

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF ENERGY AND MINERALS

TANZANIA'S SE4ALL INVESTMENT PROSPECTUS

December 2015



SUSTAINABLE
ENERGY FOR ALL



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TANZANIA'S SE4ALL
**INVESTMENT
PROSPECTUS**

December 2015

ACRONYMS AND ABBREVIATIONS

AA	Action Agenda
ACP	Africa, Caribbean and Pacific
AGOA	African Growth and Opportunity Act
ATIA	Africa Trade Insurance Agency
AUC	Africa Union Commission
BEST	Biomass Energy Strategy
BIS	Biomass Information System
BRN	Big Results Now
EAC	East African Community
EBA	European Union Everything But Arms
EE	Energy Efficiency
EIA	Environmental Impact Assessment
EPP	Emergency Power Producers
EPC	Engineering Procurement and Construction
EPZ	Export Processing Zones
ESI	Electricity Supply Industry
ESMAP	Energy Sector Management Assistance Programme
EU	European Union
EWURA	Energy and Water Utilities Regulatory Authority
FiT	Feed-in-Tariff
GACC	Global Alliance for Clean Cooking
GDP	Gross Domestic Product
GoT	Government of Tanzania
GRMF	Geothermal Risk Mitigation Facility
GWh	Gigawatts hour
HIOs	High-Impact Opportunities
HPP	Hydropower Project
HV	High Voltage
ICSID	International Centre for Settlement of Investment Disputes
ICT	Information, Communication and Technology
IP	Investment Prospectuses
IPPs	Independent Power Producers
JESR	Joint Energy Sector Review
KTTC	Kilimanjaro Tower and Tourist Centre
kV	Kilo Volt
kWh	Kilowatt hour
LPG	Liquefied Petroleum Gas
LTPP	Long-term Perspective Plan
LV	Low Voltage
MEM	Ministry of Energy and Minerals
MEPS	Minimum Energy Performance Standards

MER	Monitoring, Evaluation and Reporting
MIGA	Multilateral Investment Guarantee Agency
MKUKUTA	National Strategy for Growth and the Reduction of Poverty
MV	Medium Voltage
MW	Megawatt
NDC	National Development Corporation
NKRA	National Key Results Area
PPPs	Public Private Partnerships
PSMP	Power Systems Master Plan
RAGA	Rapid Assessment and Gap Analysis
RE	Renewable Energy
REA	Rural Energy Agency
REB	Rural Energy Board
REF	Rural Energy Fund
REMP	Rural Energy Master Plan
RERS	Renewable Energy Resource System
RET	Renewable Energy Technologies
SADC	Southern African Development Community
SE4ALL	Sustainable Energy for All
SEZ	Special Economic Zones
SPPAs	Standardized Power Purchase Agreements
SPPs	Small Power Producers
SREP	Scaling-up Renewable Energy Programme
SSMPs	Sustainable Solar Market Packages
STAMICO	State Mining Corporation
SWER	Single Wire Earth Return
TA	Technical Assistance
TANESCO	Tanzania Electric Supply Company Limited
TBS	Tanzania Bureau of Standards
TDBP	Tanzania Domestic Biogas Programme
TDV	Tanzania Development Vision
TEDAP	Tanzania Energy Development and Access Project
TIC	Tanzania Investment Centre
TShs	Tanzania Shillings
US\$	United States Dollar
USA	United States of America
VAT	Value Added Tax
WB	World Bank
WD	Wheel Drive

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1 EXECUTIVE SUMMARY

This Investment Prospectus aims at presenting the short-term priorities of the Tanzanian Government for the operationalization of the country's SE4ALL Action Agenda (AA).

Access to modern energy services is a necessary precondition for achieving development goals that extend far beyond the energy sector, such as poverty eradication, access to clean water, improved public health and education, women's empowerment and increase food production. The United Nations (UN) Secretary General launched the SE4ALL Initiative in September 2010 to achieve three inter-related goals by 2030:

- Ensuring universal access to modern energy services.
- Doubling the rate of improvement in energy efficiency (EE).
- Doubling the share of renewable energy (RE) in the global energy mix.

