



Appraisal Environmental and Social Review Summary

Appraisal Stage

(ESRS Appraisal Stage)

Date Prepared/Updated: 03/30/2021 | Report No: ESRSA00680



BASIC INFORMATION

A. Basic Project Data

Country	Region	Project ID	Parent Project ID (if any)
Tanzania	AFRICA EAST	P169561	
Project Name	Zanzibar Energy Sector Transformation and Access Project		
Practice Area (Lead)	Financing Instrument	Estimated Appraisal Date	Estimated Board Date
Energy & Extractives	Investment Project Financing	3/31/2021	4/28/2021
Borrower(s)	Implementing Agency(ies)		
United Republic of Tanzania	Ministry of Water and Energy of Zanzibar, Zanzibar Electricity Corporation (ZECO)		

Proposed Development Objective

The Project development objective is to expand access to reliable and efficient electricity services and to scale up renewable energy generation in Zanzibar.

Financing (in USD Million)	Amount
Total Project Cost	152.00

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 proposed project supports the Revolutionary Government of Zanzibar (RGoZ) to expand the access to reliable electricity service and to scale up renewable energy generation in Zanzibar, through the following three components.

Component 1: Renewable Energy and Storage Infrastructure. This component will finance the preparation, implementation, and operation of a solar park with a 10-15MW solar PV plant and a stand-alone Battery Energy Storage System (BESS). The solar PV plant will pilot utility-scale renewable energy development in Zanzibar, and the



BESS will provide supply to the grid during the evening peak period and support the integration and operation of variable renewable energy (VRE) generation. In addition, this component will support the technical design and supervision consultancy for the Solar PV plant and BESS. The consultancy will undertake feasibility studies, associated E&S studies, develop procurement documents, and supervise the construction.

Component 2: Grid Modernization and Access Scale-up. This component will finance (i) construction of the 132kV north-south transmission line and associated substations at Makunduchi, Welezo, and Matemwe; (ii) strengthening the distribution network and access scale-up, including refurbishment and reconfiguration of the 33 and 11 kV infrastructure, and grid extension and intensification, including associated last-mile household connections across Zanzibar, (iii) the design, supply and installation of the Supervision, Control and Data Acquisition (SCADA)/Energy Management System (EMS) system for the Zanzibar power system, and (iv) compensation payments to project affected persons (PAPs).

Component 3: Sector Institutional Strengthening and Project Implementation Support. This component will support the strengthening of sector institutions to improve planning frameworks and operational efficiency in the supply of electricity services in Zanzibar, including the implementation of the renewable energy generation program. The component will finance technical assistance to ZECO, MoWE, and ZURA, including relevant technical skills strengthening. This component will also support energy efficiency development and gender mainstreaming in the Zanzibar energy sector.

D. Environmental and Social Overview

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

The proposed project is located on Unguja Island which is part of the Zanzibar Archipelago in the Indian Ocean. Zanzibar is a semi-autonomous region of Tanzania. It consists of two main islands - Unguja (the larger of the two - covers an area of 1,666 km²) and Pemba (covers an area of 988 km²) as well as 50 other small islets 30 kilometers east of the mainland coastline of Tanzania. Total population is estimated at 1.3 million for both islands. Over 40% of the inhabitants live in urban areas. The majority of Zanzibar population depends on farming for their livelihood and almost half the population lives below the poverty line. The project's physical investments will be located in Unguja. Unguja island is 85 kilometers long (north-south) and 30 kilometers wide (east-west) at its widest, with an overall area of about 1,666 square kilometers. The topography of Unguja Island is generally flat but with a central ridge running from north to south and the highest point is at Masingini about 120m above sea level.

The Integrated Biodiversity Tool (IBAT) employed to screen areas of significance in and near the island indicates presence of vulnerable and endangered species such as birds and bats that can be affected by electricity lines as well as the presence of endangered corals and fish. Overall, the island has a very important mangrove areas and endemic species, hence a high biodiversity index.

Under Component 1, the location, sizing, and configuration of the Solar PV plant will be finalized once the project design and scope are completed. The proposed solar PV plant is expected to be developed on one of the three sites already identified and owned by RGoZ – Makunduchi, Bambi, and Matemwe. The latest technical analysis indicates that the proposed solar plant will likely be located on Makunduchi. The site is on a flat area with an altitude of 30 meters above the mean sea level. The Makunduchi site comprises of 8,500 hectares of land, hence can accommodate



the proposed Solar PV plant with a footprint of approximately 10-20 hectares. The proposed sites are government-owned and managed by Ministry of Lands, have coral soil and are not actively used for any economic activity. The site is sporadically covered in vegetation and is informally used for grazing cattle and planting of seasonal crops by nearby households.

