Project Information Document/
Integrated Safeguards Data Sheet (PID/ISDS)

Concept Stage | Date Prepared/Updated: 22-Jan-2019 | Report No: PIDISDSC23456
# BASIC INFORMATION

## A. Basic Project Data

<table>
<thead>
<tr>
<th>Country</th>
<th>Project ID</th>
<th>Parent Project ID (if any)</th>
<th>Project Name</th>
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<tbody>
<tr>
<td>Malawi</td>
<td>P164331</td>
<td></td>
<td>Malawi - Electricity Access Project (P164331)</td>
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<tr>
<th>Region</th>
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<th>Estimated Board Date</th>
<th>Practice Area (Lead)</th>
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<td>Mar 29, 2019</td>
<td>Energy &amp; Extractives</td>
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<table>
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<tr>
<th>Financing Instrument</th>
<th>Borrower(s)</th>
<th>Implementing Agency</th>
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<tr>
<td>Investment Project Financing</td>
<td>Ministry of Finance, Economic Planning and Development</td>
<td>Ministry of Natural Resources Energy &amp; Mining, Electricity Supply Corporation of Malawi, Ltd.</td>
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## Proposed Development Objective(s)

The development objective of the project is to increase access to electricity services in Malawi.

## PROJECT FINANCING DATA (US$, Millions)

### SUMMARY

<table>
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<tr>
<th>Total Project Cost</th>
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<tr>
<td>Total Financing</td>
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<td>of which IBRD/IDA</td>
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<td>Financing Gap</td>
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### DETAILS

#### World Bank Group Financing

| International Development Association (IDA) | 150.00 |
| IDA Credit                                  | 150.00 |

#### Non-World Bank Group Financing

| Counterpart Funding                        | 0.25   |
| Borrower/Recipient                         | 0.25   |
Environmental Assessment Category
B - Partial Assessment

Concept Review Decision
Track I-The review did authorize the preparation to continue

Other Decision (as needed). NA

B. Introduction and Context

Country Context

1. Malawi is a landlocked country in southeastern Africa, bordered by Zambia, Tanzania and Mozambique, with a population of about 18 million people. The population growth rate is estimated at 2.8 percent per annum and is expected to reach 23 million by 2025. Malawi remains an overwhelmingly rural economy, however, the country is urbanizing at an annual rate of about 3.5 percent, higher than the average for Sub-Saharan Africa. Malawi has had a stable democratic political system since 2014 and has initiated economic and political reforms in public financial management, business regulations and the foreign exchange regime. The country has a very young population with 56 percent of Malawians being younger than 20 years old. 14.2 percent of people aged 15 years and above have never attended school and 70 percent have not completed primary school.

2. The economy is largely agrarian and extreme poverty is widespread. Agriculture represents about 30 percent of GDP, over 80 percent of total export earnings, and 85 percent of employment. The agriculture sector is dominated by two crops, maize for food security, and tobacco for export revenues. This sector is heavily dependent on rainfall and, in recent years, climate variability has led to a recurrence of floods and droughts in various parts of Malawi. Malawi remains one of the world’s poorest countries, with over half of its population living in poverty. In 2016, the proportion of poor households living below the poverty line of US$1.9 /day (2011 PPP) stood at 70 percent of the population. The Gross National Income (GNI) per capita was estimated at US$340 in 2015. Malawi is ranked 173 out of 188 countries on the United Nations Human Development Index (UNDP, 2015).

3. Malawi’s development perspective is spelled out in Malawi’s vision 2020. The vision was launched in 1998 with the aim to move Malawi to a “[...] secure, democratically mature, environmentally sustainable, self-reliant with equal opportunities for and active participation by all, having social services, vibrant cultural and religious values and a technologically driven middle-income economy” by 2020. The implementation of Vision 2020 has progressed in five-year medium-term strategies. To date, three medium term national development strategies have been implemented including Malawi Poverty Reduction Strategy (MPRS) 2002 - 2005, Malawi Growth and Development Strategy (MGDS I) 2006 - 2011 and MGDS II 2012 - 2016. The Government has recently launched the MGDS III 2017 – 2022 which has five main pillars, namely: (i) Agriculture and Climate Change Management; (ii) Education and Skills Development; (iii) Transport and ICT

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1 Fourth Integrated Household Survey (IHS4) 2016-2017
3 GNI per capita - atlas method (current US$)
Infrastructure; (iv) Energy, Industry and Tourism Development; and (v) Health and Population Management.

4. While not much progress has been made under previous MGDS II, medium-term economic prospects appear positive. The Government of Malawi (GoM) under MGDS III is looking beyond the recent crisis and establishing strong foundations for economic recovery and growth. Economic patterns show signs of positive structural change, with the share of agricultural employment falling and that of more productive sectors like industry and services increasing. Real GDP growth after two consecutive years of drought fell below 3 percent in 2016 but picked up again in 2017 increasing to 4 percent. Inflation dropped to 7.1 percent by December 2017—its lowest level in recent years.