Tanzania opted-in and became one of the 14 early movers for Africa in 2012. Tanzania's SE4ALL AA seeks to integrate the multi-tier efforts that the Country is implementing towards providing universal access to energy, increasing energy efficiency and generating an increase in the use of renewable energy. By means of the AA, the Government of Tanzania (GoT) continues its commitment to transform its energy sector, and to deepen the reforms needed to scale up public and private investments in the sector to meet its SE4ALL 2030 goals.

The SE4All Initiative requires countries to set quantitative objectives for each of the three goals. Tanzania's SE4ALL goals are set as follows:

Universal access to modern energy services		Doubling global rate of improvement of energy efficiency	Doubling share of renewable energy in global energy mix	
Percentage of population with electricity access	Percentage of population with access to modern cooking solutions	Rate of improvement in energy intensity	Renewable energy share in Total Final Energy Consumption Power	Heat
>75%	>75%	-2.6% per year ¹	>50% ²	>10%

Considering that the current scenario is led by the early stages of the promotion of REA's Prospectus, Scaling-up Renewable Energy Programme (SREP) and the Big Results Now (BRN) initiative, the implementation of the AA, as an overarching strategy, will require a transitional period. The intention of the GoT is to integrate the strategic approach of the SE4ALL into the Ministry of Energy and Minerals (MEM) Strategic Planning process, hence some of the targets would be subject to the assessment of the AA implementation's progression and as part of the 2016/2022 MEM Strategic Plan design process. As the GoT integrates SE4ALL into its sectoral planning, the trajectory towards the country's SE4ALL Goals is informed by the following phases:

- **Transition (2015 – 2016).** During this period, the country will integrate the AA and Investment Prospectus (IP) into the government mid-term planning (MTP) process by incorporating them into the MEM Five-year Strategic Plan

¹ This represents the average for the period 2001 – 2010; this target will reduce energy intensity by 41% in 2030.

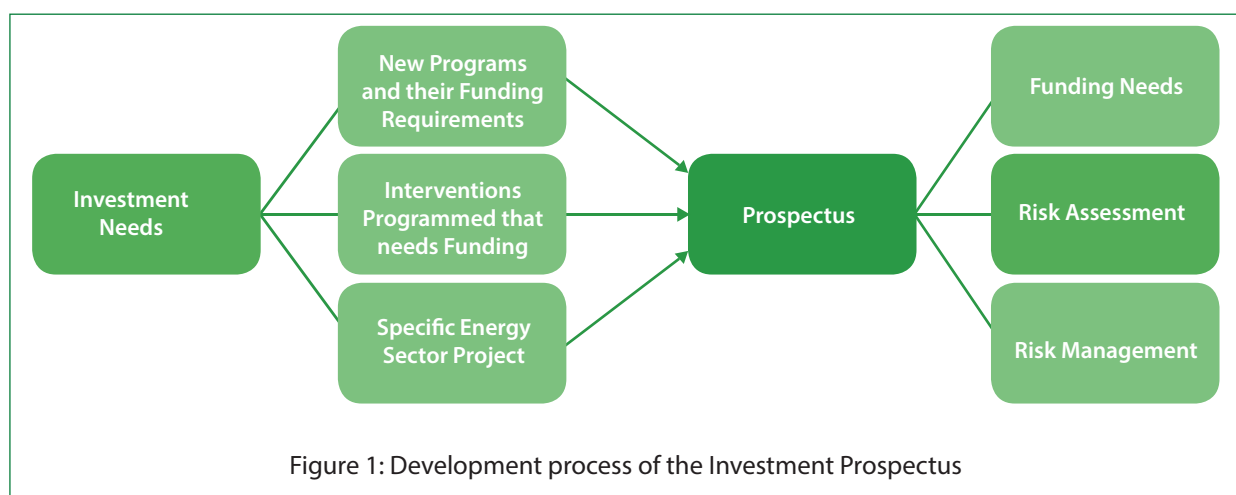
² This target includes renewable energy from off-grid generation.

2016 – 2020. As part of this process, the government will start a national dialogue with all stakeholders at national and sub-national level towards the adaptation, update and alignment of the existing initiatives with the country's SE4ALL AA. During this period, all new strategies and initiatives will have to be consistent with Tanzania's SE4ALL AA. As a result of this process, and to properly mirror the MTP, the AA and IP will be updated.

