

THE UNITED REPUBLIC OF TANZANIA

**PROGRAM FOR RESULTS
RURAL ELECTRIFICATION EXPANSION PROGRAM**

**ENVIRONMENT AND SOCIAL SYSTEMS ASSESSMENT
(ESSA)**

FINAL REPORT

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Acronyms and Abbreviations

AfDB	African Development Bank
BP	Bank Procedure
BRN	Big Results Now Program
CAS	Country Assistance Strategy
CASPR	CAS Progress Report
CIF	Climate Investment Funds
CL	credit line
CP	Core Principle
CSO	Civil Society Organization
DART	Dar es Salaam Rapid Transit Agency
DED	District Executive Director
DLIs	Disbursement-linked Indicators
DFID	Department for International Development
DP	Development Partner
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
EMA	Environment Management Act
EMO	Environmental Management Officer (in District LGAs)
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plans
ESSA	Environmental and Social Systems Assessment
EWURA	Energy and Water Utilities Regulatory Authority
GAC	Governance and Anti-corruption
GDP	Gross Domestic Product
GoT	Government of Tanzania
GPSA	Government Procurement Services Agency
HBS	Household Budget Survey
HSSE	Health, safety, social and environmental
IDA	International Development Association
JICA	Japan International Cooperation Agency
kV	Kilovolt
kVA	kilovolt-ampere
L/C	Letter of Credit
LGAs	Local Government Authorities
LV	low voltage
MKUKUTA	Government National Strategy for Growth and Poverty Reduction
MKURABITA	Mpango wa Kurasimisha Biashara Tanzania (Business Formalization Program of Tanzania)
MOF	Ministry of Finance
MEM	Ministry of Energy and Minerals
MLHHS	Ministry of Lands, Housing, and Human Settlements Development
MV	medium voltage
MW	megawatt

NEMC	National Environment Management Council
OP	Operational Policy
PAP	Project-affected Person
PfoR	Program for Results
PMO-RALG	Prime Minister's Office – Regional Administration and Local Governance
PSMP	Power System Master Plan
RAP	Resettlement Action Plan
RBF	Results-based Financing
REA	Rural Energy Agency
REB	Rural Energy Board
REF	Rural Electrification Fund
RMF	Resettlement Management Framework
RPF	Resettlement Policy Framework
SEP	Stakeholder Engagement Plan
Sida	Swedish International Development Cooperation Agency
SPP	Small Power Producers
SREP	Scaling-up Renewable Energy Program
SWER	Single-wire, earth-return
TANESCO	Tanzania Electric Supply Company Ltd.
TATEDO	Tanzania Traditional Energy Development and Environment Organization
TASONABI	
TEDAP	Tanzania Energy Development and Access Project
TPDC	Tanzania Petroleum Development Cooperation
TREEP	Tanzania Rural Electricity Expansion Program
VPOE	Vice-President's Office – Environment

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Executive Summary

The Program for Results (PforR) operation – *Tanzania Rural Electrification Expansion Program*– is designed to support the Government of Tanzania’s National Rural Electrification Program. The PforR approach innovatively links the disbursement of funds directly to the delivery of defined results and builds on increased reliance on borrower safeguard and oversight systems. The Program Development Objectives of the operation are (i) increase the number of rural electricity connections; and (ii) scale-up renewable electricity generation in rural areas. The Program will support the Government’s rural electrification program and will be implemented by the Rural Energy Agency and the Ministry of Energy and Minerals. Specifically, the Program contains the following components:

- design and construction of MV (33kV and 11kV) and LV lines; installation of MV/LV distribution transformers; procurement and installation of service cables and meters; and the provision of materials for connection of new rural customers;
- continuation of the REA’s successful Off-Grid Electrification Program implemented by small power producers (SPPs) through support for the continuation and expansion of the Credit Line (CL) and establishment of a Payment Security Mechanism (PSM) to address the risk of continued late payments by TANESCO to SPPs (the CL includes a special “window” for solar power, but mini-hydro mostly in the range of 0.5 to 2.0 MW and biomass based on agricultural residues such as rice husks and bagasse are also likely SPP energy sources);
- Strengthening Capacity of the Sector institutions to deliver the National Rural Electrification Program.

In terms of environmental and social management, PforR employs a risk management approach in which process requirements are adapted to the Program context. For each proposed PforR operation, the Bank assesses—at the Program level—the borrower’s authority and organizational capacity to achieve environmental and social objectives against the range of environmental and social impacts that may be associated with the Program. This Environmental and Social Management System Assessment (ESSA) examines Tanzania’s existing legal, regulatory, and institutional framework for environmental and social management systems, defines measures to strengthen the system, and integrates those measures into the overall Program. The ESSA has been undertaken to ensure consistency with six Core Principles outlined in the World Bank’s *Operational Policy 9.00 - Program-for-Results Financing*.¹ This report presents the findings of the ESSA exercise and its recommendations. The ESSA process includes extensive stakeholder consultations and disclosure of the draft ESSA report following the guidelines of the World Bank’s Access to Information Policy. The ESSA consultation process and content are embedded in the Program consultation process.

The ESSA assessed the risks of the Program and concludes that the overall environmental risks are low. In accordance with OP 9.00, no activities likely to have significant adverse impacts on the natural or human environment that are sensitive, diverse, or unprecedented will be supported. Managing mini-hydro impacts requires analysis to determine the characteristics of the ecosystem and the stream hydrology and to assess the need for and decide on the appropriate minimum flow and operating rules. Biomass gasification systems pose explosion and fire risks as well as potential air, water, and soil pollution. Proper solar home system battery disposal requires an acceptable disposal procedure and location. Routine mitigation

¹ Although OP 9.00 was replaced by *Bank Policy: Program-for-Results Financing* on July 10, 2015, this ESSA has been prepared in accordance with the OP because the project’s concept review and a considerable amount of preparation work were conducted prior to that date.

measures, application of good practice, and supervision and enforcement of workplace health and safety rules will be sufficient for other investments.

There is moderate risk related to land acquisition with respect to grid extension, the most significant of which REA's lack of budget and process to restore livelihoods affected by wayleave clearing. The land is acquired by means of voluntary contributions, a process that can be made consistent with Core Principle 4 through (a) well-defined criteria and procedures that will be provided in a land acquisition manual, and (b) attention to restoration of livelihoods affected by loss of assets. In addition, there is a Resettlement Management Framework (RMF) prepared for TEDAP and updated for TREEP that should be the guiding principle for land acquisition that is other than voluntary, e.g., purchased by SPPs.

The key findings of the Environmental and Social Systems Assessment (ESSA) with respect to environmental and social impact assessment and management are that Tanzania has the legislative and regulatory basis and the institutions to ensure consistency with six Core Principles² outlined in the World Bank's Operational Policy 9.00 - Program-for-Results Financing. Implementation is not consistently effective in the areas of environmental and social assessment (ESIA) preparation, review and approval; Environmental and Social Management Plan (ESMP) implementation, field supervision, monitoring and enforcement; and stakeholder consultation. The ESSA includes measures to mitigate the underlying risks, which primarily relate to the lack of personnel for field supervision in REA and TANESCO (the latter supervises grid extension activities on REA's behalf), ESIA consultants who lack experience and skills, and unmet needs for training of Environmental Management Officers in the District Local Government Authorities.

The most significant social findings are that Tanzania has land laws and land acquisition procedures that, if judiciously followed, would result in outcomes generally in line with Core Principle 4, provided additional attention is given to livelihood restoration and to the rights of project-affected people who cannot prove ownership of the land. In practice, acquisition of rights of way for 33-kV and 11-kV distribution lines relies heavily on voluntary contributions of land and land based assets (crops and trees), while it avoids personal and public structures. It has lacked proper documentation of the processes when land was provided voluntarily. In the course of the project preparation, consultations with the project-affected persons have been done in only a general manner. The ESSA includes recommended measures to bring the land acquisition up to national standards, as well as additional steps to meet Core Principle 4. The main thrust of the measures is for REA is to develop systematic procedures to guide its staff in acquiring land and rights of way, using as a resource the Resettlement Policy Framework developed for TEDAP, which can be updated for the subject PforR.

The ESSA also found that Tanzania does not have any laws specifically aimed at protecting the rights of indigenous peoples. However, Tanzania does recognize vulnerable groups as a category of potentially affected people, and various processes such as environmental impact assessments do consider potential impacts on them. The measures identified in the ESSA to achieve the objectives of Core Principle 5 are mainly for REA to develop policy and procedures to ensure that the possible presence of vulnerable groups

² The six Core Principles are: a) Promote environmental and social sustainability in the Program design; avoid, minimize, or mitigate adverse impacts, and promote informed decision-making relating to the Program's environmental and social impacts; b) Avoid, minimize, or mitigate adverse impacts on natural habitats and physical cultural resources resulting from the Program; c) Protect public and worker safety against the potential risks associated with: (i) construction and/or operations of facilities or other operational practices under the Program; (ii) exposure to toxic chemicals, hazardous wastes, and other dangerous materials under the Program; and (iii) reconstruction or rehabilitation of infrastructure located in areas prone to natural hazards; d) Manage land acquisition and loss of access to natural resources in a way that avoids or minimizes displacement, and assist the affected people in improving, or at the minimum restoring, their livelihoods and living standards; e) Give due consideration to the cultural appropriateness of, and equitable access to, Program benefits, giving special attention to the rights and interests of the Indigenous Peoples and to the needs or concerns of vulnerable groups; f) Avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.

is considered when potential investments are appraised and that if any are likely to be affected, the principles of free prior informed consultation are applied.

The ESSA analysis identifies strengths, gaps and opportunities in Tanzania’s environmental and social management system with respect to addressing the environmental and social risks associated with the Program. The analysis identified the following main areas for action in order to ensure that the Program interventions are aligned with the Core Principles 1, 2, 3, 4 and 5 of OP/BP 9.00 applicable to the Program: namely more consistent and reliable implementation of the national impact management system, with special attention to stakeholder consultation during preparation and field supervision during implementation; a more systematic, participatory and transparent procedure for acquisition of land and wayleaves; and procedures to ensure that the special needs of vulnerable groups are taken into account in planning and implementation of rural electrification activities. The gaps identified through the ESSA and subsequent actions to fill those gaps are expected to directly contribute to the Program’s anticipated results by enhancing the environmental and social sustainability of the investments in rural electrification.

The ESSA identifies the key measures to be taken for improved environmental and social due diligence in the Program. These measures are linked closely with the Disbursement-linked Indicators (DLIs) for the PforR operation. The key measures are defined in Table 1 below:

Table 1: Measures to Strengthen System Performance for Environmental and Social Management

Objective	Strengths and Weaknesses	Measures
<p>Elevate the effectiveness of the Tanzanian environmental and social management system to its full potential for the PforR program</p>	<p>Strengths. Legislation, regulations and NEMC procedures are adequate. REA’s two-person environmental/social unit, established for TEDAP, has gained experience with off-grid projects. REA has the Bank-approved TEDAP ESMF, now updated to provide guidance for TREP. Supervision reports and visits to transmission line projects and SPP projects have confirmed that impacts have been low and mitigation measures have been effective.</p> <p>Weaknesses</p> <p><i>System implementation is uneven in some areas, including: (1) ESIA preparation, review and approval, in which problems include sub-standard ESIA’s and processing delays; and (2) insufficient field inspection, monitoring and enforcement, caused by the small size of REA’s environmental and social unit, the lack of TANESCO HSSE staff in the regional and district offices that supervise REA’s grid extension projects, and skills deficiencies among the District LGA Environmental Management Officers</i></p>	<p><i>Strengthen capacity for ESIA preparation, review , and approval through: (a) preparation of a Strategic Environmental and Social Impact Assessment for development of renewable energy in Tanzania; (b) establishing an ESIA consultant qualification system at REA; (c) continuing the training begun under TEDAP for ESIA consultants, implemented by REA and NEMC; (d) having dedicated staff for TREP environmental assessment processing at NEMC; and (e) exploring other options that would streamline processing and reduce costs to SPPs.</i></p> <p><i>Strengthen capacity for monitoring, supervision and enforcement by (a) adding staff and equipment to REA’s environmental and social unit; (b) placing environmental staff in TANESCO’s zonal offices to provide to support district office supervision of REA’s grid-extension projects; (c) continuing the EMO training program begun under TEDAP, conducted by NEMC; and REA preparing an environmental and social procedural manual that includes health and safety as well as environmental and social guidelines.</i></p>

	<p>(EMO).</p> <p><i>ESIA processing delays and costs pose difficulties for small power producers (SPP).</i></p> <p><i>Stakeholder engagement is not fully effective.</i> The official process of public review and comments can be onerous and public hearings are at NEMC's discretion. There is no requirement that ESMPs include a mechanism for handling grievances. Information to and consultation with stakeholders has not been consistent in grid extension activities.</p>	<p><i>Strengthen REA's capacity for informing and consulting with all stakeholders including district and local government</i> through formulation and adoption of a Stakeholder Engagement Plan (SEP) following the detailed guidance in Annex 7 of the TREEP ESMF, and administer training in its application.</p>
<p>Improve implementation capacity for the application of the Tanzanian land laws in a transparent and participatory manner, in keeping with the principle of improving or at least restoring livelihoods</p>	<p>Strengths: strong land laws. The Ministry of Lands, Housing and Human Settlement Development (MLHSD) does follow a step-by-step process for valuation in all projects requiring land acquisition. Participation of Project Affect People (PAPs) is part of the process. At the local level, some LGAs also have land surveyors and valuation officers, who play a role in this process. Traditional and local level grievance mechanisms exist and are accessible to the PAPs. There is a RPF for TEDAP which has been updated for and will provide guidance for TREEP.</p> <p>Weaknesses: in practice, national requirements related to land acquisition as well as stakeholder engagement for acquiring land have not been systematically followed. Inter-sectoral coordination as well as coordination between REA and different tiers of government around environmental and social issues are weak, and budgets including those for compensation are often insufficient. There is a lack of clear mechanisms for livelihood restoration and of criteria for selection of the villages to be connected to the grid.</p> <p>The effectiveness of REA in overseeing land acquisition and in providing guidance at the implementation level is limited due to capacity constraints.</p> <p>Participatory Planning, implementation and monitoring for the acquisition of wayleave, and the processes involved are not always</p>	<p>The ESSA defines the needs for (a) improved and updated technical guidance for better implementation of the existing land laws, (b) greater transparency when land and livelihoods are involved, (c) special care in managing voluntary land contributions, including well-defined and transparent criteria and clear documentation of transactions (REA has some precedent in implementing TEDAP's off-grid component); (d) transparent and well-defined criteria for selection of villages to be connected (e) strong and readily accessible grievance redress mechanism, (f) provisions for community participation; and (g) development of a standard form to be signed with each district involved to ensure the provision of the budget for payments of the bills for the social infrastructure under that district. These needs will be met through preparation of the detailed REA environmental and social procedural manual as well as capacity building for REA. The adaptation of the manual by REA, detailing the above procedures, is an action under this ESSA. The updated TEDAP RPF, now known as the TREEP RMF, provides extensive guidance for implementing these measures. Acquisition of the land needed for off- grid generation (mini-hydro and solar) should follow the principles and procedures in the TREEP RMF.</p> <p>In addition, the ESSA recommends that REA monitor and report annually on its compliance with existing land and compensation laws in wayleave acquisition, and that the monitoring be subject to third party verification.</p>

	transparent and well documented.	
Strengthen procedures to promote equitable allocation of benefits and impacts of rural electrification	<p>Strengths</p> <p>For the ESSA analysis of vulnerable groups focused on: children, persons with disabilities, youths (unemployed, females, youths with unreliable incomes), people living with long illnesses (e.g. HIV/AIDS, TB, etc.), women (female headed households, widows and those not able to support themselves), drug addicts, alcoholics, and disadvantaged communities. The approach of the Government is to ensure that all vulnerable groups are consulted and benefit from Government programs</p> <p>The ESIA process in Tanzania does take into account social issues in screening, impact assessment, and mitigation measures. There is no system in place that defines Indigenous Peoples in Tanzania. Part of NEMC's screening criteria for ESIA's is to assess whether impacts vary by social group or gender, and if resources are impacted that vulnerable groups depend upon. Additionally, there is currently an initiative within NEMC and supported by donors to better mainstream social issues such as gender and HIV/AIDS in the ESIA process.</p> <p>Tanzania also has policies specific to some vulnerable and disadvantaged groups, such as the National Gender Policy and National Policy on HIV/AIDS, in order to prevent discrimination and promote equity. There is also strong guidance for community participatory planning by PMO-RALG through the "Opportunities and Obstacles to Development Handbook", which promotes inclusion of some of the vulnerable groups throughout the planning and implementation process. Such a process is being followed by the Tanzania Social Action Fund (TASAF) to support the poor in participating communities across the country.</p>	<p>REA should include in its policies and its procedural manual measures to ensure equitable treatment of any vulnerable groups that may be affected by its grid-extension activities. This should provide guidance for screening to detect the presence of vulnerable groups, and measures for their consultation and participation so that that project plans and designs take into consideration their needs, priorities, and preferences. The procedural manual should define mechanisms whereby vulnerable groups will be provided with relevant project information in local languages and in form and manner socially acceptable to them. REA's policy should specify that any project planning to acquire land in an area where vulnerable groups are present will undertake free, prior and informed consultation leading to broad community support, and each project will establish a grievance redress mechanism to handle any complaints from project-affected people and allow them to voice their concerns and questions.</p>

	<p>The experience in TEDAP with some vulnerable groups such as women headed households and disabled persons, showed the positive results of taking them into consideration in the processes of resettlement. These positive experiences, along with the TEDAP RPF updated for TREP can inform REA as it develops policy and procedure for vulnerable groups.</p> <p>Weaknesses. Even though some of the vulnerable and disadvantaged groups are covered under above polices and guidance, there is no specific policy for vulnerable groups that might be affected by different projects, including TREP.</p> <p>There are no specific requirements for considering gender and vulnerability in resettlement and compensation processes beyond payment of compensation for lost land. Therefore, there is a risk that in the process of the development, vulnerable groups may be further marginalized, or would not share equitably in benefits.</p> <p>Weak feedback mechanisms for the affected communities to voice their concerns affect progress in the achievement of inclusive consultation, monitoring and outcomes.</p>	
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I. Introduction

1. The Government of Tanzania's Rural Electrification Program is being proposed for financing through the World Bank's Program-for-Results (PforR) financing instrument. The PforR, entitled *Tanzania: Rural Electrification Expansion Program* innovatively links the disbursement of funds directly to the delivery of defined results. The instrument builds on increased reliance on borrower safeguard and oversight systems.

