

# ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

## INTRODUCTION

Zanzibar Electricity Corporation (ZECO) is a state owned utility firm responsible for power generation, transmission transformation and distribution and sales service of electricity in the Zanzibar Archipelago. The firm was incorporated in 2006 as the successor of the State Fuel and Power Corporation and is wholly owned by the Revolutionary Government of Zanzibar.

Zanzibar energy sector faces various challenges but not limited to; frequent power outage; substantial evening peak which is twofold the mid-day peak; old infrastructures; high connection charges and arrears. These constrain Zanzibar's growth potential as they have been contributing to poverty and isolation of rural populations, and affecting provision of other key services, such as clean water supply, health and education. In order to address the existing challenges, The Revolutionary Government of Zanzibar (RGoZ) through the Ministry of Water, Energy and Minerals (MoWEM) and Zanzibar Electricity Corporation (ZECO) has initiated the project- Zanzibar Energy Sector Transformation and Access (ZESTAA), to be supported by the World Bank under Investment Project Financing (IPF) instrument. The IPF has been selected as it is considered to be an effective instrument for a client whose implementation capacity is deemed weak and will be implementing a Bank financed project for the first time. Further assessments will be carried out during project preparation to determine the type of technical assistance and capacity building needed to enable effective and timely implementation of the proposed project.

The project development objective is to expand access to reliable and clean electricity services and to create an enabling environment for publicly financed scale sector participation in the Zanzibar electricity sector. The proposed project has three components to be implemented within six years from 2020/21 to 2025/2026 financial year. Three main components of the project include:

- (i) Renewable Energy and Storage Infrastructure Development;
- (ii) Grid Modernization and Access Scale-up;
- (iii) Sector Institutional Strengthening and Project Implementation Support.

The proposed project will address the key priorities in Zanzibar's power sector. These include:

- (i) the impending capacity constraint on the power imported from mainland Tanzania by supporting hard and soft infrastructure investments aimed at enabling renewable energy (RE) independent power producers (IPPs) to invest in the sector, including BESS;
- (ii) addressing the poor supply quality and reliability of the existing electricity network, and low electricity access rate through investments in transmission/distribution network strengthening and extension; and
- (iii) sector capacity challenges by providing technical assistance and capacity building support to strengthen sector governance and operational effectiveness.

This component will finance 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 support the grid by providing supply needed to meet the evening peak and integrate VRE onto the island grid. In addition, this component will also support the technical design and supervision consultancy for the Solar PV and BESS. The consultancy will undertake feasibility studies, associated E&S studies, develop procurement documents, and supervise the construction. The ESMF provides guidelines/ screening procedures and the level of assessment of environmental and social impacts for each project component to meet National and World Bank's requirements such as Environmental and Social Impact Assessments (ESIAs) and Environmental and Social Management Plans (ESMPs).

## **1.2 Objective of the ESMF**

The main objective of the ESMF is to establish Environmental and Social Screening procedures for identifying, assessing and mitigate potential environmental and social impacts of the subprojects. The screening process will determine whether environmental and social impact assessment for project component is required or not. The ESMF therefore will guide the level of assessments of environmental and social impacts of the project component according to Zanzibar Environmental Management Act (2015)

The specific objectives of ESMF are;

- i. To create procedures for environmental and social screening, planning, review, approval and implementation of project components
- ii. To stipulate roles and responsibilities and reporting procedures for managing and monitoring environmental and social concerns for project components
- iii. To identify training, capacity building and technical assistance needed for implementation of the ESMF
- iv. To describe institutional arrangement for managing environmental and social impacts
- v. To assess which world Bank environmental and Social Standards are applicable to activities of the project components
- vi. To ensure all adverse environmental and social impacts from the project activities are minimized

## **1.3 Rationale of the ESMF**

The Zanzibar Electricity Sector Transformation and Access (ZESTAA) project will be implemented in all three regions of Zanzibar, covering only four out seven districts. Risks and impacts of the proposed project cannot be determined until subprojects details in terms of exact location and design have been identified. In this situation Environmental and Social Management Framework (ESMF) is the right instrument contrary to Environmental and Social Impact Assessment (ESIA) which require project details in terms of location and design.

