



Concept Environmental and Social Review Summary

Concept Stage

(ESRS Concept Stage)

Date Prepared/Updated: 09/15/2022 | Report No: ESRSC02948



BASIC INFORMATION

A. Basic Project Data

Country	Region	Project ID	Parent Project ID (if any)
South Sudan	EASTERN AND SOUTHERN AFRICA	P178891	
Project Name	South Sudan Energy Access Project		
Practice Area (Lead)	Financing Instrument	Estimated Appraisal Date	Estimated Board Date
Energy & Extractives	Investment Project Financing	12/12/2022	3/31/2023
Borrower(s)	Implementing Agency(ies)		
The Republic of South Sudan	Ministry of Energy and Dams		

Proposed Development Objective

To increase access to electricity services and strengthen the institutional capacity of electricity sector in South Sudan.

Financing (in USD Million)	Amount
Total Project Cost	50.00

B. Is the project 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 [including overview of Country, Sectoral & Institutional Contexts and Relationship to CPF]

The project will finance activities that provide energy access in South Sudan. The proposed project will have three main components: 1) Isolated grids development and densification; 2) standalone solar systems for social institutions (health facilities and schools and); and 3) Technical assistance, Institutional Capacity Building and Implementation Support.

Component 1: Isolated grids development and densification

Public Disclosure



Juba grid densification. While Juba has the only functional grid in the country, there is a significant number of potential users, primarily households that are not yet connected to the grid. While Juba already has approximately 30,000 customers connected to the grid, JETCO estimates that there are 16,000 unconnected potential customers, of which 10,000 can be connected at relatively low cost using existing transformers. Most of these customers are expected to be households. However, the affordability of the electricity to the potential new customers need to be carefully assessed, along with options to lower the retail tariff.

Development of the isolated grids in the selected cities: The project will finance the rehabilitation and development of the isolated grid system in the selected cities out of 9 regional capital cities (Wau, Malakal, Yambio, Aweil, Bor, Kuajok, Torit, Rumbek, Bentiu) based selection criteria. Approximately 750,000 people, or 7% of national population in South Sudan, are estimated to live in these cities. A geospatial analysis, carried out under the ongoing ASA, identified these cities as strong candidates with significant concentration of potential electricity demand to be supplied with mini-grids in a cost-effective manner (Refer to Map 2 below). These cities host critical public infrastructure, including country hospitals, primary and secondary schools, and public buildings, as well as key economic hubs such as agricultural markets. Additional sites outside the regional capital can also be considered if significant demand is identified. The component will seek synergies with operations in other sectors, such as health, education and agriculture, by overlapping the geographical scope of the interventions.

Development of the isolated grid system for refugee camps: South Sudan hosts about 330,000 refugee, majority of them at JamJang (126,601) and Maban (176,844) near the northern border with Sudan as of March 31 2022. Geospatial analysis carried out as a part of the Bank's ASA suggests that these settlements have sizable demand and population density that makes isolated grid systems as a viable option for electricity services. The isolated grid system will serve both refugees and host community households, businesses and public institutions.

The implementation approach will be designed to the off-grid market assessment, conducted under the ASA – Pathways to Electricity Access Expansion. Based on global experience, it is common to implement mini-grids through a combination of public and private sector-led approaches.

The operations and maintenance arrangement for the mini-grids supported under the Project could be through MoED or through a public-private partnership (PPP) model. This approach will be discussed in detail with MoED and other key counterparts during project preparation and implementation.

Border Electrification: While there is no grid in South Sudan near Ugandan border, there is a distribution grid from Uganda side close to the border. MoED intends to import electricity across the border to provide electricity to the community at the borderland. Upon the signature of the PPA, MoED intends to build distribution grid through Public-Private Partnership to deliver electricity to customers in South Sudan. The project could finance the necessary grid investment needed to distribute the imported electricity in South Sudan.

Component 2: Standalone solar systems for social institutions (health facilities and schools)

Electrification of public institutions: The ongoing ASA identified specific locations of 1,654 health facilities and 5,580 educational facilities in South Sudan; most of them are located outside major cities and therefore unlikely to be supplied by grid services soon. This component will finance the delivery of solar and battery-based off-grid solutions for selected social institutions, with priority on Payam -level Health Care Centers (PHCCs) and secondary schools, which require more electricity for their service delivery. Other public facilities such as government administration



buildings and water supply facilities can also be supported. The component will seek synergies with Bank operations in other sectors, such as health, education, and agriculture, by overlapping the geographical scope of interventions. Efficient cooking energy solutions for public institutions will also be considered, depending on the findings from the market assessment.

The roll-out of standalone solar systems will be implemented through a combination of public and private sector led approaches with a focus on efficient delivery channels to ensure long-term sustainability of installed systems. During project preparation, the team will conduct a detailed assessment to quantify the energy needs and gaps of health facilities and schools; and identify ideal size and type of technology, operation and maintenance needs, and suitable distribution models for efficient delivery. The team will also explore ways to ensure accountability by the beneficiary institutions, such as cost-sharing and financing mechanism between the project, central government, and local authorities. Local technical capacity building will focus on basic system maintenance.

Household and productive use solar systems: This component would finance expansion of standalone electrification systems, including solar home systems for households and solar-based productive use systems such as solar water pumping systems and refrigeration systems. Such systems are expected to be used by small-holder farmers, and small businesses in the areas where grid and mini-grid are not available.