- **Transformation (2016 – 2020).** Starting July 2016, the AA and IP will operate fully integrated with MEM Five-year Strategic Plan. This means that from this moment onwards, the AA and the IP will be subject to same revision cycles than the MTP. This interaction will create synergies and contributions between the different new government plans, programs and policies and the AA and the MTP, resulting in a dynamic portfolio of IP(s). In this context, the AA will be reassessed on its progress, and additional initiatives and IP(s) should be incorporated as needed.
- **Consolidation (2020 – 2025)** – SE4ALL becomes the cornerstone of the national mid-term planning process. In this context, the AA will be reassessed on its progress and additional initiatives and IP(s) should be incorporated as needed.
- **Acceleration (2025 – 2030).** The sustainability and update of the actions and strategies will accelerate the process of achieving Tanzania's SE4ALL goals. In this context, the AA will be reassessed on its progress and additional initiatives and IP(s) should be incorporated as needed.

Because of the short period of time between the AA and IP adoption before it begins their integration into the MTP process, this IP is envisioned as a bridge to outline current funding needs for technical assistance, for closing priority gaps in the REA prospectus, and to present a pipeline of opportunities aimed at accelerating base load power supply and grid expansion. To facilitate the dissemination to prospective investors and Donors and to accelerate its integration into the MTP process in early 2016, this "bridge IP" is presented as a consolidated portfolio.

Consequently, the actions that will be integrated in the MTP should be prioritized during a national dialogue with all stakeholders at national and sub-national level towards the adaptation, update and alignment of existing initiatives, new strategies and interventions and this AA into MEM's Five-Year Strategic Plan, and impact on other Government Agencies' plans on nexus topics like health, education, nutrition, the environment and water. Once the Integration process is completed, the resulting IP(s) will comprise of an investment needs assessment, the resulting consolidated portfolios of opportunities and complete prospectuses, as presented in the figure below.



The present IP focuses in the following four areas:

- **Programme Support.** This focuses on the immediate needs of MEM and the SE4ALL Secretariat to carry out the implementation of the AA.
- **Project Investment Opportunities Associated to REA's Prospectus.** These are priority projects that required funding to close current gaps in the implementation of the Prospectus.
- **Project Investment Opportunities Associated to TANESCO's Prospectus.** These are primarily focused on on-grid power generation and grid infrastructure.
- **Other Project Investment Opportunities Associated to Access to Modern Electricity Services.**

2 DESCRIPTION OF THE INVESTMENT THESIS

2.1 Country Overview

Mainland Tanzania (herein referred to as Tanzania), part of the United Republic of Tanzania¹, is located on the East Africa region and has a land area of 883,343 km². Tanzania also includes two major islands, Ukerewe and Mafia with 67 km² and 518 km², respectively².

According to the 2012 Census, Tanzania has an estimated population of 43.6 million inhabitants, of which 70.9% were considered rural population. Tanzania's population average annual intercensal growth rate (2002-2012) has been 2.7%³.

In 2007, the percentage of the population of Tanzania living below the poverty line was 33.6%; 16.4% in Dar es Salaam, 24.1% on other urban areas and 37.6% in rural areas⁴. By 2012, Tanzania had 12.3 million (28.2%) below the poverty line. Poverty is higher in rural areas, 33.3%, than in urban areas, which is 15.5%⁵.

In 2012, the total GDP for Tanzania was US\$ 28.44 billion (44,718 billion TShs)⁶. In the last few years, between 2008 and 2012, the average annual GDP has been quite stable at around 6.7%⁷. In 2012 the annual GDP growth in Tanzania was 6.9%. Tanzania's registered GDP per capita in 2012 was US\$ 652⁸.