2. The Program Development Objectives (PDO) of the proposed PforR operation are (i) increase the number of rural electricity connections; and (ii) scale-up renewable electricity generation in rural areas. These objectives are fully aligned with the National Energy Policy and the key priorities and specific objectives for energy in the Big Results Now Initiative (BRN). The requested PforR support, aims to support two of the electrification approaches promulgated in the 2014 "National Electrification Program Prospectus".

3. To inform the preparation of the PforR operation the World Bank has conducted an Environmental and Social Management System Assessment (ESSA) of Tanzania's existing environmental and social management system reflected in the national legal, regulatory, and institutional framework that will be used to address environmental and social effects of the activities financed by the PforR operation. The ESSA defines measures to strengthen the system, and proposes to integrate those measures into the overall PforR operation. This report presents the findings of the ESSA exercise. The ESSA was undertaken to ensure consistency with six Core Principles outlined in the guidelines to the World Bank's OP/BP 9.00 Program-for-Results Financing in order to effectively manage Program risks and promote sustainable development.

4. The six Core Principles are:

- a) Promote environmental and social sustainability in the Program design; avoid, minimize, or mitigate adverse impacts, and promote informed decision-making relating to the Program's environmental and social impacts.
- b) Avoid, minimize, or mitigate adverse impacts on natural habitats and physical cultural resources resulting from the Program.
- c) Protect public and worker safety against the potential risks associated with: (i) construction and/or operations of facilities or other operational practices under the Program; (ii) exposure to toxic chemicals, hazardous wastes, and other dangerous materials under the Program; and (iii) reconstruction or rehabilitation of infrastructure located in areas prone to natural hazards.
- d) Manage land acquisition and loss of access to natural resources in a way that avoids or minimizes displacement, and assist the affected people in improving, or at the minimum restoring, their livelihoods and living standards.
- e) Give due consideration to the cultural appropriateness of, and equitable access to, Program benefits, giving special attention to the rights and interests of the Indigenous Peoples and to the needs or concerns of vulnerable groups.
- f) Avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.

5. The ESSA analyzed the environmental and social management system for the Program to assess applicability for each of the Core Principles and ensure consistency with those that apply. The gaps identified through the ESSA and actions recommended to fill those gaps are expected to directly contribute to the Program's anticipated results in the Energy sector. This Report presents an analysis of the existing system vis-à-vis the relevant Core Principles for environmental and social management in

the guidelines to OP/BP 9.00, and presents an Action Plan that will be incorporated into the overall program.

II. Background

2.1 Country Profile

6. Tanzania has an estimated population of about 49.25 million, growing annually at a rate of three percent. It is estimated that the population will increase to 74 million by 2030. At present about 73 percent of the population lives in rural areas, but it is expected that over the next 15 years, Tanzania will go through a period of intensive transformation. The country is expected to increasingly become an urban society with approximately half of its population living in major and secondary cities by 2030. Tanzania's labor force is expected to increase from 20 million in 2014 to close to 45 million by 2030.

7. Macroeconomic reform over the past two decades has brought about monetary and fiscal stability in Tanzania. From 2002 until the present, the country's annual GDP growth rate averaged seven percent, one of the highest rates in Sub Saharan Africa. There has also been some progress in poverty reduction in the recent past. The 2012 National Household Budget Survey estimates the reduction in the poverty rate from 34 percent in 2007 to 28 percent in 2012. However, much remains to be done to achieve further improvement. The new statistics showed that economic growth has trickled down to the poor, including the extreme poor. However, approximately 40% of Tanzania's adult population nevertheless earns less than \$1.25 per day, while nine out of 10 Tanzanians earn less than \$3 per day.

8. The Government of Tanzania (GoT) has outlined its medium term objective of becoming a middle-income country through the National Vision 2025. A key challenge to achieve this vision is to develop a viable infrastructure sector, including significant improvement in energy access, as it is considered central for stimulating local and foreign investment and creating wealth and employment generating opportunities. The lack of access to modern energy services constrains Tanzania's growth potential, contributes to the poverty and isolation of rural populations, and affects provision of other key services, such as clean water supply, health, and education.

9. In this context, the government launched the "Big Results Now" Initiative in 2013. The Initiative focuses government efforts on accelerating delivery of selected priority results in six areas of the economy: -- (i) energy and natural gas; (ii) agriculture; (iii) water; (iv) education; (v) transport; and (vi) mobilization of resources --with a major emphasis on leveraging private sector investment. In the priority area of energy and natural gas, a key focus is to improve reliability and access to power supply by increasing gas-based power generation and increasing access to electricity in rural areas.

2.2 Energy Sector in Tanzania

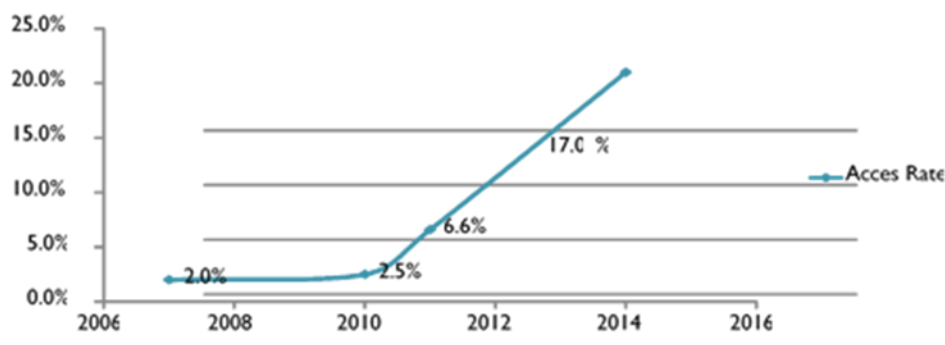
2.2.1 Sector Description

10. In the past several years, Tanzania's electricity access rate has risen dramatically, from 2.5 percent in 2010 to approximately 24 percent in 2014 (Figure 1). While noticeable progress has been achieved in urban and peri-urban areas, the pace of rural electrification lags substantially behind the national average at only seven percent.³ Given the importance of electricity access for reducing

³ The distinction between "access" and "connection" remains somewhat vague in common use in Tanzania, as in many other countries. The REA's present interpretation of the term "access" is as follows: "Access is defined as the

extreme poverty for both urban and rural populations and fostering opportunities for productive economic activities (including agriculture), scaling up access to modern forms of energy is an important component of the GoT’s long-term economic growth plan. The government is targeting to increase the country’s overall electricity connectivity level to 50 percent by 2025 and at least 75 percent by 2033.

Figure 1. Tanzania Electrification Rate



11. The GoT adopted a market oriented National Energy Policy (NEP) in 2003, updated in 2015. The 2015 NEP stresses that lack of access to affordable and reliable electricity presents a major constraint in achieving desired socio-economic transformation in Tanzania. Tanzania’s national electrification program is guided by a National Electrification Program Prospectus (the Prospectus), aimed at supporting the NEP through a defined investment strategy for the period 2013-2022, targeting to considerably advance electrification rates in a cost-efficient way. The Prospectus indicates investments for financing and determines the required institutional, regulatory, and capacity strengthening measures for the implementation of the government’s ambitious electrification targets.

12. The Ministry of Energy and Minerals (MEM) leads the development of the energy sector and takes all necessary measures to organize the industry and create conditions to enable sustainable and efficient performance of the sector. The Ministry is responsible for developing and reviewing government policies related to electricity supply and distribution, including electrification of rural areas.

13. The Rural Energy Act 2005 established the Rural Energy Agency (REA) with the objective of “facilitating the provision of modern energy services in rural areas of Mainland Tanzania.” REA operates under the oversight of the Rural Energy Board (REB).⁴ MEM guides REA on the preparation and update of Rural Electrification Plans (REMPs) as well as on taking measures to promote rural electrification in accordance with the Rural Energy Act 2005. The current REMF, which is under preparation (to be completed in mid-2016), will define specific milestones and prioritize electrification plans for each region.

14. REA finances rural electrification projects using resources from the Rural Electrification Fund (REF). Both the GoT and development partners (DPs) allocate resources to REF. REA, using the REF

total population nearby the locality benefiting from electricity, irrespective of the population being connected to electricity.” The WB’s latest assessment places “access” in Tanzania at 15.3 percent in 2012.

⁴ REB is comprised of eight delegates from different government agencies, the private sector, civil society, and one representative from the development partners, currently represented by the African Development Bank.

resources, supports grid extension in rural areas, private sector small-scale rural power generation projects (both grid and off-grid), and also provides technical assistance, training, and capacity building to private developers for project planning, preparation, and financing. In particular, the REF resources are used to pay for network construction contracts, subsidize the grid connection cost, and provide capital grants to private developers (e.g., to partially offset equipment and construction costs) with the aim of making electricity connections more affordable and attracting private sector investors to deliver modern energy services to rural customers. However, the provision of grants from the REF to cover operating costs or debt service obligations of SPPs is not permitted under the terms of the Rural Energy Act. Though not explicitly mentioned in the Rural Energy Act, an important role of REA is to coordinate electrification initiatives. REA, therefore, serves as a contact point for DPs, private developers, non-governmental organizations, community-based organizations and other stakeholders who intend to implement or support electrification projects.

15. Under the current model for grid extension, REA procures the services of contractors to extend the grid in rural areas. Tanzania's Electric Supply Company (TANESCO), a vertically integrated national utility, assumes the responsibility for contractors' supervision, quality assurance, performance evaluation, and infrastructure commissioning. Once the network is completed, the responsibility for operating and maintaining the system devolves to TANESCO.

16. REA also supports off-grid electrification through two avenues. The first is the promotion of and support to private Small Power Producers (SPPs) who sell electricity either to local communities or to the national grid under a contract with TANESCO, or to both TANESCO and local communities. Second is through the promotion of installation of isolated solar home systems by the private sector.

17. In terms of DP's financing of rural electrification, a number of donors provide concessional and/or grant resources to the sector. In particular, the Government of Norway and Swedish International Development Agency (SIDA) were providing direct contributions to REF during the last three years. World Bank (WB), within its Tanzania Development and Access Project provided a Credit Line to support SSPs on development and implementation of off-grid electrification. Currently, the donors are joining the efforts to streamline and make the sector support more effective and efficient. An agreement was reached between REA and a number of development partners, including the Government of Norway, SIDA, WB and the UK Department for International Development (DFID), that future technical assistance to REA should be pooled and financed through the REF. The purpose of this agreement is to focus all donor-supported technical assistance and capacity building activities on REA's Prospectus-based program as well as to simplify REA's monitoring and reporting requirements through the establishment of a unified results monitoring framework.

2.2.2 Sector Challenges

18. While the GoT has ambitious goals to scale-up rural electrification, it is facing a number of inter-related challenges that, if not properly addressed in a timely manner, could affect the ambitious rural electrification prospects. Key challenges and GoT and donor's supported strategies to address them include:

- a) **Sector Governance.** The key sector governance issues relate to transparency, efficiency of operations and coordination among the sector institutions. Building and strengthening capacity for effective and coordinated planning, transparency in management and operations in REA, TANESCO and other sector institutions, modernizing sector regulation, and clarifying the institutional responsibilities to avoid political interference are all necessary measures to address the existing governance problems. Tanzania has made some major strides in reforming its power sector. The GoT adopted a pro-market oriented NEP in 2003 (updated in 2015), established REA in 2005 and the Energy and Water Utilities Regulatory

Authority (EWURA) in 2008, and enacted the Electricity Act and Public Private Partnership Act in 2008 and 2010, respectively. In addition, the recently adopted the Electricity Supply Industry (ESI) Reform Strategy and Roadmap 2014-2025 promotes gradual structural transformation of the power sector (mainly TANESCO) over a 10-year period, starting with the ring fencing of the TANESCO Strategic Business Units. This measure will be followed by unbundling TANESCO into a generation segment (combined with allowing direct contracting between power plants and bulk off-takers), and subsequently transmission and distribution, finally reaching full liberalization of the sector, including the establishment of retail electricity market. Several donors, including WB, support the implementation of the Roadmap through ongoing and prospective projects. The respective examples include the Compact 2 funded by the United States Millennium Challenge Corporation (MCC), the Energy Sector Capacity Building Project financed by WB and the Canadian Department of Foreign Affairs, Trade and International Development (DFATD), WB funded series of Power and Gas Sector Development Policy Operations, and others.

- b) ***Sector Financial Viability.*** The Tanzanian power sector has been facing financial difficulties in recent years. The hydro-dominated generation system is vulnerable to droughts, especially during the annual peak demand periods, and large parts of the country have periodically experienced major load shedding. In 2011-2012, TANESCO addressed the lack of generation capacity by entering into high-cost, short-term contracts with private emergency power projects (EPPs). While the availability of generation capacity contracted from EPPs helped reduce load shedding, these liquid fuel based power plants increased significantly the average unit cost of electricity generation. As a result, TANESCO developed a sizable financial gap. To improve the performance of the electricity sector, the government—through MEM—has embarked on the implementation of a two-pronged approach to bring the sector back to a financially viable state. In the short-term, the GoT carried out a combination of government transfers to TANESCO, injection of cash from commercial borrowing, and revenue-enhancing measures, including tariff adjustments, reduction of technical and commercial losses, and improvement in collections. Following the January 2014 tariff adjustment of almost 40 percent, TANESCO’s financial situation improved, recording a stabilization and, at times, decrease in arrears. The utility is also executing an accelerated program to connect commercially viable customers in urban and peri-urban areas to boost the revenues. While TANESCO is current on its financial obligations to most suppliers and independent power producers (IPPs), reduction of arrears progresses slowly and, at times, is stagnant. Payments to SPP generators have been irregular, forcing these suppliers to take out bridging loans to cover their obligations.
- c) ***Availability of Financing to Scale-up Rural Electrification.*** To date, the bulk of the REF funds are expected to be internally generated (e.g., transfers from the government budget, contributions from the Electricity Levy, Petroleum Levy, Pre-Destination Inspection Levy, and the accrued interest of three percent on the REF deposits) while the remainder is drawn from the DPs (17 percent). However, in its annual investment planning, REA faces the following uncertainties: (i) government transfers may be late or reduced; (ii) not all revenues from the Petroleum Levy and Pre-Destination Inspection Levy may be transferred; and (iii) the DPs may not approve the proposed REF expenditures due to low quality of the project preparation. These uncertainties require REA to adjust its budget throughout the financial year. Recently, a mechanism to transfer the Petroleum Levy collections directly to the REF (not through the Ministry of Finance, MOF) was approved by the Parliament. This measure should help alleviate some of the uncertainties in securing the REF funds.

- d) ***Affordability.*** In the past, high electricity connection fees⁵ have represented a significant barrier for many potential customers. A drastic reduction in the cost of the connection fees that became effective in January 2013 has contributed to increasing the number of new connections (from 103,000 in 2012 to more than 160,000 in 2013). The drop in the cost of the connection fee was made possible through higher subsidies, imbedded in tariff (on average 51 percent for rural customers and 35 percent for urban customers who paying at the lowest subsidized tariff). However, in addition to the connection fees, the customers have to pay out of pocket for internal wiring, the cost of which presents a barrier to scaling up household connections in low-income, predominantly rural areas. The affordability challenge needs to be addressed through both the implementation of low cost network designs coupled with technical standardization and improved subsidy policies. Currently, REA is implementing a number of low-cost pilot projects to help develop the needed specifications for network design and assess the corresponding costs. During 2013-2014, the Government of Norway supported the GoT in the preparation of a new Energy Subsidy Policy. At the end of 2014, the GoT folded the Energy Subsidy Policy into the overarching NEP (2015), which the Cabinet endorsed in April 2015. However, further work on detailing subsidy implementation mechanisms and modalities is needed.
- e) ***Planning Capacity and Coordination among Government Institutions.*** Since the country is at the early stage of rural electrification, the implementation of the grid extension requires appropriate planning for the allocation of scarce financial resources between REA and TANESCO for expanding the medium-voltage (MV) grid into unserved areas versus maximizing connections in the established low-voltage (LV) grids. The latter increases the access rate, while the former creates the pre-requisite infrastructure not only for further expansion of LV networks, but also for the realization of the potential for productive economic use of electricity. The current electrification model, utilized since 2012, has eliminated major bottlenecks of delays related to the TANESCO procurement process, and clarified the responsibilities between REA and TANESCO. At present, REA executes the procurement of rural distribution network contracts, while TANESCO provides technical supervision and quality assurance, and operates the networks. The acceleration and scaling-up of the electrification program would require further strengthening of coordination on project prioritization, design, preparation, and supervision of construction, especially at the regional and district levels, where TANESCO has offices but REA does not.

⁵ TZS 272,000 (exclusive of VAT) for a single-phase service line and TZS 772,989 (exclusive of VAT) for a three-phase service line.

III. Program Description

3.1 The Government Program and Linkage with the Bank-financed PforR Program

19. The proposed PforR is a subset of the REA's existing program for both on-grid and off-grid rural electrification. REA's electrification program, based on the Prospectus, focuses on electrifying development centers⁶ through four different approaches, depending on the relevant local conditions: (i) electrification by densification; (ii) electrification by new connections to the grid; (iii) electrification through off-grid investments; and (iv) development of distributed technologies. The Prospectus estimates the required investment for the period 2013-2022 at approximately US\$3,500 million, including US\$2,060 million for rural areas. The costs for preparatory works (feasibility studies, engineering studies, etc.), administrative tasks, and supervision are not included in these estimates. These ancillary costs are estimated at 15 percent of the investment costs. The proposed PforR aims to support three of the electrification avenues identified in the Prospectus: grid extension, off-grid electrification and, within the category of the off-grid electrification, distributed solar technologies

3.1.1. On-grid Electrification

20. Under the grid extension approach, REA implements the electrification through three turnkey investment programs. These include the following activities:

- i. the ongoing Turnkey II investment program that aims to extend the grid to 1,500 settlements;
- ii. the Turnkey III investment program that would electrify settlements within 10 km of the existing 33-kV MV networks and the networks that are likely to be constructed by the end of 2019; and
- iii. the Turnkey IV investment program (2020-2022) that would electrify development centers identified, by the end of 2019, within 40 km of the MV grid; it would also electrify settlements that are within 10 km of the feeder lines to be constructed for the electrification of these development centers.