Component 3: Technical assistance, Institutional Capacity Building and Implementation Support

Sub-component 3.1: Regulatory framework for private sector participation in the energy sector.

The sub-component will develop a regulatory framework of private sector participation in the energy sector. MoED will engage technical and legal professionals to prepare a draft framework for the formal adoption by relevant authorities. The regulatory framework will be based on existing legal framework, such as the National Electricity Bill if formally approved and enacted. The legal framework is expected to define clear roles and procedures by government institutions. This sub-component will also include technical assistance to the MoED on approaches the government can take to encourage private sector investment and participation in the off-grid and mini-grid market.

Sub-component 3.2: Electricity Sector Master Plan

The plan will cover generation, transmission and distribution, in sync with national electrification strategy and take into account the regional interconnection with members of the East Africa Power Pool, alignment with GoSS's Nationally Determined Contributions on climate change, and financial and macro-economic constraints of the GoSS. Given the fragile political context, the plan will be highly agile and adoptable one that can remain relevant even in the case of political instability and shortage of financing. The preparation of the plan will be sequenced to ensure that key strategic outputs are made available to the MoED at early stage

Sub-component 3.3: MoED/SSEC Business Plan Development

The sub-component will support analytical and advisory work to define the role of SECC in the sector and its strategic direction. An SECC human resource plan will also be developed as a part of the plan to ensure adequate staffing and capacity of SECC. A special consideration will be given to the options to recruit and retain capable SECC staff.



Sub-Component 3.4: Support for the Project Implementation Unit (PIU) and capacity building.

The component will support the PIU to cover the incremental costs in relation to its PIU and operational expenses related to project management. This includes the engagement of individual consultants/consulting firms to support specific component activities as well as to strengthen MoED capability in fiduciary management as well as and environmental and social safeguards. Given the limited experience of MoED on the Bank lending operation, priority will be given to capacity building to strengthen the sector's safeguard capacity in implementing the project's Environmental and Social Framework commitments as well as fiduciary capacity to strengthen financial management (FM) and procurement. It will also support day-to-day operational expenses for project management.

D. Environmental and Social Overview

D.1. Detailed project location(s) and salient physical characteristics relevant to the E&S assessment [geographic, environmental, social]

South Sudan is a landlocked country that lies between latitudes 3°N and 13° N and longitudes 24°E and 36°E. The country's territory covers 644,329 km² and has many plains and plateaus that are drained by the Nile and its numerous tributaries. The country declared its independence from Sudan in July 2011. South Sudan is endowed with a wealth of biodiversity, which provides the country with great opportunity for socioeconomic development, as well as many biological resources that have considerable economic and social values. The country has a wide range of habitats, including lowland forest, montane forest, savannah woodland, savannah grassland, wetlands and floodplains, the Sudd Wetland, and the semi-arid region in the north, which support a very rich diversity of animal and plant species. However, such biodiversity, including wildlife, is currently under threat, due to weak environmental regulation, poor development planning, fires, and most importantly, fragility resulting from conflict, instability, and insecurity. Households in South Sudan predominantly use biomass to meet their energy needs, which involves burning charcoal, wood, grass, cow dung and agricultural residues. Over 96% of the population use firewood or charcoal as their primary fuel for cooking. Firewood, grass and paraffin lamps are the most used sources for lighting. Costly diesel generators are mostly used to produce the electricity, as there is no national grid electricity supply (Government of South Sudan Initial National Communication to the United Nations Framework Convention on Climate Change, 2018).

South Sudan has experienced various armed conflicts since 1955. Ongoing tensions with Sudan over oil revenues, land borders, armed groups, rebellions, and inter-communal violence have threatened South Sudan since its independence in 2011. These tensions have resulted in frequent conflicts, which have adversely impacted the environment, the South Sudanese people and the country's natural resources (South Sudan First State of Environment and Outlook Report 2018). In 2013, additional civil war among internal factions – along ethnic and clan lines - left the country shattered. In September 2018 a peace agreement was signed between the warring factions. However, local conflicts still flare up following the agreement. While the situation remains fluid, the recent reduction in armed conflict may facilitate substantial population movement. About 1.3 million people have returned from displacement within or outside South Sudan since 2016. The risk of spread of Coronavirus Disease (COVID-19) is high. The pandemic could push the people, especially the vulnerable poor and the displaced, deeper into destitution and the country faces the risk of further destabilization.

The power sector in South Sudan is experiencing severe shortage of supply and extraordinarily high electricity tariffs. The country's total installed power capacity is approximately 141 MW; however, power demand is estimated at 300 MW, an amount that is expected to grow during peacetime. Much of the country's generation is currently not



operational due to lack of fuel and spare parts. Urban centers outside of Juba, such as Malakal and Wau each had isolate grid infrastructure that were destroyed during the conflict of 2013. Furthermore, due to the high cost of imported fuel, grid customers in Juba pay an average tariff of 42 US cents per kWh, which is among the highest in Africa despite the poor quality of supply.

The proposed project focuses on increasing access to electricity in urban, peri-urban and rural areas through mini-grids and off-grid solutions. Recent energy sector development efforts have focused on revitalizing infrastructure and boosting power generation around Juba, the capital city, but the rest and largest part of the country remains in the dark. Only two other urban areas outside of Juba (Renk and Bor) have access to a grid that is supported by SSEC.