Sectoral and Institutional Context

5. Malawi’s power sector is guided and structured by the National Energy Policy (2003) and the Electricity (Amendment) Act of 2016. The Ministry of Natural Resources, Energy and Mining (MoNREM) is tasked with the overall policy oversight. The Malawi Energy Regulatory Authority (MERA) was established in 2007 as an independent electricity regulator whose mandate is set out in the Energy Regulation Act (2004, with subsequent amendments). The role of MERA includes inter alia (i) reviewing tariff applications from ESCOM and recommending tariff changes to GoM, (ii) granting licenses for generation and distribution operators and (iii) arbitrating commercial disputes that arise under the 2004 energy legislation. Under the amended Electricity Act of 2016, the former utility ESCOM has been unbundled into two entities: the distribution and transmission utility ESCOM, and the generation utility EGENCO. ESCOM assumed the new function of the Single Buyer and procures power from EGENCO and from independent power producers (IPP) and in future, potentially from the Southern African Power Pool (SAPP). Under the supervision of ESCOM’s Single Market Operator, ESCOM Transmission supplies power to large and small customers through ESCOM Distribution. While the utility focuses on connecting high and medium demand customers in urban and peri urban areas, the Government is electrifying rural trading centers across the country under the Malawi Rural Electrification Program (MAREP) based in MoNREM, and funded through a 4.5 percent levy on energy sales (i.e. liquid fuels, ethanol, LPG and electricity).

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6. **Malawi has abundant largely untapped solar and hydro resources.** The country’s current installed generation capacity is 365MW, of which 98 percent is from hydropower resources and the remainder from diesel power the latter in the form of emergency generation until the commissioning of transmission interconnection with neighboring countries, and new generation capacity through priority energy projects. All major power stations are located in the southern region along the Shire river. One small hydro station, the 4.5MW Wovwe plant, operates in the north of the country. The hydro-potential of the Shire River alone is estimated at about 600 MW, and another 400 megawatts of potential exists on smaller rivers. In addition, Malawi has great untapped solar potential with an average of 3,000 hours of sunshine per year. Finally, the country is also strategically located for interconnection with the SAPP.

7. **Notable results have also been achieved with regard to infrastructure expansion and electricity service delivery.** Electricity connections have grown on average 11.5 percent in the past five years from 238,041 to 409,540 connections.\(^5\) In the previous fiscal year alone (ending June 2018), ESCOM connected 35,000 customers. Under MAREP, 836 district administration and trading centers in rural areas were connected to electricity. Significant progress has been made in developing a robust transmission network. ESCOM’s transmission system presently comprises some 1,340 km of 132 kV line and 1,100 km of 66 kV line and associated substations. Total system losses have seen a major improvement from 21 percent in 2012-13 to 14 percent in 2016-17.\(^6\) The bill collection rate in Malawi has increased to 94 percent.\(^7\) This has resulted from the installation of Automated Reading Infrastructure (AMI) for all industrial customers representing about 50 percent of ESCOM’s annual base, and the migration of postpaid meters to pre-paid meters for domestic consumers.

8. **Despite this progress, the sector is beset with a multitude of challenges.**

9. **First, Malawi has one of the lowest electricity access rates in the world.** Currently, the electricity rate stands at 11 percent with severe disparities between urban (42 percent) and rural areas (4 percent).\(^8\) The inequity among the rich and poor is stark – the poorest 20 percent reports 1 percent and the richest 20 percent reports 31 percent electrification rate.\(^9\) The current annual population growth rate of 2.8 percent is outstripping the pace of electrification.\(^10\) Malawi’s off-grid sector is very nascent consisting of few donor-funded initiatives. Access to electricity and reliability of the network are major constraints also for the private sector. As per the latest 2018 Doing Business Report, procedures, time and cost to get connected to the electrical grid as well as the reliability of the electricity supply and the transparency of tariffs in Malawi is ranked extremely low and below the Sub-Saharan Africa average.\(^11\)

10. **Second, power supply is constrained at times and vulnerable to hydrologic variability.** While Malawi’s current installed generation capacity is 365MW, demand is estimated at around 440MW leading to a supply deficit. In addition, the hydropower sources are exposed to hydrologic variability and in the past two years severe droughts have led to reduced water levels in Lake Malawi and in the Shire River. This shortage resulted in prolonged load shedding of up to 12-16 hours or more a day. Malawi is also not interconnected to the Southern African Power Pool (SAPP) due to which it is unable to engage in power trade with any of its neighboring countries, which would help to ensure security of supply. 78 MW of Emergency diesel generation capacity has been installed to immediately assist with the supply deficit although at a high cost of about US$ cents 42/kWh.

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\(^5\)Information provided by ESCOM.


\(^7\)http://rise.worldbank.org/country/malawi


\(^9\)Kojima M., Zhou X, Han J., de Wit J., Bacon R. and Trimble C: Who Uses Electricity in Sub-Saharan Africa – Findings from Household Surveys - In each country, people are divided into quintiles based on per capita expenditures, with quintile 1 being the poorest and quintile 5 being the richest.

\(^10\)0.82 percent on average in the past five years.