The Tanzanian economy depends heavily on agriculture, which, in 2012, accounted for around 27% of GDP⁹, and employed around 62%¹⁰ of the population. Important exports in 2012 were tobacco (TShs 384 billion corresponding to US\$ 0.24 billion), coffee (TShs 293 billion corresponding to US\$ 0.19 billion) and cashew nuts (TShs 222 billion corresponding to US\$ 0.14 billion)¹¹. Minerals, such as gold (which in 2012 represented TShs 3,410 billion or US\$ 2.2 billion in exports) and tourism are also increasingly contributing to a substantial proportion of the country's economy. Accounting for 24% of GDP¹², Tanzania's industrial sector is one of the fastest growing in Africa. In recent years, Tanzania has discovered larger natural gas reserves than previously estimated, and thus natural gas is likely to be an important future source of revenue for the country as well as playing a key role in meeting the country's energy needs.

Tanzania is endowed with diverse forms of energy resources which have not been optimised including the recently discovered natural gas reserves, hydro power, coal, biomass, geothermal, solar, wind and uranium.

Tanzania has a series of development and sector policies and strategies, which support the country's progress towards the three SE4ALL goals: universal energy access, increasing the share of RE and enhancing EE. These strategic documents and activities include the following:

1 United Republic of Tanzania is composed of Mainland Tanzania and Zanzibar Tanzania. This AA only makes reference to Mainland Tanzania and not to Zanzibar Tanzania, which has a separate energy system and its own development policies and plans.
2 Tanzania's National Bureau of Statistics developed the Census 2012 of which the results were presented in several reports available online on its website: the "Tanzania in Figures 2012" published in June 2013 presents a summary of the results of the Census 2012 and data from other national surveys; the "Basic Demographic and Socio-Economic Profile" published in April 2014 presents detailed statistical demographic and socio-economic information from the Census 2012; and the "Housing Conditions, Household Amenities and Assets Monograph" published in January 2015 details the statistics for population, household conditions and amenities.
3 National Bureau of Statistics Report Basic Demographic and Socio-Economic Profile, April 2014
4 National Bureau of Statistics Report Tanzania in Figures 2012, June 2013
5 World Bank World Development Indicators (<http://wdi.worldbank.org>)
6 National Bureau of Statistics Report Tanzania in Figures 2012, June 2013
7 National Bureau of Statistics Report Tanzania in Figures 2012, June 2013
8 National Bureau of Statistics Report Tanzania in Figures 2012, June 2013
9 National Bureau of Statistics Report Tanzania in Figures 2012, June 2013
10 National Bureau of Statistics Report Basic Demographic and Socio-Economic Profile, April 2014
11 National Bureau of Statistics Report Tanzania in Figures 2012, June 2013
12 National Bureau of Statistics Report Tanzania in Figures 2012, June 2013

- Policy Framework:
 - Energy and Water Utilities Authority Act 2001 and 2006
 - National Energy Policy of 2003
 - Rural Energy Act 2005
 - Electricity Act 2008
 - The Petroleum Act 2008
 - Public Private Partnership Act N^o. 18 of 2010 and its Policy of 2009
 - Standardized Power Purchase Agreement & Tariffs (2008) (<10 MW)
- Government driven strategies and plans:
 - Tanzania's Development Vision (TDV) 2025 (1999)¹³
 - The Tanzania's Long-term Perspective Plan (LTPP) 2011/12 – 2025/26¹⁴
 - Joint Energy Sector Review (JESR) 2012/2013¹⁵
 - National Strategy for Growth and the Reduction of Poverty II - MKUKUTA II (July 2010)¹⁶
 - Power Systems Master Plan (PSMP) 2012 (May 2013)¹⁷
 - MEM Strategic Plan from 2011/12-2015/16 (November 2012)¹⁸
 - Big Results Now Phase I (BRN) Initiative 2013-2016 (April 2013)¹⁹
 - Scaling-up Renewable Energy Programme (SREP) – Investment Plan for Tanzania (May 2013)²⁰
 - Biomass Energy Strategy (BEST) for Tanzania (April 2014)²¹
 - Electricity Supply Industry (ESI) Reform Strategy and Roadmap 2014-2025 (June 2014)²²
 - National Electrification Program Prospectus (herein referred to as REA Prospectus) developed by REA (July 2014)
 - Guidelines for Sustainable Liquid Biofuels in Tanzania (Nov 2010)²³
 - The National Natural Gas Policy of Tanzania (Oct 2013)²⁴
 - Preparation of National Energy Efficiency Program for Tanzania (July 2014)²⁵
 - Energy Subsidy Policy (September 2013)²⁶
 - The Draft National Energy Policy (January 2015)²⁷
- Private Sector Strategies:
 - Tanzania Domestic Biogas Programme (TDBP)

13 Ministry of Planning, Tanzania's Development Vision, 1999.

14 President's Office & Planning Commission, The Tanzania Long-Term Perspective Plan (LTPP) 2011/12 - 2025/26 - The roadmap to a middle income country. Dar-es-Salaam: United Republic of Tanzania, 2012.