D. 2. Borrower's Institutional Capacity

South Sudan National Electricity Sector Policy (May 2007)/ South Sudan National Electricity Bill (2015) highlights the need to establish a highly competent and independent regulatory body and specifies the responsibility of the regulator by and large to include, licensing electricity service providers, enforcement of quality of service, as well as compliance of environmental standards, review of tariff applications, regulatory reporting and oversight functions. South Sudan has legal frameworks related to management of environmental and social risks such as the National Environment Policy (NEP; 2015-2025) which was developed to manage the environment and ensure the wise exploitation of natural resources in the country (oil, energy, mining, forest, water, land, animal, fisheries, wildlife, biodiversity, mountains, natural heritage). It's also established the Ministry of Environment which is responsible for the development and implementation of environmental policy and legislation at a national level to protect the environment and ensure sustainable development. This project will support South Sudan in achieving renewable and clean energy through solar systems that are often coupled with backup battery storage, and solar home systems. The project also supports the construction of distribution networks and plays a role in grid expansion.

However, the proposed project implementing entity (the Ministry of Energy and Dams) has no experience in management environmental and social risks of World Bank financed projects. It has no unit/department or staff who can oversee management of environment, social, health and safety risks of energy projects. During implementation of projects, EHS risk management services were sourced from the Ministry of Environment. The sector currently lacks resource to engage key personnel for project preparation, such as safeguards and fiduciary specialists. To mitigate this risk, it is critical that MoFP play a role to make necessary personnel available to the electricity sector, potentially shared with other Bank-financed projects. The client will also engage specialized consultants to extensively support the client for the preparation of the project, in particular for the preparation of environmental and social risk management instruments and the Project Procurement Strategy Document (PPSD). Hence, significant E&S staffing and capacity assessment shall be undertaken as part of project preparation and enhancement measures will need to be implemented to ensure that potential E&S risks of the project could be properly address. A detailed capacity assessment and capacity building action plan will be prepared as part of the ESMF (the timeline for which will specified in the ESCP). To this end, the Ministry shall recruit one environmental and one social risk management specialists who will based in the project implementation unit. E&S focal persons shall also be assigned at the major towns which will be beneficiaries of the project. The Bank will organize trainings on the ESF and Project-specific E&S risk management tools that will be prepared for this project.

The establishment of a functioning E&S risk management implementation arrangements will be included as one of the major commitments in the Environmental and Social Commitment Plan. Compliance with environmental and social standards shall be monitored in different ways. Quarterly and annual environmental and social monitoring reports will



be prepared by the PIU and will be shared with the Bank. There will be independent annual environmental and social audits. During the project preparation, the PIU will also closely work with relevant regulatory agency so that site specific environmental and social risk management tools could be reviewed and cleared by the agency. Details of E&S procedures and requirements of the E&S management tools that will be applicable to each sub project types will be specified in the ESMF.

II. SCREENING OF POTENTIAL ENVIRONMENTAL AND SOCIAL (ES) RISKS AND IMPACTS

A. Environmental and Social Risk Classification (ESRC)

High

Environmental Risk Rating

High

There are various potential environment, health and safety risks that can result at the during construction and operation of the off-grid and mini-grid products and materials as well as associated civil works. These include: i. Generation of hazardous and non-hazardous wastes including e-wastes (from Component 1 and 2 activities). A solar power system involves the use of rechargeable batteries including lithium-ion, nickel metal hydride, nickel cadmium and lead acid batteries. These batteries, especially nickel cadmium and lead acid batteries can have potential for environmental and health impacts if not properly transported, stored, and disassembled/recycled. They can cause serious environmental impacts because of the chemicals and heavy metals. Another emerging environmental issue associated with solar PV energy systems is exhausted solar panels. Leachate generated on landfills of PV solar panels could cause water/ground pollution. There are also potential environmental risks that can result from the use of back up diesel generators. Gensets (diesel generators) can contribute to air pollution during operation and may account for water/ground pollution from fuel spill overs during transportation and storage. Other pollutants include packaging materials of PV panels, battery banks, etc. Localized air quality pollution could result from operating machinery (i.e., fumes) and dust generation from earthworks. Wooden poles for distribution are treated with chemicals during manufacturing that can lead to leaching and the formation of surface residues at the right-of-way. ii. Small scale soil erosion, sedimentation, and landscape disturbance (from Component 1 and 2 activities). This may result from civil works of mini grids which among others include the construction of a powerhouse for the storage of the battery banks, genset, battery inverters and combiner boxes as well as during erection of distribution network poles. iii. Potential risks to flora and fauna. Wooden poles may be used for distribution line construction purpose which can lead to cutting of considerable number of trees. Vegetation clearance under and around mini grids in order not to obscure the incoming solar radiation, clearance of Right of Way (ROW), fuel and oil leakages (during transportation and storage) can affect wildlife and ecosystems. Accidental fire which could be caused by Vegetation/trees falling on distribution network cables, in case of large mini-grid systems with high current and voltage levels due to high magnetic fields), improperly stored/handled, fuel and overheating of battery banks etc. may have adverse impacts on flora and fauna. iv. Potential use of energy by health care facilities, schools, public buildings, and enterprises/farmers. Construction and operation activities of the project may lead to use of energy resource for different construction and operation related activities. iv. Potential risks to workers and community health and safety. Construction and operation activities may expose project workers to various accidents. Occupational accidents can occur in all stages of the life cycle of off-grid solar materials from manufacturing, installation, and maintenance to decommissioning and recycling. The transportation of materials and machinery may lead to increase in traffic congestion and road accidents. Diesel generators, vehicles, and construction machineries activities can cause an increase in the noise levels which can affect project workers and the communities residing near the project site. Technical assistance activities may also have potential downstream risks if not implemented following the requirements of the ESF. At this

Public Disclosure



stage, considering the above potential environmental risks as well as major contextual risks including the limited capacity of Ministry of Energy and Dams, the environmental risk of the project is rated as substantial.