21. The PforR will support the REA's investment program. The pipeline for Turn Key III includes the construction of distribution networks to reach more than 200,000 households, and low-cost design pilots, which intend to test the use of shield-wire distribution systems to connect another 20,000 households to the grid. Designs for all projects will optimize technical standards for low cost network designs (e.g. the single-wire earth return (SWER) technology, as applicable) and procurement procedures and arrangements to connect the highest possible number of customers in the selected locations. The estimated funding envelop for the Turnkey III investments is US\$555 million, and is expected to be supported by WB, the Government of Norway, SIDA, and the European Union (EU, starting in late 2016).

3.1.2 Off-grid Electrification

22. Regarding off-grid electrification, the Prospectus defines a category of small towns found in non-electrified areas of Tanzania, referred to as "priority development centers" with more than 1,500 inhabitants that were non-electrified in 2013. Of these development centers, approximately 154 have

⁶ A development center is typically a settlement with a population of at least 1,500 inhabitants in 2012, with some existing social or administrative infrastructure (school, dispensary, police station, etc.), good access by roads, and some business activities. Focusing on the electrification of such settlements promises to maximize the benefits of electrification.

been identified and considered candidates for off-grid electrification. The estimated costs of the off-grid program (i.e., the costs of electrifying 154 development centers that will not be reached by the interconnected grid before 2022) is approximately US\$176 million. Small hydro plants (18 settlements), rice-husk-fueled gasifiers (63), or diesel-PV hybrid systems (73), which then feed into local grids, will likely supply electricity to these development centers.

23. Beyond these priority development centers, the Prospectus identifies additional development centers (population of less than 1,500 inhabitants per center) that also could be supplied by traditional renewables, i.e., small hydro and biomass gasification. The total population of these development centers is about 450,000 people. Three hundred forty seven identified settlements could be supplied from approximately 141 small and mini hydro sites within 20 km (some hydro sites serve multiple development centers). With regard to biomass, the Prospectus identified 310 settlements within 20 km of a significant biomass supply source – typically agricultural waste such as bagasse and rice husks, or manure -- that could be used for electrifying up to one million inhabitants of those centers. Mini-grids using small hydro or biomass gasification could supply nearly 600 development centers and almost 1.5 million people that would not be economically electrified via the grid by 2020-2022.

24. The REA's existing SPP pipeline for off-grid electrification combines projects intended to (i) supply electricity only to the local community; (ii) supply electricity to TANESCO's existing isolated grids; and (iii) sell power primarily to TANESCO's main grid. The pipeline itself is quite fluid since projects enter and leave the pipeline as developers make progress or encounter setbacks. At present, the total capacity of the SPPs included in the pipeline amounts to about 66 MW. The proposed PforR will provide funding through a window in the existing Credit Line for the SPP development that could potentially draw upon up to US\$90 million in the Credit Line backing. A second window under the existing Credit Line will be directed at providing either term-finance or working capital to vendors of quality-verified solar products in rural areas.

3.2 Relationship to the Country Assistance Strategy and Rationale for Use of Instrument

By enhancing access to electricity in the country, the project will contribute to the GoT's poverty reduction plans and support the achievement of the Bank's twin goals: reducing poverty and boosting shared prosperity. The country's Poverty Reduction Strategy, MKUKUTA II, focuses on the following clusters: (i) growth and reduction of income poverty; (ii) improvement of quality of life and social well-being; and (iii) good governance and accountability. The project contributes to the achievement of the MUKUTA II goals, specifically Goal 2 "Reducing income poverty through promoting inclusive, sustainable, and employment-enhancing growth" by extending access to energy services and improving the service quality, primarily in development centers of rural areas as outlined in the Investment Prospectus.

25. While the FY12-FY15 Country Assistance Strategy (CAS) remains relevant in guiding the World Bank Group's engagement in Tanzania, the June 2014 CAS Progress Report (CASPR - TZ80313) proposes a more focused approach to Bank Group interventions for the remainder of the CAS period (including extending the CAS by 12 months to June 30, 2016). The CASPR states that increasing access to and reliability of power supply and sustainable management of natural gas reserves and mining resources are at the center of industry competitiveness and job creation. The proposed project is fully aligned with the CAS/CASPR's objectives of addressing key infrastructure gaps, including in the power and extractives sectors, and promoting sustainable management of natural resources.

3.3 The Bank-financed PforR Program Scope

27. The proposed PforR is a result-based program aimed at supporting the GoT in implementing and strengthening its National Rural Electrification Program through financing of core on-grid and off-grid rural electrification activities identified in the Prospectus. The PforR Program will cover the entire country. In accordance with OP 9.00, no activities likely to have significant adverse impacts on the natural or human environments that are sensitive, diverse, or unprecedented will be supported. The duration of the Program will be six years, with an expected effectiveness date around July 2016 and a targeted completion in June 2022. WB and GoT have agreed to use the PforR lending instrument to concentrate the Bank financing on three key result areas:

- a. Result Area 1: Expanding Rural Access to Electricity;
- b. Result Area 2: Increasing Supply of Renewable Electricity in Rural Areas;
- c. Result Area 3: Strengthening Capacity of the Sector to deliver the National Rural Electrification Program.

28. **Activities within Result Area 1: Expanding Rural Access to Electricity.** Within Result Area 1, this program will finance design, construction, and rehabilitation of MV (33kV and 11kV) and LV lines; installation and rehabilitation of MV/LV distribution transformers; procurement and installation of service cables and meters; and the provision of materials for connection of new rural customers. The locations of the sub-projects will fall into the following three categories: (i) centers with high, but unmet electricity demand; (ii) locations with high likelihood of rapid demand growth; and (iii) locations with low likelihood of rapid demand growth, but where the investment criteria of the Prospectus are still met. Designs for all projects will be optimized to meet technical standards for low cost networks (including SWER, as applicable) and procurement procedures and arrangements to connect the highest possible number of customers in the selected locations.

29. REA has already identified potential investments for the first two years of the PforR implementation in various parts of the Country covering all Regions REA will utilize advance payments, received through the PforR, to complete feasibility studies for all 24 regions in the country (excluding Dar es Salaam) during the first year of implementation. REA will launch the bidding processes depending on the results of the feasibility studies completed during the first two years of implementation. The grid extension will be delivered in years three and four of the program implementation, aiming at having all pre-identified customers connected to the grid by the end of year five and six. REA will continue the national electrification program after the completion of the subject PforR in 2020.

30. **Activities within Result Area 2: Increasing Supply of Renewable Electricity in Rural Areas.** Result Area 2 of the PforR will support the continuation of the REA's successful Off-Grid Electrification Program, which was initiated with WB support under the TEDAP. The PforR will support the continuation and expansion of the Credit Line (CL) and will establish a Payment Security Mechanism (PSM) to address the risk of continued late payments by TANESCO to SPPs. The CL will continue to focus on providing re-financing for SPP developers so that they can obtain local commercial debt financing of sufficiently long tenure to make their projects economically viable. Its terms are being revised to be more **efficient and to leverage additional private financing into the sector.** **The maximum size** of small generation systems to be supported is 10 MW, and most are likely to be on the order of 0.5 to 2 MW. Energy sources will likely include biomass, mini-hydro, and solar. A new, second window under this CL will support loans to solar PV product vendors seeking to expand their operations in non-electrified areas in rural Tanzania. Specific attention will be paid to gender sensitive outreach and information campaign on the CL, as there is growing evidence that integrating women in the energy supply chain as power producers can be a win-win solution for service provision and job creation. REA has identified that there currently are very few, if any female-led SPPs or other off-grid electricity producers. The PSM is designed not only to reduce the financial stress placed on SPPs by TANESCO's record of late payments but also to incentivize TANESCO to pay timely by establishing and endowing a

sustainable mechanism for managing such payment difficulties in the future. It will work through a Letter of Credit (L/C) Bank to ensure that SPPs operators are paid according to the terms of their SPPAs. .

31. **Activities within Result Area 3: Strengthening Capacity of the Sector institutions to deliver the National Rural Electrification Program.** The Result Area 3 under the proposed PforR aims at strengthening the REA's capacity to consolidate its role as an effective rural electrification agency, capable of raising funds and making effective use of them while implementing the best international practices on technical designs, procurement, financial management, transparency, and accountability. The objectives of the technical assistance are as follows:

- Strengthening REA's organizational structure, planning and technical capabilities to implement and coordinate rural electrification, including support for development of renewable energy projects, and to undertake the preparation, review, approval and implementation of environmental and social assessments (ESIA) and Environmental and Social Management Plans (ESMP);
- Improving TANESCO's capacity to design and operate rural networks and develop new generation capacity to allow for expansion of rural electrification;
- Assisting MEM in development of subsidy policy strategy and mechanisms to make access to modern energy services more affordable thus increasing the connection rates;
- Building capacity of renewable energy project developers and related market actors, including project financiers, to develop, implement, and finance projects; and

32. To achieve these objectives, the following activities will be carried out with close collaboration among REA, TANESCO, MEM, and EWURA:

- **Project Preparation Facility (PPF).** The PPF will be set at REA to coordinate project preparation, including the completion of feasibility studies for all 24 regions, carrying out project designs, procurement activities, tendering, and supervision. The PforR will finance setting up and staffing of the PPF as well as training and other capacity building activities of the PPF. The PPF will include a planning and database management division to coordinate network expansion planning with TANESCO, procurement management unit, legal affairs office, a new unit responsible for developing tender documents and performance supervision. The intended training will address capacity-building needs for such staff such as engineers, accountants, procurement specialists, etc.
- **Strengthening TANESCO network planning, supervision and operational capacity for rural electrification projects.** This part will comprise several capacity building activities, including:
 - i. Training on supervision of rural electrification projects;
 - i. Training of new regional managers/senior managers on project management and field level construction monitoring and evaluation;
 - ii. Training on the use of distribution planning tools (Power Net and Retic Master software) for planning engineers and technical staff in the regions and districts to increase skills;
 - iii. Assistance to TANESCO to develop new generation capacity to sustain rural electrification and connect additional customers.
- **Renewable Electricity Project Development Facility (REPDF).** This activity will support the preparation of renewable energy SPP and mini-grid projects for investment. Two windows are proposed: one is for qualified developers and the second one is a strategic developer program linking local developers with professional developers. REPDF resources pay for a portion of the cost of external consultants engaged by the developer for pre-construction tasks. This facility will

take the place of the early stage development support. The IDA funding will be supplemented by co-funding from SIDA/DFID.

- **Solar Companies Technical Assistance Program.** This activity will work with the WB solar loan program. This program will support consultants engaged by REA to work with selected solar firms to improve their product quality, product range, and managerial expertise. It is financed by co-funding from SIDA/DFID.
- **Support to REA for capacity building including targeted communities program.** This activity will support REA to deliver services to renewable energy project developers and improve the REA's capacity to do so. In addition to REA, the Tanzania Investment Bank (TIB), which will manage the revised SPP project Credit Line, Participating Financial Institutions (PFIs), and selected solar companies will also be eligible for support. The Targeted Communities Program will involve a proactive outreach, and engagement by REA to targeted communities to assess local renewable resources, develop renewable electrification supply and distribution plans, and then procure private sector delivery of viable renewable energy projects for multiple sites. The Result Area 3 resources for the targeted communities will be used to pay consultants engaged by REA to undertake this work. Once private sector firms are procured to deliver the projects, those firms may access the REPDF, and resources of the new SIDA/DFID results-based financing (RBF) program for network construction, and the Credit Line. This support is financed by co-funding from SIDA/DFID.
- **Support MEM in defining the implementation strategy for electricity subsidy policy and related subsidy mechanisms.** The TA is support might include, but not limited to a review of the economics of various rural electrification investments and, then, a formulation of appropriate level and structure of subsidies; and development of a mechanism to finance connection fees for households, including costs of inside-the-house customer-side-of-the-meter wiring and controls.
- **Support REA on improving capacity for Environmental and Social Safeguards.** This activity address the risks identified in the ESSA through strengthening of REA's capacities to undertake environmental and social assessment (ESIA) preparation, review and approval; Environmental and Social Management Plan (ESMP) implementation, field supervision, monitoring and enforcement; and stakeholder consultation. In addition, technical assistance will also entail the development of a manual detailing the procedures of land acquisitions and compensation based on the RMF for acquiring the wayleave.

33. REA, from its own resources, will maintain some flexibility to support additional technical assistance activities that have been identified and around which consensus on the need has been reached, i.e., for financing household connection fees (in line with the objectives of the technical assistance to MEM described above), financing productive use equipment and other appropriate pro-poor activities.

3.4 Program Development Objective and Key Results

3.4.1 Program Development Objectives

34. The Program Development Objectives are to (i) increase the number of rural electricity connections; and (ii) scale-up renewable electricity generation in rural areas.

3.4.2 Program Key Results and Disbursement Linked Indicators

35. The following indicators have been selected to measure progress towards the PDOs:
- People provided with access to electricity under the PforR by the number of household connections (grid extension);
 - People provided with access to electricity under the PforR by the number of household connections (off-grid);
 - Number of community electricity connections under the Program (off-grid);
 - Generation capacity of renewable energy constructed under the Program (MW);
 - Number of beneficiaries, including the percentage of which are female.

36. Table 1 provides an overview of the results of the PforR, including the linkages between the areas under the national rural electrification program, the PforR support, the PDO indicators, and the DLIs against which Bank disbursements to REA will be made. The choice of DLIs is based on the following justifications: (i) the importance of the indicator to signal a critical action/output along the results chain; (ii) a perceived need to introduce a strong financial incentive to deliver the result; (iii) practical aspects of verifying achievements; and (iv) capacity of REA to achieve the DLI during the implementation period of the PforR

Table 1. PforR Program Results

	Government Program	PforR Areas	PDO Indicators	DLIs
Tanzania Rural Electrification Program	Densification	Not part of the PforR program		
	Grid Extension	Result Area 1: Expanding rural access to electricity	PDO Indicator 1: People provided with access to electricity under the program by household connections	DLI 1: Cumulative number of grid electricity connections under the program
	Off-grid Electrification	Result Area 2: Increasing supply of renewable electricity in rural areas	PDO Indicator 2: Number of nonresidential connections implemented under the program PDO Indicator 3: Generation capacity of renewable energy constructed under the program	DLI 2: Cumulative number of proposed MWs covered by SPPs reaching financial close under the CL DLI 3: Cumulative value of Solar PV loans reaching financial close DLI 4: Cumulative number of SPP operators participating in the PSM
	Capacity Development	Results Area 3: Strengthening the capacity of the sector to deliver the NREP	PDO Indicator 4: People provided with access to electricity via off-grid supplies under the program (SPP and solar PV) PDO Indicator 5: Capacity and policy for delivery of energy access and renewable energy generation strengthened	DLI 5: Annual capacity building and project preparation activities completed DLI 6: Implementation strategy for subsidy policy completed

IV. Scope and Methodology

37. To prepare the ESSA, the following activities were undertaken:
- Review of the relevant laws, regulatory frameworks, and guidelines and identification of inconsistencies with the social and environmental elements of OP/BP 9.00
 - Assessment of the potential environmental and social risks of the program
 - Review and assessment of the institutional roles, responsibilities, and coordination and analysis of current capacity and performance to carry out those roles and responsibilities
 - Consideration of public participation that included a stakeholder’s workshop, social inclusion, and grievance redress mechanisms.
38. The process included: (i) analysis of the national system for environmental and social management for planning and implementing programs in the energy sector for consistency with the standards outlined in OP/BP 9.00; (ii) identifying where there were procedural and policy gaps with OP/BP 9.00, as well as performance constraints in carrying out environmental and social management processes; and (iii) developing a set of viable actions to strengthen the system and improve performance.
39. The baseline information/data reviewed included socioeconomic, infrastructure, and environmental (existing conditions), the potential environmental and social effects (including benefits and negative impacts) of Program activities, and systems for managing those effects.
40. The ESSA has drawn on various inputs, including:
- legal and regulatory analysis;
 - desk review of World Bank implementation reports from a related project (Energy Development and Access Expansion Project, or TEDAP), and experience in its field supervision;
 - various World Bank and donor reports and Government of Tanzania statistics (including the CAS progress report,;
 - field visits to one REA grid extension project under implementation and one of the regions proposed for support to grid extension under the project.; and
 - Meetings with government agencies, Development Partners, and other stakeholders.
41. The World Bank has worked closely with REA to develop the ESSA, and prepare the Action Plan as a guide to identify and mitigate impacts and strengthen the environmental and social management system.
42. The ESSA analysis was conducted using the Strengths-Weaknesses-Opportunities-and-Threats (SWOT) approach. The “weaknesses,” or gaps with OP/BP 9.00, are considered on two levels: (i) the system as written in laws, regulation, procedures and applied in practice; and (ii) the capacity of Program institutions to effectively implement the system. The analysis focuses on the strengths, gaps, potential actions, and risks associated with the systems currently in use in the Energy sector to address the environmental and social effects commensurate with the nature, scale and scope of operations. This is structured to examine arrangements for managing the environmental and social effects (i.e., benefits, impacts and risks) of the Program. The analysis also examines how the system as written in policies, laws, and regulations is applied in practice at the national and local levels. In addition, the analysis examines the efficacy and efficiency of institutional capacity to implement the system as demonstrated by performance thus far.

43. The analysis examined the questions of whether the current system: (i) mitigates adverse impacts; (ii) provides transparency and accountability; and (iii) performs effectively in identifying and addressing environmental and social risks. The overarching objectives are to ensure that the risks and impacts of the Program activities are identified and mitigated, and to strengthen the system and build capacity to deliver the Program in a sustainable manner. This ESSA report also proposes measures to strengthen the system. The following sections translate the gaps and opportunities encountered, into a viable strategy to strengthen environmental and social management capacity and performance at the national and local levels.

V. National Environmental and Social Management Systems

5.1 National Policy and Legislative Framework

44. Tanzania has a number of policies, instruments and laws that support environmental and social management and the environmental and social assessment processes. There are a number of sectoral directives to integrate environmental and social considerations in the decision-making process. The Constitution of Tanzania 1977 (amendments in 1988), Article 27 calls upon the public to ensure that the natural resources of the country are managed properly: (i) every person is obliged to safeguard and protect the natural resources of the United Republic, State property and all property jointly owned by the people; and (ii) all persons shall by law be required to safeguard State and communal property, to combat all forms of misappropriation and wastage and to run the economy of the nation assiduously, with the attitude of people who are masters of the fate of their nation.