15 MEM, Joint Energy Sector Review (JESR) 2012/2013, 2014.

16 Ministry of Finance and Economic Affairs, National Strategy for Growth and Reduction of Poverty II - MKUKUTA II 2010-2015, July 2010.

17 MEM, Power System Master Plan (PSMP) 2012 Update, May 2013.

18 MEM, Strategic Plan 2011/12 - 2015/16, November 2012.

19 NKRA Energy, Tanzania's Development Vision 2025 Big Results Now: Energy Lab Final Report, April 2013.

20 MEM, Scaling-up Renewable Energy Programme (SREP): An Investment Plan for Tanzania, May 2013.

21 MEM, Biomass Energy Strategy (BEST) for Tanzania, April 2014. This has not been approved yet and is currently under revision.

22 MEM, Electricity Supply Industry (ESI) Reform Strategy and Roadmap 2014-2025, June 2014.

23 MEM, Guidelines for Sustainable Liquid Biofuels Development in Tanzania, November 2010.

24 MEM, October 2013

25 MEM, Preparation of National Energy Efficiency Program for Tanzania & Institutional Capacity Building –Final Draft (April 2014)

26 MEM, September 2013

27 MEM, January 2015

2.2 Tanzania's Energy Sector

2.2.1 The Power Sector

The sector is regulated by: the Acts of 2001 and 2006 which establish the Energy and Water Utilities Authority (EWURA) as the regulatory authority; the National Energy Policy of 2003 that aims at promoting sustainable energy in Tanzania; the Rural Energy Act 2005 which established the Rural Energy Agency (REA); the Rural Energy Board (REB) and the Rural Energy Fund (REF); the Electricity Act 2008; the Petroleum Act of 2008; the Gas Policy of 2014; and the Public Private Partnership (PPPs) Policy of 2009 and the PPP Act N.18 of 2010 that establishes the framework for PPPs including the coordination unit.

The Tanzania Electric Supply Company Limited (TANESCO) is the sole electricity off-taker in Tanzania. Fully owned by the Government, TANESCO is the only vertically integrated electricity supplier in Tanzania. However, in June 1992, their monopoly ended when power trading was opened up to private sector participation. At the moment, TANESCO faces severe difficulties related to poor generation and financial performance because of non-payment of electricity bills while overburdened by not cost-reflective tariffs from Independent Power Producers (IPPs). Therefore, the GoT decided to solve these problems by reforming TANESCO from a vertically integrated company to several generation and distribution companies. The reform roadmap for the sector and a draft Energy Subsidy Policy²⁸ are already developed and the implementation of the roadmap is already in place.

In terms of total primary energy consumption, biomass represents 90% of the energy consumed in Tanzania. Electricity represents 1.5% and petroleum products represent 8% of the energy consumption in the country. Solar, coal, wind and other sources represent around 0.5% of the total energy consumed in the country.

Tanzania's installed electricity generation capacity is 1,550 MW of which 1,466 MW is available on the grid. Installed capacity consist of 553 MW of large hydropower, 501 MW of thermal generation with natural gas, 456 MW with oil; 27 MW with biomass, and 13 MW of small²⁹ hydropower³⁰. TANESCO supplied 59% of the total electricity generation capacity; IPPs, 26%; emergency power producers (EPPs), 13%; and small power producers (SPPs), 2%. It is estimated that there is an additional 300 MW of distributed generation capacity, mainly composed of diesel engines that are not connected to the grid³¹. In addition, in order to face demand from cross border urban centres, Tanzania imports electricity from neighbouring countries³².