Social Risk Rating

High

The risk classification of the project is substantial, considering the broader contextual risk such as political instability (induced by potential civil unrest), contextual GBV/SEA risk, accessibility of sub projects for monitoring and support, proper utilization, and implementation of Project's environmental and social risk management tools. The project is not complex or large in scale, does not involve activities that have a high potential for harming people. Social impacts associated with project activities will generally emanate from the construction of grid system, hybrid and solar PV battery storage mini grid for households and enterprises that are assigned to Component 1 of the Project. These include small scale land acquisition and/or livelihood disruption, risks linked to non-compensation for affected crops and trees, influx of labor into targeted areas (though not significant), lack of adequate consultation with affected persons and access to functioning grievance redress mechanisms, as well as social exclusion of women, youth, and other members of underserved and vulnerable groups, including refugees and host communities (potential targets of the Project) . Apart from the project related risk there is a broader contextual risk on security and Sexual exploitation and harassment risks in South Sudan. Hence, the social risk of the project is rated as substantial.

B. Environment and Social Standards (ESSs) that Apply to the Activities Being Considered

B.1. General Assessment

ESS1 Assessment and Management of Environmental and Social Risks and Impacts

Overview of the relevance of the Standard for the Project:

The activities to be financed by the project will have a range of environmental and social benefits. For example, electricity production through solar panels is clean and renewable. It can also avoid greenhouse gas emissions. Nonetheless, the project activities can also adverse environmental and social impacts as noted in section II A which include (i) generation of hazardous and non-hazardous wastes including e-wastes; (ii) small scale soil erosion, sedimentation, and landscape disturbance; (iii) potential risks to flora and fauna including birds; and (iv) potential risks to workers and community health and safety (v). Potential use of energy by health care facilities, schools, public buildings, and enterprises/farmers (vii). Community Health and Safety risks related with Infrastructure and Equipment Design and Safety; Safety of Services; and Traffic and Road Safety.

The Ministry of Energy and Dams (MoED) will prepare an Environmental and Social Management Framework (ESMF) which will be used as a basis for identification and management of environmental and social risks of the project activities which will be implemented by the public sector prior to appraisal. The ESMF will also include GBV risk assessment and GBV/SEA/SH Prevention and Response Action Plan. The ESMF will identify the construction, operations and maintenance arrangement for the mini-grids, standalones and distribution network activities supported under the Project. MoED will prepare an Environmental and Social Commitment Plan (ESCP) which will outline among others the Ministry's commitment to: i) implement the project activities in compliance with the requirements of the applicable environmental and social standards of the Bank's Environmental and Social Framework; ii) screen the subprojects per ESMF and prepare site-specific subproject E&S risk management instruments (e.g. ESMPs) and ensure assessment of EHS risks in project technical assistance related studies; iii) put an environmental and social risk management implementation arrangements including deployment of qualified staff at



different levels of implementation including a capacity building program; and iv) monitor and report on the implementation of environmental and social risk management tools. It will also prepare a Labor Management Procedure and a Security Risk Management Plan. Specific subproject E&S risk management instruments and plans (e.g. ESMPs) will be prepared during project implementation (prior to commencement of sub-project activities) following the requirements of the overall ESF and guidance provided in ESMF. The ESMF will also identify the operations and maintenance arrangement for the mini grids supported under the Project. ESMF will be used as basis to deal with the potential direct/indirect EHS impacts/risks associated with the use of energy generated by the project in schools, health care facilities, public buildings, and enterprises/farmers (operational phase

As private sector will be engaged in the operation of isolated grids, the private sector activities shall be implemented in compliance with OP 4.03. Each private sector will be required to establish an ESMS following OP 4.03. Hence, performance standards shall be applicable for the private sector. These requirements shall be reflected in the contract to be signed between the private sector and the MoED. The Ministry shall provide periodic oversight on the functionality of the private sector's ESMS. The capacity of the private sector to develop and maintain effective environmental and social systems and procedures for assessing, managing, and monitoring risks and will be assessed prior to engaging the private sector. An Environmental and Social Management System will be put in place and documented. Thus, Ministry of Energy and Dams will prepare a term of reference (TOR) for the ESMS prior to appraisal and will immediately continue to develop and submit an ESMS for the Bank approval prior to commencement of project activities related to private sector during implementation phase. In order to manage the private sector engagement on operation of isolated grids will prepare an ESMS prior to sub project commencement. For this purpose MoED will prepare a ToR for the ESMS prior to appraisal. Participating private sectors should adopt the ESMS; develop and maintain organizational capacity and competency for implementing the ESMS with clearly defined roles and responsibilities as per the requirements in the ESF and resources necessary to support such implementation.

Technical assistance and capacity building support activities (such as technical assistance to the MoED on approaches the government can take to encourage private sector investment and participation in the off-grid and mini-gird market)will be undertaken in compliance with Bank Advisory Note on Technical Assistance and the ESF. If any technical activity would involve detail design and feasibility, an environmental and social assessment will be conducted proportionate to the anticipated risks of the technical assistance or TORs will be prepared for the feasibility/design studies that ensure that relevant environmental and social issues are taken into account in conducting the studies in a manner that is consistent with the ESF. The requirements set out in paragraphs 14-18 of ESS1 will be applied to technical assistance activities as relevant and appropriate to the nature of the risks and impacts. The terms of reference, work plans or other documents defining the scope and outputs of technical assistance activities will be drafted so that the advice and other support provided is consistent with ESSs 1-10.