5.1.1 Environment

45. The relevant environmental policies, legislation and regulations are summarized in this section.

The **National Environmental Policy (1997)**: The National Environmental Policy (NEP) provides the framework for incorporating and mainstreaming environmental and social considerations into decision-making in Tanzania. The overall objectives are to:

- Ensure sustainability, security and the equitable use of resources without degrading the environment or risking health or safety
- prevent and control degradation of land, water, vegetation and air
- Conserve and enhance the natural and manmade heritage, including biological diversity of the unique ecosystems of Tanzania
- improve the condition and productivity of degraded areas, including rural and urban settlements
- Raise public awareness and understanding of the essential linkages between environment and development, and promote individual and community participation in environmental action
- Promote international cooperation on the environmental agenda

The NEP is a comprehensive attempt to guide the conservation and management of natural resources and the environment. It provides for cross-sectoral and sectoral policy guidelines, instruments for environmental policy, and the institutional arrangements for environmental management for determining priority actions and monitoring. The NEP requires environmental education and awareness-raising programs to be undertaken in order to promote informed opinions. It encourages environmental education to be introduced into primary and secondary school curricula to inculcate values that support responsible environmental care, and discourage

attitudes that are incompatible with sustainable ways of life. Reviews of environmental performance are undertaken annually. There are no published documents/reports on monitoring and reviewing environmental performance, and the NEP has not been widely distributed in the Kiswahili language, which is used by the majority of the implementers.

The Environmental Management Act (No. 20, 2004): This is a framework Act in that it is the legislation governing environmental aspects in Tanzania. It includes provisions for sustainable management of the environment, prevention and control of pollution, environmental quality standards, public participation, and the basis for the implementation of international environmental agreements. The Act sets out the mandates of various actors to undertake enforcement, compliance, review and monitoring of environmental impact assessment, to facilitate public participation in environmental decision-making and to exercise general supervision and coordination matters relating to the environment. Institutionally, it provides for the continuation of the National Environmental Management Council (NEMC), which is mandated to oversee environmental management issues and review programs to decide whether they need to undertake Environmental Impact Assessments (EIAs) and prepare Environmental Impact Statements (EISs).

The EMA has established environment units in all ministries and environmental committees at the regional, district and village levels. Within each ministry, it is the Environmental Section's responsibility to ensure that environmental concerns are integrated into the ministry's developmental planning and project implementation in a way that protects the environment.

The Environmental Assessment and Audit Regulations (No. 349, 2005) spell out the procedures and requirements for undertaking Environmental Impact Assessments and Environmental Audits for various types of development projects with significant environmental impacts. The regulations stipulate that prior to the implementation of a project the developer is required to submit a certificate of Environmental Assessment to the licensing Authority and the Authority is prohibited to issue license / permit without ESIA authorization. Regulation 46(1) classifies projects under two levels of assessment: List A of projects for which an ESIA is mandatory and List B for projects requiring a Preliminary Environmental Assessment (PEA). The regulations outline the steps that must be taken to conduct an ESIA and requires that all ESIA studies must address social, cultural and economic impacts and allow for public participation during the ESIA process.

The Forest Act (No. 14, 2002) provides for the management of forests in order to enhance the contribution of the forest sector to the development of Tanzania and the conservation and management of natural resources. In addition, the legislation fosters ecosystem stability through conservation of the forest biodiversity, water catchments and soil fertility. Section 18 requires preparation of an EIA for "any proposed development in a forest reserve, private forest or sensitive forest area including watersheds, whether that development is proposed by, or is to be implemented by a person or organization in the public or private sector." Section 49 of the Act outlines various permits that are required when certain activities are undertaken in forest reserve, including erection of building and structures and construction of roads and paths.

The Wildlife Conservation Act (No. 5, 2009) provides for the protection, conservation, development, regulation, control of fauna and fauna products and for matters incidental thereto,

and for matters connected to wildlife management. The Act restricts entry into a protected area without proper permission, restricts carrying of fire arms; bow and arrow; prohibits willfully or negligently cause of bush fire, felling of trees, hunting, digging, laying, or constructing any pitfall, net, trap, snare or other device whatsoever, capable of killing, capturing or wounding any animal.

The Antiquities Act of 1964 (as amended in 1979) and the Antiquities Rules of 1991 govern the preservation of physical cultural heritage. The Act sets forth the procedures to be followed in the event of discoveries and authorizes the responsible officials to designate sites or artifacts as monuments or protected objects. Section 16 of the 1964 Act (which was not amended in the 1979 Act) gives powers to Local Government Authorities, under the Local Government Ordinance, to pass by-laws (with the approval of the Minister responsible for Antiquities) with respect to the preservation of the archaeological heritage in their areas of jurisdiction.

The Occupational Health and Safety Act (No. 5, 2003) aims to improve health, safety, and general wellbeing of workers and workplaces by promoting occupational health and safe practices in order to eliminate occupational accidents and diseases, hence achieve better productivity in the workplaces.

In addition, it provides for the protection of persons other than those at work against hazards to health and safety arising out of or in connection with activities of persons at work. Section 15 gives powers to the Registrar of factories and workplace to enter any factory or workplace to perform his duties as provided by the Act. Section 16 requires that factories and workplace should register with Registrar of factories and workplaces before commencing operations.

Part VI of the Act deals with special safety provisions for working places involving handling hazardous chemicals, hazardous processes or hazardous equipment. This Act is relevant for the Program during construction and operation since it involves high voltage electricity, working at heights, and use of machines and instruments that may affect workers or other people. The need to ensure that all workers and workstations adhere to the laws is imperative. Personal protective gear during all times the worker is at the site must be enforced to the maximum, and people who are not relevant to the site are prohibited.

5.1.2 Social

46. The relevant land and social policies, legislation and regulations are summarized in this section.

Employment and Labour Relations Act, Act No. 6 of 2004 and the **Labour Institutions Act, Act No. 7 of 2004**. While the Employment Act provides for labor standards, rights and duties, the Labour Institutions Act constitutes the governmental organs charged with the task of administering the labor laws. Subsequently, in 2007 several pieces of subsidiary legislation were promulgated to facilitate the enforcement of labor rights and standards stipulated in the Employment Act. The new laws further enact employment and labor standards which conform to the labor standards set by the International Labour Organization. The **Employment and**

Labour Relations Act sets out provisions for fundamental rights and protections, which include forced labor, child labor, discrimination, and freedom of association. It also sets out employment standards, wage parameters, working hours, and dispute regulations, among others. While Tanzania's Constitution stipulates which laws apply across the entire United Republic, labor laws are not included. Therefore, mainland Tanzania and Zanzibar have separate legislation governing child labor. Each has a different minimum age for work and laws governing hazardous labor. Zanzibar has two different minimum ages for work. Article 100 of the Zanzibar Children's Act of 2011 prohibits children under age 18 from working, while the Zanzibar Employment Act and Act 116 of the Zanzibar Labor Act of 2007 stipulate age 17 as the minimum age for work. In contrast, the minimum age for work on mainland Tanzania is 14. While Zanzibar clearly stipulates the prohibition of the use of children for illicit activities, mainland Tanzania does not, including involvement in the production and trafficking of drugs.

The Workers Compensation Act, 2008. This Act provides for compensation to workers for injuries suffered in the course of their employment, which result into disease causing disablement or death. This Act needs to be complied with as Project workers will be exposed to various dangerous and hazardous environments during project implementation

Land Policy (1997): The Land Policy, and laws emanating from it, addresses issues of: land tenure, promotion of equitable distribution of land access to land by all citizens; improvement of land delivery systems; fair and prompt compensation when land rights are taken over or interfered with by the government; promotion of sound land information management; recognition of rights in unplanned areas; establishment of cost effective mechanisms of land survey and housing for low income families; improvement of efficiency in land management and administration and land disputes resolution, and protection of land resources from degradation for sustainable development.

The Land Act, 1999 (No.4 of 1999) provides basic legal requirements in relation to land other than village land, the management of land, settlement of disputes and related matters. Tanzanian land falls under three categories:

- Reserved Land is land set aside for wildlife, forests, marine parks, etc., and the ways these areas are managed is explained in the laws that protect each sector (e.g. Wildlife Conservation Act, National Parks Ordinance, Marine Parks and Reserves Act, etc.). Specific legal regimes govern these lands under the laws used to establish them.
- Village Land includes all land inside the boundaries of registered villages, where the Village Councils and Village Assemblies are given power to manage. The Village Land Act gives the details of how this is to be done. The Village Land Act governs this land.
- General Land is land, which is neither reserved land nor village land and is therefore managed by the Commissioner. The Land Act governs this land

The Land Act of 1999 provides for the basic law in relation to land other than the village or reserved lands. The Act lays down fundamental principles for occupying and using the land. The Land Act confirms the National Land Policy directive that that all land in Tanzania is public land vested in the President as trustee on behalf of all citizens. The Land Act seeks to achieve the following objectives:

- to ensure that existing rights in and recognized longstanding occupation or use of land are clarified and secured by the law;
- to facilitate an equitable distribution of and access to land by all citizens;
- to regulate the amount of land that any one person or corporate body may occupy or use;
- to ensure that land is used productively and that any such use complies with the principles of sustainable development;
- to take into account that land has value and that value is taken into consideration in any transaction affecting that land.
- to pay full, fair and prompt compensation to any person or institution whose right of occupancy or recognized long-standing occupation or customary use of land is revoked or otherwise interfered with to their detriment by the state under this Act or is acquired under the Land Acquisition Act; and
- provided that in assessing compensation for land acquired in the manner provided for in this Act, the compensation shall be based on the following:
 - Market value of the real property;
 - Disturbance allowance;
 - Transport allowance;
 - Loss of profits or accommodation;
 - Any other cost, loss or capital expenditure incurred with respect to the development of the subject land;
 - Interest at market rate; and
 - Provision of an efficient, effective, economical and transparent system of land administration.

In addition, and in relation power transmission and distribution lines, the Land Act (Section 151) states that the Minister " may create rights of way which shall be known as public rights of way " to serve for the that purpose for the proposed development. In addition, it defines that a "way leave" may be any public right of way created for the benefit of the Government, a local authority, a public authority, or any corporate body to enable all such organizations, authorities and bodies to carry out their functions within the designated area.⁷ Furthermore, the Act states that:

- "a public right of way shall attach to and run with the servient land in respect of which it has been created and shall be binding on all occupiers from time to time of the servient land, any manner they are occupying the land, whether under a right of occupancy or a derivative right thereof, or under customary law or as a successor in title to any such occupier or as a trespasser" ;

⁷ The *TANESCO Distribution Engineering Instruction Manual* (9th Edition) defines the widths of way leaves for power lines of various voltages. They are 5m (2.5m on either side of the center line) for 11 kV and 10m (5m on either side of the center line for 33 kV.

- "a way leave shall authorize persons in the employment of or who are acting as agents of or contractors for any of the organizations, authorities and bodies enter on the servient land for the purpose of executing works, building and maintaining installations and structures... and to pass along that way leave in connection with purposes of those organization, authorities or bodies."

Regarding the application for a way leave, the Land Act establishes that:

- except where the Commissioner is proposing of his own motion to create a way level, an application from any ministry or department of Government, or local authority or public authority or corporate body shall be made to the Commissioner;
- an application shall be made on the prescribed form and shall be accompanied by any information which may be prescribed or which the Commissioner may in writing require the applicant to supply and the Commissioner shall not begin the process of creating a way leave until all information which may be prescribed or required is submitted to him;
- the applicant shall serve a notice on:
 - All persons occupying land under a right of occupancy over which the proposed way leave is to be created, including persons occupying land in accordance with customary pastoral rights;
 - All local government authorities in whose area of jurisdiction the proposed way leave to be created is located;
 - All persons in actual occupation of land in an urban and peri-urban area over which the proposed way leave is to be created; - Any other interested person.
- The Commissioner shall give publicity to the application along the route of the proposed way leave clearly and in a comprehensible manner, and inform all persons using the land over which the proposed way leave is like to be created.

Section 156 that applies to non-governmental corporate bodies, institutions or groups of persons, requires the body or organization that applies for the way leave to pay compensation to any person for the use of land of which he/she is in lawful or actual occupation, for:

- any damage suffered in respect of trees, crops, and buildings as result of the creation of a way leave;
- Damage due to surveying or determining the route of that way leave and
- Acquisition of land for the purpose of a way leave

The Village Land Act (No. 5 of 1999) governs village land and all matters related to land tenure under the Village Councils. Most of the land that will be involved in the power transmission line is likely to be on village land, except for new areas where the way leave may be in forest reserves or social infrastructures belonging to specific institutions. Section 8 (1), (2) and (3) of the Village Land Act empowers the Village Council to manage all village lands in accordance with the principles of a trustee with the villagers being the beneficiaries. In

exercising these functions, the Village Council is required to have regard to the following principles:

- sustainable development and the relationship between land use, other natural resources and the environment in and contiguous to the village and village land;
- the need to consult with and take account of or comply with the decisions or orders of any public officer or public authority with jurisdiction over any matter in the area where the village is; and
- the need to consult with and take account of the views of other local authorities with jurisdiction over the village.

Although the Village Land Act recognizes the role of the Village Councils in management of village land, most of the land in the villages is under individuals through the customary land rights. The right of the individuals to the land must be recognized and respected and development should not take more than the land it needs for that particular development.

Land Regulations, 2001. Among other things, the Land Regulations provide guidance on the issue of compensation, which is relevant in the proposed development. According to Section 10 (1) of the Land (Compensation Claims) Regulation 2001, compensation shall take the form of:

- Monetary compensation;
- Plot of land of comparable quality, extent and productive potential to the land lost;
- A building or buildings of comparable quality, extent and use comparable to the building or buildings lost;
- Plants and seedlings;
- Regular supplies of grain and other basic foodstuffs for a specified time.

The Regulation (Assessment of Value for Compensation) states "...the basis for assessment of the value of any land shall be the market value of such land." The market value is arrived at by the use of the comparative method substantiated by actual recent sales of similar properties, or by use of income approach or replacement cost method, in case the property is of special nature and not saleable. The assessment of the value of land and any improvements will be done by a qualified valuer and verified by the Chief Valuer of the Government or his/her representative.

In addition, the Regulation defines affected persons that are eligible for compensation/resettlement if some of their properties are affected by a proposed development:

- Holder of right of occupancy;
- Holder of customary right of occupancy whose land has been declared a hazard land;

- Holder of customary and who is moved or relocated because his/her land becomes granted to other person;
- Holder of land obtained as a consequence of disposition by a holder of granted or customary right of occupancy but which s refused a right of occupancy;
- Urban or peri-urban land acquired by the President.

If the person does not agree with the amount or method of payment or is dissatisfied with the time taken to pay compensation, he/she may apply to the High Court for redress. If proved justifiable, the High Court shall determine the amount and method of payment, determine any additional costs for inconveniences incurred, and order the plaintiff to be paid accordingly.

Land Disputes Courts Act (No. 2 of 2002). Every dispute or complaint concerning land shall be instituted in the Court having jurisdiction to determine land dispute in the given area (Section 3). The Courts of jurisdiction include-

- (i) The Village Land Council
- (ii) The Ward Tribunal
- (iii) District Land and Housing Tribunal
- (iv) The High Court (Land Division)
- (v) The Court of Appeal of Tanzania.

The Act gives the Village Land Councils powers to resolve land disputes involving village lands (Section 7). If the Council fails to resolve the dispute, the matter may be referred to the Ward Tribunal as established by the Land Act (1999) and the Village Land Act. If any dispute will arise because of this project, the provision of this Act shall be observed.

Village Lands Act (No. 5 of 1999). The act requires each village to identify and register all communal land, and obtain the approval of all members of the village for identification and registration (Village Assembly, Section 13). A Register of communal land (section 13(6) is to be maintained by each village land council, and land cannot be allocated to individuals, families or groups for private ownership (section 12(1) (a)). This is also under the Ministry of Lands and Human Settlements.

Land Acquisition Act (1967). The Land Acquisition Act is the principal legislation governing the compulsory acquisition of land in Tanzania. Sections 3-18 of the Act empower the President to acquire land, and provide the procedures to be followed when doing so. The President is empowered to acquire land in any locality provided that such land is required for public purposes, and those who will be adversely affected to the acquiring of land by the government are eligible for the payment of compensation.

The Local Government Act (1982) (amended in 2002). The Act establishes and regulates District Councils, township authorities and village authorities. An important provision is the sub division of districts into divisions and wards and the establishment of Ward Development Committees along with procedures for implementation of schemes and programmes at ward level. Councillors lead the wards and form the main component of the District management team. Ward authorities and Ward Development Committee are empowered to participate in matters related to compensation, taking land from villagers and their decision is often considered with the seriousness it deserves.

Part V of the Act describes the functions of local government authorities. However; relevant provisions in the context of resettlement are Section 111 and 114. Section 111 (b) states that the local government authorities shall " promote the social welfare and economic well-being of all persons within its area of jurisdiction". In addition, subsection (c) obliges the local authorities to promote social and economic development in their areas of jurisdiction. The Act grants local government authorities a role in resettlement processes to ensure that, the affected people's social welfare is taken into account when resettlement and compensation matters are involved. Most of the areas where the power line will pass fall under local government jurisdictions.

Gender Policies: There are a number of policies positively impacting gender. Important among them include the following: (i) Gender Policy, (ii) Affirmative Action Policy, (iii) Sexual Offenses Act (1998), and (iv) Action Plan against Gender Based Violence (since 2010).

Rights of the Child; Rights to Reproduction and Access to good quality Reproductive Healthcare: Tanzania is a signatory to the Universal Declaration of Human Rights and specifically to the Convention on the Rights of the Child and has submitted the 3 reports in 2013.

Constitution of Tanzania 1977 (amendments in 1998, 2005)

Article 9 provides that:

- (a) human dignity and other human rights are respected and cherished;
- (f) human dignity is preserved and upheld in accordance with the spirit of the Universal Declaration of Human Rights;
- (g) the Government and all its agencies provide equal opportunities to all citizens, men and women alike without regard to their color, tribe, religion, or station in life;

Article 13 specifies that

- (4) No person shall be discriminated against by any person or any authority acting under any law or in the discharge of the functions or business of any state office.

Article 14 states that

Every person has the right to live and to the protection of his life by the society in accordance with law.

5.2 Institutional framework.

47. The relevant institutions with key responsibilities for environmental and social management in the energy sector are described below.