Under Component 2, the project will finance approximately 93.4km of 132kV double circuit transmission line from Matemwe to Makunduchi. The proposed route follows part (8.1km) of the existing ROW of transmission line, passes inhabited areas, and traverses grassland, shrubs and trees, rice pads, sugarcane plantations, etc. The latest feasibility study shows that the newly proposed route will not pass through the Jozani National Park, a conservation area, which is a habitat for endemic monkeys known as Zanzibar Red Colobus. As such, this newly proposed route will avoid disturbance to the National Park. Physical activities under Component 2.2 will include those in or around Stone Town a UNESCO World Heritage site.

Under Component 3. Sector Institutional Strengthening and Project Implementation Support the project will finance technical assistance activities for Zanzibar including relevant technical skills strengthening.

D. 2. Borrower's Institutional Capacity

Project preparation has been led by focal points at ZECO and at the Ministry of Finance and Planning (MoFP) where capacity is low. ZECO has experience working with development partners but this is the first World Bank-financed project that they have prepared. The MoFP has experience working on World Bank-financed projects but they have no experience working on the Environmental and Social Framework. Institutional capacity during project preparation was limited and preparation activities were carried out by consultants with guidance provided by World Bank staff. The counterparts' familiarity with the World Bank Environmental and Social Framework (ESF) increased during project preparation due to intensive hands-on support and cross-learning from other projects, but it continues to be modest. More training and hands-on learning is required.

The project will be implemented through two Project Implementing Units (PIUs), one at ZECO and the other at the Ministry of Water and Energy (MoWE). The ZECO-PIU will implement Components 1, 2, and Component 3.1. The MoWE -PIU will implement Components 3.2, 3.3 and 3.4. The MoWE has not been involved in the environmental and social risks aspects of project preparation. In addition, the ministry has recently been restructured following the 2020 General Elections (it was previously the Ministry of Land, Housing, Water and Energy). Given the recent changes in institutional arrangements, the exposure of MoWE to environmental and social risk management is unknown and will need to be understood during project appraisal. In-depth discussions on the project's environmental and social risk management approach will also be needed.

Capacity strengthening for implementation is built into the project. On staffing, the MoWE-PIU will recruit a full-time Environmental and Social Safeguards Specialist. The ZECO-PIU will recruit an Environmental Specialist, a Social Specialist, and an Occupational Health and Safety Specialist (all full-time). In addition, it will assign two existing communications staff to work on the project part-time to support stakeholder engagement activities. The communications staff have extensive experience working with ZECO customers, local communities, local authorities, and relevant government agencies. The recruitment of the above-mentioned specialists will be based on Terms of Reference acceptable to the Bank.



On training, significant institutional, technical and manpower capacity building training and on-the-job training for the PIUs at ZECO and MoWE will be required. Training during the first quarter after effectiveness for relevant staff, including the Overall Project Coordinator, the MoWE Project Coordinator, the ZECO Project Manager, and the ZECO Assistant Project Manager is built into the project. This will include training on key topics, such as stakeholder engagement, labor and working conditions, environmental management, occupational health and safety, gender-based violence, protection of cultural heritage sites, resettlement, and grievance management. Training, which will be done at least every six months, will also be provided to other key actors such as local authorities involved in mitigation measures. The training will be organized in a manner that minimizes transmission of communicable diseases, including COVID-19, in line with national and World Bank guidelines.

To address additional capacity needs and promote long-term capacity building, the project will recruit an environmental and social consultancy firm to, among other things, assess and build environmental and social management capacity of both PIUs and other relevant sector agencies as necessary. The capacity building will include training and providing recommendations on possible systems to be adopted to improve monitoring and enforcement. The firm will provide support to the PIUs for a period of 2-3 years.

The environmental and social consultancy firm will also provide support in the preparation of tools such as templates for codes of conduct, the GBV Action Plan. They will also review the site-specific instruments. Preparation of the site-specific instruments for the 33kV and 11kV works will be prepared by design firms. The preparation of the RAP for the 132kV line will be undertaken by a separate firm which will be recruited by project effectiveness.

The implementation of large works contracts, such as the 132-kV transmission line, will be supplemented by the hiring of a supervision consultant (firm), to undertake day-to-day monitoring and reporting, including of environmental and social standard compliance.

Oversight of the project’s compliance with national environmental regulations is the responsibility of Zanzibar Environmental Management Agency (ZEMA). ZEMA reviews Environmental Impact Assessments (EIAs) and issues EIA certification and ensures ahead of project implementation and monitors compliance. ZEMA’s capacity in assessing and monitoring social risks, including involuntary resettlement, is weak. Formally, there is only one sociologist/social development specialist staff, who is currently engaged in an external assignment. Lack of necessary equipment and transportation precludes the staff from regularly monitoring environmental and social risks and compliance of various projects implemented in Zanzibar.

