Concept Environmental and Social Review Summary

Concept Stage

(ESRS Concept Stage)

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I. BASIC INFORMATION

A. Basic Operation Data

Operation ID	Product	Operation Acronym	Approval Fiscal Year
P180465	Investment Project Financing (IPF)	Kenya GREEN MPA Phase 2	2024
Operation Name	Kenya Green and Resilient Expansion of Energy (GREEN) Program Phase 2		
Country/Region Code	Beneficiary country/countries (borrower, recipient)	Region	Practice Area (Lead)
Kenya	Kenya	EASTERN AND SOUTHERN AFRICA	Energy & Extractives
Borrower(s)	Implementing Agency(ies)	Estimated Appraisal Date	Estimated Board Date
The National Treasury	Kenya Electricity Transmission Company Limited (KETRACO)	05-Oct-2023	16-Nov-2023
Estimated Concept Review Date	Total Project Cost		
19-Jun-2023	202,000,000.00		

Proposed Development Objective

To facilitate increased import of renewable energy and increased capacity of Kenya system to absorb intermittent renewable energy.

B. Is the operation being prepared in a Situation of Urgent Need of Assistance or Capacity Constraints, as per Bank IPF Policy, para. 12?

No

C. Summary Description of Proposed Project Activities

1.Kenya's goal of achieving universal access to clean, adequate, affordable, and reliable electricity is critically dependent on a robust transmission system to connect the main clean energy generation sources (geothermal, hydro, and wind) in the central rift valley and eastern part of the country to the major load centers and also to allow for greater connectivity to the regional hydropower resources. The transmission system experiences challenges of capacity, poor voltage control and the risk of grid instability and cascading outages. This is as a result of power transferred via long transmission lines and inadequate reactive power supply in some regions. In particular, the load centers in the western and coastal regions

are over 400km from the supply sources and the central node of the system (Suswa substation through which almost 50 percent of the energy flows through). Local generation, based on high-cost fossil fuel, is deployed selectively to minimize voltage instability during peak periods in the two regions as well as limited imports from Uganda (in western region). Replacement of the fossil fuel-based generation is a critical element to achieving clean energy goal and reducing the cost of supply in Kenya, which is high in terms of regional standard impeding the competitiveness of Kenyan industries. Some key transmission lines to Western Kenya have recently been completed and a 400kV substation at Mariakani in the Coastal region is expected to be commissioned by end of 2023 to increase supply from renewable sources to these regions. In addition, although the energy imports from Ethiopia is one of Kenya's least cost renewable energy source and the Ethiopia-Kenya transmission interconnector has a large bi-directional transfer capacity of 2,000MW, energy imports by Kenya are currently limited to 200MW because larger imports currently poses a significant risk of instability to grid stability and outages of the Kenyan system. 2.The first phase of the Kenya Green and Resilient Expansion of Energy (GREEN) Multiphase Programmatic Approach (MPA) program (P176698) was approved by the World Bank Board on June 15, 2023 for a total financing envelope of IDA US$930 million. At the time of approval of the parent MPA, the first phase was approved as a hybrid Program for Results (PforR) (including a small technical assistance as an IPF) to support the financial and operational improvement of Kenya Power & Lighting Company PLC (KPLC) and last mile access. The proposed second phase of the MPA will be implemented by Kenya Electricity Transmission Company Limited (KETRACO) as an Investment Project Financing (IPF), to support the investments needed in grid stability equipment (STATCOM and battery storage) and a substation to increase system resilience in Kenya, which will facilitate increasing imports of cleaner and cheaper energy from Ethiopia, absorption of a larger share of intermittent renewable energy (solar and wind) in the Kenya system, and energy trade between Tanzania and Ethiopia through the Kenya system. The financing envelope for the proposed second phase of the MPA is expected to include US$153.5 million of IDA and US$48.5 million from the Green Climate Fund (GCF) as per the original MPA framework. The World Bank serves as the GCF Accredited Entity. 3. The second phase comprise the following four components: Component A : Installation of STATCOMS (IDA US$ 80 million): This component is proposed to finance installation of reactive power and voltage control equipment (STATCOM) at Suswa and Rabai substations to improve the fault levels, increase voltage stability, allow for greater import of renewable energy from Ethiopia and transfer of more geothermal energy from Olkaria to the coastal region of Kenya. The component will also finance project management and supervision consultants. Component B: Construction of a 400kV substation at Kimuka (IDA US$30 million): The proposed 400kV substation at Kimuka will enable integration of the Kenya- Tanzania interconnection and Ethiopia-Kenya interconnector enabling Tanzania to access hydropower resources of Ethiopia. The substation will also increase transmission capacity of more renewable energy (geothermal, wind and imports) from supply sources at Olkaria and Suswa to major load centers of Nairobi and the Coast regions of Kenya. The proposed substation site is on a land owned by KETRACO. The component will also finance project management and supervision consultants. Component C: Utility-Scale Solar and Battery Energy Storage US$ 84 million (US$35.5M IDA and US$ 48.5 M GCF): This will support implementation of a pilot battery energy storage system (BESS) and prefeasibility studies and preparatory work for competitive auctions for solar with funding support from Green Climate Fund (GCF). Kenya is one of seven countries benefiting from GCF funding under the Sustainable Renewable Risk Mitigation Initiative (SMRI) with the objective of supporting Kenya to shift to low-emission sustainable development pathways and increase access to affordable, reliable, sustainable, modern energy to its populations. Grid-scale BESS are needed to bridge peaking capacity gaps as well as primary reserves for frequency regulation while reducing the need to vent geothermal steam during hours of low demand. A BESS study is ongoing with support from the Bank to identify capacity, timeline and implementation arrangements for the BESS in the Kenyan power system. The study is expected to be completed by August 2023. The BESS are likely to be installed in existing substation locations belonging to KPLC and KETRACO and need for additional land is expected to be minimal. Preparatory activities for the solar auctions activities for a total capacity of about 100MW located in two or three sites