The Ministry of Energy and Minerals (MEM) will provide oversight and coordination of the PforR program. MEM is responsible for facilitating energy development, providing stimulus for private investment initiatives, and promoting effective regulation, monitoring and coordination of the sector. Specifically, MEM supervises implementation of the energy policy, which is the primary regulatory driver for change in the energy arena in Tanzania. MEM also facilitates mobilization of resources into areas where market forces fail to ensure adequate energy services. The roles and relationships of the different actors in the sector, including MEM, regulators and operators, are determined by legislation, which provides the basis for the regulatory functions of the sector, ensuring that operators will be licensed, markets and performance monitored, and necessary regulatory measures applied.

The mission of MEM is to create conditions for the provision of safe, reliable, efficient, cost-effective and environmentally appropriate energy services to all sectors on a sustainable basis, and thereby contribute to the economic growth of the country. MEM has two technical divisions -- Energy, which includes petroleum, electricity, new and renewable energy, gas utilization and energy development, and Minerals, which includes mines, mining, licensing, mineral economics, explosives management, etc. The Energy Division is directly responsible for:

- Formulating sector policy and strategy and implementing and monitoring programs in the areas of power, petroleum, new and renewable sources of energy subsectors, and energy efficiency;
- Major energy procurement, development, resource allocation and energy pricing policy formulation;
- Coordinating energy sector development programs with other sectors and other countries in the region and beyond;
- Supply and distribution of petroleum products;
- Development, promotion, and dissemination of renewable energy technologies (RETs); and
- Promotion of energy efficiency in all sectors of the economy.

Tanzania Electric Supply Company Limited. The main supplier of electricity in Tanzania is TANESCO, a state-owned monopoly (parastatal). TANESCO will be the off-taker of electricity transmitted into the national grid by SPPs and the owner and operator of the medium-voltage and low-voltage power lines and transformers installed by REA. TANESCO's roles during power line construction include provision of specifications, technical supervision, and quality control. Unlike REA, TANESCO has engineering staff at regional and district levels and so is better equipped to perform these functions, which it will provide during implementation of the program. However, TANESCO's environmental and social staff is centralized; it does not have environmental or social specialists at regional or district levels, and so its supervision does not extend to oversight of the contractor's implementation of environmental and social impact management measures.

Rural Energy Agency (REA) is an autonomous body under MEM and will be the lead implementing agency for the program. Its main role is to promote and facilitate improved access to modern energy services in rural areas of mainland Tanzania. REA was established by the Act of Parliament No. 8 of 2005 and became operational in October 2007. REA promotes and facilitates rural energy development by working in partnership and collaboration with private sector actors, NGOs, community based organizations (CBOs), TANESCO, and Government entities. The main functions of REA are the following.

- Promote, stimulate, facilitate, and improve modern energy access for productive uses in rural areas in order to stimulate rural economic and social development;
- Promote rational and efficient production and use of energy, and facilitate identification and development of improved energy projects and activities in rural areas;
- Finance eligible rural energy projects through REF;
- Prepare and review application procedures, guidelines, selection criteria, standards, terms, and conditions for grants allocation;
- Build capacity and provide technical assistance to project developers and rural communities; and
- Facilitate preparation of bid documents for rural energy projects.

REA, in partnership with project developers, identifies energy projects and facilitates investment in energy supply in rural areas. The goal is to provide access to modern energy services for rural households, schools, health centers and other social infrastructures to contribute to poverty reduction initiatives in the country. To ensure alignment with Tanzania's regulatory framework, REA works closely with TANESCO and with EWURA, which is responsible for technical and economic regulation of the energy and water sectors in Tanzania. REA is responsible for the environmental and social management of the on-grid and off-grid components of TREEP. It has a small environmental and social unit that is centralized. The unit supervises off-grid developments, such as mini-hydro, but does not supervise grid extension activities.

Office of the Vice President – Director of Environment (VPOE): The vision of the Ministry of Environment of the VPO is “to attain sustainable human development, eradication of poverty, security and equitable use of resources on a sustainable basis to meet the basic needs of the present and future generations without degrading the environment or risking health or safety and also maintain the union between the mainland Tanzania and Zanzibar”. The mission of the VPO is “to formulate policies and strategies on poverty eradication, protection of environment and non-governmental organizations as well as co-ordinate all issues pertaining to the mainland Tanzania and Zanzibar”. The VPO is responsible for overall policy guidance and advice on the development of strategic environmental vision, including formulation, analysis and appraisal of broad environmental policy, as well as formulation and review of broad environmental goals, in conformity with such vision. The VPO provides a basis for a broad political legitimacy for the administration of strategic policy decisions on a routine and continuous basis for coordinated environmental management.

The **National Environment Management Council (NEMC)** is the national authority responsible for ensuring compliance with the National Environmental Act. To ensure compliance, project must be issued an environmental license or permit, which confirms that all necessary environmental and social due diligence requirements have been fulfilled. NEMC also provides periodic oversight, monitoring the national portfolio of activities to ensure that no adverse cumulative impacts result. NEMC further provides oversight and technical assistance at the district level when required.

Overall, NEMC performs three critically important roles:

- Oversee the Environmental and Social Impact Assessment (ESIA) process ;
- Train district officials to carry out environmental and social due diligence monitoring; and
- Monitor implementation of environmental and social safeguards.

NEMC is also responsible for:

- Ensuring that operators comply with Tanzania’s environmental laws and requirements, a function it carries out with the assistance of the environmental officers assigned to district and regional governments;
- Receiving, reviewing, issuing comments and requests for revision, and providing clearance of completed ESIA or PESAs, when they are required, for subprojects prior to issuance of environmental permits and disbursement of financing from the fund;
- Reviewing and compiling monitoring reports for the district coordinators;
- Issuing directives, based on monitoring and evaluation (M&E) reports, to the operators and district environmental coordinators; and
- Conducting, in cooperation with other ministries, programs to enhance environmental education and increase public awareness.

Electricity and Water Utility Regulatory Agency (EWURA) is an autonomous regulatory authority responsible for the technical and economic regulation of the electricity, petroleum, natural gas and water sectors in Tanzania. The primary functions of EWURA include licensing of developments in the sectors, tariff review, performance monitoring and verification of standards regarding quality, safety, health and the environment. EWURA is responsible for issuing licenses to developers.

Occupational Safety and Health Authority (OSHA) was set up in 2001 under the Ministry of Labour and Employment to administer occupational health and safety at workplaces in the country. The **Ministry of Labor and Employment** is the main actor with the oversight role of ensuring that decent work is practiced and maintained in Tanzania. It provides directives, technical advice, enforces legislations, proposes amendments, allocates resources, oversees all activities carried out by OSHA and ensures that OHS rules and regulations are adhered to and maintained at workplaces.

Local Government Authorities (LGA). LGAs maintain Environmental Management Committees the membership of which typically consists of:

- District planning officer, who coordinates the planning process;

- District natural resources officer, who manages the development of natural resources/forestry, wildlife, beekeeping, fisheries, and so forth;
- District agricultural and livestock development officer, responsible for land use and management;
- District water engineer;
- District health officer; and
- Co-opted members (depending on nature of project).

The Committees are supported by a designated or appointed Environmental Management Officer, employed by the District LGA but linked to and trained by NEMC, and having these main functions:

- Issuance of ESIA registration forms to developers and operators and provision of information on relevant policy, legal, and other administrative requirements at the district level;
- Coordination of the ESIA/PESA process at the district level for Category C projects; and
- Linkage with NEMC on all undertakings within the district.

VI. Potential Environmental and Social Effects of the Program

48. Environmental benefits will be derived from substitution of electricity for other household and business energy sources and increased reliance on renewable energy sources. Social benefits will result from increased access to electricity. Potential adverse environmental impacts of the Program are likely to be associated with installation of medium- and low-voltage distribution lines and MV-LV transformers, construction of SPP generating facilities, operation of mini-hydro and biomass SPPs, and disposal of spent lead-acid batteries from solar home systems. None of the impacts is expected to be significant or difficult to avoid or mitigate, and few will be of more than short-term and local scale. Potential adverse social impacts are likely to be associated with land acquisition for SPP generating plants and acquisition of way leaves (rights of way) for 33 and 11 kV distribution lines. These are also not anticipated to be of large scale but could adversely affect individual project-affected persons (PAPs) that lose assets including structures, crops and trees, and the use of portions of their land. Physical relocation of households or businesses will not be extensive. The ESSA identifies the key measures to be taken for improved environmental and social due diligence in the Program and is intended to help the Government and implementing agencies in overcoming deficiencies with regard to environment, social, health and safety aspects of rural electrification and institute systemic improvements.

6.1 Potential Environmental Benefits and Risks

49. The Program's **Environmental Benefits** are substantial and long-term. They can be summarized as follows.

- a) Benefits from provision of electricity to households and businesses:
 - Reduction in use of diesel or gasoline-powered generators and other equipment such as grain mills, pumps, leading to reduced emissions of air pollutants, greenhouse gases (GHG), and noise
 - Reduction in consumption of kerosene for lighting and other uses, resulting in improved indoor air quality
- b) Benefits from power generation using renewable energy sources:
 - Reduction in use of diesel or gasoline-powered generators and other equipment such as grain mills, pumps, leading to reduced emissions of air pollutants, greenhouse gases (GHG), and noise
 - Increase in generation capacity with avoided GHG emissions

50. The **major environmental risks** associated with the Program are summarized below.

- a) Risks from installation and operation of SPP mini-hydro systems:
 - Obstruction of movement of migratory fish, if present
 - Mortality or stress on aquatic organisms caused by low flow or no flow in stream headrace intake and tailrace outlet
 - Mortality of aquatic organisms by entrainment in turbines

- Diminished flow for downstream uses of water
 - Climate change and anthropogenic changes in the catchment may reduce water flows for power generation
- b) Risk from land clearing for installation of SPP solar generating plants (approximately 2 ha/MW, with plants likely to be 10 MW or less)
- Loss of vegetative cover and habitat
 - Increase in soil erosion
- c) Risks from operation of biomass gasification power plants
- Diversion of agricultural production from food supply into energy
 - Deforestation if natural forest is used as biomass source or converted to plantations for biomass production
 - Water and soil pollution from improper management of residues from gasifier
 - Dust and odors
 - Explosion and fire hazard
- d) Risks from clearing of way leave for distribution lines that cannot be located in the road reserve (10m width for 33 kV, 5m width for 11 kV)
- Loss of vegetative cover and habitat
 - Increase in soil erosion until revegetation
 - Plant material removed from site causes GHG emissions and air pollution if burned
 - Obstruction of bird movements
- e) Risks from poor maintenance of solar home systems: battery replacement
- Improper disposal leads to potential water pollution and health risk
 - Informal battery recycling by burning battery cases to extract lead causes air pollution and serious health risk for those involved in the practice or living in the vicinity.
- f) Workplace and health and safety risks
- Electrocution hazard during operation of generating plants and installation and maintenance of power distribution lines
 - Injury from falls when working at heights, or from falling objects
 - Injury or fatality from heavy construction equipment
 - Injury or fatality from explosion and fire at gasification plants

51. Nearly all of these potential risks can be easily managed through routine mitigation measures and application of good design and construction practice. Managing the mini-hydro impacts requires analysis to determine the characteristics of the ecosystem, the stream hydrology, and downstream water uses, and to assess the need for and decide on the appropriate environmental flow. The operating rules should specify the releases that are required to maintain aquatic life in the stream segment between headrace inlet and tailrace outlet. Biomass gasification systems must be designed to minimize explosion and fire hazard (e.g., with gas detectors and alarms, proper ventilation) and to control potential pollution sources including dust, odors, gasifier residues. Safety and waste management procedures need to be clearly specified and accompanied by training of operators. Biomass generating plants should not depend on or

result in conversion of natural habitat. Biomass projects that depend on plantations should be carefully evaluated for impacts on food supply and habitat. Proper solar home system battery disposal requires an acceptable disposal procedure and location. The most practical mitigation measure is to require the system provider to take back spent batteries and dispose of them properly. The key to managing workplace health and safety risks is supervision and enforcement of adherence to rules and procedures – TANESCO’s *Distribution Engineering Instruction Manual* provides comprehensive requirements for work on power lines and substations – and safety rules should be established for each generating station. Construction contracts must include workplace health and safety requirements. REA, TANESCO, and SPP personnel will need periodic health and safety training.

6.2 Potential Social Benefits and Risks

52. The anticipated negative social effects of the Program are not expected to be significant provided that land and way leave acquisition are conducted in a manner consistent with Core Principle 4. Social benefits, on the other hand will be significant.

53. The **Social Benefits of rural electrification** are expected to be extensive and long-term.

a) Benefits from provision of electricity to households:

- Reduction in respiratory diseases caused by indoor air pollution from kerosene lighting
- Electricity for refrigeration, water pumping, entertainment, communication, and computers
- Lighting for students doing homework
- Generally improved quality of life
- Reduced time and energy spent by women at water pumping stations
- Opportunities for women and youth to open new business

b) Benefits from provision of electricity to businesses:

- Improved workplace health conditions because of reduction in use of diesel or gasoline-powered generators and other equipment such as grain mills, pumps, leading to reduced emissions of air pollutants, greenhouse gases (GHG), and noise
- Higher productivity
- Longer business hours
- Reduced cost of doing business

c) Benefits from provision of electricity to communities:

- Improvements in operation of schools, clinics, and government offices
- Street lighting improves convenience, safety and security
- Electric pumps reduce effort needed to fetch water.

54. Women, girls and children will disproportionately benefit from these provisions. The electricity in the health posts and clinics translate to better hygiene, safer deliveries, and better care of sick children. In schools it makes it possible for children to have access to computers or other devices that will not work

without electricity. Women and girls are the primary fetchers of water. Electric pumps make their daily tasks less strenuous; moreover, it allows for access to more water, helping the health of the family in general. Street lighting makes walking at night safer for women and girls.

55. **The main social risks** include the following:

- a) Risks from provision of electricity to households and businesses:
 - Risk of electrocution from substandard internal wiring, meter tampering, illegal connections, or lack of knowledge of electrical systems
 - Risk of fire from faulty internal wiring, meter bypass, or illegal connections

- b) Risks from land and way leave acquisition:
 - PAPs might lose part of their livelihoods in the process of clearing the wayleave, such as their cash crops, mainly cashew nuts, banana, mango, coconuts and other fruit bearing trees.
 - PAPs are unable to replace land or assets that were acquired, because of inadequate amounts of compensation, or pressure to “contribute” land voluntarily
 - PAPs experience diminished quality of life
 - Physical cultural resources may be damaged or encroached on

- c) Risk that vulnerable groups will not share equitably in project benefits provision of electricity to communities:
 - Female-headed households may be disadvantaged in obtaining access to electricity (although statistics show that this is mainly an urban problem)
 - Persons with low income – the poor, elderly, or handicapped – may not be able to afford the cost of connections or of proper internal wiring
 - Vulnerable groups may not be able to benefit fully from the provision of electricity due to their life style (for instance pastoralists).
 - The power lines might pass through some areas that are culturally and spiritually important for some social groups. .

- d) Risk that installation of mini-hydro plants will disrupt environmental services provided by streams:
 - Downstream water users who depend on the stream for washing, bathing, irrigation, livestock watering, fishing, recreation, or drinking may find those uses curtailed or lost
 - If loss of fishery occurs, family nutrition and the income of fisher folk will be affected

- e) Risk that community benefits are not sustainable
 - Power available for the extension to the grid may be insufficient, resulting in black-outs

- Electric service for social services such as schools, health centers, and water pumps under management of the District LGA may be interrupted if LGA has not budgeted for payment to TANESCO.
- Demand may exceed supply, especially in some of the villages and small towns that will eventually grow into big urban centers due to several government policies including large scale infrastructure development such as road and railways.

56. Most of these risks can be mitigated, through education on hazards of electricity, house wiring inspections, education on environmental conservation and management of catchment areas, and programs to assist the vulnerable groups. Particular care will be needed to carry out acquisition of land and wayleaves in accord with the national system and Core Principle 4. With respect to mini-hydro plants, special attention should be given to secure environmental flow to sustain downstream uses. Project designs should take into consideration sensitive cultural and spiritual places, with full consultation and participation of the affected communities and, where possible, avoid them. Finally, there should be an official commitment from districts for provision of budget for the electrical bills for social infrastructure. This needs to be followed through M&E.

VII. Operational Performance and Institutional Capacity Assessment

57. Based on a review of the documentation and detailed analysis of the environmental and social effects of the Program and consultations and discussions with stakeholders, the Analysis presented here is organized by each of the six Core Principles outlined in OP/BP 9.00 and synthesizes the main findings using the SWOT (Strengths-Weaknesses-Opportunities-Threats) approach, which is adapted and applied to the PforR context in the following way:

- Strengths of the system, or where it functions effectively and efficiently and is consistent with OP/BP 9.00;
- Inconsistencies and gaps (“weaknesses”) between the principles espoused in OP/BP 9.00 and capacity constraints
- Actions (“opportunities”) to strengthen the existing system.
- Risks (“threats”) to the proposed actions designed to strengthen the system.

7.1 Summary of System Assessment

58. The key findings of the Environmental and Social Systems Assessment (ESSA) with respect to environmental and social impact assessment and management are that Tanzania has the legislative and regulatory basis and the institutions to ensure consistency with the six Core Principles of PforR. Implementation is not consistently effective in the areas of environmental and social assessment (ESIA) preparation, review and approval; Environmental and Social Management Plan (ESMP) implementation, field supervision, monitoring and enforcement; and stakeholder consultation. The ESSA includes measures to mitigate the underlying risks, which primarily relate to the lack of personnel for field supervision in REA and TANESCO (the latter supervises grid extension activities on REA’s behalf), ESIA consultants who lack experience and skills, and unmet needs for training of Environmental Management Officers in the District Local Government Authorities.

59. The most significant social findings are that Tanzania has land laws and land acquisition procedures that, if judiciously followed, would result in outcomes generally in line with Core Principle 4, provided additional attention is given to livelihood restoration and to the rights of project-affected people who cannot prove ownership of the land. In practice, acquisition of rights of way for 33-kV and 11-kV distribution lines relies heavily on voluntary contributions of land and land based assets (crops and trees), while it avoids personal and public structures. It has lacked proper documentation of the processes when land was provided voluntarily. In the course of the project preparation, consultations with the project-affected persons have been done in only a general manner. The ESSA includes recommended measures to bring the land acquisition up to national standards, as well as additional steps to meet Core Principle 4. The main thrust of the measures is for REA is to develop systematic procedures to guide its staff in acquiring land and rights of way, using, as a resource, the Resettlement Policy Framework, developed for TEDAP, and which can be updated for the subject PforR.