\(^11\)Ranked in the category 169 out of 190 economies.
11. **Third, weak financial position of the utility further hampers the ability to undertake aggressive access expansion and ensure reliable service delivery.** The average electricity tariff of US$0.10 per kWh\(^{12}\) is insufficient to meet ESCOM’s cash flow requirements. Due to its financial situation, the utility has no borrowing capacity and the Government has been assuming debt for meeting ESCOM’s capital expenditure needs. As a result of its financial position, ESCOM (i) has not been able to perform regular operation and maintenance (O&M), which led to poor customer service including service interruptions and increased restoration time; and (ii) has focused on only connecting high value customers able to afford the connection charge. Minor improvements in the tariff regime have been made over time. In 2014, MERA approved a 38 percent base tariff increase for ESCOM that would be phased and spread over four years underpinned by the achievement of various key performance indicators (KPIs). Of the 38 percent, ESCOM was only granted a 27 percent base tariff increase. Additional tariff increases were denied by MERA in 2016 due to non-performance against agreed KPIs. A tariff increase of 24.67 percent was approved in January 2018 against the commissioning of emergency diesels of which 17 percent was made effective, and which raised the tariff of MWK 57.51 (approximately US$0.08) to MWK 60.33 (about US$0.097). The remaining 8 percent was approved in July 2018 thereby raising the tariff to MWK 74/kWh (about US$0.102). ESCOM submitted a new tariff application to MERA to increase the same by 68 percent for the next 4-year period of 2018 to 2021 against which 30 percent was approved for the same duration. In addition, MERA has retroactively approved a tariff increase for EGENCO, the unbundled generation entity to MWK 25/kWh from MWK 19.68/kWh that cannot be passed through to ESCOM’s customers. This higher cost to ESCOM has led to the incurrence of payment arrears to EGENCO that represent 67 percent of ESCOM’s current liabilities. ESCOM is also owed MWK 5 billion by Government and quasi-government entities. Unless ESCOM’s financial condition improves, its payment requirements to its creditors may render the entity in major financial distress.

12. **The GoM is addressing these challenges through a comprehensive power sector reform program to spur private sector participation especially in generation, strengthen the regulatory framework, and improve operational and financial performance of the sector and key utilities (EGENCO and ESCOM).** The Bank’s sector engagement strategy is closely aligned with the Government’s ambitious targets in the areas of increasing electricity access, improving the security of supply, and enhancing the viability of sector institutions including ESCOM and EGENCO. At the center of the Government’s power sector reform program stands the Electricity (Amendment) Act 2016 passed by the Parliament in 2016 that set the stage for a restructuring of the power market to improve its governance and competitiveness. Through the amendment of the Electricity Act of 2004, the previously vertically integrated utility was unbundled into a generation company (EGENCO) and a transmission and distribution company (ESCOM). In addition, the amended Electricity Act also allows for involvement of the private sector in generation\(^{13}\). The main pillars of the reform process include the following:

- **Addressing the power supply deficit through investment in generation and transmission projects:** The GoM is aggressively expanding its generation and transmission capacity in the near-to-medium-term to ensure power supply adequacy and by matching demand growth and grid expansion plans through three major initiatives: (i) Immediate additional power from 70 MW of emergency diesel generation and 70 MW of solar PV from independent power producers (IPPs); (ii) interconnecting to the SAPP through the Mozambique-Malawi Regional Interconnector transmission line, which will initially allow for an additional 50 MW of imported capacity from 2021 onwards; and (iii) increasing domestic generation through IPPs by embarking on reforms that attract more private investment in generation. The Bank, under the recently completed Energy Sector Support Project (P099626) supported the preparation of an Integrated Resource Plan, i.e. a least cost generation and transmission expansion plan that offers a list of priority energy projects through 2035. The Bank has further financed under the ESSP, the preparation of feasibility studies, ESIsAs and tender documents for two large hydropower projects, and the western transmission...
backbone. In addition, the Bank prepared through financing from the Government of Norway, the feasibility study and ESIA for the Mozambique-Malawi Regional Interconnector Project. Leading off from these project preparation activities, the Bank is preparing for IDA and private financing, the 308 MW Mpatamanga Hydropower Project, the Mozambique Malawi Regional Interconnector Project, and the proposed Malawi Electricity Access Project. The other donors, especially Millennium Challenge Corporation (MCC), are active in the sector (MCC compact closed in September 2018). The US$ 350.7 million US funded MCC compact invested in transmission and distribution system strengthening and expansion through investments in the transmission backbone project, transmission and distribution substations, and related TA support. On the regulatory front, in addition to the amendment of the Electricity Act of 2004, an IPP framework was also developed to provide guidance on the legal and transaction arrangements for IPPs. Cumulatively, these joint efforts are expected to improve the power supply deficit. A preliminary demand-supply analysis was undertaken in the Integrated Resource Plan (see Figure 2). The World Bank is currently preparing a power adequacy assessment detailing this demand-supply analysis with short term scenarios and responses for the next 3-5 years as part of its sector engagement that will be available by appraisal of the proposed operation. The power adequacy assessment will also support dimensioning of scope, scale, and speed of implementation and design of the proposed MEAP.