Public Disclosure

II. SUMMARY OF ENVIRONMENTAL AND SOCIAL (ES) RISKS AND IMPACTS

A. Environmental and Social Risk Classification (ESRC)

Substantial

Environmental Risk Rating

Substantial

The environmental risk classification of the Project is Substantial because of the following consideration: (i) the implementing agency (ZECO) has weak capacity to oversee the environmental risks of the project; (ii) the construction of 100km 132kV transmission infrastructure (Component 2) is close to sensitive sites (e.g. mangrove trees); (iii) the modernization/replacement of 11kV obsolete and dysfunctional network equipment (Component 2) is around or pass



through stone town, which likely cause impacts on the Stone Town, an important cultural heritage site; and (iv) the construction and operation of transmission and distribution infrastructure, and the solar plant will pose occupational health and safety risks for workers and local communities.

Social Risk Rating

Substantial

The social risk rating is classified as substantial due to low institutional, technical and manpower capacity to identify, manage and mitigate project related social risks and impacts, in particular workplace sexual harassment and other gender-based violence, labor and working conditions, especially in relation to supervision of contractor violations of labor laws, worker grievances, occupational health and safety, community health and safety related to the expected labor influx of workers for the project, and impacts related to land acquisition. While there are some capacity strengthening measures built into the project, the lack of institutional familiarity with World Bank requirements, and the existing manpower, institutional, and technical constraints at ZECO and MoWE pose a risk to the appropriate implementation of social mitigation measures in a manner consistent with the ESF.

Overall risks range from moderate to substantial in nature. Key risks include: (i) impacts to tangible cultural heritage under the works in sub-component 2.2; (ii) labor risks (lack of contractor/subcontractor compliance with national labor laws on wages, hours of work, and other terms and conditions of employment; gender-based violence, transmission of HIV/STDs and social tensions arising out of the labor influx of unskilled workers from mainland Tanzania); (iii) non-compliance with resettlement instruments; (iv) exclusion from consultation processes for vulnerable groups; and (v) elite capture of consultation processes.

These risks apply to the project activities, as noted, and also to the solar park.

Lastly, COVID-19 may continue to play a role in limiting stakeholder engagement through face-to-face gatherings. Virtual options are limited due to poor connectivity on Unguja. It is difficult at this point to determine the continued duration of the COVID-19 threat and related constraints.

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:

Assessment and management of environmental and social risks and impacts will be required for the proposed activities: Component 1: Enabling support for solar PV plant and BESS development with private sector participation; Component 2 Grid modernization and access scale-up; and Component 3 Sector Institutional Strengthening and Project Implementation Support. The Bank’s due diligence responsibilities included: (a) reviewing the ESF framework documents and an ESIA for solar PV plants conducted in 2016, preliminary feasibility study reports, and providing the client with technical comments; and (b) providing guidance to assist the client in conducting alternative analysis, and developing appropriate mitigation measures consistent with the mitigation hierarchy to address environmental and social risks and impacts in accordance with the ESSs.

(i) Component 1: The solar PV plant is funded as part of the project. Environmental Assessment for the solar PV plants, which are proposed in Makunduchi, Bambi, and Matemwe, was conducted in 2016 under EU funding. The



ESIA shows that (a) the proposed solar PV plants will cause construction impacts (e.g. noise, dust, wastewater, waste, occupation health and safety). During operation, the solar power plants are envisaged as positive on climate and reduction of greenhouse gas emission. But the solar plants will likely also bring about health and safety risks due to electrical fire hazards, visual impacts on landscape, impacts on resident and migratory of wildlife, and the disposal of electronic waste (e.g. batteries and panels). The ESIA concludes that the proposed solar plants are beneficial undertaking, and the identified impacts can be managed through the proposed mitigation measures.

The ESIA report for the solar plant(s) will be updated and disclosed after the proposed site (likely one of the three sites: Makunduchi) have been determined during project implementation. Land use related risks are assessed to include impacts to informal and seasonal uses of land related to the Solar PV Plant.

(ii) Component 2: The client is preparing an ESIA for the 132 kv transmission line and substation. The preliminary ESIA shows that the investment will bring about positive social benefits and impacts(e.g. increased power reliability and supply, economy improvement, creation of job opportunities). But the construction of transmission and distribution infrastructure will likely involve clearing of vegetation, bring about construction impacts (e.g. impacts on flora and fauna, traffic management, construction waste, disturbance to local communities), visual impacts on surrounding landscape, occupation health and safety risks (working at height). During operation, the transmission infrastructure and upgraded distribution infrastructure will help significantly reduce technical losses, improve supply efficiency and reliability. But the transmission and distribution infrastructure may pose potentially fatal risk to birds through collisions and electrocutions. The operation of these infrastructure may have occupation and health impacts/risks on workers and local communities. The nature and magnitude of the impacts and risks is being assessed by ESIA, which is expected to be submitted to the Bank for review prior to project effectiveness. Other project activities under Component 1 and 2, such as BESS and 33kv reconfiguration works will have limited or minor impacts. ESIA and/or ESMPs will be prepared for other activities in accordance with the requirements specified in ESMF.