60. The ESSA also found that Tanzania does not have any laws specifically aimed at protecting the rights of indigenous peoples. However, Tanzania does recognize vulnerable groups as a category of potentially affected people, and various processes such as environmental impact assessments do consider

potential impacts on them. The measures identified in the ESSA to achieve the objectives of Core Principle 5 are mainly for REA to develop policy and procedures to ensure that the possible presence of vulnerable groups is considered when potential investments are appraised and that if any are likely to be affected, the principles of free prior informed consultation are applied.

7.2 System Assessment Details

Core Principle 1: General Principle of Environmental and Social Management

OP 9.00: Environmental and social management procedures and processes are designed to (a) promote environmental and social sustainability in Program design; (b) avoid, minimize or mitigate against adverse impacts; and (c) promote informed decision-making relating to a program’s environmental and social effects.

BP 9.00: Program procedures will:

- Operate within an adequate legal and regulatory framework to guide environmental and social impact assessments at the program level.
- Incorporate recognized elements of environmental and social assessment good practice, including (a) early screening of potential effects; (b) consideration of strategic, technical, and site alternatives (including the “no action” alternative); (c) explicit assessment of potential induced, cumulative, and trans-boundary impacts; (d) identification of measures to mitigate adverse environmental or social impacts that cannot be otherwise avoided or minimized; (e) clear articulation of institutional responsibilities and resources to support implementation of plans; and (f) responsiveness and accountability through stakeholder consultation, timely dissemination of program information, and responsive grievance redress measures.

Applicability

Core Principle 1 is considered in terms of environmental and social management (ESM) for the rural electrification subsector, as a key component of good service delivery (i.e. measures included under the Program’s system-strengthening measures for enhanced accountability and oversight mechanisms).

Summary Findings

There is an adequate national regulatory framework in Tanzania and technical guidelines exist for environmental and social due diligence with respect to the potential impacts of the Program. There are also environmental and social procedures under existing World Bank-funded energy projects that have been deemed satisfactory. However implementation has not been consistently up to standards, and the assessed weaknesses are systemic, related to insufficient resources – financial, personnel, and skills - for preparing and implementing EIAs and overseeing and monitoring implementation of impact management measures.

System Strengths. The EMA, the Environmental Assessment and Audit Regulations, and the procedures established thereunder by NEMC provide the basis for full achievement of objectives defined in BP 9.00 for this core principle. One of NEMC’s functions is to promote clean energy in Tanzania, and it has

Gaps

Inconsistent implementation: Environmental management activities are weak in some areas, including: EIA preparation, review and approval; and systematic inspection, monitoring and enforcement. This is primarily due to (i) weak and

<p>recently been gaining experience on the job and through study tours with environmental aspects of small solar power plants and solar-powered mini-grids.</p> <p>REA's two-person environmental and social unit, established for TEDAP, has gained experience in environmental and social impact management of off-grid projects using, among other things, the TEDAP ESMF prepared by MEM before REA became operational. That ESMF has been updated and expanded for TREP to cover grid extensions, by consultants USAID supplied in support of TREP preparation.</p> <p>TANESCO provides field supervision for REA's grid extension projects and has a vested interest in the quality of the work since it will operate the facilities once put into operation. TANESCO has a 17-person environmental and social unit with abundant experience in implementation of environmental and social impact management instruments prepared for Bank-supported projects such as TEDAP's on-grid component and the Backbone Transmission Infrastructure Project.</p> <p>Under TEDAP, REA provided EIA training to a group of local consultants in order to improve the quality of EIAs it was receiving from SPPs, and NEMC conducted training for EMOs at regional, district, and town levels in all regions of Tanzania mainland to build their capacity to carry out the monitoring, supervision and reporting they are required to do.</p> <p>Supervision reports and field visits to transmission line projects and SPP projects have confirmed that impacts have been modest and measures to mitigate potential impacts have had reasonable success in being implemented.</p>	<p>insufficient institutional and technical capacity; and (ii) inadequate resources, including personnel, training, technology, and equipment. Regarding the EIA issues, some EIA reports for TEDAP-supported mini-hydros do not contain adequate hydrologic or ecological baseline data. On the other hand, some substandard EIAs have been approved. There can be long delays in the NEMC review process; these and the costs of NEMC processing if site visits and a technical review panel are required can pose difficulties for SPPs. Some local environmental consultants lack both an understanding of the characteristics of a good EIA and the skills to produce one. Most of those investing in mini-hydros do not have knowledge or sufficient resources to undertake detailed ESIA. Some of the REA projects funded by the Government of Tanzania have not been subjected to ESIA</p> <p>iii) No common method or analysis and collection of climate related data for monitoring the effect of climate on long-term availability of projected hydropower development under Rural Energy Program.</p> <p>The size of REA's environmental and social unit and the fact that no staff are located outside of Dar es Salaam limits its ability to make field visits to SPPs, and it does not supervise grid extension work. TANESCO, with offices in districts and regions, can and does supervise grid extension activities, both its own and REA's, but those offices do not include HSSE specialists and hence provide mainly engineering supervision and quality control. Many of the EMOs in District LGAs have environment-related training and skills – many are foresters – but they are not trained in environmental and social impact management and monitoring.</p> <p>Public disclosure of documents for those programs requiring a full ESIA is a requirement. But the official process of public review and comments can be onerous and public hearings are at NEMC's discretion during the ESIA review and approval process. Consultation with project-affected communities and other stakeholders is not consistently carried out effectively. Under EMA,</p>
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	<p>there is a procedure related to grievances with respect to decisions about granting the EIA certificate. There is no requirement that ESMPs include a mechanism for handling other stakeholder grievances. There are processes at the local level for handling general grievances and disputes, although it has been difficult to assess if this functions well in practice to resolve grievances tied to environmental and social impacts.</p>
<p><i>Actions and Opportunities</i></p> <p><i>Technical Guidance and Implementation Capacity:</i> There is opportunity to strengthen capacity for ESIA preparation, review , and approval through: (a) preparation of a Strategic Environmental and Social Impact Assessment for development of renewable energy in Tanzania; (b) establishing an ESIA consultant qualification system at REA; (c) continuing the training begun under TEDAP for ESIA consultants, implemented by REA and NEMC, and (d) developing a Stakeholder Engagement Plan (SEP) for REA, with district and local government and TANESCO included among the stakeholders.</p> <p>There is opportunity to strengthen capacity for monitoring, supervision and enforcement of impact management implementation through: (a) adding staff and equipment to REA’s environmental and social unit; providing guidance in the REA procedural manual, including for stakeholder consultations in impact assessments (b) placing environmental staff in TANESCO’s zonal offices to provide support to district office supervision of REA’s grid-extension project; (c) continuing the EMO training program begun under TEDAP, conducted by NEMC; (d) having a staff person at NEMC dedicated to project processing for TREEP; and (e) exploring other options that would streamline processing and reduce costs to SPPs.</p> <p>It would be useful for REA to undertake Environmental Audits for all its ongoing projects with special attention to mini-hydro and biomass projects</p>	<p><i>Risks</i></p> <p>Mini-hydro systems will be designed and operated without adequate attention to hydrologic impacts and related ecological and social risks and impacts. Biomass gasification facilities will not be designed and operated to minimize explosion and fire hazard and to prevent air, water, and soil pollution. Solar panel and battery systems will proliferate without provision for safe and environmentally sound disposal of spent lead-acid batteries. Off-grid and grid extension subprojects will not receive adequate environmental and social supervision and monitoring. Social benefits of grid extension may be curtailed by insufficient power, or non-payment for service to government facilities (schools, clinics, etc.). Stakeholder concerns will not be consistently taken into account in environmental and social assessments.</p>

Core Principle 2: Natural Habitats and Physical Cultural Resources

OP 9.00: Environmental and social management procedures and processes are designed to avoid, minimize and mitigate against adverse effects on natural habitats and physical cultural resources resulting from program.

BP 9.00: As relevant, the program to be supported:

- Includes appropriate measures for early identification and screening of potentially important biodiversity and cultural resource areas.
- Supports and promotes the conservation, maintenance, and rehabilitation of natural habitats; avoids the significant conversion or degradation of critical natural habitats, and if avoiding the significant conversion of natural habitats is not technically feasible, includes measures to mitigate or offset impacts or program activities.
- Takes into account potential adverse effects on physical cultural property and, as warranted, provides adequate measures to avoid, minimize, or mitigate such effects.

Applicability

The provisions in Core Principle 2 are considered as part of the ESIA process analyzed under Core Principle 1. The Program will not support investments that would either impact or convert critical natural habitats and will avoid conversion of natural habitat. This Core Principle is applicable to the program, however, because clearance of power line way leaves and installation of small hydros could affect natural habitat and result in chance finds of physical cultural resources, and operation of small hydros will have some impacts on aquatic ecosystems.

System Strengths

The Tanzanian ESIA process considers physical cultural resources, including screening for archaeological, historical and cultural sites. The assessment shows that impacts on cultural sites are taken into account in program design and implementation and appropriate mitigation measures adopted.

Aside from the provisions of the EMA, *National Environmental Action Plan* (2013-18), Forest Policy 2007, Wildlife Policy 2007, among other relevant regulatory activities, the GoT is revising the National Biodiversity Strategy and Action Plan of 2001 to be able to meet the UN Aichi Biodiversity Targets agreed in 2010, which will set the parameters for conservation and natural habitats – aquatic, terrestrial and agro-biodiversity. This has also been strengthened by the establishment of a national coordinating body that will oversee all aspects, from environmental safeguards to information dissemination. The

Gaps

There are no significant inconsistencies between OP/BP 9.00 and Tanzania’s policies, laws, and regulations related to natural habitats.

<p>Antiquities Act and its related regulations and institutions provide an adequate basis for protection of physical cultural resources.</p>	
<p>Actions and Opportunities</p> <p>The opportunities and actions identified for strengthening the system for Core Principle 1 are applicable to Core Principle 2. In addition, chance finds procedures will be included in all construction contracts; environmental assessments for proposed mini-hydro systems will be required to provide measures to mitigate potential impacts on downstream hydrology, aquatic ecology, water uses and water users; and REA will not support biomass generation that would degrade or convert natural habitat, and.</p>	<p>Risks</p> <p>The risks identified for strengthening the system for Core Principle 1 are applicable to Core Principle 2. In addition, there is the risk that natural habitat will be degraded or converted in the course of developing feedstock sources for biomass gasification systems.</p>

Core Principle 3: Public and Worker Safety

<p><i>OP 9.00:</i> Environmental and social management procedures and processes are designed to protect public and worker safety against the potential risks associated with (a) construction and/or operations of facilities or other operational practices developed or promoted under the program; (b) exposure to toxic chemicals, hazardous wastes, and otherwise dangerous materials; and (c) reconstruction or rehabilitation of infrastructure located in areas prone to natural hazards.</p>
<p><i>BP 9.00:</i></p> <ul style="list-style-type: none"> • Promotes community, individual, and worker safety through the safe design, construction, operation, and maintenance of physical infrastructure, or in carrying out activities that may be dependent on such infrastructure with safety measures, inspections, or remedial works incorporated as needed. • Promotes use of recognized good practice in the production, management, storage, transport, and disposal of hazardous materials generated through program construction or operations; and promotes use of integrated pest management practices to manage or reduce pests or disease vectors; and provides training for workers involved in the production, procurement, storage, transport, use, and disposal of hazardous chemicals in accordance with international guidelines and conventions. • Includes measures to avoid, minimize, or mitigate community, individual, and worker risks when program activities are located within areas prone to natural hazards such as floods, hurricanes, earthquakes, or other severe weather or climate events.
<p>Applicability</p> <p>The provisions in Core Principle 3 are considered as part of the ESIA process analysed under Core Principle 1. Complementing that analysis the review found that Core Principle 3 is applicable to the Program as it finances construction activities as well as facilities where high voltage electricity is present.</p>

<p>Strengths</p> <p>By law in Tanzania it is the duty of central and local governments to provide for the health and safety of the public. The EMA and its regulations contain several provisions for public and worker safety, which are consistent with OP/B</p> <p>P 9.00. The ESIA process contains robust procedures for worker safety, requiring plans for accident prevention as well for health and safety of workers and communities, which are also part of contracts for civil works. The Occupational Health and Safety Act and TANESCO’s safety instructions cover workplace and electrical safety. TANESCO publishes a brochure for the public on electrical safety that is also available on its website</p> <p>Tanzania has a <i>Contractor Registration Board</i> (CRB) that enforces best practice and monitors and enforces occupational health and safety regulations with regard to construction works. The Rules of Conduct require that contractors must maintain accident registers, provide workers with protective gear, and standards for construction sites and post warning signs visible to the public and workers about requirements for personal protective equipment.</p>	<p>Gaps</p> <p>Public and worker safety are adequately covered in the EMA regulations, the OSHA Act, TANESCO’s safety instructions, and the CRB, and there are no major inconsistencies between the system and Core Principle 3. However, the worker and public safety provisions are not always included in civil works contracts and contractor adherence to and enforcement of safety rules such as use of personal protective equipment is weak or non-existent. Other gaps identified in Core Principle 1 are also applicable to Core Principle 3.</p>
<p>Actions and Opportunities</p> <p>The opportunities and actions identified for strengthening the system for Core Principle 1 are applicable to Core Principle 3. Capacity-building for REA staff, environmental consultants, and district environmental officers will include training in workplace health and safety procedures and enforcement and in preparing and enforcing health and safety provisions in construction and operating contracts.</p>	<p>Risks</p> <p>The risks identified for strengthening the system for Core Principle 1 are applicable to Core Principle 3.</p>

Core Principle 4: Land Acquisition

<p><i>OP 9.00:</i> Land acquisition and loss of access to natural resources are managed in a way that avoids or minimizes displacement, and affected people are assisted in improving, or at least restoring, their livelihoods and living standards.</p>
<p><i>BP 9.00:</i> As relevant, the program to be supported:</p>

- Avoids or minimizes land acquisition and related adverse impacts;
- Identifies and addresses economic and social impacts caused by land acquisition or loss of access to natural resources, including those affecting people who may lack full legal rights to assets or resources they use or occupy;
- Provides compensation sufficient to purchase replacement assets of equivalent value and to meet any necessary transitional expenses, paid prior to taking of land or restricting access;
- Provides supplemental livelihood improvement or restoration measures if taking of land causes loss of income-generating opportunity (e.g., loss of crop production or employment); and
- Restores or replaces public infrastructure and community services that may be adversely affected.

Applicability

Some of the infrastructures under component 1, Grid Extension, and component 2, Off Grid power generation, could need land and would impact crops, livelihoods, and possibly even structures. Activities under Component 1 include construction of approximately 9600 km of medium-voltage (MV) distribution lines, installation of approximately 7500 km of low voltage lines to consumers, and provision of transformers, in 500 subprojects across the country. Some of these activities could require land or could affect livelihoods and some community infrastructure or cultural features such as cemeteries. TANESCO's way leave, or right of way (ROW) width specifications for 33 and 11 kV lines are 10m and 5m, respectively, and they apply to lines constructed by REA. The impact will be minimal given that these lines are passing mainly through rural areas. Nonetheless, given that the project covers all regions in the Country and in each the grid extension can be substantial, this is one of the risks that need mitigation. In Component 2, SPP plants need land for access roads and small buildings and, in the case of solar power generation, approximately 2 ha/MW of cleared and graded land for the panels, Way leaves will be required to connect the plants to the national grid or to mini-grids.

Summary Findings

The experience in similar projects (such as TEDAP) is that physical relocation of households and businesses has been avoided or minimal. Most impacts have been related to trees and crops, land (agricultural and residential), and some small structures. The practice used by TANESCO (but not by REA) for 33 and 11 kV lines has been that the actual area where the pole is going to be put is purchased and compensated. However, the ROW of 10 meters in total for 33kV and 5 meters for 11kV is given by the PAPs voluntarily, according to TANESCO and REA. This is mainly because utmost care is taken not to affect residential houses or businesses, and even though there is an official restriction on cultivation under these lines, in practice people have not been stopped unless they plant trees or build houses. Nonetheless, there are people who could lose part of their livelihoods in forms of fruit-bearing trees.

Information collected during stakeholder consultations indicates that most PAPs who resist volunteering their land are those losing a significant fraction of their land or permanent crops such as cashew nut trees, or are not direct beneficiaries of the project, or both. Loss of access to natural resources is a low risk, given that the lines do not constitute a barrier to passage and the fact that protected areas and sensitive natural features will be avoided as measures for compliance with GP1.

System Strengths	Gaps
<p>Land laws and acts and clear staff roles and responsibilities. The Land Acquisition Act 1967, the first systematic and the principal legislation governing the compulsory acquisition of land in Tanzania; and the Constitution of Tanzania (1977 as amended, 1998) provides that every persons has the right to own property and the right to have his or her property protected in accordance with the law. In 1995, the Government adopted a National Land Policy 1995 that set out the fundamental principles guiding land rights and land management. The National Land Policy was followed by the adoption of the Land Act and Village Land Act in 1999.</p> <p>The Land Regulations provide steps that need to be followed for projects requiring land acquisition, including the ones under TREEP, participation of Project Affect People (PAPs), and a clear approvals process. At the local level, some LGAs also have land surveyors and valuation officers that play a role in this process. If they don't, then for projects they are able to obtain these staff from neighboring Districts. While this system is operating, a bill that that codifies the valuation process is under preparation and has been sent to Cabinet.</p> <p>Grievance procedures and dispute resolution There is a system where complaints could be channeled upward, starting with the Mtaa⁸, Ward Executive Officer, District Commissioner, then to the Region. If still unsatisfied PAPs can seek recourse for grievances in the courts (specifically the Court of Land Arbitration). The processes related to addressing the complaints related to land issues at the local</p>	<p>While the content of the screening and analysis for Environmental and Social Impact Assessment (ESIA) under EMA are comprehensive with respect to the principles of OP/BP 9.00, there are gaps in the content of ESIA requirements, including: (i) The screening process does not explicitly take into account: Land acquisition and resettlement, restricted access to resources, and special situation of vulnerable groups; If land acquisition is invoked the gaps would need to be filled. However the risk related to land acquisition is low, given that the program is not expected to acquire much land for construction purposes and wayleave can be used for cultivation of short crops.</p> <p>Moreover, REA in practice consults with the villages that are demanding electricity, and land is normally provided voluntarily for the wayleave in recognition of the benefits of electricity. The 10 meter wayleave for 33kV and 5 meters for 11kV is cleared for the construction, but once construction is done the villages can use the wayleave for gardening and short crops. REA avoids any built-up area. With respect to off-grid facilities such a mini-hydros, if land is needed it will be acquired by the developer based on the national system. It is for this part of the project as well as other infrastructures such as access roads that the following gap analysis will apply. It will apply also to the livelihoods restoration for those on the wayleave. For the acquisition of the wayleave, the ESSA will recommend measures to ensure that the spirit of OP/BP 9.00 Core Principle 4 is met.</p> <p>While there are policy gaps between OP/BP 9.00 and the Tanzanian system for land acquisition and resettlement, there are no direct conflicts between the Tanzanian land laws and OP/BP 9.00, which indicates that gap-filling measures in the Program (if required) will not be contrary to the law should it be required.</p> <p>Tenure: Tanzanian law has clear procedures for landholders and generally extends eligibility for compensation to recognized or customary land users or occupiers lacking full title, but does not recognize</p>

⁸ A small urban area or geographical division of a ward.

level is community based. In the urban areas it is handled through Mtaa and in the rural area, which is related to this ESSA, through Village Land Committee. The system is developed as such to resolve the complaints at the community level. If the aggrieved party is not satisfied then the next steps are Ward, District and eventually the court. The majority of the complaints are addressed and resolved at the local level. In practice, though, the system does not always work well. At the village level due to lack of information among some affected people and due to the village committees being overwhelmed with the number of cases (since they deal with all land related issues), the system may not be able to address all the grievances in a way that meets the requirements of Core Principle 4. In addition, there is no requirement that the affected people should be represented in the Village Land Committee.

