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Report No: PADHI01035

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED GRANT

IN THE AMOUNT OF
SDR187.1 MILLION (US$245.8 MILLION EQUIVALENT)

AND A PROPOSED GRANT IN THE AMOUNT OF US$5 MILLION
FROM THE ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM MULTI-DONOR TRUST FUND

TO THE

REPUBLIC OF MALAWI

FOR AN

ACCELERATING SUSTAINABLE AND CLEAN ENERGY ACCESS TRANSFORMATION IN MALAWI (ASCENT MALAWI) PROJECT

AS A PHASE 8 UNDER THE
ACCELERATING SUSTAINABLE AND CLEAN ENERGY ACCESS TRANSFORMATION PROGRAM
USING THE MULTI-PHASE PROGRAMMATIC APPROACH
WITH AN OVERALL FINANCING ENVELOPE OF US$5 BILLION

DECEMBER 20, 2024

Energy and Extractives Global Practice
Eastern and Southern Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective: November 30, 2024)

Currency Unit =	US$
US$1 =	SDR 0.76

FISCAL YEAR
April 1 – March 30

Regional Vice President:	Victoria Kwakwa
Regional Director:	Wendy E. Hughes
Country Director:	Nathan M. Belete
Practice Manager:	Yadviga Viktorivna Semikolenova
Task Team Leader:	Zhengjia Meng

ABBREVIATIONS AND ACRONYMS

AFE	Eastern and Southern Africa
ASCENT	Accelerating Sustainable and Clean Energy Access Transformation
CCDR	Country Climate and Development Report
COMESA	Common Market for Eastern and Southern Africa
CPF	Country Partnership Framework
DRE	Distributed Renewable Energy
BWB	Blantyre Water Board
ERP	Enterprise Resource Planning
EPC	Engineering, Procurement and Construction
ESCOM	Electricity Supply Corporation of Malawi
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESCOM	Electricity Supply Corporation of Malawi
ESMAP	Energy Sector Management Assistance Program
ESMP	Environmental and Social Management Plan
ESMMP	Environmental and Social Management and Monitoring Plan
ESRS	Environmental and Social Review Summary
E&S	Environmental and Social
FX	Foreign Exchange
GCF	Green Climate Fund
GEAPP	Global Energy Alliance for People and Planet
GoM	Government of Malawi
IDCOL	Infrastructure Development Company Limited
IEP	Integrated Energy Plan
IPP	Independent Power Producer
IRP	Integrated Resource Plan
IVA	Independent Verification Agent
LPG	Liquefied petroleum gas
MEAP	Malawi Energy Access Project
MERA	Malawi Energy Regulatory Authority
MOE	Ministry of Energy
MOFEA	Ministry of Finance and Economic Affairs
MOMA	Mozambique-Malawi Interconnector
MPA	Multi-Phase Programmatic Approach
MTF	Multi-Tier Framework
MW	Megawatt
MWK	Malawi Kwacha
MV	Medium Voltage
NDC	Nationally Determined Contribution
NBFI	Non-bank financial institution
NNNF	Ngwee Ngwee Ngwee Fund
O&M	Operations and maintenance
OHS	Occupational Safety and Health
PAYGo	Pay-as-you-go
PBC	Performance-based conditions
PDO	Project Development Objective
PIU	Project Implementation Unit
POM	Project Operational Manuel
PPA	Power Purchase Agreement

PPSD	Project Procurement Strategy for Development
RAP	Resettlement Action Plans
RBF	Results-based financing
RBM	Reserve Bank of Malawi
RE	Renewable Energy
SHS	Solar-Home-System
SME	Small and Medium-sized Enterprises
SGI	Social and Gender Inclusion
STEM	Science, Technology, Engineering, and Mathematics
TDB	Trade and Development Bank
WBG	World Bank Group

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DATASHEET

BASIC INFORMATION

Project Beneficiary(ies)	Operation Name		
Malawi	Accelerating Sustainable and Clean Energy Access Transformation in Malawi		
Operation ID	Financing Instrument	Environmental and Social Risk Classification	
P502464	Investment Project Financing (IPF)	Moderate	

Financing & Implementation Modalities

[✓] Multiphase Programmatic Approach (MPA)	[ ] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[✓] Performance-Based Conditions (PBCs)	[ ] Small State(s)
[✓] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternative Procurement Arrangements (APA)	[ ] Hands-on Expanded Implementation Support (HEIS)

Expected Approval Date	Expected Closing Date	Expected Program Closing Date
23-Dec-2024	31-Dec-2030	31-Dec-2030
Bank/IFC Collaboration		
No		

MPA Program Development Objective

To increase access to sustainable and clean energy in Eastern and Southern Africa

MPA FINANCING DATA (US$, Millions)

MPA Program Financing Envelope	5,415.00
with an additional request to IBRD	51.00
with a reduction of IDA	3,323.00

Proposed Development Objective(s)

The PDO is to increase clean and sustainable energy access in Malawi.

Components

Component Name	Cost (US$)
Off-grid Connection through Solar Home System	60,000,000.00
Last Mile Grid Connection	150,000,000.00
Energy Access for Schools and Health Facilities	20,000,000.00
Clean Cooking Solutions	10,000,000.00
Technical Assistance and Capacity Building	10,800,000.00

Organizations

Borrower:	Republic of Malawi
Implementing Agency:	ESCOM, Ministry of Energy

MPA FINANCING DETAILS (US$, Millions)

Board Approved MPA Financing Envelope	**5,415.00**
MPA Program Financing Envelope:	5,415.00
of which Bank Financing (IBRD):	0.00
of which Bank Financing (IDA):	5,000.00
of which Other Financing sources:	415.00

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	**250.80**
Total Financing	**250.80**
of which IBRD/IDA	**245.80**
Financing Gap	**0.00**

DETAILS

World Bank Group Financing

International Development Association (IDA)	245.80
IDA Grant	245.80

Non-World Bank Group Financing

Trust Funds	5.00
Energy Sector Management Assistance Program	5.00

IDA Resources (US$, Millions)

	Credit Amount	Grant Amount	SML Amount	Guarantee Amount	Total Amount
Regional	0.00	25.00	0.00	0.00	25.00
National Performance-Based Allocations (PBA)	0.00	220.80	0.00	0.00	220.80
Total	**0.00**	**245.80**	**0.00**	**0.00**	**245.80**

Expected Disbursements (US$, Millions)

WB Fiscal Year	2025	2026	2027	2028	2029	2030
Annual	5.00	50.00	75.00	75.00	40.00	5.80
Cumulative	5.00	55.00	130.00	205.00	245.00	250.80

PRACTICE AREA(S)

Practice Area (Lead)

Energy & Extractives

Contributing Practice Areas

Education; Health, Nutrition & Population

CLIMATE

Climate Change and Disaster Screening

Yes, it has been screened and the results are discussed in the Operation Document

SYSTEMATIC OPERATIONS RISK- RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Substantial
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Substantial
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Moderate
6. Fiduciary Financial Management Risk rating from Specialist: Substantial as of 04-Dec-2024 Procurement Risk rating from Specialist: Substantial as of 18-Dec-2024	Substantial
7. Environment and Social Environment Risk rating from Specialist: Moderate as of 06-Dec-2024 Social Risk rating from Specialist: Moderate as of 06-Dec-2024	Moderate
8. Stakeholders	Moderate
9. Overall	Substantial
Overall MPA Program Risk	Moderate

POLICY COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

ENVIRONMENTAL AND SOCIAL

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
ESS 1: Assessment and Management of Environmental and Social Risks and Impacts	Relevant
ESS 10: Stakeholder Engagement and Information Disclosure	Relevant
ESS 2: Labor and Working Conditions	Relevant
ESS 3: Resource Efficiency and Pollution Prevention and Management	Relevant
ESS 4: Community Health and Safety	Relevant
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Currently Relevant
ESS 8: Cultural Heritage	Relevant
ESS 9: Financial Intermediaries	Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

LEGAL

Legal Covenants

Sections and Description
Section I.A.4(a) of Schedule 2 of the FA: the Recipient shall not later than thirty (30) days after the Effective Date establish the Project Steering Committee with the mandate, resources, terms of reference and functions, satisfactory to the Association, and thereafter, maintain said Project Steering Committee throughout the Project implementation. Section I.I(1) of Schedule 2 of the FA: The Recipient shall, by no later than 6 months after the Effective Date, appoint

independent external monitoring and evaluation experts ("NNNF Verification Agent"), to act as third-party verifiers of the proper implementation of the NNNF under Part 2,3 and 4.1 of the Project.

Conditions

Type	Citation	Description	Financing Source
Effectiveness	Section 5.01 (a) of the FA	the Recipient has prepared and adopted the Project Implementation Manual (not including the POM), in form and substance satisfactory to the Association	IBRD/IDA
Effectiveness	Section 5.01 (b) of the FA	the Grant Agreement shall have been duly executed and delivered on behalf of the Recipient and shall have become effective and binding upon the Recipient in accordance with its terms	IBRD/IDA
Effectiveness	Section 5.01 (c) of the FA	the Subsidiary Agreement, acceptable to the Association, shall have been duly executed and delivered on behalf of the Recipient and the Project Implementing Entity and shall have become effective and binding upon such parties in accordance with its terms;	IBRD/IDA
Effectiveness	Section 5.01 (d) of the FA	the Recipient through MoE has established the MoE PIU and recruited/ seconded/ deployed to the said PIU: a manager, deputy manager, power engineer, GIS specialist, environment and social specialist, procurement specialist, financing management specialist and a financial management	IBRD/IDA

		assistant, monitoring and evaluation specialist, all with qualifications, experience and under terms of reference satisfactory to the Association	
Effectiveness	Section 5.01 (e) of the FA	the Recipient has caused ESCOM to establish the ESCOM PIU and recruited/ seconded/ deployed to the said PIU: a manager, deputy manager, procurement specialist, financial management specialist, accountant, environment specialist, social & gender specialist, monitoring and evaluation specialist, all with qualifications, experience and under terms of reference satisfactory to the Association	IBRD/IDA
Disbursement	Section III B.1.(c) of Schedule 2 of the FA	no withdrawal shall be made under Category (1) and (2) unless the Project Implementing Entity has prepared and disclosed the ESMF and the Resettlement Policy Framework both in a manner satisfactory to the Association;	IBRD/IDA
Disbursement	Section III B.1.(d) of Schedule 2 of the FA	no withdrawal shall be made under Category (3) unless the Recipient has (i) Appointed the Fund Manager in a manner acceptable to the Association, in accordance with the Procurement Regulations; (ii) Prepared and disclosed the ESMS in a manner acceptable to the	IBRD/IDA

		Association; (iii) recruited an environmental and social specialist to work with the Fund Manager in the management of the NNNF, with terms of reference, qualifications, and experience, satisfactory to the Association; and (iv) prepared and adopted the Project Operations Manual, in form and substance satisfactory to the Association;	
Disbursement	Section III B.1.(b) of Schedule 2 of the FA	no withdrawal shall be made for payments under Category (1) with respect to each PBC, as set forth in Schedule 3, for which a withdrawal request has been submitted, until and unless the Recipient has also submitted: (i) evidence, in form and substance satisfactory to the Association, of the Eligible PBC Expenditures paid, as presented in the IFR and verified pursuant to the PIM; and (ii) supporting documentation confirming the Recipient's achievement of the respective PBC or PBCs in form and substance satisfactory to the Association, as further elaborated in Schedule 3 and as set forth in the Verification Protocol, including, but not limited to, a report issued by the PBC Verification Agent,	IBRD/IDA

		confirming the achievement of the respective PBC or PBCs and the amount to be paid.	

I. STRATEGIC CONTEXT

1. **Accelerating Sustainable and Clean Energy Access Transformation (ASCENT) Malawi ("Project") is conceived as Phase 8 of the ASCENT Program (P180547), using the Multi-Phase Programmatic Approach (MPA), approved by the World Bank's Executive Directors on November 28, 2023.** It is designed to support Malawi in achieving its strategic goal of reaching at least 50 percent electricity access by 2030, as outlined in Malawi Vision 2063. For over a decade, the country's power sector has struggled with supply shortages and a limited ability to expand electricity access. Between 2011 and 2019, the electrification rate remained stagnant around 11 percent, positioning Malawi as one of the least electrified nations in Africa. Compounding this challenge is the slow progress in expanding access to clean cooking solutions in Malawi, where less than 2 percent of households have access to modern clean cooking[1].

2. **Over the past three years, Malawi has made significant strides in expanding electricity access, with the electrification rate rising from 14.2 percent in 2021[2] to 25.9 percent in 2024.[3]** These achievements have been driven in large part by the private sector and the World Bank-financed investment and Technical Assistance to increase utility capacity and electrification planning. As the current World Bank-financed project (Malawi - Electricity Access Project, "MEAP", P164331), which introduced better planning and successfully piloted off-grid market development schemes approaches its completion in June 2025, the sector is poised for a significant scale-up to accelerate energy access and meet the 2030 targets.

3. **The Project aligns with the overarching ASCENT objective to increase clean and sustainable energy access in Eastern and Southern Africa (AFE), targeting 100 million people with access to electricity and 20 million with access to clean cooking in the AFE region.** The Project design builds upon the implementation experiences of the MEAP, significantly scaling up grid densification and off-grid electrification efforts. Additionally, it includes targeted efforts to improve utility efficiency, implement sustainable solutions for the distribution of clean cooking solutions, as well as the electrification of schools and health centers.