will include: (i) sector diagnostic study and assessment and preliminary project identification, selection and prioritization; and (ii) project prefeasibility studies. The determination of the project structure and actual auctions are expected to be supported with IDA funding (co-financed with GCF) under the third phase of the MPA. Component D: Technical Assistance and Capacity Building (US$ 5 million): The Component will support sector studies, capacity building, and training activities for sector development and to help sustain and enhance the policy, institutional, regulatory arrangements and reforms as well as gender and citizen engagement. Relationship to CPF 4. The GREEN MPA Program, including the second phase is aligned with the Kenya Country Partnership Framework (CPF) FY2023-2028. The overarching goal of the CPF is to support Kenya's Vision 2030 of transformation into a middle-income economy that achieves inclusivity and resilience. The three higher-level outcomes of the CPF are: i) faster and more equitable labor productivity and income growth; ii) greater equity in service delivery outcomes; and iii) greater resilience and sustainability of Kenya's natural. By supporting cheaper and clean energy options for Kenya, the proposed intervention will contribute to the higher-level outcomes of income growth and sustainable equity in service delivery outcomes. Consistent with one of the priority focus areas of the CPF, the proposed operation leverages climate financing (GCF) in support of renewable energy development in Kenya.

D. Environmental and Social Overview

D.1 Overview of Environmental and Social Project Settings

The Phase II of the MPA will comprise of 2 STATCOMs at Suswa and Rabai substation, 400kV substation at Kimuka, a Battery Energy Storage System (BESS), and Prefeasibility Studies and technical Assistance and Capacity Building. With the exception of the BESS, exact location of the subproject sites are known and are brownfields thus minimal E&S impacts expected. On the environment, anticipated risks include health and safety risks posed by construction activities to the workers and community and risk of electrocution during the operation and maintenance phase of the project. KETRACO did ESIAs for Suswa and Kimuka but shall be updated, for Rabai site, an ESIA study shall be done. Kimuka and Suswa sites are in Kajiado and Narok counties home to the Maasai pastoralists who are considered Sub-Saharan African Historically Underserved Traditional Local Communities (SSAHUTLCs) under ESF. Feasibility studies for the implementation of the more solar and BESS may fall in other counties with overwhelming Vulnerable and marginalized groups (VMGs). It is proposed they be considered for unskilled and semi-skilled jobs during the construction of the substation and the installation of the STATCOM in their areas. The location of the proposed BESS is not known at this stage. It is anticipated that it will be constructed in an existing substation owned by KETRACO or KPLC. If not available, land would be acquired through a willing buyer-willing seller principle. It is anticipated that the outputs of the proposed pre-feasibility studies and the accompanying preliminary environmental and social screenings, will make recommendations for detailed environmental and social assessments, including the preparation of ESIAs and RAPs (as necessary) for the sites proposed by the prefeasibility studies as suitable for future construction of solar power generation projects and the BESS.

