renewable energy lending. Under RIFF, TDB has acquired expertise in financing off-grid solar sector, which the present Project will leverage and expand to other DRE and clean cooking sectors. TDB has also established a Trade and Development Fund, as its wholly owned subsidiary, to promote impact financing, with a focus on small and medium enterprises (SMEs).

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

The Project Development Objective is to increase access to sustainable and clean energy in Eastern and Southern Africa.

Key Results

14. The PDO level indicators include:

- People provided with access to energy (Million)
- Financing mobilized for delivery of modern energy services (Million USD)
- Greenhouse gas emissions reduced (tCO2e)

D. Project Description

15. **The proposed project is central to ASCENT's private sector mobilization approach.** ASCENT's first phase will unlock the existing near-term pipeline of DRE and clean cooking sub-projects in the region, in order to enable the continued upward trajectory of the leading DRE and clean cooking companies, as well as bringing the "next generation" companies with the growth potential on a similar trajectory. Through this approach, ASCENT aims to address existing companies' financing, TA and capacity building needs, while strengthening their commercial orientation and ability to attract commercial funders.

16. **The Project will establish a Regional Energy Access Financing (ASCENT-REAF) Platform**, which will (i) enable debt financing tailored to DRE and clean cooking companies' needs that is currently not readily available on the market, including long-term debt, local currency financing, and targeted financing for smaller companies with high growth potential; (ii) initiate systematic market-building interventions in unserved and underserved markets, especially FCV, including through a regional RBF facility, and (iii) mobilizing additional commercial capital and engagement from regions' commercial banks. These efforts will be aided by ASCENT's future phases, which will continue expanding a range of available instruments, including more comprehensive de-risking, tailored to the specific needs of the DRE and clean cooking sectors, in order to attract new (larger) companies and investors to the DRE market.

17. **ASCENT-REAF Platform will be implemented via three Components.** *Component 1: Debt financing for DRE and clean cooking* will extend loans to DRE and clean cooking companies, either through direct lending or through on-lending via participating financial intermediaries (PFIs). *Component 2: Result-based financing for frontier markets* will provide RBF and catalytic grants to DRE and clean cooking companies to enter or expand operations in unserved and underserved markets. *Component 3: Technical assistance, tools and innovations* will provide comprehensive technical assistance and capacity building to key stakeholders, including TDB, TDF, region's commercial banks and other financial intermediaries and DRE and clean cooking companies, including for developing and piloting innovative financing approaches and instruments – with the objective to drive DRE and clean cooking sectors to scale.

Table 2: Proposed Project Components and Funds Allocation Under the Project

Component	ASCENT MPA Pillar	IDA-SUW	Regional IDA credit	ESMAP RETF grant	Total
1: Lending to DRE and clean cooking companies	3 – Scaling DRE	250	15	0	265
2: Results based financing for frontier markets	3 – Scaling DRE	0	0	12	12
3: Technical assistance, tools and innovations	1 – Access Platforms	0	10	7	17
TOTAL		**250**	**25**	**19**	**294**[11]

[11] This financing is expected to mobilize US$300 million of private/commercial capital.

- **Component 1: Lending to DRE and clean cooking companies:** This component will provide loans to DRE and clean cooking companies to expand electricity and clean cooking access in IDA-eligible countries in the AFE region that are TDB members. The Component will finance sub-projects aimed at sales, distribution and financing of off-grid solar systems for households and productive uses, renewable energy mini grids, and clean cooking technologies and fuels. Eligible beneficiaries will be private/commercial enterprises legally operating in project eligible countries, with track records in delivering energy services with eligible DRE and clean cooking technologies. Only economically and financially viable sub-projects with positive returns on investments will be supported, and lending will be carried out on market terms, with a view towards building long-term financial sustainability of the DRE and clean cooking sectors. The sub-projects will also be screened for climate resilience and support provided to develop climate resilient designs. The project will support DRE and clean cooking companies either through direct lending or through on-lending via eligible participating financial intermediaries (PFIs). For larger transactions, TDB would seek co-financing from other financiers. For smaller loans to small and medium enterprises (SME), TDB may lend via its subsidiary Trade and Development Fund (TDF), specialized in SME financing.
- **Component 2: Results based financing for the frontier markets*:*** This component, which will be led by TDF, will establish a regional Results-Based Financing (RBF) facility, which will finance grant funding via result-based financing and performance-based catalytic grants to support DRE and clean cooking expansion in markets unserved or underserved by national programs. RBF will support solar home systems, mini grid connections, productive use systems and appliances and clean cooking stoves and fuels (Same as Component 1). Eligible companies will need to demonstrate prior experience in the DRE and clean cooking sectors. The RBF grants will be geographically targeted. They will partially offset the initial costs and risks associated with companies expanding their operations and setting up their sales and service infrastructure in new regions and bridging the affordability gap, thereby incentivizing the private sector to serve more underserved areas, whilst keeping end user prices affordable. The RBF grants will be disbursed against installment payments based on the achievement of pre-agreed milestones (e.g., connections/sales of systems) and satisfactory electricity sales/after-sales service support. Performance-based catalytic grants will be offered to support companies entering new markets, to pilot promising innovations in business models and to help (smaller) companies to grow, and will be disbursed against reaching specific pre-agreed business plan milestones. TDB will engage TDF in the implementation of the RBF facility. All grants will follow procedures established in the Grant Manual, which will be a part of the Operations Manual.
- **Component 3: Technical assistance, tools and innovations for DRE and clean cooking:** This component will finance technical assistance, capacity building, acquisition of tools and development and piloting (via lending or grants) of financial innovations. This will include TA to TDB and TDF to gain better understanding and ability to carry out due diligence on DRE and clean cooking sub-projects, including for environmental and social (E&S) aspects, climate resilience and building a pipeline of viable sub-projects; (ii) acquisition of tools supporting due diligence and monitoring processes, including a digital planning, management and monitoring, reporting and verification (MRV) platforms; (iii) contracting of RBF implementation support and independent verification, (iv) supporting strengthening TDB's internal capacity on gender and a gender action plan ; (v) TA to DRE and clean cooking companies, including on E&S aspects and climate-resilient designs, (vi) TA and capacity building for PFIs, and (vi). development and piloting of innovative financing instruments that can be scaled up under Components 1 and 2 and/or through future ASCENT phases, including affordable hedging/swaps for local currency lending, de-risking/guarantees for small companies and underserved/FCV markets, and promising aggregation structures. This will also include support for monetizing carbon revenues and mobilizing other climate finance, such as via renewable energy certificates (RECs), green bonds or other commercially oriented climate finance mechanisms.