The ESMF determines the level of assessment required to project component and provides procedures for environmental and social impacts assessment. It sets out the principles, rules, guidelines and procedures to assess the environmental and social risks and impacts. It contains

measures and plans to reduce, mitigate, and /or offset adverse risks and impacts, provisions for estimating and budgeting the costs of such measure, capacity of the agency to manage environmental and social risks and impacts. It includes adequate information on the area in which subproject are expected to be sited, including environmental and social vulnerabilities of the area, and on the potential impacts that may occur and mitigation measures that might be expected to be used.

## **MFUMO WA KUDHIBITI ATHARI ZA KIMAZINGIRA NA KIJAMII (ESMF)**

### **Utangulizi**

Sekta ya Nishati ya Zanzibar inakabiliwa na changamoto mbali mbali zikiwemo kukatika kwa umeme mara kwa mara, kuongezeka kwa matumizi wakati wa jioni ambapo yanakua kwa mara mbili ya matumizi ya mchana, miundombinu ya zamani, malipo makubwa ya uunganishaji umeme na malimbikizo ya madeni. Changamoto hizi zinakwaza maendeleo ya Zanzibar kwani zimekuwa zikichangia umaskini na kutengwa kwa wakaazi wa vijijini, na kuathiri utoaji wa huduma nyingine muhimu, kama vile maji safi, afya na elimu. Ili kukabiliana na changamoto zilizopo, Serikali ya Mapinduzi ya Zanzibar (SMZ) kupitia Shirika la Umeme la Zanzibar (ZECO) imeanzisha mradi huu wa kufanyia mabadiliko na ufikiaji wa malengo ya Sekta ya Nishati ya Zanzibar (ZESTA), na kuungwa mkono na Benki ya Dunia chini ya kitengo chake cha Uwezeshaji wa Miradi (IPF). IPF ni kitengo ambacho kinasaidia nchi changa na ambazo zinaonekana utoaji wake wa huduma ni dhaifu kuweza kutekeleza miradi inayofadhiliwa na Benki ya dunia kwa mara ya kwanza. Tathmini zaidi itafanywa wakati wa kuandaa mradi ili kubaini aina ya msaada wa kiufundi na namna ya kuwajengea uwezo wataalamu ili kuwezesha utekelezaji mzuri na kwa wakati kwa mradi uliopendekezwa.

Lengo la maendeleo la mradi huu ni kuongeza kasi ya upatikanaji wa umeme wa uhakika ndani ya Zanzibar. Mradi uliopendekezwa una sehemu tatu za kutekelezwa ndani ya miaka mitano , mwaka wa fedha 2020/21 hadi 2025/2026. Sehemu kuu tatu za mradi huu ni pamoja na: (i) Uzalishaji wa umeme kwa kutumia nishati ya jua na uhifadhi wake (BESS); (ii) Usafirishaji wa umeme mkubwa wa mkondo wa kilovolti 132, uimarishaji, ukarabati, udhibiti wa mfumo wa umeme wa kisasa, na upatikanaji wa umeme wa uhakika (iii) Kuziimarisha Taasisi na kuzipa Msaada kwenye Utekelezaji wa Miradi.

Mradi huu utaongeza upatikanaji wa umeme kwa kaya, watumiaji wa kibiashara na viwanda, na taasisi za umma vijijini, pembezoni mwa miji na maeneo ya mjini Unguja. Sehemu kuu tatu za mradi ni pamoja na: (i) Nishati Mbadala na Uendelezaji wa Miundombinu ya Uhifadhi; (ii) Uboreshaji wa Gridi ya Taifa na Kuongeza Upatikanaji; (iii) Kuimarisha Taasisi za Kisekta na Msaada wa Utekelezaji wa Miradi.

### **Mfumo wa Kudhibiti Athari za Kimazingira na Kijamii**

Athari za mazingira na kijamii zinazohusiana na shughuli za mradi zimeweka kulingana na eneo na uhitaji wa njia maalum za kupunguza athari hizo. Takriban athari zote za mazingira zinaweza kudhibitiwa kwa urahisi kupitia mpango maalum wa kuzuia athari hizo ukiamabatana na bajeti maalum, hatua za kudumisha Afya na Usalama kazini .