4. **The Project will be an important contributor to the Mission 300 target.** Mission 300 (M300) refers to an ambitious effort by the World Bank Group (WBG), African Development Bank (AfDB) and partners to scale up energy access in Africa while ensuring that the transition to more diversified and cleaner sources of energy meets growing demand, brings economic growth, and creates jobs. Its core objective is to help provide electricity access to 300 million people in Africa by 2030, of which 250 million are the WBG target (with 150 million to be achieved in AFE). It is estimated that about half of the Mission 300 target will be most cost-effectively achieved via grid connections and half via mostly private sector-led distributed renewable energy (DRE). In addition to residential connections, the WBG and the AfDB also aim to extend electricity access to Micro, Small and Medium Enterprises (MSMEs), commercial and industrial (C&I) sectors, social infrastructure like schools and health facilities, and productive uses of energy, which are crucial for economic growth. To ensure newly connected households can have access to affordable and reliable electricity, M300 also entails support for generation, transmission, regional interconnection, sector reform and crowding in private sector investment.

5. **The Project is a part of larger WBG's efforts supporting the energy sector.** Aligned with the ASCENT MPA design, the Project focuses on accelerating both grid and off-grid connections. This effort is complemented by targeted WBG interventions aimed at expanding renewable power generation, strengthening transmission infrastructure, supporting

[1] Global Health Observatory. Geneva: World Health Organization; 2024.
[2] IEA, IRENA, UNSD, World Bank, WHO. 2023. Tracking SDG 7: The Energy Progress Report
[3] Malawi Energy Access Diagnostic Report Based on Multi-Tier Framework (MTF), 2024

utility reforms and facilitating regional energy trade. These projects will help Malawi to ensure sufficient supply, diversify the energy mix, improve financial sustainability and increase the reliability of grid supply for existing and new customers as well as to drive economy growth. Key investments under this framework include the Mpatamanga Hydropower Storage Project (P165704) and the Mozambique-Malawi Regional Interconnector Project (P164354).

A. Country Context

6. **Malawi, a landlocked country in southeastern Africa with a population of over 20 million, grapples with economic challenges and multiple climate hazards.**[4] Malawi's public finances remain significantly weakened by a series of exogenous shocks and persistent macro-fiscal imbalances since 2019, which have pushed the economy into a prolonged and severe crisis. Economic growth remained below two percent of gross domestic product (GDP) per year in both 2022 and 2023, translating to a real per capita contraction, with poverty stagnating at above 70 percent (US$2.15 per day). Persistent climate volatility disrupting the production process, longstanding macroeconomic imbalances from sustained high fiscal and external deficits, and a series of external shocks have contributed to this trajectory. Continued implementation of expansionary fiscal policies amidst a shrinking resource envelope, combined with weak Public Financial Management systems, has further weakened the fiscal position, resulting in deficits beyond 10 percent of GDP. Growing import demand against weakened export performance has resulted in a worsening external sector position. The subsequent depletion of foreign exchange buffers pushed the government to contract foreign exchange (FX) swaps to support a historically fixed exchange rate. The combined effect of these factors has pushed public debt into distress, with external debt restructuring ongoing. Public debt, as a percentage of GDP, reached 91.3 percent at the end of 2023.

7. **Despite a new IMF program supported by an Extended Credit Facility (ECF) and a recently approved World Bank Development Policy Operation (DPO) series, low reserves and very limited fiscal space remain a significant challenge for Malawi**. To restore macroeconomic stability and address longstanding structural weaknesses, the Government of Malawi (GoM) completed the IMF Staff Monitored Program with Executive Board involvement and secured an IMF ECF arrangement in November 2023. This was followed by a reform program supported by a World Bank DPO series approved in December 2023 — including efforts to strengthen debt management and restore debt sustainability, fiscal consolidation and increased budget discipline, and reforms to increase the flexibility of the exchange rate and increase foreign exchange liquidity. Growth is estimated to increase modestly in 2024. This has been impacted by the lack of lack of rain, and the continued unavailability of many production inputs due to supply chain disruptions and limited access to foreign exchange.

B. Sectoral and Institutional Context

8. **Malawi's power sector has grappled with power supply shortages, climate disasters, and an inability to expand electricity access to its citizens for a decade.** From 2011-2020, the energy access rate remained stagnant at 11 percent, making Malawi one of the least electrified countries in Africa. In rural areas, access was even lower, often below 5 percent. The country faced severe power supply constraints, including widespread blackouts from 2017-2019 due to drought and in 2021-2022 when Cyclone Ana damaged the largest hydropower station, Kapichira. In response to the 2019 supply crisis, the government resorted to costly emergency diesel generators. However, in January 2022, when Kapichira was out of service for 13 months due to cyclone damage, the government opted not to use expensive

[4] Malawi is ranked 167 out of 187 on Notre Dame GAIN country index. It is vulnerable to coastal and urban floods as well as volcanic eruptions, wildfires and extreme heat. It is moderately impacted by earthquakes, landslides and cyclones with 38.60 percent of the population exposed to climate-related hazards.

emergency power, resulting in severe load shedding and reduced system reliability. Kapichira resumed operations in April 2023 with a temporary dam, and a permanent, climate-resilient structure is expected to be completed by 2028.

9. **The Malawi power sector is guided by the National Energy Policy (2018) that defines the national energy development agenda in relation to the Malawi Vision 2020, Malawi Growth and Development Strategy III, and the Sustainable Development Goals (SDGs)**. The National Energy Policy will be updated[5] in 2025 to reflect the new energy access ambition, off-grid technology development and climate resilience. In 2024, the country updated its Least Cost Plan for power sector development. The plan includes the Demand Forecast, and the Generation, Transmission, and Distribution Master Plans, all of which will be formally adopted and published in early 2025. In addition, Malawi has established an Independent Power Producers (IPP) framework which has been tested by the procurement and management of three existing IPPs in the country.

Table 1 Key Parameters of Malawi Power Sector, 2021 and 2024

	2021	2024
Electricity Access Rate - %	14.2%	25.9%
installed Capacity	488 MW	541 MW
Energy Mix - %	75% hydro, 25% thermal	75% hydro, 15% Solar, 10% thermal
Private Sector in Generation - %	16%	15%
Average Cost of Service	US c13/kWh	US c10/kWh*
Average Tariff	US c12/kWh	US c10/kWh
Average Network Losses	22.8%	22.6%

Source: estimated by the World Bank
** Excluding FX losses*

10. **Between 2021 and 2024, Malawi has made significant strides in increasing energy access.** The access rate increased from 14 percent in 2021 to 26 percent in 2024, largely driven by the private sector, improved utility planning and operational capacity as well as the World Bank-funded Malawi Energy Access Project (MEAP, P164331). In addition to the energy access increase in 2021-2024, Malawi increased its total installed generation capacity from 488 MW to 541 MW. Importantly, this increase came with power supply diversification, moving away from reliance on hydro and diesel to the addition of 100 MW of new solar capacity from the Salima, Golomoti, and Serengeti Solar IPPs, offset by the decommissioning of the Aggreko diesel generators. The planned completion of the Malawi-Mozambique interconnector, expected in 2025 with an initial guaranteed capacity of 50 MW, and Electricity Supply Corporation of Malawi's (ESCOM)[6]) utility scale battery project (20MW) expected at the end of 2025, will further diversify supply and enhance power reliability. In 2024, favorable hydropower conditions as well as strong performance from solar IPPs ensured power supply adequacy. The restoration of power supply created the necessary conditions for expanding energy access.

11. **During the period of 2021-2024, the power sector gradually improved its financial position because of restoration of Kapichira, improved performance of hydropower generation and a series of reform actions in the sector.** As a result, ESCOM, the national electric utility (and power sector off-taker), reached the cost recovery level in 2023- prior to a 44 percent currency depreciation that took place in November 2023. From 2022-2023, ESCOM was able to generate a modest net Income at US$5-10 million, despite very difficult operating conditions. The financial turnaround can be mainly attributed to a tariff increase to cost recovery levels, arrears reduction from public institutions

[5] An international consultancy firm has started working with MoE since October 2024.
[6] National utility that manages transmission, distribution and retail segment of the power sector. It also acts as the system operator.

and Power Purchase Agreement (PPA) renegotiations. Improved financial conditions are among the key factors motivating ESCOM to increase connections to less profitable domestic household customers.

12. **Despite recent improvements, the sector faces new challenges.** In November 2023, the Malawi Kwacha depreciated by 44 percent, increasing power sector costs by over 30 percent, as most supplies and materials are imported. While the regulator, Malawi Energy Regulatory Authority (MERA) promptly approved a tariff adjustment following the Automatic Tariff Adjustment Mechanism, its implementation was partial. Tariffs for commercial and industrial users increased by about 40 percent in December 2023, but domestic household tariffs remained unchanged through 2024. This partial adjustment has led to an estimated MKW 20 billion (US$12 million) in financial losses for ESCOM in the first six months of 2024. To manage these losses, ESCOM delayed payments to suppliers and vendors while ensuring regular payments to IPPs. The losses also constrained ESCOM's ability to finance its maintenance program and new connections beyond the support provided by World Bank funding. If delays in tariff adjustments continue, they could jeopardize the progress made through recent reforms and threaten the sector's sustainability.

C. Relevance to Higher Level Objectives

13. **The Project is vital to achieving Malawi's Vision 2063, which aims for a self-reliant, middle-income economy with 50 percent energy access by 2030**. By expanding grid and off-grid solutions, it addresses energy challenges, supports economic growth, and promotes sustainable development, aligning with national priorities like poverty reduction, industrialization, and climate resilience. This program fast-tracks progress toward universal energy access, the sector's financial recovery and a prosperous future.

14. **The Project is aligned with the World Bank Group Country Partnership Framework (CPF) for Malawi (FY21-25) (Report No. 154505-MW),** in particular objective 2.3: enabling access to sustainable and resilient renewable energy (RE). The Project will directly contribute to realizing this CPF focus area by connecting households, schools and health facilities to renewable energy dominated grid power and/or solar based off-grid solutions.

15. **The Project is aligned with Malawi's Nationally Determined Contributions (NDCs),[7], its National Adaptation Plan Framework (NAPF)[8] as well as the World Bank Country Climate and Development Report (CCDR) recommendations[9] for the country.** Energy access through both on-grid and off-grid solutions will allow urban and rural communities to access new services and increase resilience against the multiple climate hazards the country is facing. As described in both the NDC and the CCDR, there is an urgent need to invest in solar power and clean cooking solutions to reduce dependence on traditional biomass fuels. Moreover, the Project will provide capacity building for key stakeholders on electrification planning and monitoring considering climate change risks. The Project is aligned with the goals of the Paris Agreement as it supports accelerating energy access, reducing greenhouse gas (GHG) emissions, and enhancing community resilience, while integrating gender-transformative approaches to close energy access gaps and empower women in the energy sector. Extensive citizen engagement will ensure responsiveness to community needs and continuous improvement through consultations and feedback mechanisms.

[7] Malawi Nationally Determined Contributions (NDCs), 2021, https://unfccc.int/sites/default/files/NDC/2022-06/Malawi%20Updated%20NDC%20July%202021%20submitted.pdf

[8] Malawi National Adaptions Plan Framework (NPA), 2020, https://napglobalnetwork.org/wp-content/uploads/2020/03/napgn-en-2020-malawis-national-adaptation-plan-framework.pdf

[9] Malawi Country and Climate Development Report (CCDR), World Bank, 2022, https://openknowledge.worldbank.org/entities/publication/ea68d466-764a-5c06-90c9-14105f558955

16. **The Project is aligned with the World Bank's Evolution priorities** and its mission to end extreme poverty and boost shared prosperity on a livable planet. It contributes to the Mission 300 agenda and is aligned with the regional priorities of the Eastern and Southern Africa Region.

17. **The Project will significantly contribute to the regional integration agenda.** Malawi is currently constructing the interconnector with Mozambique, a critical infrastructure that will play a major role in improving energy access. With peak demand already exceeding supply, the additional energy imported from Mozambique will help bridge the supply gap until new domestic generation assets are operational by 2030. Furthermore, scaling up off-grid electrification will help build a larger decentralized renewable energy (DRE) market, enabling economies of scale to be captured.

Table 2 ASCENT MPA Table

Phase	Operation ID	Countries	Phasing	Instrument	IDA Amount (US$, mln)	Other Amount (US$, mln)	Approval Date	E&S Ris Rating
1	P180547	COMESA	Simultaneous	IPF	50	15	11/28/2023	S
2	P180575	Rwanda	Simultaneous	IPF	300	100	11/28/2023	S
3	P177099	Sao Tome and Principe	Simultaneous	IPF	38	0	11/28/2023	S
4	P181341	Somalia	Simultaneous	IPF	100	0	11/28/2023	S
5	P179631	Tanzania	Simultaneous	PforR	300	0	11/28/2023	M
6	P181328	Trade and Development Bank	Simultaneous	IPF	275	300	11/28/2023	S
7	P181494	Burundi	Simultaneous	IPF	100	0	6/24/2024	S
8	P502464	Malawi	Simultaneous	IPF	245.8	5	12/20/2024	M

II. PROJECT DESCRIPTION

A. Project Development Objective

(i) PDO Statement

The objective of the Project is to increase clean and sustainable energy access in Malawi, aligning with ASCENT's Program Development Obective (PrDO) of increasing clean and sustainable energy access in Eastern and Southern Africa.