**Figure 2: Demand supply Balance (2017-2036) – constrained/unconstrained scenarios**

b. **Improving financial and operational performance of the utility:** Since mid-2016, various initiatives have been undertaken to improve the financial and operational performance of the sector entities. MCC financed the implementation of ESCOM’s turnaround aimed at restoring the utility’s financial health and rebuilding the organization into a financially sustainable and well-managed utility. Consultants through MCC funding have recently conducted a financial modeling exercise that resulted in a set of recommendations on how to improve the financial health of the utility, including a sustainable debt management plan for ESCOM, plan for reducing ESCOM’s high operating costs, a tariff adjustment methodology that will align tariff more with the costs and new accounting policies to adhere more closely to international financial standards. The World Bank proposed potentially through PPIAF funding a technical assistance program to implement part of these recommendations. These interventions have already yielded results, i.e. improvement in ESCOM’s tax management, improved monitoring of CAPEX, and budget utilization, and improved corporate performance. MCC also supported ESCOM to introduce stronger operational practices to improve maintenance planning and execution, which will reduce the

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high system losses. In addition, ESCOM has moved most of its customers from post-paid to pre-paid meters. ESCOM is also implementing a revenue protection program (RPP) and has already moved through funding from the Bank’s ESSP, 750 of its high value customers representing 50 percent of ESCOM’s revenues to advanced metering infrastructure, which will reduce non-technical losses.

c. **Improving transparency and effectiveness of the regulatory framework:** To allow for the implementation and management of the new structure of the electricity sector that introduced the single buyer, the market operator, and IPPs in generation, MERA has adopted a new grid code and market rules for Malawi’s electricity market. Several other efforts are underway: The Government is in the process of adopting a new National Energy Policy and a Renewable Energy Strategy, which will improve transparency of Malawi’s regulatory framework, increase predictability and generate investor confidence. Through ESMAP support, the World Bank carried out a regulatory gap analysis as well as a review of policies and regulatory instruments, including the National Energy Policy, the Renewable Energy Strategy, and the IPP Framework, which resulted in recommendations for supporting the reform process.

13. **The Government aims to rapidly scale-up electricity access as a means for enabling broad based economic growth, and for enhancing the well-being of all citizens nationwide.** In 2018, the Government of Malawi updated the National Energy Policy of 2003 to define 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 overall goal of the National Energy Policy 2018\(^{15}\) is to establish a guiding framework including policy and strategic direction for achieving increased access to affordable, reliable, sustainable, efficient and modern energy for every person in the country. It emphasizes the importance of establishing the institutional and regulatory framework to support achievement of energy access goals. According to the National Energy Policy 2018 currently being reviewed by the Cabinet, the GoM currently aspires of reaching 80 percent electricity connectivity by 2035\(^{16}\). There is currently insufficient data and analytics to assess the feasibility of these preliminary access goals.

14. **The GoM with Bank TA support, is now preparing a comprehensive National Electrification Program (NEP).** Consistent with the SE4ALL objectives, the Malawi NEP is being designed towards achieving adequate, reliable and affordable universal access to electricity as soon as feasible; in a systematic, efficient and sustainable manner nationwide, and informed by relevant best practice experience internationally. Toward this end, the key operational action elements of the NEP include (i) a fast-paced ambitious grid connections rollout Program implemented by ESCOM and MAREP; (ii) enhanced design and reach of an off-grid access rollout program alongside grid connections; and (iii) a catalogue of technical assistance (TA) activities targeted at strengthening the institutional framework in order to deliver universal access to electricity. Responsibility of the overall program oversight of the NEP will lie with MoNREM.

15. **The NEP represents a strategic shift by the GoM, from the track record of numerous fragmented activities financed by development partners to a programmatic and holistic electrification approach.** The Government has further recognized the importance of aligning ongoing and planned electrification efforts directly with national electricity access priorities and targets. The NEP’s design and implementation is organized to rally all designated sector agents, development partners and other stakeholders around a common sector platform and sector-wide implementation framework and process (“Many players – One plan”). Furthermore, the Government recognizes the necessity of supplementing its limited budgetary and fiscal resources to ensure mobilization of adequate financing that can be sustained over the duration of the NEP’s implementation, particularly for capital expenditures associated with on-grid (MV, LV, final service drops and connections) and off-grid access rollout. Towards this end, the Government has sought

\(^{15}\) Currently awaiting Cabinet approval.

\(^{16}\) 35 percent Tiers 4 & 5 and 45 percent Tiers 1,2 & 3.
the Bank’s technical assistance in the design and preparation of a good-practice experience-informed bankable financing plan for mobilizing funding that is anchored by a sound least cost electricity access rollout plan, to achieve universal access as soon as feasible.