Consultations: Community land consultations is an integral part of the land acquisition process, and is followed at the community level to ensure there is consensus on the donated land and if there are impacts on any group community mitigation measures are undertaken. For land acquisition, the valuation process includes a sensitization meeting with PAPs, which must be attended by local leaders as well. The intent is to explain the program, the valuation process, valuation rates, and arrangements for physical inspection of properties.

Analysis and Guidance There is good guidance on resettlement and compensation in Tanzania that goes beyond the Land Act and Regulations – there has been a comprehensive gap analysis between World Bank OP 4.12 and the Tanzanian system, and all of the elements of Core Principle 4 are visible in any existing Resettlement Policy Framework for Bank supported projects, including the Resettlement Policy Framework (RPF) for TEDAP updated in 2015 for as the Resettlement Management Framework (RMF) for TREEP. For any unanticipated emerging risk, the RMF will

tenants, squatters or encroachers as being entitled to assistance or any allowances for transportation, disturbances, etc.

Market value: Tanzania law provides for the calculation of compensation on the basis of the market value of the lost land and unexhausted improvements, plus a disturbance, movement, and accommodation allowance, and loss of profits where applicable. However, the depreciated replacement cost approach is used, that does not result in full replacement cost of the lost assets which is inconsistent with OP/BP 9.00. Additionally, market values and valuation procedures tend to be outdated and there is little baseline data for land values, which risks the valuation being at the discretion of the Land Valuation Officer.

Lost Assets and Livelihood Restoration: “Replacement assets” under the Land Act in Tanzania are restricted to land and developments on land, and where relevant, loss of profits. OP/BP 9.00 goes beyond physical assets and includes livelihoods and standard of living, seeking to improve them or at least to restore them to pre-displacement levels. While profit losses are included in Tanzanian law, this is more narrowly defined as formal business profits and compensation for crops. While the Land Act does entitle compensation for business losses, there are no legal provisions requiring the government to restore livelihoods or to provide assistance towards the restoration of such livelihoods. Land users such as tenant farmers are only entitled to compensation for crops (the valuation method is outlined in the 2001 Regulations).

Wayleave: With respect to the wayleave, as noted above, even though there is not much of a policy gap on paper, in practice land for 33kV and 11kV, lines is given voluntarily in recognition of the benefits of receiving electricity, according to REA and TANESCO. REA tries to avoid any structures, rerouting the wayleave when necessary to do so. As a result the principles discussed below in the Actions and Opportunities section need to be followed.

Community Infrastructure: It does not appear that public infrastructure is specifically addressed in the Land Act and Regulations. For projects/programs prioritized and implemented by the community, risks that community infrastructure will be impacted is low.

Consultation and Disclosure: As resettlement in

<p>be used to provide guidelines for mitigating the land acquisition related risks.</p>	<p>practice is done as part of the ESIA, consultation and disclosure generally follow this process with the addition of a sensitization meeting with PAPs as part of the valuation process. PAPs are also publicly informed toward the end of the process when they can collect their compensation payments. Community Development Officers have a role during this process as well, as do Ward Officers. However, this process is geared only toward the land valuation process, and may not include tenants, informal land users, and other types of resettlement and compensation that are not covered by Tanzanian law.</p> <p>Measures to be taken to meet the spirit of principle 4 of OP 9:00 with respect to voluntary provision of the land for the wayleave are presented in the Action column,</p> <p>There is no clear budget or source of finance stipulated for paying compensation and hence a challenge when it comes to project implementation.</p> <p>Affected businesses should be given enough compensation to establish their business elsewhere; this usually includes the compensation for land, inventory and 36 months profit.</p>
<p>Actions and Opportunities</p> <p><i>Technical Guidance and Implementation Capacity:</i> To ensure low impact projects with large scale resettlement are ineligible for finance with TREEP – no projects, in any given region, displacing more than 20 households will be financed. Screening procedures will be included in the technical manual.</p> <p>Given that the exiting practice is to give the land voluntarily for such lines, if land is given voluntarily the following principles should be followed: The land given should not be more than 10% of the land own or used by the PAPs; the remaining land should be variable for whatever use it had before the project; the voluntary contributions of land should be documented by REA and available in the communities affected; REA will take actions to restore livelihoods affected by loss of structures, valuable trees, and crops; people who provided land should be able to continue gardening, cropping and grazing</p>	<p>Risks</p> <p>The risk of not taking the proposed Actions to address the gaps identified described above could result in inconsistency with the Core Principles of OP/BP 9.00. The risk is relatively low, since there is minimal land acquisition, but the impact on individual livelihoods could be severe. For mini-hydro solar power plants and ancillary facilities (workshops, access roads, transmission lines), there will be more land acquisition, e.g. approximately 2 ha per MW for solar), but with low risk if PAPs are compensated by the developers and site selection considers avoiding areas with major impact.</p>

activities in the wayleave as long as they will not plant trees or build structures; and finally the grievance mechanisms should be established in each affected village to address any complaints people have. In addition, a phone number should be provided to all PAPs and communities to voice their concerns to REA through phone calls or text on all issues. REA should inform the PAPs of the grievance mechanisms that will be established in the affected villages and also should ensure that the Village Land Committees are informed about and follow the procedures detailed in the manual. Any grievance mechanisms at the village level should include at least one affected person.

The ESSA defines the needs for (a) improved and updated technical guidance for better implementation of the existing land laws, (b) greater transparency when land and livelihoods are involved, (c) special care in managing voluntary land contributions, including well-defined and transparent criteria and clear documentation of transactions when land is provided voluntarily (REA has some precedent in implementing TEDAP's off-grid component) and attention to livelihood restoration; (d) transparent and well-defined criteria for selection of villages to be connected (e) strong and readily accessible grievance redress mechanism, (f) provisions for community participation; and (g) development of a standard form to be signed with each district involved to ensure the provision of the budget for payments of the bills for the social infrastructure under that district. These needs can be met through preparation of a detailed REA procedural manual as well as capacity building for REA. The procedural manual detailing all the above needs to be adopted by REA. The updated TEDAP RPF, now known as the TREEP RMF, provides extensive guidance for implementing these measures. Acquisition of the land needed for off-grid generation (mini-hydro and solar) should follow the principles and procedures in the TREEP RMF.

Core Principle 5: Indigenous Peoples and Vulnerable Groups

OP 9.00: Due consideration is given to cultural appropriateness of, and equitable access to, program benefits giving special attention to rights and interests of Indigenous Peoples and to the needs or concerns of vulnerable groups.

- BP 9.00:*
- Undertakes free, prior, and informed consultations if Indigenous Peoples are potentially affected (positively or negatively) to determine whether there is broad community support for the program.
 - Ensures that Indigenous Peoples can participate in devising opportunities to benefit from exploitation of customary resources or indigenous knowledge, the latter (indigenous knowledge) to include the consent of the Indigenous Peoples.
 - Gives attention to groups vulnerable to hardship or disadvantage, including as relevant the poor, the disabled, women and children, the elderly, or vulnerable groups. If necessary, special measures are taken to promote equitable access to program benefits.

Applicability and Summary Findings

Resettlement and environmental degradation tend to disproportionately impact the poor and vulnerable groups, documented in both academic studies on environmental justice in Tanzania as well as operational documents for other Bank projects/programs. The analysis confirmed that, at present, there is currently no specific legislation or policy in place in Tanzania on or for Indigenous Peoples.

While considering the applicability of this Core Principle, the analysis found that it was relevant in terms of ensuring that vulnerable groups are included in the planning process (especially needs prioritization), implementation and monitoring of program activities; that vulnerable groups have access to program benefits; and that the needs of vulnerable groups are considered with respect to the Programs impacts. For the ESSA, the analysis of vulnerable groups focused on children, persons with disabilities, youths (unemployed, females, youths with unreliable incomes), people living with long illnesses (e.g. HIV/AIDS, TB, etc.), women (female headed households, widows and those not able to support themselves), drug addicts and alcoholics, and disadvantaged communities. The approach of the Government is to ensure that all vulnerable groups are consulted and benefit from Government programs.

<p>System Strengths</p> <p>Tanzania has a longstanding practice of extensive consultation and participation at local levels which is consistent with the principle of free, prior and informed consultation leading to broad community support. This approach is enshrined in legislation, such as the Local Government Act, 1982 which promotes public meetings at the local level and encourages village residents in</p>	<p>Gaps</p> <p>The analysis identified a number of critical gaps in the system as written, including:</p> <p>Identification of Vulnerable Groups: While vulnerable groups are generally included in the screening process for ESIA through EMA or in the Tanzanian system for land acquisition and resettlement, there is some risk that this may not</p>
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<p>“undertaking and participating in communal enterprises” and to “participate, by way of partnership or any other way, in economic enterprises with other village councils.”</p> <p>The ESIA process in Tanzania does take into account social issues in screening, impact assessment, and mitigation measures. Part of NEMC’s screening criteria for ESIA’s is to assess if impacts vary by social group or gender, and if resources are impacted that vulnerable groups depend upon. Additionally, there is currently an initiative within NEMC and supported by donors to better mainstream social issues such as gender and HIV/AIDS in the ESIA process.</p> <p>Tanzania also has policies specific to some vulnerable groups such the National Gender Policy and National Policy on HIV/AIDS, in order to prevent discrimination and promote equity. There is also strong guidance for community participatory planning by PMO-RALG through the “Opportunities and Obstacles to Development Handbook”, which promotes inclusion of some of the vulnerable groups throughout the planning and implementation process. Such a process is being followed by the Tanzania Social Action Fund (TASAF) to support the poor in participating communities across the country.</p> <p>Weaknesses</p> <p>There is no system in place that defines Indigenous Peoples in Tanzania.</p> <p>Even though some of the vulnerable groups are covered under above polices and guidance, there is no specific policy for them that might be affected by different projects, including TREEP.</p>	<p>be adequately handled in the program.</p> <p>Resettlement: While the Tanzanian ESIA process includes analysis of impacts on vulnerable groups there are no specific requirements for considering gender and vulnerability in resettlement and compensation processes beyond payment of compensation for lost land.</p> <p>The experience with vulnerable groups of PAPs could benefit from further information and action – it is clear that at least in donor-funded programs with Environmental and Social management/and or Resettlement Action Plans, vulnerability is screened for and taken into consideration; however, there is little information on how vulnerability is considered in the actual practice of compensation and/or relocation where necessary.</p> <p>Monitoring: Monitoring of gender, poverty, economic and social vulnerability, and HIV/AIDS in the development planning process is in need of strengthening. In the energy sector there is no common method of analysis and collection of baseline to aid development planning on these issues.</p>
<p>Actions and Opportunities</p> <p>Technical Guidance and Implementation Capacity: While there are some criteria for vulnerable groups in the ESIA process, these need to be strengthened. If requested by the Government, the project may support the current undertaking by NEMC to better mainstream vulnerability, gender and HIV/AIDS in the environmental and social assessment process and</p>	<p>Risks</p> <p>It is clear from the analysis that if the gaps identified and opportunities presented in this core principle (where applicable) are not addressed, the Program would be at risk of not generating the desired environmental and social effects for all potentially-affected people and would remain inconsistent with the guiding principles of OP/BP</p>

<p>to ensure socially appropriate benefit-sharing..</p> <p>Addressing Resource Constraints: It is unclear if any staff in the REA is trained to provide inputs on identifying, consulting with, and assisting vulnerable groups that may be impacted by the types of activities that will be financed by TREEP and/or promoting social inclusion in the development planning process. The Program capacity building and training plan can include measures for good practices on inclusive consultations, monitoring and feedback of all groups of people.</p> <p>To mitigate some of the negative impacts on vulnerable groups and to enhance positive impacts, free, prior, and informed consultation will be done with them before projects under TREEP are finalized. In addition, some rapid social assessment will be done to assess the situation with regard to vulnerable and disadvantaged groups and to propose measures to ensure that the development process fully respects their dignity, rights, economies, and social characteristics and needs.</p> <p>Additionally, unless there is free, prior and informed consultation leading to broad community support, program activities would not: (i) commercially develop socio-economic resources and knowledge of vulnerable groups; (ii) displace vulnerable groups from traditional or customary land; or (iii) commercially develop natural resources within customary lands under use that would impact livelihoods or the social values of vulnerable groups.</p>	<p>9.00.</p>
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Core Principle 6: Social Conflict and Equity

<p><i>OP 9.00:</i> Avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.</p>
<p><i>BP 9.00:</i> The Program considers conflict risks, including distributional equity and cultural sensitivities.</p>
<p>Applicability and Summary Findings</p> <p>Tanzania is not a fragile or post-conflict state, and there are no areas subject to territorial disputes.</p>

However, there can be issues of distributional equity in extension of electric service in rural areas that could lead to conflict. It has been noted in some areas that REA projects by-pass certain villages and leave them out while in many areas, 33kV or 11kV lines pass over the villages without providing electricity to those villages. This is not only raising concerns to the villages but it will threaten peace because, in most of these areas, land has been acquired and people have not been compensated. In one area for example, local people refused the construction of the power lines and force has to be used to ensure the contractor is working.

<p>System Strengths</p> <p>Project areas do not have social conflicts</p>	<p>Gaps</p> <p>The core principle should consider land use conflicts as the major type of social conflict in Tanzania mainly between farmers and pastoralists or between famers themselves due to encroachment to other people’s land</p>
<p>Actions and Opportunities</p> <p>The opportunities and actions identified for strengthening the system for Core Principles 1, 4 and 5 are applicable to Core Principle 6</p>	<p>Risks</p> <p>If citizens do not receive compensation to restore livelihoods, there could be conflicts, vandalism of the infrastructure, delays in project implementation, and, as a result, additional costs to the project.</p> <p>Where the distribution line goes through a village, and that particular village is not benefiting from the project, residents could resisting the line’s construction and hence delay the project.</p>

7.2 Integrated Risk Assessment

61. Based on the findings of the ESSA Analysis, the following table aggregates the risks discussed above, and proposed measures to mitigate those risks. The overall environmental and social risk of the Program is considered low because, whereas mini-hydro projects have potential adverse impacts that require specific management plans, and land acquisition has potential adverse impacts on livelihoods, these impacts are of limited scale and are manageable under the Tanzanian system when strengthened by the actions recommended in the ESSA. This risk assessment is included in the Program’s integrated risk assessment.

Risk Description	Risk Management
<p>Potential Environmental Impacts of the project are not identified, mitigated, and monitored;</p>	<p>TREEP’s environmental risks are low overall. With the exceptions of risks associated with mini-hydro and biomass generating plants and solar home system maintenance, they can be mitigated with application of good practice and other well understood mitigation measures. Mini-hydros require analysis of stream flows, management of the catchments, aquatic ecology, and downstream uses to arrive at environmental flows and operating rules to preserve environmental services that may be important to communities. Biomass gasification plants require design features for proper waste management and prevention of explosion and fire. TREEP includes measures to improve the quality of environmental assessments and management plan implementation, as well as to reduce costs and delays incurred by SPPs in the preparation and processing of environmental assessments. REA will prepare an environmental and social procedural manual that will include environmental, health, and safety guidelines. Monitoring and supervision of due diligence measures related to environmental and social issues will be a part of World Bank supervision.</p>
<p>Potential social impacts of the project are not identified, mitigated or monitored.</p>	<p>The potential social impacts of most concern are:</p> <ul style="list-style-type: none"> • Loss of sources of livelihood resulting from wayleave clearing, chiefly valuable trees and crops • Termination of electric service to social infrastructure because of non-payment • Marginalization of vulnerable groups • Unrest in villages “skipped” in grid extensions • Impairment of environmental services of importance to communities downstream of mini-hydro generating plants <p>The project will include development of a REA environmental and social procedural manual for wayleave acquisition covering topics including consultation and participation of PAPs in planning, a method to document that voluntary land contributions are truly voluntary, and livelihood restoration. REA will develop forms and procedures to facilitate and document coordination with District and local governments to ensure timely budgeting for electric service to schools, health centers, etc. REA will also have procedures to screen for the presence of vulnerable groups, to engage them in free, prior informed consultation, and to ensure they are treated equitably in the project. REA will define and publicize its criteria for selecting villages to be connected to new power lines and will ensure that “skipped” villages understand the reasons and prospects. Environmental assessments for mini-hydros will accord special attention to downstream impacts.</p> <p>The ESSA recommends that REA monitor and report annually on its compliance with existing land and compensation laws in wayleave</p>

	<p>acquisition, and that the monitoring be subject to third party verification. Monitoring and supervision of management measures related to social issues will be a part of World Bank supervision.</p>
<p>Information to, consultation with, and participation of affected stakeholders remain weak.</p>	<p>REA will develop and publicize a Stakeholder Engagement Plan (SEP) covering all aspects of the project, including a Grievance Mechanism that will be readily accessible to interested and affected communities. Staff will receive training on the SEP. In addition, the REA environmental and social procedural manual will include procedures for consultation during environmental and social assessments.</p>

VIII. Recommended Measures to Strengthen Systems Performance

8.1 System Performance Strengthening

62. The Program ESSA analysis presented above identifies strengths, gaps and opportunities in Tanzania’s environmental and social management system with respect to effectively addressing the environmental and social risks associated with the Program. This section converts these gaps and opportunities into a viable strategy to strengthen environmental and social management capacity and performance at the national and local level.