(ii) PDO Level Indicators

The proposed PDO level indicators are:

(a) People provided with direct access to electricity through new connections (Number of people)
(b) Health and educational facilities provided with access to electricity (Number of facilities)
(c) People provided with access to clean cooking (Number of people)

18. Indicators (a) will directly contribute to ASCENT MPA's PrDO Indicators, while indicators (b) and (c) align with ASCENT MPA's intermediate outcome indicators**.**

B. Project Components

19. The Project's activities described below are fully aligned with the scope of activities under the ASCENT MPA, drawing on ASCENT's menu of options under all of its three pillars: (i) Pillar 1: Regional and National Platforms to

accelerate energy access (Component 5), (ii) Pillar 2: Expanding grid electrification (Component 1 and part of Component 3); and (iii) Pillar 3: Scaling up Distributed Renewable Energy and Clean Cooking (Components 2, 4, and part of Component 3).

Component 1 - Last Mile Grid Connection (US$150 million)

20. This component will finance cost-effective, priority investments in grid densification and last-mile connections, aiming to connect 235,000 new households (approximately 1 million people) at an estimated cost of US$466 per connection. The total investment is projected at US$150 million, including US$40 million allocated to upgrading and replacing aging transformers to ensure reliable power supply even in the case of climate events. Targeted households are located near existing distribution networks, identified through the geospatial-based Integrated Energy Plan (IEP),)10, a customized electrification planning tool tailored to Malawi's context. The Project will also address connection barriers by providing ready boards to low-income households unable to afford internal wiring costs.

21. Updated in October 2024 with guidance from the Ministry of Energy (MoE) and ESCOM, the IEP highlights that, beyond the current 650,000 ESCOM customers (14 percent of total households), over 1.03 million households (22 percent of total households) are within 600 meters of existing transformers and can be connected through grid densification. Of these, 235,000 households will be supported by this Project. The remaining 64 percent of households, located farther from the grid, will require significant investments in medium-voltage (MV) and transmission lines to enable connections. These households will be candidates for off-grid Solar Home Systems (SHS) in the short- to medium-term and considered for future grid expansion initiatives which may involve separate investment programs or projects in the medium- to long-term.

22. To maximize impact within the Project's scope, Component 1 will prioritize districts and settlements with the highest concentrations of households near existing infrastructure. The Project will finance low and medium voltage line extensions, service drops, and prepayment meters to enable these connections. Additionally, to ensure reliable power supply, the Project will reinforce and upgrade transformers, which will also contribute to the climate resilience of the system. These enhancements will support both existing and newly connected households, ensuring sustainable and high-quality service delivery. Component 1 is divided into two sub-components:

Sub-component 1.1 – Last Mile Grid Connection with PBCs (US$45 million)

23. Previous and ongoing electrification efforts, including Malawi Electricity Access Project (MEAP, P164331), have revealed critical operational bottlenecks that must be addressed to improve ESCOM's operational efficiency and effectiveness. Key challenges include lengthy procurement processes caused by public procurement framework requirements and delayed approvals, time-consuming customer surveys due to a lack of digitized area maps, and insufficient management information systems to support granular tracking and timely decision-making.

24. To tackle these challenges and incentivize ESCOM to implement solutions, specific improvement actions have been proposed as prerequisites for accessing about one-third of the Component 1 funding. By linking funding to these targeted improvements, the Project aims to ensure that grid densification efforts are executed more efficiently, with

[10] First established financed by SE4all in 2022 and updated in 2024 with USAID financing

streamlined operations and better management systems. A summary of the proposed PBCs is provided below in Table 3, with further details outlined in the appraisal section.

Table 3 Performance Based Conditions

PBC	Trigger	Eligible expenditures	Value	Verification	Targeted Date of Achievement
1: Strengthening procurement systems	ESCOM has prepared and executed at least one standardized framework contract for procurement of one or more of poles, meters, transformers, or line hardware.	New grid connections	US$15million	IVA verifies successful execution of one framework contract	December 31, 2026
2: Distribution loss reduction	ESCOM has recorded geospatial information (including location of customer and nearest transformer) for at least 95 percent of its customers.	New grid connections	US$15million	IVA verifies entry of geolocation data into ESCOM's customer database and confirms accuracy of data by spot-checking random sample of customers	December 31, 2026
3: MIS implementation & integration	ESCOM has processed 95 percent of maintenance incidents through its MIS over the previous 12 months	New grid connections	US$10million	IVA verifies ESCOM's processing of maintenance incidents	December 31, 2026
	ESCOM has operationalized an electrification dashboard in its MIS	New grid connections	US$5million	IVA verifies effective functionality of the electrification dashboard.	December 31, 2026
Total			**US$45million**		

Sub-component 1.2 – Last Mile Grid Connection (US$105 million)

25. The sub-component will support immediate grid densification efforts, enabling the connection of about 157,000 new households. This portion of the financing is not tied to specific conditions. The funds are specifically intended to facilitate the immediate procurement of materials and supplies, ensuring that implementation can commence without delay and that progress toward expanding access to electricity is accelerated.

Component 2 – Off-grid Connection through Solar Home System (SHS) (US$60 million)

26. The second component focuses on scaling up off-grid solar energy solutions, targeting households and communities beyond the reach of the current national grid. The component is expected to connect 811,000 households (3.4 million people) at an estimated cost of US$116 per connection. The total investment of this component is estimated at US$94 million, of which US$60 million will be from the World Bank, leveraging US$34 million from the private sector.

27. This component will be implemented by the MoE through the "Ngwee Ngwee Ngwee Fund" (NNNF), a government-owned energy access fund hosted by the MoE and established with World Bank support in 2023. Through

a competitive process, MoE hired the Infrastructure Development Company Limited (IDCOL)11 as the fund manager. The NNNF has achieved over 200,000 connections within 16 months from 2022 to 2024, fostering a strong solar home system (SHS) market in Malawi. The key to success lies in offering innovative financing solutions that effectively mitigates FX risk, an essential element not available in the market, thereby unlocking private sector capital. Building on this success, the NNNF is set to scale up its financing to SHS companies through two funding windows: a credit line window and a results-based financing (RBF) window.

28. To address the critical shortage of hard currency, the credit line window will enable these companies to secure SHS supply from the international market and support innovative technologies and business models. The RBF window will directly provide end-user subsidies to ensure the affordability of the SHS products. Based on the current affordability assessment, up to US$16 million is expected to be allocated to the RBF window, with the remaining US$44 million allocated to the credit line window. The exact allocation of grant and loan, terms of financing, eligibility criteria, and fund flow will be finalized in thea Project Operational Manual (POM), which is a disbursement condition of Component 2. Under the credit line window, the NNNF will enter into loan agreements with SHS companies, secured by the companies' receivables and underlying sales contracts. Through the RBF window, the NNNF will provide grants to SHS companies, disbursing funds based on the number of connections delivered. Given the continued innovation in DRE technologies and business models, additional technologies, such as mesh grids, could be integrated into the NNNF offering in the future.

29. While public resources are currently critical to enable the scale-up of off-grid solar market in Malawi, given the macro challenges and low affordability levels, it is expected that private sector financing will increase over time, allowing a reduction in public sector support (phasing out of credit lines and/or reducing end-user subsidies as affordability gaps are reduced). The Project will carefully monitor and assess market conditions to adjust the NNNF offerings as appropriate.

Component 3 - Energy Access for Schools and Health Facilities (US$20 million)

30. The third component of the Project focuses on supporting the electrification of schools and health facilities. The component will connect 1,000 schools and 280 health centers that have no electricity access today at an average cost of about US$15,000 per facility. This includes both connections to the grid and off-grid solar informed by the Integrated Energy Planning Tool (IEP) as part of the least cost electrification planning. The Project will include a screening of the system design to ensure its resilience, particularly in the face of extreme weather events, such as heatwaves. The total investment for this component is estimated at US$20 million.

31. Currently over 6,500 public facilities do not have access to power, with most of them being primary schools. High-level least-cost electrification analysis suggests 3,000 of these facilities are better candidates for grid connection, and 3,500 for off-grid solar electrification. It is estimated that about US$80 million will be required for capital expenditure (capex) (US$70 million for off-grid solar and US$10 million for grid connections), out of which the Project will finance US$20 million. The remaining financing is expected to be provided by other development partners, philanthropic institutions, and the private sector. The component will also help establish financing mechanisms to sustain the

[11] A Bangladesh non-bank financial institution specialized in infrastructure and renewable energy projects financing. It also has substantial experiences in obtaining carbon financing
https://blogs.worldbank.org/en/climatechange/lighting-rural-bangladesh-rooftop-solar-carbon-credits

operation and maintenance of the off-grid assets and ESCOM connections, potentially collaborating with de-risking platforms including the World Bank Group Guarantee Platform to mitigate counterpart risks.

32. This component will be implemented by the Ministry of Energy, in close coordination with the Ministry of Education and the Ministry of Health. Two task forces have been established already with the Ministry of Education and the Ministry of Health, respectively, to coordinate the activities under Component 3. Through task force meetings in November 2024, the government acknowledged that schools/health centers and the education/health sector in general will commit to contributing to the operating costs to ensure that the electricity will be provided in a sustainable way.

33. As part of the school selection process, the Project will work with the PIU of the Digital Malawi Acceleration Project (P505095) financed by the World Bank to ensure that electricity and internet connectivity to schools are delivered in a coordinated manner. By aligning these efforts, the Project will enable schools not only to connect to power but also to benefit from reliable internet access, enhancing learning outcomes and bridging the digital divide.

34. Opportunities are being explored to mobilize additional financing from the Green Climate Fund (GCF) Cooling Facility, which has already allocated resources to Malawi, to broaden the scope and enhance the impact of this component.

Component 4 - Clean Cooking Solutions (US$10 million)

35. This component aims to catalyze the expansion of the market for Tier 4 and 5 modern energy cooking solutions, primarily through the deployment of electric, liquefied petroleum gas (LPG), and pellet-based cookstoves, while supporting a sustainable, private-sector-driven clean cooking market throughout the country.

36. At the core of the component is the establishment of a dedicated clean cooking loan window under the NNNF. This financing mechanism is designed to support small and medium-sized enterprises (SMEs) offering higher-tier modern energy cooking solutions. Subsidized loans will be provided to clean cooking companies, contingent upon the transfer of ownership of their carbon credits to the NNNF. Serving as a carbon aggregator, the NNNF will consolidate the carbon credits and facilitate carbon finance transactions. The resulting carbon revenues will enable the NNNF to subsidize the loans, cover associated transaction costs, and return any surplus revenues to participating companies, supporting operational growth and market expansion. Companies will retain flexibility in determining the number of stoves to distribute and the corresponding loan amount, allowing alignment with their operational capacities and market strategies. The NNNF will manage the carbon credits generated and oversee their compliance. This approach reduces the complexity and costs associated with carbon market entry for SMEs.

37. The program employs a carbon revenue-sharing mechanism to facilitate loan repayment while channeling surplus revenues, beyond debt service requirements back to participating SMEs. This approach incentivizes SMEs to sustain operations, invest in growth, and scale their impact in delivering modern cooking solutions. The revolving nature of the window also ensures the financial sustainability for the government to continue to provide support to the clean cooking sector.

38. Technical assistance to create an enabling environment for modern cooking solutions will also be supported under this component. Key interventions include capacity building for originating and managing carbon financing, developing and enforcing national standards, enhancing monitoring and reporting oversight, and conducting consumer awareness campaigns.

39. The transition to clean cooking solutions is a critical climate adaptation action for Malawi, addressing the severe impacts of climate events such as floods and droughts, which are partially caused by deforestation. By reducing reliance

on traditional fuel sources and technologies, clean cooking will reduce the demand of biomass-based fuels and help to curb deforestation, particularly in rural areas. Additionally, promoting diversified and sustainable cooking technologies helps mitigate environmental and socio-economic challenges, supporting food security and reducing pressure on the environmental ecosystems.

40. The Energy Sector Management Assistance Program (ESMAP), a trust fund housed in the World Bank, will provide US$5 million in co-financing to this component, with the remaining US$5 million from IDA. The OPEC Fund is considering providing parallel financing.

Component 5 – Technical Assistance and Capacity Building (US$10.8 million)

41. This component focuses on supporting both ESCOM and the MoE in acquiring the necessary capacity and analytical tools to achieve the required tasks under the Project. This includes updating the electrification monitoring platform, revising sector policies, developing market standards, developing climate change risks assessments, strengthening carbon finance origination and monitoring capacity, and expanding outreach to rural communities to ensure comprehensive and inclusive progress in electrification efforts.

42. Link to ASCENT's regional facilities: The project will benefit from support provided through the ASCENT Regional Acceleration Platform under the Common Market for Eastern and Southern Africa (COMESA), which will drive the implementation of MPA Pillar 1 and the Regional Energy Access Financing (REAF) Platform under the Trade and Development Bank (TDB) supporting Pillar 3. Malawi is eligible to receive support from both facilities. Key initiatives include support for the digitalization of energy access, including capacity building for the interface of Malawi's national electrification monitoring system12 with a regional digital platform for monitoring, reporting and verification (D-MRV) and other digital solutions, as well as enabling access to climate finance resources, support for integrating best practices for policy and regulatory frameworks, TA to distributed renewable energy (DRE) companies operating in Malawi, and skill development. In addition, Malawi is anticipated to benefit from ASCENT's extensive partnership efforts aimed at accelerating energy access initiatives across the region. The TDB REAF platform will complement the project's activities to scale up off-grid electrification by offering financing for DRE companies, including those operating in Malawi.

C. Project Beneficiaries

43. **The main project beneficiaries are the population of Malawi, who will directly benefit from access to energy, including both power and clean cooking at home as well as in schools and health facilities.** By expanding access to energy, the Project aims to improve the quality of life and resilience of households, enhance productivity for businesses, and support essential services such as healthcare and education. The availability of clean cooking options will also contribute to decreasing GHG emissions and improving health outcomes, particularly for women and children, by reducing exposure to harmful indoor air pollution. Overall, the Project will play a critical role in advancing Malawi's development goals by fostering social and economic inclusion through sustainable energy access.