**Figure 3: Malawi’s National Electrification Program**

<table>
<thead>
<tr>
<th>National Electrification Program</th>
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<tbody>
<tr>
<td>Programmatic Approach</td>
</tr>
<tr>
<td>Many players – One Plan</td>
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<tr>
<td>Financially sustainable – affordable to the population</td>
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</tbody>
</table>

16. Specifically, detailed design of the NEP will be informed by the several analytical efforts underway, managed by the Bank and supported by ESMAP funds:

   i. the National Electrification Strategy (NES) defining the targets of the program as well as the key strategic elements that will ensure efficiency, effectiveness, and timeliness in program delivery;
   
   ii. a geospatial least cost electrification plan that will determine optimal modality (grid and off-grid) for access provision, taking into account technical and economic viability, georeferenced demand centers, and load forecasts; anchoring financing prospectus;
   
   iii. the off-grid market assessment specifying the operational implementation design for the off-grid pre-electrification program for the scale-up of stand-alone solar systems solutions and mini grids; and finally,
   
   iv. a Power Adequacy Analysis, which will ensure grid electrification roll-out is aligned with plans for commissioning new generation capacity as determined under the Bank financed Integrated Resource Plan for Malawi.

17. **According to preliminary conclusions of the First Order Least Cost Electrification Plan**\(^\text{17}\) grid electrification is likely to be the dominant least cost electrification technology for Malawi. Most (95 percent) of Malawi’s population lives within 10 km of the existing MV grid network; and a high percentage of those currently live within 5 km of an existing ESCOM network infrastructure. The strategic implication of this finding is that over the longer-term grid connections represent the least cost delivery modality for achieving universal access. The most important practical insight for electrification planning for Malawi in the near-term is the large number of potential connections in range of existing transformers that can be reached with little to no additional medium voltage lines in the near-term (2019-2022). 40-45 percent of the national population representing 1.1 million households live within 1 km of existing ESCOM lines.

\(^{17}\) The preliminary First Order Least Cost Electrification Plan has been prepared and is currently reviewed by the Government.
Connecting these households will bring the national access rate to 38 percent. The First Order Least Cost Electrification Plan also highlights that the capital expenditures for grid connections can be reduced by at least 25 percent when applying best practices under a national electrification plan.

18. Although extending the grid is key and represents for most parts of Malawi the least cost electrification option, most households, especially in rural areas, are unlikely to have their homes connected to the grid in the foreseeable future. In the past five years, ESCOM has only been able to connect 34,300 households annually. Given the current low rate of access overall, the pre-electrification segment is substantial in size of the order of 2 million households today. Given that energy demand for rural households will be low for at least a couple of years before they start using higher power consuming appliances, solar represents the best and fastest pre-electrification alternative. Use of solar power in Malawi is growing; the Business Innovation Facility (BIF) conducted a small off-grid lighting and phone charging study in 2016 capturing a snapshot of household technologies, habits and expenditure. The study highlights that 13 percent of off-grid households use solar lighting, 9 percent portable solar lights, and 4 percent fixed solar lights. Promoting the use of solar, including for productive use, would be a good pre-electrification option with the opportunity of a more sustainable (market-driven) approach that would eventually eliminate dependency on Government and/or donor resources.

19. Despite the market potential, off-grid solar in Malawi is very nascent with a handful of micro, small and medium-sized enterprises (MSMEs). There are no local manufacturers in Malawi and all systems are being imported, mostly from China. Companies are building innovative distribution networks, working with agents at district and community levels; however, building and maintaining a strong distribution network is resource-intensive. Growth of existing importers and distributors is constrained by several factors, limited access to affordable finance being the major one. All companies are financed by own equity and/or grant financing. Commercial credit market is very expensive with interest rates ranging from 30 percent to over 100 percent for micro loans, which discourages enterprises to go for commercial credit. In addition, the solar home systems market is an unknown space for financial institutions, hence their low appetite to lend to businesses and to end-consumers in this sector. To make products affordable, solar companies are providing consumer financing through a pay-as-you go (PAYG) system that allows for installment payments of up to 18 months. However, with this mechanism, companies are taking the credit risk, and lock-in their working capital, thereby limiting their capacity to grow. Annex 3 provides more information of the state of the off-grid solar sector in Malawi.

20. There are ongoing activities in the development of mini-grids as well, yet the market is currently pre-mature. The Government of Scotland is funding two renewable energy projects during 2015 to 2018 including the Sustainable Off-grid Electrification of Rural Villages (SOGERV) project. The project aims to electrify rural households, businesses and community energy infrastructure. In addition, the Powering Development in Mulanje (PDM) off-grid electrification project is meant to catalyze social and economic development of poor communities around Mulanje. The European Union (EU) is funding several renewable energy projects in Malawi including the supply and installation of solar powered stations to