63. The analysis identified the following main areas for action in order to ensure that the Program interventions are aligned with the Core Principles 1, 2, 3, 4, and 5 of OP/BP 9.00. These could be further defined during the consultation process and during implementation, as required. The ESSA therefore identifies the following key measures to be taken for improved environmental and social due diligence in the Program.

Measures to Strengthen System Performance for Environmental and Social Management	
Objective	Measures
Elevate the effectiveness of the Tanzanian environmental and social management system to its full potential for the PforR program	<p>Strengthen capacity for ESIA preparation, review, and approval through: (a) preparation of a Strategic Environmental and Social Impact Assessment for development of renewable energy in Tanzania; (b) establishing an ESIA consultant qualification system at REA to demand special skills for experts undertaking ESIA for REA projects; and (c) continuing the training begun under TEDAP for ESIA consultants, implemented by REA and NEMC; (d) exploring other options that would streamline processing and reduce costs to SPPs.</p> <p>Strengthen capacity for monitoring, supervision and enforcement of HSSE management measures by (a) adding staff and equipment to REA’s environmental and social unit; (b) placing environmental staff in TANESCO’s zonal offices to provide support district office supervision of REA’s grid-extension projects; (c) continuing the EMO training program begun under TEDAP, conducted by NEMC; and (d) including environmental, health and safety guidelines in the REA environmental and social procedural manual (see below).</p> <p>Strengthen REA’s capacity for informing and consulting with all stakeholders including district and local government through formulation and adoption of a Stakeholder Engagement Plan (SEP) following the detailed guidance in Annex 7 of the TREEP ESMF, and administer training to REA staff in its application.</p>

<p>Improve implementation capacity for the application of the Tanzanian land laws in a transparent and participatory manner, in keeping with the principle of improving or at least restoring livelihoods</p>	<p>REA to prepare an environmental and social procedural manual and build capacity for wayleave acquisition that provides (a) improved and updated technical guidance for better implementation of the existing land laws; (b) greater transparency and consultation when land and livelihoods are involved; (c) special care in managing voluntary land contributions, including well-defined and transparent criteria and clear documentation of transactions (REA has some precedent in implementing TEDAP's off-grid component); (d) transparent and well-defined procedures for livelihood restoration; (e) strong and readily accessible grievance redress mechanism; and (f) provisions for community participation. The updated TEDAP RPF, now known as the TREEP RMF, provides extensive guidance for implementing these measures.</p> <p>Acquisition of the land needed for off- grid generation (mini-hydro and solar) should follow the principles and procedures in the TREEP RMF.</p> <p>The Project Action Plan will include a requirement for annual REA monitoring and reporting by REA on its compliance with existing land and compensation laws in wayleave acquisition, subject to third party verification.</p> <p>REA to define and publicize the criteria for selection of villages to be connected.</p> <p>REA to develop a standard form to be signed with each district involved in the program, to ensure the timely provision of the budget for payments to TANESCO for electric service to be provided to social infrastructure (schools, clinics, etc.) under TREEP.</p>
<p>Strengthen procedures to promote equitable allocation of benefits and impacts of rural electrification</p>	<p>REA should include in its policies and its procedural manual measures to ensure equitable treatment of any vulnerable groups that may be affected by its grid-extension activities. This should provide guidance for screening to detect the presence of vulnerable or disadvantaged groups, and measures for their consultation and participation so that that project plans and designs take into consideration their needs, priorities, and preferences. The procedural manual should define mechanisms whereby vulnerable and disadvantaged groups will be provided with relevant project information in local languages and in form and manner socially acceptable to them. REA's policy should specify that any project planning to acquire land in an area where vulnerable groups are present will undertake free, prior and informed consultation leading to broad community support, and each project will establish a grievance redress mechanism to handle any complaints from project-affected people and allow them to voice their concerns and questions.</p> <p>In practice, this may require culturally appropriate methods of data collection. Data should be disaggregated so that outcomes for vulnerable groups can be discerned.</p>

8.2 The Grievance/Complaint Redress Mechanism

64. National Level: At the national level there is a government portal available for registering complaints. In addition, REA will also have a portal that can be used for registering complaints. The existence of this mechanism needs to be widely disseminated in format and language understood by the citizens using all media accessible to them. In addition the implementers of both the portals need to have a person identified for integrating the complaints into the community score card for discussion with service providers and monitored for redress. The Open Government Project in the pipeline will also assist in this area and lay out a streamlined process that can be followed by all government ministries.

65. Local Level: : LGAs have a complaint box to receive complaints and, depending on the issues raised, the LGA either provides resolutions or includes the complaint in the community score card for mutual discussions and resolution.

66. Communities and individuals who believe that they are adversely affected by a World Bank supported project may submit complaints to existing project-level grievance redress mechanisms or the Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the World Bank's independent Inspection Panel, which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond⁹

⁹ For information on submitting complaints to the World Bank's corporate Grievance Redress Service (GRS), <http://www.worldbank.org/GRS>.

For information on submitting complaints to the World Bank Inspection Panel: www.inspectionpanel.org.

IX. Stakeholder Consultations

67. The ESSA process included extensive stakeholder consultations and disclosure of the ESSA Report following the guidelines of the World Bank’s Access to Information Policy. At present, the ESSA consultation process is embedded in the Program consultation process. Feedback from stakeholders has been instrumental in designing and revising the program Action Plan, indicators, and technical manual.

68. Consultations: For the preparation of this ESSA, Bank specialists undertook meetings and consultations with different stakeholders including government agencies at National, Regional and District level, development partners, District Authorities, contractors and local communities that either have an ongoing project or are likely to benefit from this project, and development/funding partners. Further consultations were undertaken during appraisal and consisted of consultations with a large group of stakeholders along with smaller meetings with selected stakeholders. (See Annex 2 for the list of participants).

69. Document Dissemination and Public Comments Period: The final draft ESSA was publicly disclosed and shared with the donor partners and stakeholders involved with environmental and social management issues in Tanzania. The final report was translated in Kiswahili and disclosed publicly as well as in the World Bank InfoShop in Washington and in the Public Information Center of the World Bank office in Dar es Salaam and to several stakeholders.

70. Consultation Event: A public consultation was held where the ESSA was presented and stakeholders were invited to offer inputs on the findings and recommended actions in an interactive format.. Other consultations were undertaken during field visits. A list of consulted individuals is in Annex 2 while the list of participants to the workshop is in Annex 3.

71. The issues discussed and information provided during the various interviews, field visits and the stakeholder workshop that was used for disclosing the report are provided in table below:

Issues Raised	Response
<p>Supervision</p> <p>The arrangement is that REA appoints a contractor for the projects and TANESCO is the main consultant for REA- however the supervision is mainly on technical issues with limited or no consideration of Environment or Social aspects.</p> <p>Currently TANESCO and REA have Environmental Units but with no representation at the Regions or District Offices and therefore limited capacity to supervise on such aspects</p>	<p>TREEP is promoting assignment of environmental staff to TANESCO zonal offices.</p>

<p>District officials revealed willingness to work with REA/TANESCO in monitoring and supervision, however insisted that it is important for them to receive some kind of training.</p>	<p>TREEP will continue the training delivered by NEMC to regional and district officers during TEDAP</p>
<p>Compensation of affected Properties</p> <p>Discussion with REA and TANESCO revealed that the current arrangement is for local communities to volunteer their land for the distribution lines; though consultation with locals indicate that they would prefer to receive compensation especially if structures and permanent crops are affected as this affects their livelihood. “Why is it that only REA projects do not pay compensation while all other Government projects pay those affected?”</p> <p>TANESCO officials at Regional and District offices revealed that they sometimes face resistance from PAPs who insist that they would prefer to be paid compensation particularly those losing cash crops (permanent crops) and recommended that the Government should consider allocating budget for compensation to minimize conflicts in project areas.</p>	<p>ESSA is proposing a livelihoods restoration component in TREEP.</p>
<p>Stakeholders Engagement:</p> <p>There is limited stakeholders engagement in REA projects at District and local level for instance District officials claim to have limited information regarding the project or even the land acquisition process;</p> <p>Likewise local communities revealed that they are engaged at a minimal level regarding time frame of project implementation and land acquisition process; for instance meeting to discuss/or ask locals to volunteer land are done prior to locals knowing exactly the magnitude of impact or who will be affected, therefore once they realize it's too late as they had already accepted to volunteer.</p>	<p>TREEP is requesting REA to prepare and disclose a Stakeholder Engagement Plan.</p> <p>REA will have a procedure to document coordination with District and local government.</p>
<p>Way leave with TANROADS</p> <p>Previously REA had considered of utilizing TANROADs way leaves for the construction of the distribution lines, however currently TANROADs are resisting the use of these way leaves and hence force REA to acquire land from</p>	

individual local people.	
<p>Benefits of the project</p> <p>Local communities are positive of the projects as the Rural electrification has improved individual household living condition, improved quality of services in schools, water pumps and health facilities and has increase business opportunities</p>	
<p>With regard to household benefits –how could the poorest of the poor get connected and benefit, especially poor female headed households?</p>	<p>TREEP is recommending that TANESCO continue with the policy of reduced rates for certain groups to enable them get connected.</p> <p>TREEP is also recommending that Districts meet the cost of electricity provided to social services such as water, health, schools, street lights</p>
<p>The program to raise the use of energy for cooking as currently its only for lightening while firewood is the main source cooking leading to environment degradation</p>	<p>TREEP recommends that REA continue with support on bio-gas programs for cooking especially for institutions such as schools, prisons and so as to reduce the impact on forest.</p>
<p>The use of firewood is not a rural phenomenon alone, because even in urban areas, people still use firewood or charcoal</p>	
<p>The program to cover vulnerable groups</p>	<p>REA will develop a manual dealing with how to engage with various groups including vulnerable and poor in the rural areas and develop affirmative policies of dealing with such groups</p>
<p>Awareness of Environment and Social tools</p> <p>There is limited knowledge on use of environmental and social tools particularly by those implementing the project at the site that include the consultant (for this case TANESCO regional and district officials) as well as the contractors and recommend that TANESCO and/or REA should have a representative at Regional level to overlook Environment and social aspects during REA project implementation.</p>	<p>TREEP is proposing posting of environmental staff in TANESCO zonal offices, a practice also being proposed by Millennium Challenge Corp.</p>

REA to contribute to the management of catchment areas as a source of water for its projects	REA will consult with the MEM and other stakeholders on how best to implement this idea
<p>Project implementation</p> <p>Stakeholders particularly Local communities and District officials are concerned with the modalities of REA project implementation particularly selection of sites that sometimes leads to villages being left out of a project and instead only distribution lines going through the villages. Locals revealed that in such cases locals can resist these lines to go through their villages or even vandalize the infrastructures.</p>	REA will define and disclose its criteria for selecting villages for electrification
Stakeholders are concerned about the changes taking place in rural areas, especially currently; some centers in rural areas are turning into small towns and with the government plans of industrialization in rural areas, it is likely there will be significant change in rural areas requiring more electricity.	REA intends to expand electricity generation to have more electricity delivered to rural and peri-urban areas that will meet their criteria.
The document lays the foundation for implementation of some of the measures such as SESA	SESA and capacity development programs will be undertaken as part of the project implementation
The report should consider the effect of climate change on renewable energy such as hydros	Climate Change issues will be included as a gap that need to be addressed in line with meeting the requirements for Core Principle One
Delays in the implementation of the project due to weaknesses at institutional level or with individual EIA experts	REA to continue to work with NEMC to address the challenges caused by delays on the part of the process that NEMC is handling but also to continue with their policy of outsourcing environmental experts to deal with specific issues due to having limited in house capacity
Project does not cover other sources of energy such as biomass	Currently, REA is focusing in solar, hydro as sources of energy in rural areas, recognizing also the importance of biomass.

Annex 1. Environmental Impact Assessment (EIA) Process in Tanzania

The key steps of the EIA process are:

Registration: The proponent is required to register a project with NEMC by submitting a completed EIA application form and a project brief that provides a summary description of the project. The forms are available at NEMC.

Screening: Screening is an initial review step in the EIA process. Thus, the EIA application forms and Project Brief are screened in order to assess and establish the category of project and determine the level of EIA required. This is done by NEMC within 5 working days after submission of EIA registration forms.

Scoping: If the screening indicates that a full EIA is required, identification of main issues of concern through scoping will be conducted by the developer through his Consultant. This is done by consulting all the relevant concerned parties. Draft Terms of Reference (ToR) will then be prepared to guide the impact assessment study. A Scoping Report and draft Terms of Reference (ToR) are submitted to NEMC for review and approval. This is done within 10 days after submission of the Scoping Report.

Impact Assessment: Conducting EIA study is done after approval of ToR by NEMC. The Consultant uses the ToR to conduct the actual EIA study. The crucial task is to identify likely impacts, assess and evaluate their severity and magnitude and propose mitigation measures to minimize potential negative impacts and enhance positive benefits. The output of this stage is a draft EIA report, also known as Environmental Impact Statement (EIS). This includes an Environmental and Social Management plan (ESMP) as well as a Monitoring Plan (MP) that outline management and monitoring of anticipated impacts, including those, which affect local communities in the project area. Public consultation is mandatory when conducting an EIA and the proponent (through his consultant) must meet key stakeholders to get their views and include them in the report. A list of all consulted parties is attached in the report together with their signatures as proof of participation in the EIA process.

Review: Once the proponent has submitted a draft EIA report (EIS), NEMC conducts site verification visit. The site visit is conducted to verify information provided in the EIS report. NEMC then coordinates a cross-sectoral Technical Advisory Committee (TAC) to review the EIS. The TAC is composed of members from sectors responsible for environment and the relevant sector for the proposed project. NEMC also send draft report to relevant sector to get their input prior to the TAC meeting. Review of EIS is completed by NEMC within 60 days from the date it was received by NEMC.

Public hearing: As part of the review process a public hearing may be necessary to address public concerns over a proposed activity or project. Normally this takes place when major concerns have been raised by the public and potential negative impacts of the proposed project are perceived to be far reaching. Other critical factors that may necessitate public hearing are sensitivity of the site location, type and scale of project, technology used, multiple land use considerations, presence of relocation and resettlement issues, cumulative impacts and any other factor related to a particular project that might

cause public concern. The decision to call for a public hearing is vested on NEMC and is not a common practice in Tanzania.

Environmental Decision-Making: After submission of the final version of the EIS, NEMC assesses it in order to ascertain whether all the TAC comments and recommendations have been adequately addressed by the consultant. Thereafter, a report covering NEMC review, site visit and proposed terms and conditions for issuance of the EIA Certificate are submitted to the Minister responsible for environment, together with the EIS. Approval/disapproval of the EIS is done by the Minister responsible for Environment as stipulated in EMA 2004 section 92 (1) within 30 days of receipt of the EIS and recommendations from NEMC.

Appeals: Both the proponent and the affected or interested parties have the right to appeal. If there is dissatisfaction on the decision reached, provision for appeal to the Environmental Tribunal or Court of law is provided by law.

Project Implementation: This is conducted according to the terms and conditions of approval and is guided by the Environmental and Social Management and Monitoring Plans.

Monitoring: It is the collection of data through a series of repetitive measurements of environmental parameters (or more generally, a process of systematic observation) over a long period to provide information on characteristics and functioning of environmental and social variables in space and time. Day to day internal monitoring (routine monitoring) is done by the developer (project management team), but compliance monitoring is done by NEMC in collaboration with key stakeholders and regulatory bodies.

Environmental Audit: Environmental audit is an independent and objective oriented examination of whether the practice complies with expected standards. Broadly, environmental audit means a check on some aspects of environmental management, and implies some kind of testing and verification. There are two levels of Environmental Audits, i.e. Environmental Impact Audit and Environmental Management Audit. Environmental Impact Audit involves comparing the impacts predicted in an EIS with those that actually occur after implementation of the project while Environmental Management Audit involves checks against adherence to plans, mitigation measures and general compliance of terms and conditions. However, the law in Tanzania does not distinguish audits but directs developers to conduct audit for ongoing project or projects that were established prior to the coming into force of the EMA. NEMC is required to conduct compliance audit, to verify if projects complies with policies, regulations, and conditions of development.

Annex 2. List of Persons Consulted

Consultations were held in Dar es Salaam during ESSA drafting with following persons:

Millennium Challenge Account – Tanzania

Mr. Ernest Mwasubila, Environmental and Social Performance Coordinator

National Environmental Management Council

Mr. James Ngeleja, Project Coordinator, ESCBP and TEDAP/TREEP

Mr. Carlos Mbuta, Principle Environmental Management Officer

Ms. Jacqueline Mwakangale, Environmental Management Officer

Rural Energy Agency

Mr. Boniface Gissima Nyamo-Hanga, Director of Market Development and Technology

Mr. Duncan Rusule, Environment Manager

TANESCO

Mr. Hamdun Mansur, Manager, Environment

Consultations as part of field visits during ESSA drafting were held with the persons listed below.

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19	Msingija Lugata	Region Manager TANESCO- Kigoma Region	+255786405085
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21	Joseph Ngoso	Acting District Executive Director-Kasulu District	
22	Tumsifu Kiwisu	Human Resource Officer- Kasulu District Council	
23	Fanuel Samwel	TANESCO Technical officer- Kasulu District	
24	Adrian Kushula	TANESCO Technical person-	

		Kasulu District	
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Annex 3 List of Workshop Participants
ENVIRONMENT AND SOCIAL SYSTEMS ASSESSMENT (ESSA) CONSULATATION
January 19, 2016-MIRAMBO CONFERENCE ROOM

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1.	OTHMAN MGENI	TPDC	omegeni@tpdc-tz.com	0713813532
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Annex 4. List of References

TECHNICAL REPORTS AND GOVERNMENT SOURCES

In addition to the laws, policies, and regulations cited in this report, the ESSA has drawn from a range of sources including Government documents, technical reports, evaluations, and project documents. This annex lists some of key sources that were consulted in the preparation of the ESSA.

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