D. Rationale for Bank Involvement and Role of Partners

44. **The World Bank has been a long-standing partner and major financier of Malawi's energy sector.** Through the implementation of MEAP, the World Bank has played a pivotal role in increasing Malawi's electricity access rate from 14.2 percent in 2021 to 25.9 percent in 2024. MEAP's innovative delivery model and financial solutions, which facilitated private sector involvement in off-grid electrification, have been particularly effective in driving this progress and have led to innovative collaborations with other financiers, such as Acumen's Hardest to Reach Fund. With key stakeholders

[12] expected to be completed by June 2025

anticipating a further scale-up of efforts, the World Bank, in collaboration with the African Development Bank (AfDB), recently launched the M300 initiative. This initiative aims to provide energy access to 50 percent of the people currently without electricity in Africa, with Malawi being one of the key focus countries expected to significantly benefit. With partners such as Global Energy Alliance for People and Planet (GEAPP), the Rockefeller Foundation, and SEforALL, the World Bank aims to leverage innovative financing and technical solutions to bridge the energy access gap. The Project will also explore other financing opportunities, including those from the GCF and the OPEC Fund.

E. Lessons Learned and Progress on Learning Agenda

45. During the implementation of MEAP from 2019-2024, valuable lessons were learned and summarized below.

46. **Delays in the delivery of key materials, especially in 2023 and 2024, were caused by gaps between supply contracts and prolonged procurement process.** These challenges stem from insufficient procurement expertise to handle World Bank and government requirements. To address this, the Project will introduce framework contracts, reducing transaction costs and speeding up the approval process. One of the Project's Performance-Based Conditions (PBC) is for ESCOM to prepare standard framework contracts for key materials.

47. **ESCOM's inefficiencies in workflow and inventory management through its Enterprise Resource Planning (ERP) system have further contributed to delays.** Despite having an ERP system in place, it has not been properly implemented. Operational teams often bypass the system, reverting to manual processes due to the ERP's inflexibility. This system is not suited for rapid electrification, as each connection currently becomes a mini project, requiring engineers to spend considerable time inputting data, slowing down overall progress. These issues have been discussed with ESCOM management, and it has been agreed that the system will be reconfigured as part of a structured change management process.

48. **The implementation of MEAP has demonstrated to key stakeholders in Malawi that SHS can play a crucial role in accelerating electrification and resilience.** Over the past five years, SHS has helped increase the country's energy access rate by about 10 percentage points, while grid connections have lagged. As a result, the new project will allocate more resources to the off-grid component, recognizing the significant potential of SHS in expanding energy access quickly and efficiently.

49. **The MEAP off-grid implementation emphasizes a paradigm shift from grant-based public support to addressing key bottlenecks to de-risk private sector participation**. In Malawi, the most significant constraint for the private sector has been limited access to hard currency, as the country faces a macroeconomic crisis with critically low foreign exchange reserves. This lack of access to US dollars has severely dampened private companies' appetite for new investments. MEAP's credit line design was adapted to specifically tackle the FX shortage by directly supporting US dollar payments to suppliers. This approach has proven to be the most effective measure for scaling up the market, enabling companies to continue operations and expand their investments despite the macroeconomic challenges.

III. PROJECT IMPLEMENTATION

A. Institutional and Implementation Arrangements

50. **The Project will be implemented through two PIUs.** One managed by ESCOM with a focus on Component 1 (Grid Densification) and the other managed by the MoE with a focus on Component 2 (SHS), Component 3 (Electrification of Public Facilities – On-Grid and Off-Grid), and Component 4 (Clean cooking). Component 5 (Technical Assistance and Capacity Building) will be implemented by both ESCOM and MoE. The two PIUs currently implementing MEAP will continue to carry the Project within (a) the ESCOM Projects Department and (b) the Department of Electricity in MoE.

The main tasks include project administration, contract management, M&E, and reporting of all project-related matters. A project Steering Committee with Principal Secretary MoE as Chair will meet with the two PIUs to gauge monthly progress. The Steering Committee will also be responsible for preparing the semi-annual progress report.

51. **Component 1.** ESCOM will appoint an internal project coordinator for the overall coordination across all units and stakeholders during project preparation and implementation. Network planning, technical design, and feasibility studies of subprojects fall under the responsibility of ESCOM's System Planning Unit. The ESCOM Planning and Development Division in collaboration with ESCOM's Finance, Commercial, and System Planning Units will be responsible for preparing the proposed investment budget for the Project. Three regional project coordinators would be responsible for managing the construction and operation of their respective subprojects. ESCOM's regional project offices will be responsible for preparing the Project ESF documents including environmental and social management plans (ESMPs) and resettlement action plans (RAPs). While ESCOM has experience with World Bank and donor-funded projects, challenges faced during MEAP highlighted capacity constraints when relying on internal personnel for construction and connections. To address this, contractors will be engaged from the start of the project, with ESCOM focusing on supervision and final connection activities, including meter installation and activation. To build long-term capacity for access expansion, a capacity-building program will be included under Component 5. The PIU will also need to strengthen its core functions in financial management, procurement, environmental and social standards, and monitoring and evaluation. Additionally, the project includes technical assistance to enhance ESCOM's capacity to use the Integrated Energy Planning (IEP) Tool to support electrification efforts beyond the project's lifespan.

52. **Components 2, 3 & 4.** The responsibilities under Components 2, 3 & 4 require niche and specialized skills that are not fully available within the government. As part of the MEAP implementation, the MoE established the NNNF in 2023 to oversee financing for the deployment of SHS. IDCOL was engaged to manage the fund's daily operations through offering credit lines and result-based grants to private sector companies, leveraging its expertise in renewable energy and carbon financing. Since 2023, the NNNF has demonstrated strong operational and financial performance, supporting the distribution of 200,000 SHS and disbursed most of its debt financing to private companies. Given these positive outcomes, it is proposed to retain IDCOL, at least in the initial phase, to manage NNNF for Component 2,3 & 4. IDCOL's responsibilities include: (a) modifying the POM to reflect the increased funding and expanded scope that includes schools/health centers and clean cooking; (b) effective operation and management of the fund windows, including planning, FM, budgeting, and M&E; and (c) originating, monitoring, and managing the loan/grant issuance in accordance with the POM.

53. The MOE's PIU will continue to be responsible for the overall supervision, and monitoring (including E&S), particularly reviewing the loan portfolio of the NNNF. Since the NNNF under the Project will include other areas not previously included under MEAP, like electrification of public facilities and clean cooking, capacity building for the MoE PIU will be required for the effective overall supervision and monitoring of the NNNF. In addition, the PIU will establish a task team staffed with professionals from education and health sectors to work closely with the NNNF on Component 3. A Steering Committee will provide overall strategic direction and will approve the POM (adopted from MEAP and aligned to suit the expanded scope of the Fund under the Project), changes, and compliance. This Steering Committee will include representation from the Ministries of Health and Education to oversee and provide strategic direction of Component 3. The MoE is experienced in handling World Bank-funded and other donor-funded projects. The Department of Electricity in MoE has been overseeing the bidding process and implementation of projects under MEAP. Throughout project implementation, the PIU will be sufficiently staffed in all core functions relevant for project implementation (especially procurement, FM and E&S). In addition, the Project will provide necessary TA to strengthen MoE's overall capacity of these functions. This support is provided through Component 5.

54. Project implementation manuals. The Project's implementation will be guided by two manuals: (a) A project-level implementation manual (PIM), which will set out detailed institutional, administrative, financial, technical, and operational guidelines and procedures for the implementation of the Project, including detailed E&S, FM, and procurement arrangements as well as M&E. The PIM needs to be prepared, adopted by the Government, and submitted to the World Bank for no-objection before the grants' effectiveness; and (b) an expanded Project Operational Manual (POM) prepared by the NNNF fund manager , based on the POM already developed under MEAP, which will detail the selection and eligibility criteria based on which companies are being selected under the facility, the loan and grant terms, the FM arrangements of the fund (including detailed fund flow) in compliance with World Bank policies for financial intermediaries, and a monitoring and verification system for the fund. The POM will be approved by MoE and adopted by the fund manager. The POM will not be available by the grants' effectiveness. However, disbursements of funds (Under the Component 2,3 & 4 disbursement categories) will only be allowed after the adoption of the POM.

B. Results Monitoring, Evaluation, and Verification Arrangements

55. While the MoE will be tasked with the overall project coordination and reporting on results achieved under the Project, ESCOM will report on the achievements of its tasked activities under Component 1 of the Project. ESCOM and MoE respectively will prepare standard quarterly and monthly reports for the review of the Project Steering Committee. The utility also has a grievance-handling mechanism in place and carries out routine customer satisfaction surveys. The proposed operation will also support the strengthening of the existing M&E system.

C. Disbursement Arrangements

56. The disbursement arrangement according to the disbursement categories, will be aligned with the Project components. The Project will maintain (a) two segregated Designated Accounts (DAs), namely, US dollar DAs for ESCOM and MoE, respectively, and (b) two separate Malawi kwacha project bank accounts, for the centralized systems for ESCOM and MoE, respectively. The DAs will be opened in the Reserve Bank of Malawi (RBM) and the Project accounts will be opened in commercial banks, acceptable to the World Bank. Transfers from IDA will be made into the DAs held at the RBM. Funds from the DAs will be transferred to commercial bank accounts held in Malawi kwacha to defray the Project expenses. ESCOM and MoE will apply the interim financial report (IFR) based disbursement method and submit cash flow forecast projection for six months to receive the initial deposit into the US dollar DA. The Project provides for the use of advances, direct payment, reimbursement, and special commitments as applicable disbursement methods, and these will be specified in the DFIL. As part of Components 2, 3, and 4, the Project will make use of NNNF managed by a fund manager, which will allocate the loans and grants to eligible companies offering quality SHS, for the electrification of households, public facilities, and clean cooking. The fund manager will submit monthly financial reports to the MoE for the liquidation of the advances.

IV. PROJECT APPRAISAL SUMMARY

57. **All investments are supported by ASCENT's technical, economic and financial analysis** and are aligned with ASCENT MPA's activities as described in the ASCENT Program menu of options under ASCENT's three pillars. The Project addresses climate mitigation and adaptation by enhancing energy access through renewable solutions, such as off-grid solar systems, clean cooking technologies, and RE powered grid expansions. These initiatives reduce dependency on biomass, curbing deforestation and greenhouse gas emissions. The project fortifies energy infrastructure to withstand climate disruptions, including grid upgrades and climate-resilient designs. It electrifies schools and health facilities, increasing community resilience and improving essential services during climate crises. Clean cooking solutions reduce environmental degradation and health risks, particularly for women and children. Additionally, capacity-building efforts

and technical assistance incorporate climate risk assessments and adaptive planning, aligning with Malawi's Nationally Determined Contributions and the Paris Agreement.

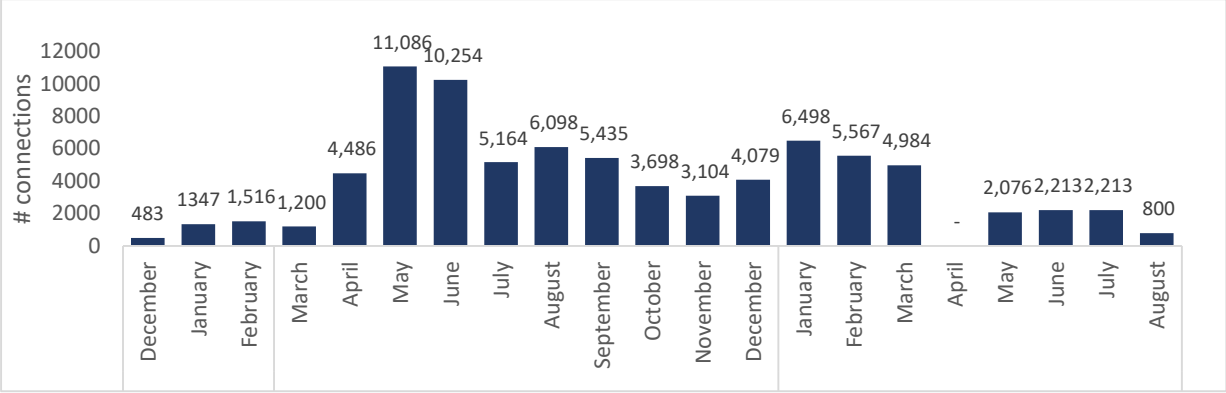
A: Technical

Component 1 – Last Mile Grid Connections (US$150 million)

58. Component 1 will mainly focus on last-mile connections. Most of the connections will be within proximity to existing distributions lines and transformers. The 2024 Malawi Integrated Energy Planning Tool (IEP) update confirmed densification as a key strategy to expand electricity access within the existing grid network. The densification analysis methodology in the 2024 Malawi IEP update identifies areas for expanding electricity access within the existing grid network. Each distribution transformer was assigned a 600-meter buffer zone, defining areas where new connections can be feasibly added. Using GIS and structure data, households within each buffer zone were mapped, allowing planners to determine the densification potential around each transformer. Current ESCOM customers were then mapped to each transformer, enabling the analysis to compare connected households to the total within the buffer zone and identify unconnected households as potential new connections.

59. With densification potential identified, the cost per new connection was estimated based on three main components: transformer upgrades, LV/MV line extensions, and service drops. The costs are broken down as follows: transformer costs average US$238 per customer, assuming a 25 kVA transformer supports 12 households; LV/MV line extensions are estimated at US$79 per household for a 5-meter line extension; and service drops cost US$150 per household, covering 30 meters of service line and a meter installation.