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Area OP 7.60	No

Summary of Screening of Environmental and Social Risks and Impacts

18. The Distributed Renewable Energy (DRE) projects within the World Bank's ASCENT project bring about significant environmental, social, and safety (EHS) risks and considerations. While the project is designed to deliver substantial environmental benefits, such as optimizing energy systems, using lower-emission energy sources, and contributing to climate change adaptation through diversified energy supply, it also entails various E&S risks. This project expands on TDB's existing World Bank-financed RIFF project (P171967) under RIFF's component 2 and enables long-term lending to DRE initiatives. It encompasses a multifaceted reach, targeting clean energy expansion across households, enterprises, farms, schools, health clinics, and other public institutions. While the project's primary focus is on PV systems, it could finance other technologies like small-scale hydro (up to 20MW), while avoiding investments in dams or high-voltage transmission infrastructure, and any other ventures fraught with high-risk implications. It is, however, anticipated that the vast majority of subprojects will be solar PV under 2 MW. Environmental risk is categorized as substantial. Potential EHS risks may include inappropriate e-waste management, labor issues, and water resource management. Subprojects within the scope of this Project will generate battery waste, characterized by Li-ion and lead-acid batteries, alongside electronic waste comprising panels, circuit boards, and wires. The off-grid solar products and mini-grids will involve elements of hazardous material, demanding meticulous handling and management to avoid soil and groundwater contamination. The absence of comprehensive national regulations across various African countries increases these risks. The small-scale hydro projects involve additional risks such as impacts on watersheds, cumulative impacts, changes to drainage patterns and hydrology at intake sites, resource efficiency concerns, pollution challenges, and management of hazardous waste, notably used batteries. Nuisances in the form of air and noise emissions, as well as disruptions to land, water, and biodiversity, further compound the environmental challenges that the subprojects might face. The project's social risk rating is categorized as substantial. The focus is expected to be on DREs such as solar home systems, and mini grids in Component 1 and 2. The civil construction work is expected mostly in the mini grid projects but is likely to be at smaller scale. The impacts of land acquisition depend on subproject size and nature, with impacts varying from low to medium. Mini-grid subprojects, capped at 20 MW, might require 50-75 acres per subproject, affecting communities, especially in countries like Kenya with communal land tenure. Land-related risks encompass conflicts, exclusion of land users, capacity challenges, and livelihood impacts. Social risks extend beyond land concerns, to SEA/SH risks, labor management issues, and potential engagement in areas with IP/SSAHUTLC populations and conflict or violence-affected regions, and areas accommodating refugees. Other social risks could entail the potential exclusion of disadvantaged communities, including women, indigenous populations, and rural residents, from reaping the project benefits. Component 3 involves providing technical assistance (TA) to develop clean energy projects and improve the capacity of financial institutions. While some TA activities could lead to higher-risk subprojects, social risk is considered low. All TAs will adhere to WB Performance Standards to mitigate environmental and social risks. The capacity of TDB and the PFIs to effectively monitor and supervise subprojects across a vast geographical expanse is crucial, and equally crucial, is the ability of potential borrowers to meet their E&S obligations. Operating as an apex FI, TDB will serve as the conduit for project funds to the PFIs operating at both the country and regional levels, facilitating the onward lending to DRE subprojects. Collaboration with regional and country-level FIs is key Project execution strategy. The main risks concerning the involvement of these FIs in the Project pertain to their commitment and comprehension of E&S risks and impacts linked to DRE projects. It also relates to their

E&S capacity to identify and effectively manage these risks and impacts. The PFIs will need to screen projects to identify these risks such that high risk subprojects would not be eligible for financing. The ESMS of TDB and PFIs will include screening criteria and project specific exclusions to address these risks. TDB will assess the adequacy of each PFI's ESMS prior to financing them under ASCENT, and subprojects initially eligible for on-lending via PFIs will be limited to under 2MW. The Project will not finance sub-projects larger than 20 MW, those requiring dams and high voltage transmission lines.

E. Implementation

Institutional and Implementation Arrangements

19. **The project will be implemented by TDB**. TDB will be responsible for all aspects of implementation, including procurement, FM and safeguards. Implementation arrangements will leverage capacity built under the RIFF Project, using the same TDB team that is currently implementing the RIFF project, but it will be strengthened with at least one additional DRE specialist and with additional E&S specialists. TDB will follow its established investment processes, further described in the Operations Manual. For Component 2 and parts of Component 1 and Component 3 TDB will engage TDF via a Subsidiary Agreement.

20. Implementation of the project will follow procedures established in the Operations Manual. Component 2 will follow procedures established in the Grant Manual, which would be a part of the Operations Manual.

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