Udhibiti wa hatari za kiafya na usalama kazini unategemea usimamizi na utekelezaji wa sheria na taratibu. Mikataba yote ya ujenzi lazima ijumuishe mahitaji ya afya na usalama sehemu za kazi na kuwepo kwa ufuatiliaji wa kufuata na kutoa taarifa. Hatari nyingi za kijamii zinaweza kupunguzwa kupitia kutoa elimu juu ya za umeme, ukaguzi wa nyaya, elimu juu ya uhifadhi na usimamizi wa mazingira, na mipango ya kusaidia makundi maalum. Miundo

ya miradi inapaswa kuzingatia maeneo nyeti ya kitamaduni na ya kiibada, kwa mashauriano kamili na ushiriki wa jamii zilizoathiriwa na, ikiwezekana, ziepuke.

### **Malengo ya Mfumo huu**

Lengo kuu la Mpango wa kudhibiti mazingira na jamii ni kuanzisha taratibu za Uchunguzi wa Mazingira na maisha ya jamii kwa kuainisha, kutathmini na kupunguza athari za mazingira na kijamii za miradi. Mchakato huu utaamua ikiwa tathmini ya athari za mazingira na kijamii kwa sehemu ya mradi inahitajika au la. Kwa hivyo ESMF itaainisha kiwango cha tathmini ya athari za mazingira na kijamii za sehemu ya mradi kulingana na Sheria ya Usimamizi wa Mazingira ya Zanzibar (2015)

### **Malengo maalum ya Mpango huu ni;**

- i. Kutengeneza taratibu za uchunguzi wa mazingira na kijamii, mipango, uhakiki, kuidhinishwa na utekelezaji wa vipengele vya mradi
- ii. Kuainisha majukumu, wajibu na taratibu za kuripoti kwa kusimamia na kufuatilia athari za kimazingira na jamii zinazoweza kusababishwa na shughuli za mradi.
- iii. Kuainisha mafunzo, kujenga uwezo na msaada wa kiufundi unaohitajika kwa utekelezaji wa ESMF
- iv. Kuelezea mpangilio wa taasisi kwa kusimamia athari za mazingira na kijamii
- v. Kutathmini ni viwango gani vya Mazingira na Jamii vya Benki ya Dunia vinavyotumika kwa shughuli za sehemu za mradi
- vi. Kuhakikisha athari zote mbaya za mazingira na kijamii zinazotokana na shughuli za mradi zinapunguzwa

### **Umuhimu wa mradi**

Mradi wa Mabadiliko ya Sekta ya Umeme Zanzibar (ZESTA) utatekelezwa katika mikoa yote mitatu ya Zanzibar, ikijumuisha wilaya nne tu kati ya saba. Hatari na athari za mradi uliopendekezwa haziwezi kubainishwa hadi maelezo ya shughuli za mradi kulingana na eneo halisi zitakapoainishwa. Katika hali hii Mfumo wa Usimamizi wa Mazingira na Jamii (ESMF) ni chombo sahihi kinyume na Tathmini ya Athari za Mazingira na Jamii (ESIA) ambayo inahitaji maelezo ya mradi kulingana na eneo na muundo.

ESMF inatoa maelezo juu ya kiwango cha tathmini inayohitajika kwa sehemu ya mradi na hutoa taratibu za tathmini ya athari za mazingira na kijamii. Pia inaweka wazi kanuni, sheria, miongozo na taratibu za kutathmini hatari na athari za mazingira na kijamii. Inajumuisha hatua na mipango ya kupunguza, kutatua hatari na athari, vifungu vya kukadiria na kupanga bajeti kwa kukidhi gharama za hatua hiyo, uwezo wa watendaji kusimamia hatari na athari za mazingira na kijamii. Inajumuisha maelezo ya kutosha juu ya eneo ambalo mradi unatarajiwa kutekelezwa, pamoja na vihatarishi vya mazingira na kijamii kwa eneo hilo, na juu ya athari zinazoweza kutokea na hatua za kupunguza ambazo zinatarajiwa kutumiwa.