Under Component 1- Isolated grids development and densification, given the possible need for land acquisition and/or physical or economic displacement as well as restrict access to and use of natural resources, a Resettlement Framework (RF) will be prepared, in consideration of the requirements of ESS5 and national legal frameworks taking gender issues into consideration, and where necessary Resettlement Plans will be prepared prior to starting Project activities on the ground. MoED shall prepare a Social Assessment which will set measures and actions to address the risks of exclusion or discrimination towards the disadvantaged or vulnerable individuals or groups including the historically underserved communities /SSAHUTLC/ in the context of South Sudan and in accordance with the



requirements of the ESS1 and ESS7. The SA that will include Security Risk Assessment and Management Plan (SRAMP) that will be developed by MoED prior to appraisal. The SRAMP will outline the Project’s approach to address the pertinent security risks in the project sites. This includes approaches to security risk assessments and categorization, security provisions for different types of workers and communities (on a large spectrum from prevention to response), institutional cooperation with security actors in the region (local, national, international, WB), decision making processes, and according documentation.

Furthermore relevant E&S standards, WBG EHS Guideline and sector specific EHS guidelines for Electric Transmission and Distribution, Health Care Facilities, Geothermal Power Generation, Wind Energy and other and other relevant WB guidance notes will be applied. For the preparation of the master plan in the energy sector, the client can rely on the SESA which was conducted in 2016 for the energy sector with some updates.

Areas where “Use of Borrower Framework” is being considered:

None

ESS10 Stakeholder Engagement and Information Disclosure

The objective of the stakeholder engagement is to incorporate views from all stakeholders through meaningful consultations and feedback to improve the environmental and social sustainability of the project, enhance its acceptance, and make a significant contribution to successful project design and implementation. The project will require inputs from different stakeholder groups, including those who will be directly affected as well as those who have other interests in the project interventions. The Ministry of Energy and Dams (MoED), South Sudan Electricity Corporation (SSEC), Juba Electricity Distribution Company (JEDCO), the sole electricity service provider in the capital Juba, as a joint venture/public-private partnership (PPP) between MoED and Ezra Construction and Development Group Company Ltd. are among the key stakeholders to be listed for this Project. On the other hand, the private sector in the off-grid market, civil society organizations, communities, etc. extends the list of stakeholders under SSEA Project. The mapping of stakeholders, respective interest, roles and responsibilities will be defined and updated before appraisal.

In consultation with the Bank team, a Stakeholder Engagement Plan (SEP) will be developed (before appraisal) with specific provisions for the different project components. The SEP will outline the characteristics and interests of the relevant stakeholder groups and timing and methods of engagement throughout the life of the project. The project will ensure that the needs and voices of vulnerable people (female-headed households, elderly, youth, people with disabilities) are heard through inclusive consultation and participation to ensure that they can equally participate and benefit from the project. The project will also ensure that respective provisions on gender equality and the mitigation of gender-based violence in the energy sector will be implemented; to avoid potential adverse impacts but also to ensure strong participation of women in the development of the country’s energy sector. The social assessment that will be prepared by the client will identify the project risks and impacts in relation with vulnerable groups, people with disabilities, service barrier to women and will include mitigation measures to tackle the identified risks.

The client will seek stakeholder feedback and opportunities for proposed future engagement, ensuring that all consultations are inclusive and accessible (both in format, language and location) and through channels that are suitable in the local context. The Project implementing entities are required to engage in meaningful consultations with all stakeholders throughout the project life cycle.



As a key focus of the project is to ensure that vulnerable groups including indigenous/ underserved people can access project benefits, the stakeholder engagement process shall ensure that their views are incorporated in project design and implementation, and that risks particularly affecting women and girls are adequately assessed and mitigated. For the underserved communities meeting ESS7 criteria, the project will ensure that any specific engagement requirements for their participation are provided in the SEP

The project will identify various individuals or groups who i) are affected or likely to be affected (directly or indirectly) by the project (“affected parties”), or ii) may have an interest in the project (“other interested parties”). The SEP will ensure that beneficiaries and affected communities will be engaged, especially regarding electrification options, design and location. It will also consider the differential needs and participation requirements of men, women and those more likely to be excluded from participation due to their circumstances as the project location would be remote and difficult to access. Due to the likelihood of project’s footprint at historically underserved and vulnerable communities in the country, any specific engagement requirements for their participation will be provided in the SEP.

The SEP includes a robust GRM with provisions for IP/SSAHUTLC, refugees/returnees, and survivors of SEA/SH. Specific assessments of a feasible approach on SEA/SH shall be developed as part of the Gender and SEA/SH assessment. Grievance mechanism (GRM) will be developed to provide an avenue for complaints regarding with project activities. The GRM would include mobile-phone based applications, and in-person centers for complaint registration and resolution, and a free hot line linked with a call center.

B.2. Specific Risks and Impacts

A brief description of the potential environmental and social risks and impacts relevant to the Project.