(iii) Technical Assistance: Component 1 and 3 support technical assistance activities which include, among others, Technical assistance for renewable energy development (Component 1.3); formulation of an Energy Efficiency Master Plan and Roadmap, support the development of necessary regulatory framework, a diagnostic study focusing on feasibility of energy improvement in water pumping and distribution (Subcomponent 3.3) and Closing the gender gap in Zanzibar energy sector (Subcomponent 3.4). These technical assistance activities may have potential direct or indirect environmental and social impacts when implemented. All technical assistance and transaction advisory services supported under the project will be consistent with the World Bank Environmental and Social Standards. The TORs to be prepared for these technical assistance activities will be in line with World Bank E&S Standards. Potential impacts/risks will be addressed in accordance with the ESMF and the World Bank Interim Guidelines on the Application of Safeguard Policies to Technical Assistance (TA) Activities in Bank-Financed Projects and Trust Funds Administered by the Bank (January 2014), which requests, among others, (i) TORs for Strategic Environmental and Social analysis (SESA) if required; and (ii) TORs for technical studies in which environmental and social consideration to be fully incorporated.

Mitigation and management of these risks and impacts will be managed under (i) ESS1 through the Environmental and Social Impact Assessment (ESIA) and associated ESMPs, (ii) ESS3 on Resource Efficiency and Pollution Prevention



and (iii) ESS4 on Community Health and Safety through the Health and Safety Management Plan and Traffic Management Plan. Construction contractors will be required, as a condition of their contracts, to implement/comply with the ESMP, include preparing construction management plans consistent with site specific management plans provided in the ESMP.

Key social risks and impacts are related to the following: (i) labor: workplace accidents and injuries and related occupational health and safety hazards, gender-based violence, including workplace sexual harassment, child labor, forced labor, lack of employer compliance with national labor laws, and discrimination against women and persons with disabilities in recruitment and employment; (ii) community health and safety, including gender-based violence, in particular sexual exploitation and abuse of community members and transmission of communicable diseases including HIV/STDs and COVID-19, rise in social tensions and security problems in relation to project-related labor influx; (iii) involuntary land acquisition and economic displacement (temporary and permanent) resulting from the civil works; and (iv) stakeholder engagement where risks of exclusion of vulnerable individuals exist and elite capture (due to the reliance on use of local authorities to facilitate consultations) is a possibility in light of experience in other projects.

Mitigation measures are: (i) under ESS2 a draft Labor Management Procedure (LMP) has been prepared and will be disclosed at appraisal; (ii) under ESS4 a GBV Action Plan will be prepared early in project implementation; (iii) under ESS5 a project-wide Resettlement Policy Framework (RPF) has been prepared and the project will start to prepare a Resettlement Action Plan (RAP) for subcomponent 2.1 no later than two months after project effectiveness; (iv) under ESS8 a Heritage Impact Assessment will be prepared as part of the ESIA for Component 2.2 prior to the preparation of the bidding documents; and (v) under ESS10 a Stakeholder Engagement Plan has been prepared. The project design also includes the recruitment of an NGO to support monitoring of social impacts.

ESS10 Stakeholder Engagement and Information Disclosure

Stakeholder engagement during project preparation (December 2019 – March 2020) has included community members, local authorities (Shehia), government agencies, and nongovernmental organizations. Consultations started early in project preparation and focused on project design, risks and impacts. Consultations were carried out in a culturally appropriate manner. At the community level local authorities were used as interlocutors and consultations were carried out in Kiswahili.

Focus group discussions with some vulnerable individuals were held in January and February 2020. These included women, the elderly, and disabled. Inclusion of women in consultations was adequate but more attention needs to be paid during implementation to ensure voices of women's groups and female community members are heard and taken into consideration.

In March 2020, consultative meetings with NGOs were conducted, including Jozani Environmental Conservation Association (JECA); Pete Community Conservation Committee; Jozani Community Conservation Committee; and Umoja wa Wenye Mashamba Jozani (UWEMAJO). The organizations were identified based on initial stakeholder mapping. Due to COVID-19, safe practices for consultations were observed and consultations consisted of one-on-one



phone calls and face-to-face conversations. The objectives of the consultative meetings were to introduce the project, understand stakeholders' concerns and expectations related to the project, and receive feedback and opinions from stakeholders. During the presentation and discussions Kiswahili language was used throughout.

Consultations with Development Partners have also been undertaken (November 2019 and May 2020). Here, project information was shared, as well as the approach to environmental and social risk management. Development Partners expressed their support for the proposed project and reiterated their commitment to supporting Zanzibar in the transition of the energy sector. In addition, ZECO and MoFP identified additional support needed from the DPs.