Mapendekezo ya mradi yana sehemu kuu tatu ambayo yanamalengo ya kuongeza ufikiwaji wa kuaminika wa huduma ya umeme na kutengeneza mazingira wezeshi wa sekta binafsi kushiriki katika sekta ya umeme ya Zanzibar. Sehemu hizo kuu tatu ni;

**Sehemu ya 1:** Nishati Mbadala na Miundombinu ya Uhifadhi. Sehemu hii itafadhili eneo

la uzalishaji wa umeme kwa kutumia nishati ya hifadhi ya jua yenye uwezo wa Megawati 10-15 za vigae vya jua na Mfumo wa uhifadhi wa Nishati ya Betri (BESS). Utumiaji huo wa nishati ya jua utaleta maendeleo ya matumizi ya nishati mbadala ndani ya Zanzibar na itasaidia gridi kwa kutoa usambazaji unaohitajika kukidhi matumizi makubwa wakati wa jioni na kuunganisha nishati mbadala hiyo kwenye gridi ya kisiwa. Vile vile, sehemu hii itasaidia harakati za kiufundi na ushauri wa matumizi ya nishati mbadala ya jua na usimamizi wa uhifadhi wa Nishati ya jua (BESS). Ushauri utakaotolewa ni pamoja na ufanyaji wa upembuzi yakinifu, mafunzo yanayohusiana na nishati ya jua, tathmini za mazingira na kijamii, kuandaa hati za ununuzi wa vifaa na kusimamia ujenzi.

**Sehemu ya 2:** Uboreshaji wa gridi ya kisasa na kuongeza upatikanaji wa umeme. Sehemu hii itafadhili shughuli kuu zifuatazo:

- (a) Ujenzi wa miundombinu ya usafirishaji wa umeme mkubwa wa mkondo wa kilovolti 132. Hii itasaidia ujenzi wa mkondo wa umeme wa Kaskazini- Kusini wa kilovolti 132 pamoja na vituo vidogo vya usambazaji vya Makunduchi, Welezo na Matemwe. Utayarishaji wa dizaini ya wa miundombinu ya usambazaji wa mkondo wa kilovolti 132 unafanywa na mshauri muelekezi aliyeajiriwa na Shirika la Umeme Zanzibar (ZECO).
- (b) Kuimarisha mtandao wa usambazaji na ugawaji wa umeme. Hii ni pamoja na: (i) ukarabati na uboreshaji wa miundombinu iliyopo ya mikondo ya kilovolti 33/11; (ii) uwekwaji wa vifaa vya kisasa au vifaa vya mabadala vya mkondo wa kilovolti 11 ndani na karibu na Mji Mkongwe; na (iii) kuimarisha na kuongeza mtandao wa uungaji umeme kwa wateja na upunguzaji wa upotevu wa umeme.
- (c) Mfumo wa Udhhibiti na Usimamizi wa Upatikanaji wa Takwimu (SCADA): Sehemu hii itajumuisha ubunifu, upangaji na utumiaji wa mfumo wa SCADA kwa ZECO kwa madhumuni ya kuboresha ufanisi katika shughuli za gridi ya taifa.
- (d) Msaada wa makaazi na malipo ya fidia kwa watu walioathirika na mradi. Malipo ya fidia kwa waathirika wa mradi

**Sehemu ya 3:** Uimarishaji wa Taasisi na Sekta za Nishati pamoja na Msaada wa Utekelezaji wa Mradi. Sehemu hii itasaidia kuimarisha taasisi kwa kuboresha mifumo ya mipango na ufanisi wa utendaji katika usambazaji wa huduma za umeme Zanzibar, ikijumuisha utekelezaji wa mpango wa uzalishaji wa nishati mbadala. Taasisi ambazo zitahusika na mpango wa uimarishaji wa stadi za kiufundi ni Shirika la Umeme Zanzibar (ZECO), Wizara ya Maji, Nishati na Madini, Mamlaka ya Maji (ZAWA) na Mamlaka ya Udhhibiti Maji na Nishati (ZURA). Halikadhalika sehemu hii itasaidia maendeleo ya ufanisi wa nishati na ujumuishaji wa kijinsia katika sekta ya nishati ya Zanzibar.