Figure 1 New monthly connections under MEAP



PBC (Performance Based Conditions)

60. Meeting Malawi's ambitious on-grid connection targets will not be possible without addressing key ESCOM electrification bottlenecks that emerged during MEAP. To achieve 50 percent overall electricity access target by 2030, ESCOM needs to connect at least 18,000 new households per month. By contrast, under the ongoing MEAP project, even in its most productive month, ESCOM connected just over 11,000 new customers, and has averaged less than 4,000 new connections per month (Figure 1). Notably, ESCOM is expected to connect significantly fewer customers in 2024 than it did in 2023. Several factors have contributed to this slowdown, but among the most critical are: i) a lack of poles, meters, and other materials, resulting from inadequate procurement arrangements; ii) insufficient customer geospatial data to plan and roll out new connections and associated distribution reinforcements systematically; and iii) sluggish and

incomplete adoption of critical IT systems, including inadequate integration of electrification planning and monitoring tools.

61. To support ESCOM in sustainably meeting its connection targets, 30 percent of project funding for new connections will be linked to ESCOM's achievement of Performance-Based Conditions. These PBCs (Table 3) will ensure that ESCOM has addressed critical performance bottlenecks in procurement, customer data management, and use of IT tools. This approach ensures that grid densification and expansion can be carried out without compromising ESCOM's financial and operational sustainability. At the same time, the chosen PBCs i) remain reasonably within ESCOM's control; ii) represent quantities and actions that can be easily monitored by ESCOM and verified by an Independent Verification Agent (IVA); and iii) do not introduce excessive complexity that could risk delaying project implementation. The proposed PBCs are as follows:

a) ***PBC 1****: ESCOM has prepared and executed at least one standardized framework contract for procurement of one or more poles, meters, transformers, or line hardware.* A significant factor behind the slowing pace of connections under MEAP has been ESCOM's difficulty in procuring critical electrification materials. Under current procurement arrangements, ESCOM will launches a new competitive procurement process for each new batch of materials. These tenders will be administratively cumbersome and have repeatedly proven vulnerable to disputes, resulting in considerable delays. Under this PBC, ESCOM will – with the help of technical assistance under this project – prepare standardized framework contract(s) for electrification materials. The PBC will be triggered once at least one of the framework contracts has been prepared and executed with one or more suppliers. Eligible expenditures under this PBC will include new grid connections, amounting to 10 percent of the Project's funding allocation for grid connections
b) ***PBC 2:*** *ESCOM has recorded geospatial information for at least 95 percent of its customers****.*** ESCOM currently captures location data for only about 75 percent of its customers in its system. The lack of precise location data for the remaining 25 percent hinders ESCOM's ability to conduct efficient network maintenance, plan grid expansion, and manage faults, and increases fraud risk from inaccurately reported connections. These inefficiencies and risks are likely to escalate with the rapid electrification proposed under the Project. Under this PBC, ESCOM will be required to have digitized locational data for 95 percent of its customers and integrate this data into its customer database. This should include geospatial data for customer location and a mapping of customers to connection points (transformers and MVs). The PBC provides an incentive for ESCOM to log each new connection's location, map it to distribution assets, and link this information with its internal maintenance, fault management, and customer relations systems. Eligible expenditures under this PBC will include new grid connections, amounting to 10 percent of the Project's funding allocation for grid connections.
c) ***PBC 3:*** *ESCOM has operationalized an electrification dashboard in its Management Information Systems (MIS) and has processed 95 percent of maintenance incidents through its MIS over the previous 12 months.* Insufficient and delayed network maintenance has negatively impacted the reliability and efficiency of ESCOM's power supply, resulting in distribution losses exceeding 20 percent in recent years and a high number of transformer failures and service outages. Furthermore, its current systems do not allow ESCOM to effectively track electrification progress. To address these challenges, ESCOM is currently implementing a suite of IT tools, centered around Enterprise Resource Planning (ERP) and Customer Management System software. This PBC would trigger once i) ESCOM has successfully migrated handling of its maintenance incidents to its MIS and ii) incorporated a working electrification dashboard into its MIS. Eligible expenditures under this PBC will include new grid connections, amounting to 10 percent of the Project's funding allocation for grid connections.

62. **Verification of PBCs will be performed by an Independent Verification Agent (IVA), to be procured using technical assistance under the Project.** The IVA will confirm that: i) at least one framework contract for procurement

has been prepared and executed; ii) customer location data has been accurately collected, recorded, and integrated into ESCOM's MIS; iii) critical MIS systems for maintenance management and electrification dashboard are installed and operational. An IVA will be recruited with expertise in sampling and surveying customer data, and experiences in implementing MIS.

63. **The performance improvements targeted under these PBCs will contribute to a wider reform program to strengthen both ESCOM's and the sector's sustainability.** The actions required under the PBCs will not only accelerate new ESCOM connections but will broadly enhance ESCOM's operational capabilities. Improving contracting, customer recordkeeping, and use of MIS are expected to lead to lower distribution losses, better value for money in procurement, and improved service quality. These actions will complement additional reforms taking place under other World Bank-supported initiatives that are critical but – being outside of ESCOM's control – are less appropriate for PBCs under this project. For instance, the Malawian regulator (MERA) approved a cost-reflective multi-year tariff order under the World Bank's 2023 Malawi First Growth and Resilience DPO. Meanwhile, Ministry of Finance and Economic Affairs (MoF), MoE, ESCOM, and the Blantyre Water Board (BWB) have separately agreed to an arrears clearance plan to manage outstanding BWB payment to ESCOM.

Component 2 – Off-grid Connection through Solar Home System (SHS) (US$60 million)

64. High-quality Tier-1 SHS, supported by the World-Bank-funded NNNF, are affordable and accessible for at least 50 percent of rural Malawians. Under MEAP, the NNNF has supported sales of SHS certified by Verasol providing Tier-1 energy access, defined by the Multi-Tier Framework (MTF) developed by ESMAP. These SHS provide basic energy access, including multiple lighting points, a phone-charging port, and often a radio.

65. Over 95 percent of SHS supported by the NNNF were sold via Pay-As-You-Go (PAYGo), with customers paying about US$3.70 monthly over a two-year period. This price point is affordable for at least 50 percent of the rural population, as per SEforALL's 2022 assessment. This price point is the result of the NNNF's credit line and RBF subsidies, enabling companies to reduce prices by about 30 percent. Off-grid solar companies participating in the NNNF sell SHS in every district of Malawi, demonstrating nationwide agent networks that reach households throughout the country.

- **Existing financing mechanisms provided to off-grid solar companies by the NNNF can be scaled up to achieve the 811,000 households target of the Project.** These financing mechanisms include a credit line and RBF. The credit line provides companies with access to hard currency to import SHS, repaid in local currency at a fixed exchange rate, mitigating foreign exchange risks from currency devaluation. This mechanism, essential for maintaining affordable SHS imports, is unmatched by any other financial institution at the required scale in Malawi. With an average import cost of US$54 per SHS unit, the credit line will need to provide US$44 million for 811,000 SHS.
- **In addition, RBF is provided to make product more affordable and to support innovations.** Specifically, it will reduce SHS prices for them to be affordable. A US$20 subsidy is provided in MWK-equivalent for each SHS sold to eligible households, subject to verification by an independent verification agent (IVA). This RBF coupled with the credit line allowed companies to sell PAYGo SHS at the above-mentioned price point of about US$3.70 per month. The total amount of RBF needed for 811,000 SHS is the MWK-equivalent of US$16 million. Final subsidy amounts for types of products will be detailed in the POM and periodically adjusted to reflect the market situation. In addition, the RBF can also be used to support innovative energy access technologies and business models.

66. **In addition to the 811,000 households supported by the Project, off-grid solar companies will need alternative sources of finance to sustain off-grid energy access**. SHS typically have a warranty of 2 years and a useful life of 3-4 years. An estimated 600,000 SHS currently in use in Malawi, along with about 320,000 SHS that will be sold under the

Project, will need to be replaced by 2030. The replacement cost, estimated at US$107 million (US$116/unit), covers procurement, inbound shipping, logistics, management team and general overheads, PAYGo software and agent commissions, a provision for bad debts from PAYGo customers, and financing costs. Companies are expected to finance this through revenues, equity, and debt from other sources.

Component 3 - Energy Access for Schools and Health Facilities (US$20 million)

67. **There are 6,500 public facilities, including schools and health facilities, without access to electricity.** A high-level least-cost electrification analysis suggests 3,000 of these facilities are better candidates for grid connection and 3,500 for off-grid solar electrification. Most are primary schools, where electricity is needed for basic services (e.g., lighting, ventilation, communications, clean water supply), education technology (e.g., charging of tablets for e-learning), and electricity for staff housing.

68. **About US$80 million will be needed to cover capital expenditures (capex) for these 6,500 public facilities (US$70 million for off-grid solar and US$10 million for grid connections)**. Based on a high-level energy demand assessment, daily energy demand per facility ranges from 15 kWh (average for fully equipped health posts and primary schools) to 40 kWh a day (average for fully equipped health centers). Capex costs for solar electrification of these facilities vary between US$20,000 and US$45,000 per facility, covering high-quality off-grid solar PV equipment, installation, and the internal wiring. It is expected that off-grid solar PV systems will function for about 10 years before replacing major components (like inverters and batteries). With regards to grid connection, the cost of connecting and wiring public facilities close to low-voltage power lines is estimated at US$2,000-4,000 per facility.

69. **Adequate operation and maintenance (O&M) are crucial for off-grid solar systems to remain functional for their expected useful life but are costly.** O&M costs are estimated at 4 percent of capex per year, amounting to US$2.9 million per year for all 3,500 off-grid facilities, ranging from US$800 to US$1,800 per facility per year. These costs include remote monitoring and control equipment, preventive and reactive maintenance (remotely and on-site), and the cost of spare parts. For grid-connected facilities, annual electricity bills are estimated at US$1.3 million for all 3,000 facilities, ranging from US$400 to US$1,000 per facility per year.

70. **Public schools and health facilities in Malawi, which provide free services, depend on insufficient government allocations to cover costs such as electricity bills and off-grid solar O&M**. Insufficient government allocations, coupled with competing priorities, result in an extremely low ability to pay for electricity. Grid-connected facilities can barely afford to pay electricity bills, while off-grid solar O&M costs, estimated at US$0.14/kWh, are significantly higher than ESCOM tariffs. Additional funding to cover operating expense (Opex) associated to the electrification of health facilities and schools will be necessary to sustain electricity use.

71. **Solar electrification of schools and health facilities can be delivered by the private sector but requires substantial public funding.** Off-grid solar companies can be competitively selected to deliver electricity to public facilities long-term and paid based on performance. Two possible contractual arrangements are envisaged: (i) an Engineering, Procurement and Construction (EPC) contract and a management contract for the long-term operation and maintenance. The latter will have management fees tied to performance indicators, such as system uptime, guaranteed minimum and maximum consumption, battery depth of discharge, etc. Grant funding from the Project and other development partners will be needed to cover EPC costs (capex) and part of the management fees (Opex). (ii) an Energy-as-a-Service contract, where off-grid solar companies are selected to invest in the energy supply infrastructure and sell power to the school or health facility against a fee. In this case, grant funding from the Project and other development partners will be needed to provide capex grants (to buy down the companies' initial investment and in return lower

energy fees) and part of the operating fees (Opex). Substantial discussions have already taken place, and the project steering committee is expected to decide on the delivery model based on Task Force recommendations within three months after project effectiveness.

72. **With US$20 million in funding, the Project will finance capex for at least 1,000 schools and 280 health facilities, including both grid connections and off-grid solar electrification. The Project will also help establish financing mechanisms to subsidize Opex**. Facility section and technology prioritization will be managed by an inter-ministerial task force. This same task force will provide recommendations on the most suitable contracting arrangements for the engagement of off-grid solar companies. The Project funds will be used to cover the capex of off-grid solar electrification (full capex in case of EPC + management contract model, capex grants in case of Energy-as-a-Service model) or connections to the grid. A mechanism to support the health and education sectors with Opex payments will be set up and include subsidies from the NNNF (using debt reflows into the fund of Component 2), as well as technical support to leverage a variety of existing mechanisms (e.g. performance-based grants available for schools, carbon finance or decentralized renewable energy credits). Capex and Opex estimates for the electrification of public facilities are as follows:

- *Off-grid solar electrification through EPC + management contract model.* The Project will fund US$19 million to cover full capex for 177 health facilities (EPC cost of US$29,000 per facility on average) and 684 schools (EPC cost of US$20,000 per facility on average). Opex is estimated at US$0.2 million per year for health facilities (US$1,150 per facility per year) and US$0.6 million per year for schools (US$800 per school per year) for the management contract, performance based. It is proposed that about half of the operational cost be met by the public facilities (through allocations from the respective line ministries, performance-based grants of the education and health sectors, and fees raised from their staff and community who will also benefit from electricity supply) and the other half as a matching grant from the NNNF.
- *Alternative: Off-grid solar electrification through Energy-as-a-Service contract model.* The Project will fund US$19 million in capex grants for 177 health facilities and 904 schools (80 percent of capex as a grant, 20 percent from the EaaS company). Opex is estimated at US$1.9 million per year. This will be partly met by the public facilities (through allocations from the respective line ministries, performance-based grants of the education and health sectors, and fees raised from their staff and community who will also benefit from electricity supply) and partly through a matching grant from the NNNF.
- *Grid connections.* The Project will fund US$1 million for grid connections and internal wiring for 103 health facilities and 300 schools in proximity to the electricity distribution network.