D.2 Overview of Borrower's Institutional Capacity for Managing Environmental and Social Risks and Impacts

MPA Phase1 will be led by KPLC while phase 2 will be implemented by KETRACO. KETRACO has developed capacity to manage environmental and social risks and impacts associated with civil works operations under the safeguards policies. A recent assessment of the E&S capacity of KETRACO undertaken as part of the Environmental and Social System Assessment (ESSA) for phase one of the MPA, found that KETRACO has a Wayleaves Acquisition Department that ensures compliance with national and international environmental regulations and with lender E&S requirements. The department has a total of 13 social and 9 environmental specialists. It can thus effectively manage the E&S risks of the phase II. Although this is the first time that KETRACO will be implementing a project under the ESF, KETRACO has

capacity in preparation, implementation and monitoring of Environmental and Social Impact Assessments (ESIAs) Construction Environmental and Social Management Plans (CESMPs), and RAPs that was acquired while implementing World Bank and other externally funded projects. The Company implemented the Kenya Electricity Expansion Project (KEEP, P103037) and the Eastern Electricity Highway Project (EEHP, P126579). In response to the E&S challenges identified in the National Energy Policy (2018) and from the implementation of KEEP and the EEHP, KETRACO underwent an organizational restructuring in 2020/2021, with the aim of mainstreaming E&S risk management in its organizational structure. As a result of the restructuring, KETRACO's Directorate of Project Development Services now has two key departments, with one department – the Wayleaves Acquisition Department - dedicated to E&S risk management. KETRACO will establish a PIU dedicated to the phase II Project which will have at least one dedicated social specialist and one environmental specialist responsible for managing all the E&S issues. E&S consultants may be also recruited to support internal capacity of the PIU should need arise.

II. SCREENING OF POTENTIAL ENVIRONMENTAL AND SOCIAL RISKS AND IMPACTS

A. Environmental and Social Risk Classification (ESRC) — Substantial

A.1 Environmental Risk Rating — Moderate

The overall environmental risk rating for the phase II project is considered Moderate. Construction related activities might have moderate impact to the environment. For the other subprojects, minimal environmental risk is expected from two substations that are known brownfield environments. Rabai and Suswa sites have existing power infrastructure development that are already in operation while the Kimuka site in Ngong is a known reserved site for future substation development. The fourth site for the BESS is yet to be identified, however, it's expected to be within an existing substation owned by either KETRACO or KPLC like the other three. The two developed sites have no onsite or proximal sensitive environmental receptors while Kimuka (the green field) is expected to be fenced off and all activities restricted within the enclosed area. No known environmental or EHS liabilities and non-com exist on the operational sites, which continue to adhere to initial project ESIA done in 2008 and 2017 by KETRACO. The construction and operational environmental and social impacts will be minimal and site specific manageable by enforcement of ESMPs and C-ESMPs which will include noise, air, water and soil pollution from effluents, waste, and machines usage on sites; safety hazards related to normal civil, mechanical, structural, and electrical works. For the operation and maintenance, impacts such as risk of electrocution, leakages of transformer oil, and management of general solid and electronic wastes will be managed guided by the project ESMPs and existing KETRACO safe working procedures. At this stage, it's unknown if the pre-feasibility studies will be carried out in specific locations or countrywide, therefore, the countrywide position is assumed even though only two or three sites are expected to be developed. The outcome of the study will be subjected to detailed environmental and social assessment to assess the viability of the options being considered.

A.2 Social Risk Rating — Substantial

The social risk rating for the phase II project is considered Substantial on the basis of: (i) the exact locations for the prefeasibility studies is unknown thus the it is assumed that the studies may be undertaken in counties that are security risk- prone areas; (ii) potential site specific social risks under the project are anticipated to include SEA-SH risks by project workers undertaking the activities under this phase; (iii) local and international labor influx of migrant workers into sub-project areas; (iv) child labor i.e to provide food vending especially around the construction sites; (v) exclusion of some stakeholders and special groups such as VMGs and vulnerable individuals such as People with

Disabilities (PWDs), minority clans, women, and youth from consultations. (vi), exclusion of the Maasai VMGs from unskilled and semi-skilled employment during construction of the substation at Kimuka, and the installation of the STATCOM at Suswa. The Environmental and Social Commitment Plan (ESCP) will be prepared, outlining the material measures and actions that KETRACO will implement to address the potential environmental and social risks and impacts. It will address the risks and impacts relating to mitigation of the E&S risks including the preparation of a Stakeholder Engagement Plan (SEP), Labor Management Procedures (LMP) with clear statements/sections on child labor, employment of locals, and codes of conduct for project workers. The LMP will clearly require KETRACO and their contractor to consider VMGs for unskilled and semiskilled labor employment. If necessary, a SEA/SH Management Plan, a Security Risk Management Plan if sites area proposed sites are in security risk prone areas. The ESCP will recommend measures for the management of environmental, health and safety risks identified and additional instruments and tools to be prepared including ESMPs, C-ESMPs etc. KETRACO will disclose the ESCP, and as applicable, the LMP, and SEP, before the appraisal