ESS2 Labor and Working Conditions

ESS2 in the project is relevant for the project due to direct and contracted workers employed or engaged by the Project implementing agencies, and primary supply workers for the activities under Component 2- standalone solar systems for social institutions.. The Project will have Construction workers who will be contracted, for the anticipated civil works (mainly for Component 1- isolated grids development and densification) and technicians for the installation and maintenance of the solar panels and mini grids (Component 2). Whereas primary supply workers will be recruited and engaged by the contracted company for the supply of construction materials and equipment, etc. However, community workers are not expected to engage in this project.

These workers may be exposed to occupational health risks during construction, maintenance, and operation activities. The client will prepare labor management procedures (LMP) proportional to the activities, risks and impacts which provide detailed information on the work terms and conditions including explicit prohibition of child labor. Differentiated provisions will be provided to the different workers under the project, i.e. civil servants, specific PIU staff, Contractors staff and consultants, and others. Finally, the LMP will also outline the establishment and availability throughout the project life cycle of labor-specific grievance redress mechanisms accessible to the different range of workers. To ensure health and safety of workers during the construction and operational phases of the project, a Occupational Health and Safety (OHS plan in line with Good International Industry Practice (GIIP) will be prepared as part of the CESMPs, with general guidance provided as part of ESMF.



The plan will include procedures on incident investigation and reporting, recording, and reporting of non-conformity, emergency preparedness and response procedures, and continuous training and awareness to workers. Besides, the project will need to develop and implement written labor-management procedures (LMP) that will set out how project workers will be managed including a code of conduct to mitigate GBV related risks and promote safe workplace behavior. Occupational Health and Safety (OHS) measures will be applicable to all project workers. Construction activities as well as installation and maintenance of off-grid solar materials can expose workers to different occupational accidents. Activities under densification and installation of transformers could also have health and safety impacts. Collection and recycling practices lack basic precaution measures to prevent the emission of lead and battery acid to the workspace and the environment. This causes severe and potentially life-threatening health risks for workers and the communities surrounding such operations. Hence, due attention will be given to training of workers on OHS risks and awareness to minimize the risks.

The OHS risk mitigation measures which will be described in the LMP shall cover: (a) identification of potential hazards to project workers; (b) provision of preventive and protective measures, including elimination of hazardous conditions or substances; (c) training of project workers and maintenance of training records; (d) documentation and reporting of occupational accidents, diseases and incidents; (e) emergency prevention and preparedness and response arrangements to emergency situations; and (f) remedies for adverse impacts such as occupational injuries, disability and disease. Contractors will be required to prepare and implement Occupational Health & Safety Plans (OHSP) following the World Bank Group Environment, Health and Safety (EHS) General Guidelines, adopt a code of conduct to all workers and establish worker-specific GRM (accessible for direct and contracted workers) before commencement of the civil works.

Bidding documents shall include budget provisions for all OHS risk management activities as well as other costs associated with labor management (e.g. the operation of a grievance redress mechanism). The Ministry will regularly monitor the contractor's performance in implementing OHS measures. The Ministry's quarterly E&S performance report should include a section on performance on the OHS implementation. The Ministry shall also provide the necessary oversight on the adequacy of the private sector's ESMS to ensure compliance with ESS2 including management of OHS risks.

ESS3 Resource Efficiency and Pollution Prevention and Management

ESS3 is relevant as improper disposal of batteries can cause pollution including air, soil, and water contamination. The batteries which will be used in solar power system may include nickel cadmium and lead acid batteries that can have adverse environmental and health impacts if not properly transported, stored, and disassembled/recycled because of the chemicals and heavy metals. Leachate generated on landfills of PV solar panels could cause water/ground pollution.

Potential environmental risks that can also result from the use of back up diesel generators. Gensets (diesel generators) can contribute to air pollution during operation and may account for water/ground pollution from fuel spill overs during transportation and storage. Other pollutants include packaging materials of PV panels, battery banks, etc. Small scale soil erosion and sedimentation may result from civil works of mini grids which among others include the construction of a powerhouse for the storage of the battery banks, genset, battery inverters and



combiner boxes as well as during erection of distribution network poles. These construction activities can contribute to environmental pollution such as air, solid, and liquid waste including construction waste, and water pollution. Localized air quality pollution could result from operating machinery (i.e., fumes) and dust generation from earthworks. The wooden utility poles are treated with pesticide preservatives to protect against insects, bacteria, and fungi, and to prevent rot. The preservatives commonly used for power poles are oil-based pesticides such as creosote, pentachlorophenol and chromnated copper arsenate. While in use, poles may leach preservatives into soils and groundwater, however, levels are highest directly beside poles and decrease to within normal levels at approximately 30 centimeters (cm) distance from the pole. The most significant potential environmental impacts occur at specialized wood treatment facilities if not managed appropriately. Pesticide use, if any, should be established through Integrated Pest Management (IPM) strategy. It is also essential to evaluate benefit of using alternative pole materials (e.g. steel, concrete, and fiberglass). Sulphur hexafluoride which may be used to insulate high-voltage circuit breakers, switches, and other equipment used in the distribution network is a potent greenhouse gas and can also cause health problems (lung damage) if workers are exposed to SF6 decomposition gas during routine maintenance. Sediment and erosion from construction activities and storm water runoff may increase turbidity of surface watercourses.