Additional opportunities for consultation on the draft environmental and social assessment documents after disclosure will be needed, but will need to be taken with care to avoid risks related to COVID-19. The draft ESIA for the 132kV line was subject to consultations with local leaders and government institutions and agencies. Consultations targeting the affected communities were undertaken in January 2021.

The project has prepared a Stakeholder Engagement Plan (SEP) for the project which documents preparation-stage consultations and details an approach for implementation-stage engagement. The SEP identifies a range of stakeholders and differentiated approaches to engaging those stakeholders. It identifies individuals vulnerable to exclusion as those registered as poor with the local social services, women-headed households, elder-headed households (over 70) without any other household member bringing in income, households headed by disabled people, and women and girls. The SEP identifies ways in which they can be included in consultations. No ethnic or religious minorities were identified in the project areas. The Grievance Redress Mechanism detailed in the SEP aligns with ESS10 requirements but will need regular review to ensure that it is operational throughout project implementation.

The project has included sufficient staffing for implementation of the SEP. A full-time social specialist will be recruited and two part-time communications staff will be assigned from ZECO. The MoWE-PIU will include a safeguards specialist. Capacity building will be important during implementation to ensure that the social specialist and the communications staff gain a practical understanding of ESS10 requirements on consultation and grievance management which vary from current practice.

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

Anticipated key labor risks and impacts are mainly associated with the planned construction and rehabilitation works, and during the operation and maintenance phases under Components 1 and 2. Based on prior operational experience in Zanzibar and elsewhere in Tanzania, there are risks of employers failing to pay workers on time and of violating other legal requirements relating to benefits and related terms and conditions of employment, as well as provision of adequate Personal Protective Equipment (PPE). ZECO has stated that contractors/subcontractors will be required to consult with Sheha (ward leaders) in the recruitment of candidates from the local communities for the



project's unskilled labor force and that candidates from local communities will be given priority in hiring for unskilled labor positions. In circumstances where Sheha or other local leaders are involved in identifying such candidates, the ZECO PIU/MoWE PIU will be responsible for ensuring that the contractors/subcontractors have measures in place to guide and coordinate recruitment with the Sheha to ensure that the recruitment of candidates is clear, transparent and non-discriminatory. Given the prevalence of child labor in Zanzibar and Tanzania generally, there is also a risk of child labor in relation to primary suppliers of gravel and other construction materials and goods and services for the project. (U.S. Department of State Country Reports on Human Rights Practices, Country Report on Tanzania 2019; and U.S. Department of Labor Findings on the Worst Forms of Child Labor, Tanzania, 2018.) Given the anticipated scope of civil works, there may be a need to attract labor from outside of Zanzibar, principally from mainland Tanzania, to fill the approximately 70 -80 expected unskilled labor positions. It is anticipated that the labor influx will necessitate the establishment of one or more work camps to accommodate project workers. There will be a need to maintain the safety, hygiene, health, access to food, accommodation, and supervision of these camps. A more accurate assessment of labor needs for the project will be determined once the final design and scope of the different works activities/different subcomponent activities are finalized. Labor Management Procedures (LMP) in line with ESS2 has been prepared and will be disclosed at appraisal. Depending on project circumstances, the ZECO-PIU and MoFP-PIU may also need to prepare a Labor Influx Management Plan (LIMP), a Security Management Plan (SMP) in line with ESS4 and national law requirements, and a Health, Safety and Environmental (HSE) plan in line with Good International Industry Practice (GIIP) to ensure health and safety of workers, as well as the local communities, during the construction, operational and maintenance phases of the project. Drafts of the LIP, SMP and HSE, which are expected to be finalized within 3 months of project effectiveness, will be included as chapters in the ESMF, along with requirements for further development during implementation. The project will develop and implement a worker grievance mechanism (WGM) in line with ESS2 for all persons directly employed/engaged by the project to raise workplace concerns and will ensure that all contractors/subcontractors develop and implement a WGM in line with ESS2 for their workforces, prior to implementation of project activities. Occupational health and safety monitoring programs will form part of the HSE plan where records of occupational accidents and diseases and dangerous occurrences and accidents are maintained through the project life cycle. The project will ensure compliance with national law requirements as well as World Bank guidelines regarding the COVID-19 situation, in particular "ESF/Safeguards Interim Note: COVID-19 Considerations in Construction/Civil Works Projects".

The project will cause occupational health and safety issues during the construction, operation and maintenance phases. Occupational health and safety hazards specific to electric power transmission and distribution projects primarily include, among others; (i) workers may be exposed to occupational hazards from contact with live power lines during construction, maintenance, and operation activities; (ii) working at height; and (iii) electric and magnetic fields; and iv) the possibility of eye, skin and respiratory injuries if optical fiber cables are used. These impacts and risks, among others, will be assessed in EISA after the investment details are determined during project implementation.