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18 Demand is usually limited to a few lamps, radio and/or television; these products can easily be powered by solar systems.
19 BIF conducted a small off-grid lighting and phone charging study capturing a snapshot of household technologies, habits and expenditure in Malawi with a sample size of 513 districts: Blantyre, Zomba, Lilongwe, Mzuzu, Rumphi, Chikwawa, Salima
20 Only four companies are currently importing systems targeted at the off-grid proportion of the population, namely Total, Sunny Money, Zuwa and Green Planet. Total is selling solar lanterns and home systems at its petrol stations across the country as a replacement for kerosene. Sunny Money, so far the largest importer of systems, has to-date sold about 220,000 systems through distribution agents like teachers or solar entrepreneurs.
21 This is attributable to several factors, including high cost of funds especially for small financial institutions, high perceived risks of MSMEs and consumer lending, high operational costs
22 Two financial institutions have piloted consumer lending and with technical assistance, more institutions could provide financing solutions to solar enterprises and consumers
deliver electricity to households, businesses, and irrigation. The MCC is funding the construction of distribution substations. While the First order geospatial least cost electrification plan has identified mini grid locations for investment, the Government will need to determine the business modalities for mini-grids and establish the regulatory framework under which mini-grids can operate.

21. **NEP financing is being leveraged from a combination of budgetary allocations as well as investment financing and extensive technical assistance support from development partners and the World Bank.** As part of the first phase of the NEP, ESCOM has launched a US$500,000 Accelerated Electrification Program (AEP) aimed at increasing access to grid-connected electricity among the rural and low income urban households. The project will allow consumers to get access to an electricity connection and house wiring for a fee of US$100 to be repaid in installments. The AEP shall be integrated into MEAP through the ESCOM FY 19 and beyond connections program. GoM is also mobilizing financing from development partners to overcome the projected funding gap for the overall implementation of the NEP. EU and several bilateral donors have expressed interest in supporting the implementation of the NEP.

Relationship to CPF

22. The proposed project directly contributes to the Country Assistance Strategy (CAS) for Malawi FY13-16, especially to Theme 1: Promoting Sustainable, Diversified, and Inclusive Growth (Outcome Indicator 1.2: Improved ease of doing business, through improved economic infrastructure, regional integration, and better access to demand-responsive skills development) by providing the necessary critical infrastructure investments improving the ease of doing business. Increased access to reliable electricity supply will not only lower costs and improve the profitability of business enterprises but is also key to enabling the setup of new private sector-led enterprises which stimulate GDP growth. It also increases opportunities for poor rural and remote households to pursue income-generating opportunities, stimulating off-farm activity and economic interaction and hence can lead to more inclusive growth.

23. In addition, the project contributes to CAS Theme 2: Enhancing Human Capital and Reducing Vulnerabilities (particularly Outcome 2.1: Improved access to quality education, reliable nutrition, HIV/AIDS services, and sustainable water supply and sanitation services) by increasing access to electricity services for poor households, particularly in rural areas contributing to raising the quality of life, improving access for social services such as educational and health facilities as well as information technologies promoting awareness on HIV/AIDS and other diseases. Expansion of low-emission renewable energy will reduce women’s exposure to indoor air pollution.

24. Energy is also one of five main pillars of the Third Malawi Growth and Development Strategy (MGDS III, 2017 – 2022), which is the five-year medium-term implementation plan of Malawi’s vision 2020. Finally, the proposed project is aligned with Sustainable Development Goal 7 (SDG7), Sustainable Energy for All (SE4ALL), and World Bank’s Energy Sector Directions Paper (ESDP)15. The SDG7, Sustainable Energy for All, and ESDP all aim to “Ensure access to affordable, reliable, sustainable, and modern energy for all”.

C. Proposed Development Objective(s)

The development objective of the project is to increase electricity access to households, businesses, and public facilities.

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23 The World Bank Group new Country Partnership Framework (CPF) for Malawi is due in FY19. The CPF is expected to focus on growth and resilience, human development, and institutions for implementation. It will support the Third Malawi Growth and Development Strategy (2017-2022) which has five priority areas: (1) Agriculture and climate change; (2) Education and skills development; (3) Energy, industry, and tourism development; (4) Transport and ICT infrastructure; (5) Health and population.
Key Results (From PCN)

PDO level indicator:

- People provided with new or improved electricity service (number) (Corporate Results Indicator)
  - People provided with new or improved electricity service - Female (number) (Corporate Results Indicator)
  - People provided with new or improved electricity under the project by household connections (number) (Corporate Results Indicator)
  - People provided with access to electricity through community electricity connections under the project (number) (Corporate Results Indicator)
- Number of enterprises provided with access to electricity

Intermediate level indicators:

- Number of LED lights distributed under the project
- Kilometers of MV/LV lines constructed
- Kilometers of MV/LV lines rehabilitated
- Number of off-grid solar systems installed
- Percentage of female technical and engineering staff at ESCOM
- Development and Implementation of Gender Capacity Building Plan (Y/N)
- Development and Implementation of Recruitment, Leadership Development and Mentoring program targeting females in STEM fields (Y/N)
- GIS platform for network reticulation planning, design, and bill of materials set up (Y/N)
- System-wide MV feeder- specific upgrading Master Plan through 2030 completed (Y/N)
- Mini-grid Development – Standardized Framework and Design Standards study completed (Y/N)
- Grievances registered related to the delivery of the project benefits that are actually addressed (%)