Though there are project activities that utilize energy for construction the project is not anticipated to cause significant energy. However, further screening and assessment shall be conducted during preparation of the ESMF and the ESMF will address how potential ESS 3 impacts/risks will be managed associated with the use of energy generated by the project (e.g., in schools, hospitals, public buildings, enterprises/farms). Pollution risk management and resource efficiency measures shall be covered in the ESMF. Site specific ESMPs will also adequately cover pollution prevention and management measures. The Project activities will also be implemented in compliance with the requirements of IFC's Environmental, Health, and Safety Guidelines for Electric Power Transmission and Distribution so that potential risks could be minimized. Similarly, the project technical assistance studies/activities will properly include ESS3 considerations. The MoED shall provide the necessary oversight on the adequacy of the private sector's ESMS to ensure compliance with ESS3 including resource efficiency and pollution management activities.

ESS4 Community Health and Safety

ESS4 is relevant as the project activities could cause various community health and safety risks. The majority of the unskilled workers will be sourced from the community members in the project site and a few required skilled workers from outside of the project area. The project is not anticipated to contribute to a significant labor influx in the project sites, as the project scope is limited and implemented throughout the country it is expected that the attractiveness of the project by outside labour sources will be much less than the absorptive capacity of the anticipated project implementation target area. However, potential community health and safety risks in the project sites are related to an increase in crime, prostitution, gender-based violence (GBV), and sexual exploitation. Also, the project could contribute to potential structural safety risks such as electric shocks during installation and connections, The transportation of materials and machinery may lead to increase in traffic congestion and road accidents. Accidental fire may be caused by trees falling on distribution network cables, improperly stored/handled fuel and overheating of battery banks. Generators, vehicles, and construction machineries activities can cause an increase in the noise levels which can affect the communities residing near the project sites. To address these risks, the ESMF will cover among others traffic and road safety management requirements and emergency procedure for accidental fire in addition to fire risk mitigation measures. Detail risk mitigation measures shall be prepared as part of the site specific ESMPs.



MoED will evaluate the risks and impacts of the Project components on the health, safety and security of the affected communities that are living in the Project affected areas during construction and operation, including impacts during the operation of the Project on participating education and health centers. These would include adverse social impacts such as labor influx and associated impacts of Gender-Based Violence (GBV), sexual exploitation and the transmission of communicable diseases such as HIV/AIDS and COVID 19 on local communities. Implementing entities participating in grid development under Component 1 and companies that will involve in standalone solar systems installation for Component 2, will actively collaborate and consult with communities in promoting the understanding, and methods for, the implementation of community health and safety, including HIV and communicable diseases prevention, and informing communities about the requirements of workers' codes of conduct. Contractors will also provide project workers with training on respectful relations with communities, including on health and safety practices. While the civil works to be financed are limited in scale and scope, to ensure the health and safety of communities during the construction and operation phases of the project.

The ESMF will also assess exposure of communities to construction stage related traffic, road accidents, and health and safety issues. Further, all works, and operations will be planned, designed and implemented to comply with the WBG EHS guidelines. MoWD/ SSES, (including other subprojects' implementers will evaluate the risks and impacts of the project activities on the health and safety of persons in the project areas. As part of Component 2, the installation of Standalone Solar Systems in schools and health institutions, can disrupt regular functions of the institutions through impacts such as dust emission, noise, and increased generation of solid waste. The potential risks and mitigation measures for impacts on beneficiaries will be analyzed in the ESMF and will be further detailed in subproject specific ESIA/ESMPs. To address potential risks associated with the security personnel to be hired by contractors, the ESMF will include mitigation measures in compliance with ESS1 and ESS4. The MoED shall provide the necessary oversight on the adequacy of the private sector's ESMS to ensure compliance with ESS4.

Pervasive incidence of SEA/SH in South Sudan is a significant contextual challenge. Assessment of project SEA/SH will be conducted and a commensurate action plan for the identified potential risks will be developed. Given the context of pervasive SEA/SH, the project will adopt a robust approach to address potential GBV risks; including site-specific assessments of the availability of referral systems and its establishment if insufficient. Relevant mitigation measures to address these risks (e.g., integrating Codes of Conduct with SEA/SH related protections into community consultations and mapping activities to identify potential service providers, and establishment of GRM with procedures and channels to enable safe, confidential and ethical reporting of SEA/SH incidents) will be established in the SEA/SH action plan to be prepared as part of the ESMF preferably prior to Project appraisal.

The project will include capacity building and training of relevant stakeholders including government partners, contractors and project workers; risks will be monitored throughout project implementation through regular re-assessment with the risk screening tool, particularly as new project locations are determined, and through regular monitoring engagement.

Ensuring security for project operations (including the protection of project workers, beneficiaries and affected persons) will be a challenge during implementation. To reduce and mitigate the potential security risks, the client will conduct security risk assessment and based on the findings of the assessment, and Security Management Plan will be prepared which can be annexed in the project ESMF preferably before project appraisal.



ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

The project is not expected require significant land acquisition and resettlement. However, some of the activities under Component 1 such as isolated grids development and densification along with their low-voltage distribution networks may require some private or communal land. At this point, no details are available; and the extent of land acquisition and the impacts thereof (on local people / communities) are not known. Hence, framework approach will be adopted. Accordingly, the client will prepare a Resettlement Framework (RF) which will consulted upon and disclosed by appraisal in accordance with the requirements of ESS5 and South Sudan land expropriation legislatives. The RF will establish how site-specific Resettlement Plans (RPs) will be prepared, disclosed, and implemented, to mitigate and compensate potential risks and impacts associated with land acquisition, restrictions on land use and involuntary resettlement upon project affected persons, households, or community groups. For the private sector engagement on operation of isolated grids, resettlement related Site-specific impacts will be governed by the procedures which will be stated in the ESMS. Thus, MoED will make sure that this is integrated in the ToR which will be developed prior to appraisal.

ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources

ESS6 is relevant as the project activities can have various potential risks to biodiversity and habitats. Right-of-way and land required for mini-grid construction activities may affect habitats and vegetation. Construction of solar mini-grids and solar home systems might affect critical natural habitats, in some ways. The ESMF will screen out subproject sites deemed to cause risks/impacts to areas of high biodiversity values, critical or sensitive natural habitats within project areas, protected areas, and endemic flora and fauna including protected animal or plant species. Wooden utility poles may be used for the distribution purpose which can lead to cutting of considerable number of trees. Fuel and oil leakages (during transportation and storage) from the project activities can affect wildlife and ecosystems. Accidental fire, if any, may have adverse impacts on flora and fauna. The distribution poles can pose potentially fatal risk to birds and bats through collisions and electrocutions. Power distribution lines may require construction of corridors crossing aquatic habitats that may disrupt watercourses and wetlands and require the removal of riparian vegetation.

Further assessment on potential risks of the project activities on biodiversity shall be conducted during preparation of the ESMF and subproject site specific ESMPs will also adequately cover risk management measures for biodiversity and habitats as needed. Besides, IFC's Environmental, Health, and Safety Guidelines for Electric Power Transmission and Distribution shall be used as basis for management of potential risks to biodiversity and habitats. Similarly, the project technical assistance studies/activities will properly include ESS6 considerations. The MoED shall provide the necessary oversight on the adequacy of the private sector's ESMS to ensure compliance with ESS6.

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

The majority of people in the country meet the requirements of ESS7 including many of the ethnic groups in South Sudan as well as in the project area and excluding only recent immigrants from other countries. The project design and implementation process of the proposed project therefore embeds its basic principles. Respective planning elements will be included in the project design. The project through SEP will identify the needs and priorities of all communities and include them in the project design. Further, the findings of the SA will be integrated into the project



ESMF. The Project will build in an iterative social/conflict monitoring throughout the project period to see how the project activities interact with the local dynamics, so that the project activities/approach can be adjusted in real-time.

The project design and implementation should consider the cultural appropriateness, affordability of technologies, maintenance (after service) alternatives, that may not be catered due to remoteness, and so on. The delivery of the project activities may require assessment of affordability of the household level technologies in the South Sudanese context, including those Historically Underserved Traditional Local Communities and vulnerable groups.

Selection of project components/ subprojects that would otherwise result in significant adverse impacts on land or natural resources traditionally owned or used by under-served/Indigenous communities, relocation, or impacts on these cultural heritages, will not be eligible for financing.

ESS8 Cultural Heritage

The potential risks of project activities to tangible and intangible cultural heritage shall be assessed as part of the ESMF. In other words, the project , through community consultation, shall identify tangible and intangible heritages, if any, and management procedures will be outlined in the site specific management plans. as relevant. Besides, Chance Find Procedures shall be adopted for precautionary reasons for infrastructure investments to address unknown archeological or historical remains and objects and procedure will clearly be described in the ESMF.

ESS9 Financial Intermediaries

FI will not be engaged in this project

C. Legal Operational Policies that Apply

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

III. WORLD BANK ENVIRONMENTAL AND SOCIAL DUE DILIGENCE

A. Is a common approach being considered? No

Financing Partners

None

B. Proposed Measures, Actions and Timing (Borrower’s commitments)

Actions to be completed prior to Bank Board Approval:

Actions to be completed prior to appraisal include preparation of:

Public Disclosure



1. Environmental and Social Management Framework (including GBV risk assessment and GBV/SEA/SH Prevention and Response Action Plan, Labor Management procedure)
2. Social Assessment (will include Security Risk Assessment and Management Plan (SRAMP)).
3. Environmental and Social Commitment Plan
4. Stakeholders Engagement Plan
5. Resettlement Framework
6. A ToR for the ESMS for the private sector

Possible issues to be addressed in the Borrower Environmental and Social Commitment Plan (ESCP):

Establishing a functioning E&S risk management implementation arrangement including deployment of qualified staff; implementation of the Project activities in compliance with the applicable Environmental and Social Standards; Preparation of an ESMS for the subcomponent engages private sector; Preparation of site specific environmental and social risk management tools following the requirements of the ESMF; allocating budget for environmental and social risk management activities; compliance monitoring and reporting; E&S capacity development

C. Timing

Tentative target date for preparing the Appraisal Stage ESRS 30-Sept-2022

IV. CONTACT POINTS

World Bank

Contact: Kenta Usui Title: Senior Energy Specialist

Telephone No: +1-202-473-9736 Email: kusui@worldbank.org

Contact: David Loew Title: Senior Energy Economist

Telephone No: 5220+82199 Email: dloew@worldbank.org

Borrower/Client/Recipient

Borrower: The Republic of South Sudan

Implementing Agency(ies)

Implementing Agency: Ministry of Energy and Dams

V. FOR MORE INFORMATION CONTACT

Public Disclosure



The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 473-1000
Web: <http://www.worldbank.org/projects>

VI. APPROVAL

Task Team Leader(s):	David Loew, Kenta Usui
Practice Manager (ENR/Social)	Iain G. Shuker Recommended on 13-Aug-2022 at 12:31:32 GMT-04:00
Safeguards Advisor ESSA	Peter Leonard (SAESSA) Cleared on 15-Sept-2022 at 16:17:28 GMT-04:00