The selection of the delivery model will primarily be based on cost-effectiveness and the potential for private sector co-financing.

73. **Inter-ministerial task forces have been set up to more precisely define the technical details of implementation. Ministries of Education and Health are also expected to be formally integrated in the Project implementation**. Task forces with the Ministry of Education and Ministry of Health have been set up to achieve consensus on a variety of issues related to project implementation, such as defining more precise energy demand targets, corresponding capex and Opex provisions, prioritization of facilities, detailed contractual arrangements, additional funding sources, etc. It is expected that both line ministries formally integrate the Project implementation team through participation in technical and steering committees.

74. **An additional US$60 million in capex and up to US$1.1 million per year in Opex support will be needed to provide sustainable electricity supply to the remaining 5,220 public facilities**. Funding will come from development partners, philanthropic institutions, the government, and the private sector. The World Bank is also exploring the potential use of the NNNF balance, generated through loan repayments, to partially fund Opex.

Component 4 - Clean Cooking Solutions (US$10 million)

75. **In Malawi, approximately 98 percent of households rely on firewood and charcoal for daily cooking, a dependency that drives severe deforestation and land degradation while threatening agricultural productivity, food security, water resources, and hydroelectric capacity.** This over-reliance on solid biomass, much of which is harvested unsustainably, also heightens the country's vulnerability to climate-related shocks. Transitioning to modern cooking solutions faces significant barriers, including limited access to alternatives, low awareness, and affordability challenges. According to the 2023 Malawi Multi-Tier Framework (MTF) household survey, 69 percent of households still use three-stone stoves, followed by 22.5 percent using improved cookstoves (ICS), 6.5 percent using traditional stoves, and only 2 percent using clean fuel stoves, including 0.3 percent LPG and 1.7 percent electric stoves. Rural households predominantly rely on three-stone stoves (78.1 percent), compared to just 14 percent in urban areas. Urban areas, in contrast, see higher adoption of improved cookstoves (72.4 percent) and clean fuel stoves (11.1 percent), compared to rural adoption rates of 14.2 percent and 0.2 percent, respectively. Additionally, 14.5 percent of households practice "stove stacking", using multiple stove types for cooking, while 40.6 percent spend over seven hours per week collecting and preparing fuel.

76. **Affordability remains a major obstacle, with only 4.3 percent of households spending less than 5 percent of their total budget on cooking fuel.** According to the MTF survey, willingness to pay for clean fuel stoves is similarly low; only 18 percent of households are willing to pay the full price of an LPG stove upfront, and nearly a third are unwilling to pay under current financing options. However, willingness increases with price reductions, with 48.2 percent of households willing to pay upfront when the price is reduced by 33 percent. Addressing these barriers requires a multi-faceted approach, including raising awareness, increasing access to affordable and diverse cooking technologies tailored to consumer needs, and implementing financial mechanisms to bridge affordability gaps.

77. **The fourth component is designed to expand access to modern energy cooking solutions across Malawi.** With a US$10 million allocation—US$7 million dedicated to the clean cooking facility and US$3 million for technical assistance—the component aims to provide Tier 4 and Tier 5 cooking solutions to approximately 150,000 households, benefiting an estimated 645,000 individuals. Core technologies include electric cooking, LPG, and pellet stoves, which are already available in the Malawian market. Retail prices for these solutions range from US$52.20 for a 6kg LPG package (cylinder and cooktop) to US$94.50 for electric pressure cookers (EPCs), bringing the total estimated CAPEX to US$9.06 million. The US$7 million financing allocation will empower local medium-sized clean cooking companies to reach these targets by leveraging carbon financing to ensure scalability and sustainability over and after the Project's duration.

78. **The program's carbon revenue potential will drive its financial sustainability and incentivize scaling.** Based on the World Bank's 2024 clean cooking market assessment in Malawi, Tier 4 and Tier 5 cooking technologies can achieve annual emissions reductions ranging from 0.5 to 2.5 tCO_2 per cookstove (including electric, LPG, and pellet cooking technologies). The carbon revenues generated through this facility will depend on prevailing carbon market prices, and the Project is actively exploring opportunities to secure carbon buyers from the compliance market. Based on preliminary engagements, there will be surplus after deducting debt service and transaction fees. Surplus carbon revenues will be returned to participating companies, enabling reinvestment in operations and expansion.

79. **This component will be implemented by MoE through the NNNF operating a dedicated clean cooking window, following the same implementation framework as Component 2 of the Project.** Through this window, the NNNF will provide loans to competitively selected small and medium-sized companies offering modern energy cooking solutions, including electric cooking, LPG, pellets/briquettes, biogas, and ethanol. The specific allocation of loans, financing terms, eligibility criteria, and fund flow will be detailed in the NNNF's POM.

Component 5 – Technical Assistance and Capacity Building (US$10.8 million)

80. **This component focuses on supporting both ESCOM and the MoE in acquiring the necessary capacity and analytical tools**.

81. **Technical Assistance to MoE**: This includes support to the management and operation of the NNNF as well as the support to hire an Independent Verification Agent (IVA) under Results-Based Financing (RBF) and Performance-Based Contracts (PBCs). Additional funding supports the implementation of an electrification monitoring platform, development and enforcement of market standards for off-grid solar products, PIU capacity building, and sector policy development, and public outreach.

82. **Technical Assistance to ESCOM**: This component will support GIS training, framework procurement contract development, the full digitalization of customer profiles, implementing change management support for the Management Information System (MIS) and support to a gender action plan. These initiatives will help ESCOM improve its operational efficiency and enhance service delivery.

B. Fiduciary

83. **Financial Management**: A Financial Management Assessment (FMA) was conducted for the Project in November 2024, in accordance with the World Bank Directive.[13] ESCOM and MoE are expected to build on the existing FM arrangements[14] which have been assessed as adequate. The financial management (FM) arrangements for ESCOM are satisfactory, with moderate risk, while the MoE's performance is moderately satisfactory, carrying substantial risk. ESCOM has adequate staffing and reliable accounting software, ensuring timely and compliant financial reporting for both interim financial reports (IFRs) and audited financial statements. However, the internal audit function for both ESCOM and MoE requires strengthening to detect and address weaknesses in FM practices promptly. MoE's rating reflects delays and errors in financial reporting, including the MEAP audit report for the year ended March 31, 2024, which was overdue. Additionally, World Bank transaction reviews identified several instances of noncompliance with IDA resource utilization guidelines.

84. To mitigate these risks, the Project will implement measures such as strengthening staffing through the recruitment of qualified financial management personnel, opening designated accounts for ESCOM and MoE at approved banks, developing a comprehensive POM, and ensuring regular internal and external audits. The PIU at ESCOM and MoE will submit quarterly unaudited interim financial reports and audited financial statements. The IFRs will be required for each calendar quarter during the period of implementation and submitted to the World Bank 45 days after end of quarter. The audited financial statements for the project will be required for each financial year during the period of implementation and submitted to the World Bank within six months after end of financial year. Enhanced financial

[13] Reference material - Financial Management in Bank-Financed Operations and other Operational Matters (Catalogue number OPCS5.05-DIR.147) Issued September 7, 2021, and effective from September 7, 2021

[14] ESCOM is currently implementing three World Bank funded operations: Malawi Electricity access Project (MEAP, P164331), Malawi Mozambique Interconnector (MOMA, P164354) and Emergency Power Project (EPP, P178914) while MoE is implementing MEAP and Mpatamanga Hydro Power Project (P165704) under the PPA.

oversight and timely reporting will aim to mitigate FM risks identified through the project design and support effective project implementation.

85. **Procurement procedures**. Procurement activities under the project will be carried out in accordance with the World Bank's Procurement Regulations for IPF Borrowers (Procurement Regulations), fifth edition (September 2023); World Bank 'Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants', dated October 15, 2006, and revised in January 2011, and July 1, 2016 (Anti-Corruption Guidelines); and other provisions stipulated in the Financing Agreements. Procurement procedures will be reflected in the procurement section of the PIM.

86. **Procurement capacity assessment for the Project.** The assessment concluded that both MoE and ESCOM have good experience in implementing World Bank-financed projects. However, some challenges remain including delays in evaluation processes, handling of procurement related complaints, procurement plan monitoring which led to excessive procurement lead time in the past. To mitigate these risks, both ESCOM and MoE will engage dedicated Procurement Specialist and Assistant Procurement Specialist. The above assessments rated the overall residual procurement risk 'Substantial'.

87. **Project Procurement Strategy for Development (PPSD).** MoE and ESCOM have prepared a PPSD, which includes detailed market conditions, risks, and corresponding market approaches and procurement methods for identified procurable items. Based on the findings of the PPSD, MoE and ESCOM prepared a procurement plan of the first eighteen months of the Project. The MoE and ESCOM will use the STEP tool to prepare, submit, review, and clear all Procurement Plans, conduct all procurement transactions, monitor delays and measure procurement performance.

C. Environmental, Social and Legal Operational Policies

88. **The environmental and social (E&S) risk rating is moderate**. Both ESCOM and the MoE have developed an understanding of the environmental and social risks associated with the proposed activities through the implementation of the MEAP. However, some challenges remain including addressing occupational health and safety (OHS) risks, ensuring a functional GRM given that the Project will be implemented in all districts in Malawi except Likoma Island and adequate E&S capacity is available at both implementing agencies.

89. The off-grid project activities, involving -scaling-up of household off-grid electrification and school and health sector off-grid electrification, will be implemented by the MoE through the NNNF. The NNNF will on-lend to private companies who will subsequently engage a large workforce of sale agents/installers across the country to sell solar home systems to and manage monthly payments from a largely vulnerable client base. The anticipated risks include labor risks such as exploitation and unfair treatment by employers which include lack of employment contracts, underpayment, delays in payment and poor working conditions; OHS risks during installation by workers, community health and safety concerns including SEA/SH Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH); accidents and injuries associated with maintenance and repair by households/ institutions and waste management. These risks are expected to be managed by the private sector companies that benefit from the fund. An Environmental and Social Management System (ESMS) will be developed and operationalized within the NNNF. The ESMS will stipulate E&S governance processes including institutional arrangements, E&S instruments, budgetary requirements, capacity building, stakeholder engagement and information disclosure, internal and external grievance mechanism, and monitoring and evaluation provisions.

90. On-grid electrification will be implemented by ESCOM and will involve construction and upgrading of grid infrastructure including last mile connections, distribution OHLs, and transformer sites. Potential risks including OHS

risks to workers including electrocution and road accidents, land acquisition leading to loss of assets, conflicts over land, restricted land use and involuntary resettlement; voluntary land donation (VLD) is also anticipated; community health and safety risks associated with the presence of workers and activities being implemented in close proximity to communities; potential impacts to birds and bats; and labor related risks, including for contractors. Significant impacts associated with cultural heritage, resettlement and biodiversity are not expected and will all be minimized through the siting of project infrastructure. In light of these anticipated risks, ESCOM will prepare a number of E&S instruments, i.e. Environmental and Social Management Framework (ESMF), Resettlement Policy Framework (RPF) including Voluntary Land Donation (VLD) requirements, and Labor Management Procedures (LMP) with a focus on OHS and local recruitment. Requirements in the E&S instruments will be included in the bidding processes for the contractors. Separate stakeholder engagement plans will be developed by MoE and ESCOM. The grievance mechanism will utilize existing GM structures i.e. Community Grievance Redress Committees (CGRCs) at community level and District level GRCs. Capacities of these committees will be strengthened through trainings including to ensure they are SEA/SH responsive. The Project will require multiple reporting channels to be adopted such as emails, and toll-free numbers. Capacity building activities will be undertaken in line with the ESF. A Gender-Based Violence (GBV) service provider will be engaged to support in managing sexual exploitation and abuse and sexual harassment (SEA/SH) risks and monitoring the GRM to be SEA/SH responsive.

91. ESCOM and the MoE have experience in implementing the proposed project activities. To manage E&S risks ESCOM will engage an environment specialist, an OHS specialist, and a social specialist, while MoE will engage an environmental and social specialist. The NNNF will also engage an environmental and social specialist who will oversee the management of the NNNF ESMS.

92. There are allegations of forced labor risks associated with the solar panel supply chain in particular polysilicon suppliers. The GoM will require the primary supplier to identify those risks and if forced labor cases are identified, the GoM will require the primary supplier to take appropriate steps to remedy them. Ultimately, where remedy is not possible, the GoM will, within a reasonable period, shift the project's primary suppliers to suppliers that can demonstrate that they are meeting the relevant requirements of ESS2. Prior to beginning the procurement process, the GoM will undertake market analysis to identify the possible sellers of solar panels to the project. The bidding documents will emphasize forced labor risks in solar panels and components and will require that sellers of solar panels to the project will not engage or employ any forced labor among their work force. Bidders will be required to provide two declarations: a Forced Labor Performance Declaration (which covers past performance), and a Forced Labor Declaration (which covers future commitments to prevent, monitor and report on any forced labor, cascading the requirements to their own sub-contractors and suppliers). In addition, enhanced language on forced labor will be included in the procurement contracts. The World Bank will prior review procurements of solar panels and components to ensure that enhanced provisions are used by the GoM.

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

D. Gender

93. **The Project aligns with the World Bank Gender Strategy 2024-2030 to address persistent gender disparities in energy access and sectoral participation in Malawi**. While clean energy access has improved since 2018, only 18 percent of female-headed households have access to electricity. Women-led enterprises are also less likely to have electricity access, limiting their income-generating potential. On the supply side, women remain underrepresented in the energy sector, comprising just 25 percent of MoE staff and 13 percent of ESCOM staff, with even fewer women in technical roles; for instance, female engineers are at 2 percent of ESCOM's entire workforce. This could be attributed to cultural norms, budget constraints, and limited capacity for gender integration at both institutions.