D. Concept Description

25. The proposed project will support the implementation of the NEP, by financing the first phase (2019-2022) of grid electrification activities, developing market-based mechanisms for an off-grid solar roll-out to the extent possible and building implementation capacity. Provision of last-mile electrification under the proposed project will increase access to electricity services for poor households, particularly in rural areas, creating opportunities to study and work, contributing to raising the quality of life, improving safety at night and stimulating off-farm activity and economic interaction. Increased access to reliable electricity supply will not only lower costs and improve the profitability of business enterprises but it is also key to enabling the setup of new private sector-led enterprises which stimulate GDP growth. In addition, the project will contribute to cross-cutting issues such as gender and climate change by integrating specific gender-based actions in the project’s design and supporting expansion of low-emission solar technologies, respectively. Improved electricity access for social services such as health clinics will also promote gender equality through gains in maternal health outcomes.

26. The proposed project will more than double the existing electricity rate and provide crucial technical assistance urgently needed to rapidly scale-up access to electricity. The proposed project provides financing to connect 300,000 households within close proximity to the existing grid network, which represent the lowest hanging fruit for electrification
in Malawi. This will increase the current electricity rate from currently 11 percent to 20 percent by the project’s completion in 2023. In addition, through the off-grid solar market roll-out, at least 200,000 households will access electricity, increasing the overall access rate by another 6 percent. However, the market roll-out promoted by the project will have a much larger transformative impact for reaching the households that will not be connected to the grid in the foreseeable future by creating an environment for off-grid solar companies to scale. Finally, the technical assistance provided under the proposed operation will address the key bottlenecks of the sector to move the country towards universal access to electricity.

27. More specifically, the project will support the following components:

Component 1: New on-grid electricity connections (US$115 million)

27. This component will focus on the lowest hanging fruit of grid electrification by providing households living in close proximity to an existing distribution infrastructure in urban, peri-urban, and rural areas with electricity connections. Specifically, the component will finance low voltage (LV) extensions, service drops, and pre-payment meters to connect up to 300,000 households, which will nearly double the current access rate in the country from 11 percent to 20 percent. Some of the new connections may also require reinforcing hardware elements of the supplying MV feeder for ensuring quality and reliability of supply for new connections. Connections will be identified based on ESCOM’s corporate proposal to connect 360,000 over the fiscal years 2019-22. The component may also finance ESCOM’s Accelerated Electrification Program (AEP), which is investing in scaling up the number of connections in MAREP areas in a “campaign mode” to achieve scale economies in cost and speed. A distribution engineer has been recruited to assist with the detailed design of the connection roll-out based on feeder capacity as well as design of scope and costing of system reinforcement. The distribution planner is aligning ESCOM’s first year investment plan with the results of the geospatial least cost electrification plan. The methodology developed through this support will be applied for designing the investment plan for the remaining years of the project by ESCOM.

Component 2: Off-grid market development (US$20 million)

28. The component will address the challenges to developing the nascent off-grid market. This component will set up a financing facility managed by a qualified fund manager that will provide access to loans and grants to eligible enterprises offering quality assured solar off-grid systems. Solar companies will use funds to finance stock, develop business models and build the distribution channels to reach consumers. This component draws from successful experiences of off-grid facilities, in Bangladesh, Kenya, Ethiopia and Zambia. The component will be implemented by MonREM, which will procure a qualified fund manager during project implementation tasked with selecting eligible companies according to the project operations manual.

Component 3: Technical Assistance (US$15 million)

29. This component will finance various technical assistance (TA) and capacity building activities to ensure ESCOM, MoNREM and other sector stakeholders have adequate technical, planning, and operational capacity to implement the electrification roll-out activities and effectively undertake activities under Component 1 and 2 of the project.

SAFEGUARDS

A. Project location and salient physical characteristics relevant to the safeguard analysis (if known)
The investments under the proposed operation will be implemented nationwide. The investments that will trigger safeguards policies are in the components: 1) New on-grid electricity connections, which will support ESCOM's new electricity connections program during 2019-22 and finances distribution infrastructure (low voltage extensions, service drops and pre-payment meters) and limited medium voltage infrastructure; and 2) Off-grid market development, which will finance a facility managed by a qualified fund manager (to be procured as part of project implementation), which will provide access to loans and grants to eligible enterprises offering quality assured solar off-grid systems.

The physical characteristics that need to be considered in this project are trees, soils, agricultural fields and human settlements. While a long list of locations of the investments in Component 1 has been prepared as part of ESCOM's five-year investment plan, specific locations to be funded under the project will be determined by the outcome of the ongoing distribution planning process. Exact site location will not be available during project preparation. Similarly, exact locations of investments in component 2 will not be identified at the outset. Therefore, framework instruments (Environmental and Social Management Framework - ESMF and Resettlement Policy Framework - RPF) will be prepared for both components 1 and 2 in accordance with the laws of Malawi and the WB Environmental and Social safeguards policies, and will be reviewed by the Bank and relevant regulatory agencies in Malawi, and disclosed in country and in the Bank's external website prior to appraisal.