Unsafe operation and maintenance of BESS may cause fire hazard. Under the project the technical design consultant for the BESS will be required to clearly outline preventative operation, maintenance and reporting procedures to mitigate risks and avoid incidents. These procedures will be incorporated in the installation and operation manual for the BESS. Further, as a part of the procurement process, it would be required for the supplier to enlist all safety related risks and how these will be mitigated through different design measures. The O&M of the BESS will initially (at



least for a 2-3 year period) be contracted out to a specialist firm (possibly the supplier itself) with capacity building built-in for subsequent operation by ZECO.

ESS3 Resource Efficiency and Pollution Prevention and Management

Solar has positive impacts of energy saving and pollution reduction related to energy use since the solar energy reduce reliance on fossil fuels. Both Component 1 and 2 results in GHG emissions reduction. Under the first component, the GHG emissions savings are estimated based on energy displaced by the solar PV and the BESS Under the second component, the GHG emissions savings are from the reduction in technical losses and unserved energy. Overall, there will be a net GHG emission reduction of 1,553,722.54 tCOR2Re over the economic life of the project. In addition, the project will increase access to electricity to the communities in Unguja Island, and reduce the pollution from existing diesel/petrol generators, and improve air quality in the project influence area.

The refurbishment works under Component 2 will involve replacement of the existing equipment (e.g. transformers, circular breakers). Based on the information provided by ZECO, the equipment to be replaced does not contain PCB contaminated oil. Tanzania has signed the Stockholm Convention and prepared an inventory of PCB equipment, through the National PCB Committee. The equipment to be replaced will be stored in warehouses for reuse in rural electrification expansion works(for equipment that is still serviceable) or disposed of as waste.

The disposal of solar products and spent BESS battery at the end of their life span, which are defined as e-wastes, can cause pollution posing environmental and health risks (e.g. soil and groundwater pollution due to possible leakage of toxins from broken panels.) if not properly managed. A waste management plan will be developed as part of EA document (to be developed as per ESMF). The e-wastes may be collected and sent to approved/accredited dealers/manufacturers for reuse in the factory as source of industrial raw materials. Alternatively, the e-wastes may be collected in separate bins and sent to an approved landfill in Unguja where they will be handed over for recycling or disposal in an environmentally sound and safe manner that includes the appropriate control of residues resulting from the handling and processing of the e-waste in accordance with ESS3.

Transformers and other capacitors at the substations may release sulfur hexafluoride (SF6) gas, and oil spill/leakage may come from these equipment during operation phase. Though the impacts are not likely to be significant, regular inspection and good maintenance of equipment, and timely replacement of aging equipment will be required in the ESIA.

Construction will need sources materials (e.g. gravel, water, sand), and cause general construction impacts (e.g. noise, vibration, dust, waste, wastewater and disturbance). Water will be used to clean the panels during the dry season. The project will consider making arrangements for water supply that are independent from the public utility in order to avoid exerting additional pressure on such services. The project impacts/risks will be analyzed by ESIA and mitigated by site specific ESMP in accordance with national laws and regulations, ESSs, and the WB EHS Guidelines on power transmission and distribution.

ESS4 Community Health and Safety



Construction activities may pose potential safety concerns for the inhabitants within the vicinity of works especially when construction is carried out near a village/community. Measures should be put in place to ensure relevant codes of conduct are prepared and enforced. The SEP includes a Grievance Redress Mechanism.

Transport of solar panels, equipment for transmission/distribution may use existing roads including village and districts roads, state and national highways which could hinder movement of traffic. In some cases, temporary closure of roads may be required to facilitate transport activities. This disruption in movement would cause inconvenience to the local communities, as access would be interrupted temporarily. Traffic management plans will be put in place to address these inconveniences. Changes in baseline environmental conditions may be experienced by the local communities in terms of increased nuisance levels from emission of dust, contamination of surface water or ground water from soil erosion and runoff, and noise from construction activities. During the construction phase, the communities may be exposed to construction vehicles and potential construction site and material handling related accidents. The communities may also be exposed to structural safety issues in event of structural failure for towers/poles or cases where unauthorized persons are interested in climbing the structures.

Contractors will be required to certify that all staff engaged on the project, including subcontractors, have completed training on safety/conduct prior to work commencement. Moreover, a Health, Safety and Security (HSS) plan, which would be a separate plan from any Security Management Plan that the project may develop and implement, may need to be prepared to ensure health, safety and security of the local communities, during the construction, operational and maintenance phases of the project.

Furthermore, electricity usage is expected to be a new experience for many people in the project area. It is therefore expected to pose some safety risks to the new users that should be addressed through outreach awareness campaigns and sensitization on the safe use of electricity. The ESMP and other safeguard documents will fully describe the need for conducting meeting to all villagers to explain on safety and proper use of electricity as well as form a permanent team to provide training to the villagers (customers) on ways of safe use of electricity, as this will be part of the contract documents with the intended customers. For all construction, it will be stipulated in the ESMP that the contractor installs a security system around the project sites (fences, security guards) during the entire construction period.