94. Building on best practices from MEAP, the Project aims to close gender gaps in energy access and employment of women by supporting the MoE to enhance its gender mainstreaming capacity by hiring a gender specialist to develop a national gender equality strategy for the energy sector, which in turn will enhance MoE's responsiveness to national energy programs, policies, and entrepreneurship initiatives, and oversee the gender inclusion efforts of NNNF for off grid access. Further, the Project will expand and ensure grid and off-grid electricity access for female-headed households through gender-inclusive consumer awareness campaigns and flexible payment plans (Pay-as-You-Go program) to increase the ability of female headed households to pay electricity, especially for vulnerable female headed households. Additionally, the Project will support ESCOM to implement its Social and Gender Inclusion (SGI) Policy to increase women's employment in technical positions by building a recruitment pool of women with technical backgrounds through increasing internship and scholarship programs for women studying STEM fields, STEM-career awareness programs targeting girls in secondary and tertiary institutions, enhancing the *HeforShe* program, which is a male-staff engagement strategy to improve gender equality in male-dominated environment, which in turn will create a work environment conducive to women's employment as well as foster leadership training opportunities for women in technical roles.

V. GRIEVANCE REDRESS SERVICE

95. Grievance redress. Communities and individuals who believe that they are adversely affected by a project supported by the World Bank may submit complaints to existing project-level grievance mechanisms or the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project-affected communities and individuals may submit their complaints to the Bank's independent Accountability Mechanism (AM). The AM houses the Inspection Panel, which determines whether harm occurred, or could occur, as a result of the Bank's noncompliance with its policies and procedures, and the Dispute Resolution Service, which provides communities and borrowers with the opportunity to address complaints through dispute resolution. Complaints may be submitted to the AM at any time after concerns have been brought directly to the attention of Bank Management and after Management has been given an opportunity to respond. For information on how to submit complaints to the Bank's Grievance Redress Service (GRS), visit http://www.worldbank.org/GRS. For information on how to submit complaints to the Bank's Accountability Mechanism, visit https://accountability.worldbank.org.

VI. KEY RISKS

96. The overall risk rating of the proposed operation is 'Substantial'. Key risks that might affect the achievement of the Project Development Objective (PDO) relate to (a) political and governance; (b) macroeconomic; (c) Sector Strategies and Policies; and (d) Fiduciary

97. **Political and Governance - Substantial**

Malawi faces heightened political and governance risks during election years, with the potential for civil unrest and instability impacting project implementation. Historical patterns reveal that political transitions can lead to delays in decision-making, reduced institutional focus, and shifts in priorities, which are further exacerbated by weak governance structures. Corruption risks often increase during such periods, potentially undermining transparency and accountability in public procurement and project execution. To mitigate these risks, the Project will ensure regular stakeholder engagement with government, private sector and civil society with a robust monitoring framework and independent audits to safeguard against delays and corruption.

98. **Macroeconomics - Substantial**

Malawi's macro fiscal challenges in particular low foreign exchange reserves pose significant macroeconomic risks, including fuel supply shortages and civil unrest that could delay transportation of materials and equipment, slowing electrification efforts and increasing project costs. The dependence on imported goods for energy infrastructure further exacerbates vulnerabilities to currency fluctuations and supply chain disruptions. To mitigate these risks, the Project will prioritize local procurement where possible to reduce reliance on imports. Strategic fuel stockpiling will be explored with ESCOM and coordination with suppliers will ensure a steady fuel supply for transportation needs.

99. **Sector Strategies and Policies - Substantial**

Malawi's energy sector faces significant risks from inconsistent and delayed policy implementation. For example, delays in operationalizing key policies, such as cost-recovery tariffs for ESCOM, could severely hinder electrification progress. Additionally, limited coordination among government agencies risks inefficiencies and fragmented decision-making, further undermining energy access goals. To mitigate these risks, the World Bank has been supporting the development of the Malawi Energy Compact, which outlines critical policy actions and reforms required in the short and medium term to ensure a coherent and effective sector strategy.

The fulfillment of PBCs for ESCOM requires significant improvements in its internal procurement process and management information systems. Delays in addressing these areas could jeopardize access to IDA funds. To mitigate this risk, it is proposed to allocate technical assistance under Component 5 to support ESCOM in achieving these critical performance improvement objectives.

100. **Fiduciary - Substantial**

Fiduciary risks for this project include weaknesses in financial management and procurement processes, which could lead to delays, inefficiencies, or misuse of funds. ESCOM and MoE's past audits have highlighted issues such as unreconciled accounts and insufficient financial oversight. To address these risks, the Project will engage dedicated financial management and procurement specialists supported by assistant accountants in PIUs in ESCOM and MoE respectively. Capacity-building activities and regular audits will also strengthen ESCOM and MoE's financial systems.

VII. RESULTS FRAMEWORK AND MONITORING

PDO Indicators by PDO Outcomes

Baseline	Closing Period
Increased access to electricity in Malawi	
People provided with direct access to electricity through new connections (Number of people) CRI	
Nov/2024	Dec/2030
0	4,400,000
➢People provided with direct access to electricity through new connections - Female (Number of people) CRI	
	Dec/2030
	2,250,000
➢People provided with direct access to electricity through new connections - Youth (Number of people) CRI	
	Dec/2030
	1,575,000
Health and educational facilities provided with access to electricity (Number)	
Nov/2024	Dec/2030
0	1,280
Increased access to clean cooking solutions in Malawi	
People provided with access to clean cooking solutions (Number)	
Nov/2024	Dec/2030
0	645,000

Intermediate Indicators by Components

Baseline	Closing Period
Off-grid Connection through Solar Home System	
People provided with access to electricity through off-grid solar connections (Number)	
Nov/2024	Dec/2030
0	3,400,000
Private capital enabled (Amount(USD))	

	Dec/2030
	34,000,000
Last Mile Grid Connection	
People provided with access to electricity through grid connections (Number)	
Nov/2024	Dec/2030
0	1,000,000
ESCOM framework procurement contract for electrification materials executed (Yes/No) PBC	
Nov/2024	Dec/2030
No	Yes
Customers for which ESCOM has recorded location data (Percentage) PBC	
Nov/2024	Dec/2030
75	95
ESCOM MIS electrification dashboard fully operationalized (Yes/No) PBC	
Nov/2024	Dec/2030
No	Yes
Maintenance incidents processed through ESCOM MIS in 12 months time (Percentage) PBC	
	Dec/2030
	95
Energy Access for Schools and Health Facilities	
Schools provided with access to electricity (Number)	
Nov/2024	Dec/2030
0	1,000
Health facilities provided with with access to electricity (Number)	
Nov/2024	Dec/2030
0	280
Budget for monthly electricity payments in public buildings (solar PV maintenance and ESCOM bills) is allocated (Yes/No)	
Nov/2024	Dec/2030
No	Yes
Clean Cooking Solutions	
Households gained new or improved access to clean cooking solutions (Number)	
Nov/2024	Dec/2030
0	150,000
Technical Assistance and Capacity Building	
Women employed in technical positions in ESCOM (Number)	

Nov/2024	Dec/2030
121	202
Women employed in technical positions in the Ministry of Energy (Number)	
Nov/2024	Dec/2030
7	15
Resolved cases/complaints received through Grievance Redress Mechanism (GRM) (Percentage)	
Nov/2024	Dec/2030
0	95
Greenhouse gas emissions reduced (Metric ton)	
Nov/2024	Dec/2030
0	1,634,142
Percentage of female headed households among newly connected households (Percentage)	
Nov/2024	Dec/2030
0	30

Performance-based Conditions (PBC)

Period	Period Definition
Period 1	December, 2026

Baseline		Period 1	
1:Customers for which ESCOM has recorded location data (Percentage)			
75		95	
0.00		15,000,000.00	
PBC allocation	15,000,000.00	As a % of Total PBC Allocation	33.33%
2:ESCOM framework procurement contract for electrification materials executed (Yes/No)			
No		Yes	
0.00		15,000,000.00	
PBC allocation	15,000,000.00	As a % of Total PBC Allocation	33.33%
3:Maintenance incidents processed through ESCOM MIS in 12 months time (Percentage)			
		95	
		10,000,000.00	
PBC allocation	10,000,000.00	As a % of Total PBC Allocation	22.22%

4:ESCOM MIS electrification dashboard fully operationalized (Yes/No)			
No		Yes	
0.00		5,000,000.00	
PBC allocation	5,000,000.00	As a % of Total PBC Allocation	11.11%

Monitoring & Evaluation Plan: PDO Indicators by PDO Outcomes

People provided with electricity	
People provided with direct access to electricity through new connections (Number of people) CRI	
Description	This indicator will measure the number of people provided with new access to electricity under the project
Frequency	Annually
Data source	ESCOM, participating compnaies, IVA reports
Methodology for Data Collection	Component 1 – ESCOM report based on CRM (Customer Relationship Management) date Componet 2/Component 4 – MoE through verified result provided by IVA Component 3 – MoE report
Responsibility for Data Collection	Component 1 – ESCOM Component 2/4 – IVA together with NNNF participating companies Component 3 - MoE
People provided with direct access to electricity through new connections - Female (Number of people) CRI	
Description	This indicator will measure the % of females provided with new access to electricity under the project
Frequency	Annually
Data source	ESCOM, participating compnaies, IVA reports
Methodology for Data Collection	Component 1 – ESCOM report based on CRM (Customer Relationship Management) date Componet 2/Component 4 – MoE through verified result provided by IVA Component 3 – MoE report
Responsibility for Data Collection	Component 1 – ESCOM Component 2/4 – IVA together with NNNF participating companies Component 3 - MoE
People provided with direct access to electricity through new connections - Youth (Number of people) CRI	
Description	This indicator will measure the % of youth provided with new access to electricity under the project
Frequency	Annually
Data source	ESCOM, participating compnaies, IVA reports
Methodology for Data Collection	Component 1 – ESCOM report based on CRM (Customer Relationship Management) date Componet 2/Component 4 – MoE through verified result provided by IVA Component 3 – MoE report
Responsibility for Data Collection	Component 1 – ESCOM Componet 2/Component 4 – MoE through verified result provided by IVA Component 3 - MoE
Increased access to clean cooking solutions in Malawi	
People provided with access to clean cooking solutions (Number)	
Description	This indicator will measure the number of people provided with new access to clean cooking solutions under the project
Frequency	Annually
Data source	MoE and IVA reports
Methodology for Data Collection	MoE will provide the data to the IVA agent, who will verify and confirm the progress against the target.
Responsibility for Data Collection	MoE PIU and IVA

Monitoring & Evaluation Plan: Intermediate Results Indicators by Components

Energy Access or Schools and Health Facilities	
Schools provided with access to electricity (Number)	
Description	This indicator will measure the number of schools provided with new access to electricity through grid or off-grid solutions.
Frequency	Annually
Data source	Reports of the taskforce comprised of the Ministry of Energy (MoE) and Ministry of Education, ESCOM PIU Report
Methodology for Data Collection	Direct reporting by the taskforces
Responsibility for Data	MoE and ESCOM PIUs

Collection	
Health facilities provided with with access to electricity (Number)	
Description	This indicator will measure the number of health facilities provided with new access to electricity through grid or off-grid solutions.
Frequency	Annually
Data source	Reports of the taskforce comprised of the Ministry of Energy (MoE) and Ministry of Health
Methodology for Data Collection	Direct reporting by the taskforces
Responsibility for Data Collection	MoE and ESCOM PIUs
Budget for monthly electricity payments in public buildings (solar PV maintenance and ESCOM bills) is allocated (Yes/No)	
Description	This binary target is achieved once both the Ministry of Education and Ministry of Health have demonstrated allocating the budget for new solar PV maintenance and ESCOM bill payment at schools and health centers electrified under the project. Appropriate budget allocation demonstrates government commitment to sustainable electrification.
Frequency	Annually
Data source	Budget of the Ministry of Education, Budget of the Ministry of Health
Methodology for Data Collection	Direct reporting by the taskforces
Responsibility for Data Collection	MoE and ESCOM PIUs

Last Mile Household Grid Connection	
People provided with access to electricity through grid connections (Number)	
Description	This indicator measures the number of people provided with new access to electricity through grid.
Frequency	Annually
Data source	ESCOM report
Methodology for Data Collection	ESCOM report based on Customer Relationship Management (CRM) date
Responsibility for Data Collection	ESCOM PIU
ESCOM framework procurement contract for electrification materials executed (Yes/No)	
Description	This binary target is achieved once ESCOM has demonstrated having prepared a framework agreement for key contracts and has exeucted one such contract with a supplier.
Frequency	Once - Upon achievement of the target
Data source	ESCOM
Methodology for Data Collection	ESCOM will provide framework contracts including one executed contract to the IVA. The IVA will carry out verification, certify the achievement of results and eligible expenditures.
Responsibility for Data Collection	ESCOM and IVA
Customers for which ESCOM has recorded location data (Percentage)	
Description	This target is achieved when percentage of customers captured in the Customer Relationship Management (CRM) system relative to the average number of customers billed monthly exceeds 95%.
Frequency	Once - Upon achievement of the target
Data source	IVA verification through Customer Relationship Management (CRM) system
Methodology for Data Collection	ESCOM to provide CRM customer list and billed customer list to IVA. The IVA to verify and certify the achievement of results and eligible expenditures.
Responsibility for Data Collection	ESCOM and IVA
ESCOM MIS electrification dashboard fully operationalized (Yes/No)	