B. Relevance of Standards and Policies at Concept Stage

B.1 Relevance of Environmental and Social Standards

ESS1 - Assessment and Management of Environmental and Social Risks and Impacts Relevant

Risk in this project relate to civil, mechanical and structural works associated with the construction of the STATCOMs, the substation and BESS could result to environmental impacts such as substation fire, electrocution, vegetaion clearance, noise, air, water and soil pollution from effluents, waste, and machines usage on sites. And social risks such as child labor, the exclusion of VMGs and vulnerable individuals, insecurity risk, SEA/SH risks. All these may potentially lead to various kinds of project related grievances. To manage the above risks, an Environmental and Social Commitment Plan (ESCP) will be prepared and ageed on with KETRACO during appraisal outlining the material measures and actions that KETRACO will need to undertake including developemnt of additional documents such as the SEP, LMP and SMP. Existing ESIAs and their ESMPs will be updated to be materially consitent with the ESF and WB EHSGs, including the new ones to be prepared for the Substation and BESS

ESS10 - Stakeholder Engagement and Information Disclosure Relevant

A SEP will be prepared by KETRACO prior to appraisal, to guide the stakeholder consultations in line with the requirements of ESS 10. Stakeholders who will be consulted in the course of project implementation will include relevant government departments, agencies, and ministries; development partners, NGOs, CSOs, and other organizations, including the and representatives of VMGs, and the traditionally excluded groups. Where applicable, the SEP will include differentiated stakeholder engagement and consultation measures to allow the equal and effective participation of those identified as VMGs, disadvantaged/vulnerable groups or traditionally excluded groups. KETRACO will ensure that all stakeholder consultations are done in a culturally appropriate manner, using the free, prior, and informed consent principles as outlined in ESS 7. The SEP will include a functional and efficient Grievance Redress Mechanism (GRM) and will include disclosure plans in line with the requirements of ESS 10.

ESS2 - Labor and Working Conditions Relevant

Given the nature of work involved, health and safety risks to these workers is anticipated during the construction of the substation and the STATCOM. The construction and operational phase workers will be facing risks of electrocution, falls from positive and negative height, exposure to land transport risks. Other potential labor related risks include SEA/SH, disputes over salaries/wages, child labor, forced labor and engagement of national and migrant labor as well as the risk of exclusion of locals. Risks associated with future phases of the MPA, including full feasibility studies, will be addressed in the environmental and social instruments. KETRACO will assess any anticipated labor-related risks and impacts of phase II project activities and outline mitigation measures in a Labor Management Plan (LMP) in line with ESS 2 that will be prepared prior to appraisal. These measures will further be prescribed in the ESCP in a manner consistent with ESS2 and ESS1.

ESS3 - Resource Efficiency and Pollution Prevention and Management Relevant

It is expected that the project will generate potentially solid hazardous and non-hazardous waste and potential use of hazardous materials, some of which will include but not be limited to Styrofoam, polythene bags, used oil filters, damaged solar panels and batteries among others. The anticipated liquid waste such as used oils and Polychlorinated Biphenyls (PCBs) may be present in transformer and backup generator equipment. The BESS facility will be a source of harzadous battery waste that may be recycled as one of the options to minimize pollution. The other anticipated impacts will be addressed in a manner that is materially consistent with ESS 3 and through the subproject ESIAs, ESMPs and C-ESMPs where contractors hazardous waste management plan, water use management plan and effluent management plan will be developed to minimize resource wastage and reduce pollution. Additional risk reduction and mitigation will be included in the ESCP to be agreed on with KETRACO during appraisal

ESS4 - Community Health and Safety Relevant

Grid connection of the substation to high voltage overhead cables are a potential risk of electrocution to residents should the masts collapse due to poor workmanship or vandalism. During the construction stages, the trucks delivering material and workers to site will be a potential risk of accidents. It will be necessary to ensure adequate controls are included in the ESMP and C-ESMPs to manage traffic risks. Inappropriate solid and liquid disposal has the potential to threaten the health and safety of the community through pollution of ground and underground water resources. Other OHS risks will be managed by strict enforcement of ESMPs and C-ESMPs to be prepared on timelines to be agreed by KETRACO during appraisal stage in line with the ESF. Other plans that will be prepared for the management of social risks under this standard include Labor Management Plans and SEA/SH Prevention and Response Plans for managing risks associated with labor influx.