The project is proposed to be assigned EA category B because the proposed investments may result in potential negative environmental and social impacts that can be reversed, are temporary in nature and scope, and can be easily and cost-effectively mitigated. It is also expected that impacts will be site-specific and may not affect an area broader than the sites of the physical works. This will however be confirmed during project preparation and site visits.

B. Borrower's Institutional Capacity for Safeguard Policies

The project's Component 1 will be implemented by ESCOM, Component 2 by MONREM (which will procure a qualified fund manager after the project's effectiveness) and Component 3 by both ESCOM and MONREM. ESCOM and MONREM are the borrower agencies that will be responsible for safeguards preparation and implementation. Based on safeguards implementation in preceding projects i.e. the Energy Sector Support Project (P099626) and a capacity assessment undertaken, ESCOM's and MONREM's capacity to manage safeguards is deemed inadequate. This is because of lack of/limited filled positions and limitations in experience of those filled positions in environmental and social risk management. Both ESCOM and MONREM will establish PIUs and adequate safeguards staffing shall be ensured for the length of the project. ESCOM has committed to a reorganization that will fully staff and maintain experienced safeguards officers in its Environment and Social Unit. If it is evident that by the time of project implementation both ESCOM and MONREM do not have adequate institutional capacity to manage safeguards, the project shall be compelled to hire short term consultants for environmental and social management for the life of the project. In addition, support will be sought from district level environment offices and through regular capacity building to enhance ESCOM's and MONREM's skills in ensuring compliance with and enforcement of national regulations and requirements on environmental and social management.

During the development of safeguard instruments, Environmental and Social Safeguards Capacity assessment of both ESCOM and MONREM will be undertaken as part of the Institutional Analysis and Implementation Framework of safeguard instruments, a Safeguard Strengthening Plan will be developed and the budget for its implementation will be included as part of the Component 3.

C. Environmental and Social Safeguards Specialists on the Team
D. Policies that might apply

<table>
<thead>
<tr>
<th>Safeguard Policies</th>
<th>Triggered?</th>
<th>Explanation (Optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Assessment OP/BP 4.01</td>
<td>Yes</td>
<td>The operation will finance the upgrading and reinforcement of existing medium-voltage (MV) and low-voltage (LV) extensions as well as service drops. Physical civil works are expected to be undertaken in the operation that will have environmental and social impacts including, deforestation, dust and noise pollution, soil disturbances, health and safety concerns, potential land acquisition, and possibility of labor influx. Component 2 will finance a facility of loans and grants for solar off-grid companies. Since exact locations of investments in both components 1 and 2 will not be identified at the outset, therefore an Environmental and Social Management Framework (ESMF) will be prepared to ensure that a process for identifying, assessing, and mitigating environmental and social impacts is integrated in the development of the specific subprojects. The ESMF shall be prepared through a Consultative Process and shall be disclosed both in-country by GoM and by World Bank on the Website. Reference shall also be made to WBG Environmental, Health, and Safety Guidelines for Electric Power Transmission and Distribution that can be accessed on the following website <a href="https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines">https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines</a>. The guidelines provide measures to manage magnetic fields, risk of bush fires, risk of electrocution of birds and management of hazardous wastes such as PCB, Sulfur Hexafluoride, creosote etc. Guidelines on Occupational Health and Safety will also be applied. All subprojects shall be screened and where necessary, ESIAs/ESMPs shall be undertaken during project implementation as part of feasibility and design development, including incorporating any recommended mitigation measures into the bidding and contractual documents for the civil works.</td>
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<tr>
<td>Performance Standards for Private Sector Activities OP/BP 4.03</td>
<td>No</td>
<td>Policy is not applicable.</td>
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<tr>
<td>Category</td>
<td>OP/BP</td>
<td>Trigger Decision</td>
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<td>Natural Habitats OP/BP 4.04</td>
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<td>Forests OP/BP 4.36</td>
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<td>Pest Management OP 4.09</td>
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<td>Physical Cultural Resources OP/BP 4.11</td>
<td>Yes</td>
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<td>Indigenous Peoples OP/BP 4.10</td>
<td>No</td>
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<td>Involuntary Resettlement OP/BP 4.12</td>
<td>Yes</td>
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<td>Safety of Dams OP/BP 4.37</td>
<td>No</td>
<td></td>
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<tr>
<td>Projects on International Waterways OP/BP 7.50</td>
<td>No</td>
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</table>
Projects in Disputed Areas OP/BP 7.60 | No | This policy is not applicable to this operation since the project will not be implemented in any area of dispute.

**E. Safeguard Preparation Plan**

Tentative target date for preparing the Appraisal Stage PID/ISDS

Jan 25, 2019

Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing should be specified in the Appraisal Stage PID/ISDS

ESMF and RPF will be prepared, consulted upon and disclosed by January 28, 2019.

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| APPROVAL |
|------------------|---------------------|
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**Approved By**

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| Practice Manager/Manager: | Sudeshna Ghosh Banerjee | 21-Jan-2019 |
| Country Director: | Greg Toulmin | 07-Feb-2019 |