Description	This binary target is achieved once the IVA confirms ESCOM MIS electrification dashboard as fully operational.
Frequency	Once – Upon achievement of the target
Data source	IVA report, ESCOM MIS
Methodology for Data Collection	ESCOM will provide its electrification dashboard to IVA. The IVA will verify that dashboard is fully operational, certify the achievement of results, and confirm eligible expenditures.
Responsibility for Data Collection	ESCOM and IVA
Maintenance incidents processed through ESCOM MIS in 12 months time (Percentage)	
Description	The target is achieved once ESCOM demonstrates that more than 95% of maintenance incidents over a period of 12 months have been processed through the MIS system.
Frequency	Once – Upon achievement of the target
Data source	IVA verification report, MIS system
Methodology for Data Collection	ESCOM to process all maintenance records processed in the system, and details of all maintenance incidents received at the call center. The IVA will verify this information, certify the achievement of results, and confirm eligible expenditures.
Responsibility for Data Collection	ESCOM and IVA

Clean Cooking Solutions	
Households provided with new or improved access to clean cooking solutions (Number)	
Description	This indicator will measure the number of households provided with new or improved access to clean cooking solutions under the project.
Frequency	Annually
Data source	IVA report based on the data provided by the Fund Manager and NNNF participating companies
Methodology for Data Collection	NNNF participating companies will collect and report the data to the IVA. IVA verifies accuracy and produces a report.
Responsibility for Data Collection	MoE PIU, IVA

Off-grid connection through solar home system	
People provided with access to electricity through off-grid solar connections (Number)	
Description	This indicator will measure the number of households provided with new access to off-grid energy solutions under the project.
Frequency	Annually
Data source	NNNF Data Platform and IVA customer surveys
Methodology for Data Collection	NNNF participating companies will collect the data. The Fund Manager will periodically feed the data into the NNNF Data Platform. The IVA will verifiy the data accuracy by surveying a sample of customers.
Responsibility for Data Collection	NNNF participating companies and MoE PIU through the Data Platform
Private capital enabled (Amount(USD))	
Description	This indicator measures the volume of financing flows from private sectors, including climate finance sources (e.g. carbon revenues) for Components 1, 2, 3 and 4.
Frequency	Annually
Data source	ESCOM and MoE data ontained through Data Platform (MoE) and MIS (ESCOM)
Methodology for Data Collection	Financing amounts estimated from the reported number of connection and energy consumption through the Data Platform (MoE) and MIS (ESCOM)
Responsibility for Data Collection	ESCOM and MoE PIUs

Technical Assistance, Capacity Building and Cross-Cutting

Women employed in technical positions in ESCOM and MoE (Number)	
Description	This indicator tracks the number of women employed at ESCOM and occupying technical positions after operationalization of ESCOM's SGI Policy.
Frequency	Annually
Data source	Report by ESCOM Social and Gender Inclusion (SGI) Unit based on HR data
Methodology for Data Collection	ESCOM Social and Gender Inclusion (SGI) Unit will track progress based on the offical records from ESCOM HR.
Responsibility for Data Collection	ESCOM PIU
Resolved cases/complaints received through Grievance Redress Mechanism (GRM) (Percentage)	
Description	This indicator measures a percentage of received cases/complaints in the project's GRM, which have been resolved.
Frequency	Quarterly
Data source	GRM database
Methodology for Data Collection	MoE and ESCOM PIUs based on the GRM database
Responsibility for Data Collection	MoE and ESCOM PIUs
Greenhouse gas emissions reduced (Metric ton)	
Description	This indicator estimates reduction in greenhouse gas emissions based on the number of people with new access to electricity and the type of electrification (grid/off-grid) and the number of people with clean cooking solutions and the type of solution (e.g., pellets, LPG, e-cooking)
Frequency	Annually
Data source	NNNF participating companies, ESCOM PIU report, MoE PIU report
Methodology for Data Collection	Direct reporting by project implementing agencies
Responsibility for Data Collection	ESCOM and MoE PIUs
Percentage of female headed households among newly connected households (Percentage)	
Description	This indicator will measure the percentage of female headed households provided with new access to electricity under the project.
Frequency	Annually
Data source	For off-grid - NNNF Data Platform and IVA customer surveys, for grid - ESCOM PIU reports
Methodology for Data Collection	Direct reporting by project implementing agencies
Responsibility for Data Collection	MoE and ESCOM PIUs

Verification Protocol: Performance Based Conditions

1. ESCOM has prepared and executed at least one standardized framework contract for procurement of one or more of poles, meters, transformers, or line hardware.	
Formula	**One framework contract prepared and executed (Yes/No)**
Description	ESCOM has prepared a framework agreement for key contracts and has executed one such contract with a supplier
Data source/ Agency	ESCOM
Verification Entity	IVA
Procedure	ESCOM will provide framework contracts, including one executed contract, to the IVA; The IVA will do verification, certify the achievement of results and eligible expenditures.

2. ESCOM has recorded geospatial information (incl. location of customer and nearest transformer) for at least 95% of its customers.	
Formula	**Percentage of customers captured in the Customer Relationship Management (CRM) system relative to the average number of customers billed monthly exceeds 95%.**
Description	ESCOM to cpature all geo-location data for 95% total billed customers anytime after the Proejct's effectiveness
Data source/ Agency	ESCOM
Verification Entity	IVA
Procedure	ESCOM to provide CRM customer list and billed customer list to IVA; The IVA will do verification, certify the achievement of results and eligible expenditures

3.1. ESCOM has processed 95% of maintenance incidents through its MIS over the previous 12 months	
Formula	**ESCOM maintenance incidents processed in the MIS > 95% in the past 12 months**
Description	ESCOM has processed 95% incidentcs in its MIS
Data source/ Agency	ESCOM
Verification Entity	IVA
Procedure	ESCOM process all maintenance records processed in the system, and details of all maintenance incidents received at the call center. The IVA will verify this information, certify the achievement of results, and confirm eligible expenditures.

3.2. ESCOM MIS electrification dashboard fully operationalized (Yes/No)	
Formula	**ESCOM will provide its electrification dashboard**
Description	Electrification dashboard provided
Data source/ Agency	ESCOM
Verification Entity	IVA
Procedure	ESCOM will provide its electrification dashboard. The IVA will verify this information, certify the achievement of results, and confirm eligible expenditures.

ANNEX 1: Financial Intermediary Assessment

1. The Ministry of Energy, through the “Ngwee Ngwee Ngwee Fund” (NNNF), will be the implementing agency (IA) for Component 2: Off-grid connection through Solar Home System (SHS), Component 3: Energy Access for Schools and Health Facilities and Component 4: Clean cooking solutions. These components focus on scaling up off-grid solar energy solutions, electrifying schools and health facilities, and expanding the market for modern energy cooking solutions.

NNNF Establishment and Fund Manager

2. The NNNF was established under the "Malawi Electricity Access Treasury Revolving Fund" Order, in accordance with the Public Finance Management Act (No. 4 of 2022). The order, dated February 1, 2023, was officially signed by the Minister of Finance and Economic Affairs. The order delegate the authority to administer the fund to the Principal Secretary of the Ministry of Energy. Through a competitive tendering process, the Ministry of Energy hired a professional firm Infrastructure Development Company Limited (IDCOL) in partnership with Africa Grant Advisors Limited to serve the role of fund manager of the NNNF. An agreement with IDCOL was signed in June 2022, renewable annually.

3. IDCOL consortium was selected based on its track record in managing funds for renewable energy and SHS deployment as well as its competitive fee level. Established in 1997 by the Government of Bangladesh, the IDCOL operates under the Ministry of Finance as a financial institution dedicated to financing infrastructure, renewable energy, and energy efficiency projects. IDCOL was licensed by Bangladesh Bank as a non-bank financial institution (NBFI) and operates under its regulatory supervision in this capacity. IDCOL has made significant contributions to Bangladesh's energy and infrastructure landscape. It has financed 31 percent of the country's privately installed power generation capacity (over 4,000 MW) and leads in renewable energy, supporting 65 percent of the nation's installed capacity (589 MW). Its landmark projects include its Solar Home Systems (SHS) Program with over 5.28 million systems installed, benefiting 20 million people. IDCOL is the first Bangladeshi entity accredited by the Green Climate Fund, managing loans and grants up to US$250 million. Additionally, IDCOL supports energy-efficient solutions, including industrial solar rooftops, solar mini-grids, biogas plants, and clean cookstoves.

4. NNNF is currently managing the Component B - Off-Grid Market Development of the World Bank’s Malawi Electricity Access Project (MEAP - P164331). With an initial capitalization of US$20 million, consisting of US$14 million in credit and US$6 million in grants provided by the World Bank, the fund was launched to tackle systemic issues such as limited access to finance, foreign exchange constraints, and high costs of off-grid energy solutions. These barriers had previously stifled the growth of the SHS market in Malawi. NNNF began disbursing funds in September 2023, targeting priority areas and market segments most in need of intervention.

5. The NNNF allocated its capital across three funding mechanisms: a US$14 million Debt Window, a US$5.5 million Results-Based Financing (RBF) Grant Window, and a US$0.5 million Market Catalyst Window. The Debt Window provides working capital loans to qualified private sector solar companies (Participating Organizations, or POs) at market rates, with a three-year loan tenor and a one-year grace period. These loans are primarily secured through project receivables, contracts, and corporate guarantees. To mitigate financial challenges, NNNF introduced a direct payment mechanism, enabling loan disbursements directly to international suppliers in US dollars. This approach has significantly reduced financial risks for POs operating within Malawi’s constrained foreign exchange environment.

6. The RBF Grant Window offers performance-based subsidies of up to US$20 per SHS unit, with 90 percent disbursed upon verified installation and the remaining 10 percent retained to ensure after-sales service commitments. These subsidies are channeled through the POs, benefiting end users directly by lowering the predefined sale price of SHS units. Together, the reduction in foreign exchange risk and the end-user subsidy have decreased SHS costs by over 25 percent, improving affordability and accelerating market adoption. The Market Catalyst Window supports innovation, offering grants of up to US$150,000 to local enterprises and business models driving progress in the energy sector.

7. The fund's operations are guided by a governance and management framework documented in the MEAP POM (Project Operational Manual). While the IDCOL consortium oversees daily operations, governance is maintained through a multi-tiered structure, including a PO Selection Committee for evaluating companies, a Technical Committee for operational guidance, a Steering Committee led by Ministry of Energy with the participation of Ministry of Finance and Economic Affairs for strategic oversight.

NNNF Operational and Financial Performance

8. Since its first disbursement, the NNNF has delivered strong operational results in expanding energy access in Malawi. By October 2024, the fund supported the installation of over 200,000 solar home systems (SHS), providing electricity to approximately 860,000 people and increasing the energy access rate from 8 percent to 14.3 percent within a year. The fund met its initial target eight months ahead of schedule and is projected to exceed its goal by 25 percent, aiming to reach 250,000 households by June 2025. Solar companies participating in the fund installed a cumulative capacity of 1.5 MW, with notable results in remote districts such as Mzimba and Kasungu.

9. NNNF enforces strict quality standards for SHS installations. POs must adopt VeraSol (an international quality standard for SHS) certified product to be eligible for funding. An Independent Verification Agent (IVA) verifies installation and compliance for at least 15 percent of installations before grant disbursement.

10. The NNNF has demonstrated strong financial performance to date, achieving 100 percent collection of commitment fees and timely interest payments after the grace period. Notably, the fund has recorded zero bad debts thus far. The total repayment to the NNNF to date is over 3billion kwacha (~US$1.7million). Participating Organizations (POs) have reported positive outcomes from customers purchasing SHS on a pay-as-you-go basis, with default rates in the Malawi market significantly lower than the Sub-Saharan Africa (SSA) average and improving compared to pre-NNNF levels.

11. Based on the performance of the NNNF under MEAP, the NNNF and IDCOL are considered well-prepared to scale up their activities under the Project. The NNNF has an established operational and financial structure, along with experience gained from its operations within the Malawian context. IDCOL brings proven experience and expertise as an institutional fund manager, having overseen more than US$2 billion in concessional loans and grants covering areas such as renewable energy, infrastructure, solar home systems, mini-grids, clean cooking, and carbon finance. Additionally, there is an emerging pipeline of private companies in Malawi showing notable demand for this operation, indicating readiness for further engagements.

Pricing Policy and Interest Rates

12. The NNNF provides working capital loans to qualified private sector solar companies through its Debt Window. Loan pricing is based on the guidance interest rates published by the Reserve Bank of Malawi, plus a premium determined by the NNNF fund manager to reflect market conditions. These loans have a three-year tenor, including a one-year grace

period during which interest is payable, but principal repayments are deferred. Security for the loans primarily relies on project receivables, contracts, and corporate guarantees, reducing collateral requirements while maintaining effective risk mitigation.

13. Currently, no commercial banks in Malawi can offer loans to the PO on any terms, largely due to their limited capacity to accept receivables and contracts as collateral. International impact investors provide limited alternatives under comparable terms, with one notable example being Acumen's recent US$2 million loan to a PO, which mirrors the terms and conditions of the NNNF. This underscores the unique role of the NNNF in filling critical financing gaps for Malawi's off-grid solar market. Under MEAP, capacity-building efforts have been directed toward equipping private sector companies to enhance their ability to leverage receivables and contracts as collateral, paving the way for improved lending by commercial banks to the sector. Moreover, institutionalization studies are underway to integrate commercial banks into the NNNF framework, establishing a more resilient and collaborative financial structure that fosters long-term sustainability.