ESS5 - Land Acquisition, Restrictions on Land Use and Involuntary Resettlement Relevant

Since land for the two STATCOMs and the new substation are owned by KETRACO and KPLC, and because the pilot BESS are likely to be implemented within existing substations that are owned by KETRACO and KPLC, no involuntary resettlement is anticipated. However, it is not clear at concept stage if a BESS facility may be required along an existing grid infrastructure. In the event that a BESS facility is required along an existing grid infrastructure, then the land for the construction of the facility (the size of a standard room), would be acquired through a willing buyer-willing seller principle. In such a case, KETRACO/KPLC will advertise for potential willing sellers to bid for the sale of such land. Finally, no involuntary resettlement risks and impacts are expected in relation to any of the subprojects under phase two of the MPA

ESS6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources — Relevant

The two sites (Rabai and Suswa) are on a brownfield site with existing operational sub-station with environments that are highly modified thus no impact on biodiversity. The Kimuka site is located in the peri-urban areas of Ngong town. Impact on biodiversity is expected to be limited to vegetation clearance within the area where the substation will be constructed. The proposed BESS site for the battery storage which is yet to be identified will be cited within an existing substation to minimize impacts on biodiversity. Pre-feasibility study for potential solar sites will have no direct impact on biodiversity. The preliminary ESA/ESIA to be conducted as part of the pre-feasibility study will identify brownfield sites with minimal impacts to biodiversity to be assessed in further detail as part of the full feasibility study. Actual impacts to biodiversity and how to manage them will be thoroughly assessed in the subproject ESIAs to be prepared prior to launching of procurement documents.

ESS7 - Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities — Relevant

One STATCOM (at Suswa) and the substation at Kimuka are located in Narok and Kajiado counties inhabited by the Masai pastoralists. At this stage, the exact substations or existing grid infrastructure at which the BESS facilities will be located is unkonown. It is therefore assumed that this ESS will also apply to the BESS subproject, should any of them be located in a substation or grid infrastructure that may be located in VMG areas. Similarly, the exact location of the prefeasibility studies is not known at this stage, but may likely include counties in northern Kenya which are inhabited overwhelmingly by VMGs/pastoralist communities. To mitigate the potential risks related to employment opportunities for VMGs under the civil works subprojects and their participation in the prefeasibility studies. The SEP and the LMP to be prepared by KETRACO, and the ESCP to be prepared by KETRACO and the Bank, will include material measures for mitigating these risks.

ESS8 - Cultural Heritage — Relevant

This ESS applies to the phase II activities, specifically the construction of the Kimuka substation, the pilot BESS, and the installation of the STATCOMs. Given the civil works will take place on brownfield sites, no impacts on tangible and intangible cultural heritage are expected, but ESS8 is relevant as such impacts will be assessed in the subproject ESAs/ESIAs and at least chance find procedures will be included in the ESMPs.

ESS9 - Financial Intermediaries — Not Currently Relevant

This standard is not relevant to this project as financial intermediaries will not be involved.

B.2 Legal Operational Policies that Apply

OP 7.50 Operations on International Waterways	No
OP 7.60 Operations in Disputed Areas	No

B.3 Other Salient Features

Use of Borrower Framework No

Use of Common Approach No

The GCF with the World Bank serving as the Accredited Entity will fund the major share of Component C: Utility-Scale Solar and Battery Energy Storage costs.

C. Overview of Required Environmental and Social Risk Management Activities

C.1 What Borrower environmental and social analyses, instruments, plans and/or frameworks are planned or required by Appraisal?

- Prepare Draft Environmental and Social Impact Assessments (ESIAs) as applicable for the Substation, Statcoms and the BESS subprojects. The ESIAs will clearly spell out the material measures and actions (commitments) required for the project to achieve compliance with the ESSs over the specified time frame in the ESMPs prior to effectiveness;
- Prepare and disclose the Stakeholder Engagement Plan (SEP) and Labor Management Procedures (LMP), both including description of the respective GRM, and SEA/SH Prevention and Response Action Plan before project appraisal;

III. CONTACT POINT

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V. APPROVAL

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