The risks of project-related GBV in light of the labor influx will be assessed with relevant measures articulated in a GBV Action Plan which will be prepared by the environmental and social consultancy firm no later than 6 months after effectiveness. The expected labor influx from mainland Tanzania could create considerable social and economic problems for project affected communities. These risks and impacts could include increased rates of crime, and social conflict and violence, increases in traffic accidents, increased pressure on local accommodation and rents, increased transmission of HIV/STDS, as well as increases in gender-based violence, in particular sexual exploitation, including trafficking in persons for sex work. While project contractors/subcontractors will be responsible for establishing and maintaining these workcamps, the ZECO-PIU and MoWE-PIU will be responsible for their supervision and ensuring that these camps comply with national law and the provisions of ESS2 and ESS4. ZECO's technical, manpower and institutional capacity constraints present a real risk in relation to ensuring adequate supervision and remediation of problems that might arise regarding these camps and the labor influx. Where necessary, additional measures will be integrated into the LMP, the GRM, and the ESMF/ESMPs. The project will ensure compliance with national law



requirements as well as World Bank guidelines regarding the COVID-19 situation, including in relation to workers who are part of the labor influx.

ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

Under Component 2 works are expected to result in impacts on assets and physical and/or economic displacement. Land acquisition will be required, for example, the construction of the substations, and in some cases restrictions of land use will be imposed due to easements. As all the sites for works were not known prior to project appraisal, a Resettlement Policy Framework (RPF) was prepared during project preparation.

Component 2.1 (132kV North-South Transmission Infrastructure) will result in impacts on assets, physical displacement, and economic displacement. The project area was defined during project preparation under a feasibility study financed by the Arab Bank for Economic Development in Africa (BADEA). An Environmental and Social Impact Assessment is underway.

The line will run from Welezo to Ubago (approximately 10km) where it will divide into two routes. The northern route will run from Ubago to Matemwe (approximately 36km). The southern route will run from Ubago to Makunduchi (approximately 48km). The route from Welezo to Ubago will use an existing Right of Way for a 33kV line that was acquired in 2012 by ZECO. The Bank has been informed that there are no pending grievances related to the acquisition of land in 2012. Impacts related to ESS5 are expected including impacts to structures (approximately 100 estimated in the draft ESIA) and crops.

A Resettlement Action Plan (RAP) will be prepared early in project implementation by a consulting firm. ZECO is planning to recruit the firm by effectiveness and the preparation of the RAP may start prior to project approval. Given existing capacity constraints, this approach would need to be buttressed by measures to ensure that the Terms of Reference and firm capacity are adequate. In addition, there will need to be close monitoring of the preparation process to ensure that it is in line with ESS5.

Component 2.2 (Distribution network extension, strengthening, modernization and access scale-up) is expected to result in impacts ranging from potentially minor (for medium/low voltage lines in sparsely populated areas) and may be moderate if land for substations is required. The exact sites of all the works are not known at this time. Both physical and economic displacement may occur, as well as temporary and permanent impacts. Once exact sites and impacts are known Resettlement Action Plans should be prepared as needed in line with the RPF.

The RPF provides guidance on application of ESS5 with attention to vulnerable individuals and the gendered impacts of involuntary land acquisition at individual/household levels. One of the sites under consideration for the Solar PV plant is a government-owned plot at Makunduchi. The Bank’s review of the site revealed informal use—cattle grazing and farming of seasonal crops—by individuals with no claims to the land.



ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources

In line with a brief IBAT assessment, data indicates presence of vulnerable and endangered species including birds and bats that can be affected by electricity lines as well as the presence of endemic species (e.g. cattle egret, white-broad coucal) .

Under component 2, The proposed 132kv route follows part of the existing ROW of transmission line, pass inhabited areas, and traverse grasslands, shrubs and trees, rice pads, sugarcane plantations, etc. Most of the transmission line wayleave are within the areas where the natural environment has already been disturbed or modified by human activities. Some vegetation and trees will be cleared for the construction of transmission line and erection of the towers. During operation, trees and vegetation which affect safe operation of transmission line will be trimmed. But vegetation and trees will not be affected as long as they are not overgrown to jeopardize the safety of the transmission line.

The originally proposed route for 132kV north-south transmission infrastructure was passing through Jozani National Park which is the only National Park in Zanzibar and host to endemic Monkeys known as Zanzibar Red Colobus. This could lead to disturbance to the monkeys and other species of importance within the National Park. However, this route option has been rejected after alternative analysis. The now recommended route option, which is minimum 600 meters away from the officially protected boundaries of the National Park, would avoid disturbance to the national park.

About 300m (in length) of the 132 kV transmission line will cross over a mangrove area at Pete Inlet Bay. To avoid potential impacts on the mangrove trees, a 350m long extended height fly-span will be designed to cross over the mangroves area. Two 50 meter high transmission towers will be installed to prevent mangrove trees being cut or cleared since fully grown mangrove trees range between 8-10m in height in the area.

There are no submarine cable installations expected, so no major impact on corals and maritime fauna and flora should occur under the project. But the transmission and distribution infrastructure may pose potentially fatal risk to birds through collisions and electrocutions. To mitigate potential impacts and risks, the design for the overhead transmission lines will ensure that transmission lines to have a minimum separation distance between phases, and the design of the towers will discourage birds resting or nesting on the critical parts of the towers. The impacts and mitigation measures will be specified in the ESIA. The ESIA for the 132 KV transmission line is under preparation, and is expected to be sent to the Bank for review prior to project effectiveness, but may be delayed due to COVID-19 travel restrictions. Bird and bat study will be carried out during project implementation to complement ESIA. Relevant mitigation measures will be incorporated into technical design and the bidding document for civil works.

Under Component 1, based on the ESIA conducted in 2016 and the field visit, the vegetation of the proposed solar PV plant site is disturbed due to overgrazing and shifting cultivation that lead to poor regeneration of plants . During the site visit, some cows were observed grazing in close vicinity of the potential project site. Construction activities will include excavation, movement of machinery and increased movement of people, which might also likely cause



disturbance to the flora and fauna habitats within the vicinity of the Solar plant footings and the project sites sub-stations because of the deposition of dust and noise generated from the construction activities. Gravel for concrete and natural stones for construction will likely be sourced at the project area as per the ESIA done in 2016. The ESIA for the solar plant will be updated in accordance with the final project design and the World Bank ESSs. Further analysis on the application of ESS6 will be carried out during the site specific assessment of impacts and risks, and measures to mitigate will be recommended in the ESMPs.

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

This standard is not relevant as there are no groups that fall under the definition of the ESS7 in Zanzibar.

ESS8 Cultural Heritage

Zanzibar is a UNESCO World Heritage site with numerous structures that have significant historical and cultural significance. The project (e.g. Component 2) may cause risks and impacts to cultural heritage sites. Especially the rehabilitation/refurbishment of the 11kV distribution equipment (Component 2.2) that will be carried out around Stone Town, a historic town with cultural and artistic importance. Construction (e.g. excavation for laying underground cables) may have impacts on nearby buildings. After the details of project activities are known during project implementation, the impacts of these project activities will be assessed in accordance with relevant national regulations and the World Bank Environmental and Social Framework. Relevant mitigation measures (including modification of the footprint of the project) will need to be proposed during the ESIA process when detail design and locations of investments are known. Based on the consultation, mitigation measures may include (i) the design (e.g. depth of excavation) should be submitted to relevant stakeholders (e.g. Stone Town Conservation and Development Authority for comments; (ii) excavation of trenches should be accompanied with immediate backfilling to protect nearby buildings, and rehabilitation activities should be done during dry seasons; and (iii) construction during off-peak tourist season to limit safety concerns, and effect on tourism.

Chance find procedures will also be included in the subsequent ESMPs. The heritage impact assessment report and the proposed mitigation measures will be sent to the Stone Town Conservation Authority for approval and UNESCO for no objection to fulfill procedural requirements for approval.

The draft ESIA shows that about 15 household graves need to be relocated due to the construction of 132kv transmission line. Cultural heritage objectives may be identified during construction phase (e.g. RoW clearance, excavations of foundations). To address this issues, chance finds procedure will be specified in the ESIA's.

ESS9 Financial Intermediaries

The project will not involve any financial intermediaries.



C. Legal Operational Policies that Apply

OP 7.50 Projects on International Waterways No

OP 7.60 Projects in Disputed Areas No

B.3. Reliance on Borrower’s policy, legal and institutional framework, relevant to the Project risks and impacts

Is this project being prepared for use of Borrower Framework? No

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

The operation will not rely upon the Borrower’s E&S Framework. However, the project will also comply with Tanzania E&S, ESIA, Labour, Occupational Health and Safety, legal and regulatory requirements.

Public Disclosure

IV. CONTACT POINTS

World Bank

Contact:	Kabir Malik	Title:	Senior Economist
Telephone No:	+1-202-458-2618	Email:	kmalik@worldbank.org
Contact:	Mbuso Gwafila	Title:	Senior Energy Specialist
Telephone No:	5355+3714	Email:	mgwafila@worldbank.org

Borrower/Client/Recipient

Borrower: United Republic of Tanzania

Implementing Agency(ies)

Implementing Agency: Ministry of Water and Energy of Zanzibar

Implementing Agency: Zanzibar Electricity Corporation (ZECO)

V. FOR MORE INFORMATION CONTACT



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): Kabir Malik, Mbuso Gwafila

Practice Manager (ENR/Social) Helene Monika Carlsson Rex Cleared on 08-Feb-2021 at 22:56:39 GMT-05:00