Like many other countries with high dependency on hydropower, Tanzania faces unpredictability of supply due to changing weather patterns. This is aggravated by the fact that most hydropower plants are located on two rivers prone to drought conditions. Hence, Tanzania has had to run expensive thermal power plants as base load and has suffered load shedding and high operational costs to supply electricity. It is therefore essential that the country diversifies its generation sources to avoid risks of distribution disruptions and price increases.

In 2012, the demand was 851 MW of on-grid power³³. In terms of electricity consumption per capita, Tanzania has very low levels: about 97 kWh/year in 2012³⁴. Efforts have been put forward in order to achieve the PSMP 2012 target of 200 kWh/year electricity consumption per capita by 2015/16³⁵.

Through the implementation of the different policies and strategies currently in place in Tanzania, electricity demand is expected to increase at a rate of 12%-15% annually from what it is today to 7,400 MW by 2035. Generation capacity is expected to increase at a rate of 6% annually, from around 1,550 MW in 2012 to at least 8,990 MW by 2035. A recent revision of the power sector strategy expects capacity to increase to 10,000 MW in 2025³⁶.

28 The Energy Subsidy Policy, which is still waiting for approval by the GoT, puts "forward an approach for decision making and action in terms of energy subsidies and switches to a focus on universal access and consumers paying their fair share of the costs of energy supply". MEM Energy Subsidy Policy 2013 (Draft).

29 Small hydropower are hydropower projects with capacities of 10 MW and below.

30 MEM, Scalling-up Renewable Energy Programme (SREP): An Investment Plan for Tanzania, May 2013.

31 MEM, Scalling-up Renewable Energy Programme (SREP): An Investment Plan for Tanzania, May 2013.

32 According to MEM Power System Master Plan (PSMP) 2012 Update (May 2013) Tanzania imported around 14 MW from Uganda, Kenya and Zambia.

33 MEM, Power System Master Plan (PSMP) 2012 Update, May 2013.

34 MEM, Strategic Plan 2011/12 - 2015/16, November 2012.

35 MEM, Strategic Plan 2011/12 - 2015/16, November 2012.

36 MEM, Electricity Supply Industry (ESI) Reform Strategy and Roadmap 2014-2025, June 2014.

For statistical purposes, the GoT uses two definitions of electricity access: (i) at household level: 1 connection implies 1 household connected to electricity; and (ii) at community level: access implies that any person within 600 metres of the low voltage distribution line(s) (33 kV, 11 kV or 0.4 kV) has access to electricity services³⁷.

In 2012, 20.7% of Tanzania's population was connected to electricity, correspondent to 9.5 million inhabitants³⁸. Increasing modern energy access is a major objective of the GoT. The different policies and strategies set the target of 75% for national electrification by 2033 with interim targets of 30% by 2016 and 50% by 2020. By 2012, TANESCO fell short of the new connections target set in 2007³⁹. Therefore, to close the gap, to face growing demand and to achieve the short-term target of increasing access to electricity to 30% by 2016, TANESCO has agreed to connect an average of 250,000 customers per year from 2013 to 2017⁴⁰.

While TANESCO has pursued on-grid access, REA has been the main driver for the deployment of off-grid electrification projects (decentralised solutions ranging from 1 to 10 MW), through the Tanzania Energy Development and Access Project (TEDAP), grid extension projects and other initiatives⁴¹. To date TEDAP's RE based electrification outcomes include: TANESCO signing Small Power Purchase Agreements (SPPAs) with 11 power developers to supply 46 MW of power and letters of intent with another six for 31 MW of power. Moreover 100,000 households are expected to benefit from the REA performance based grant support to mini-grids, Sustainable Solar Market Packages (SSMPs), stand-alone systems and the Lighting Rural Tanzania⁴² project.

Current strategies that aim to support current energy supply and access targets in the medium and long term, include:

- PSMP 2012 which provides the short-term (2013-2017), medium-term (2018-2023) and long term (2024-2035) plan for the development of the electricity supply sector, focusing on providing access to electricity supply through grid extension and connection and increased generation. The plan aims at increasing the overall electrification rate to 30% by 2015 and 75% by 2033; electricity supply to 2,780 MW by 2016 and more than 7,400 MW by 2035 (mainly through the implementation of hydropower, natural gas-fired generation and coal projects and with smaller contributions of solar, wind and biomass cogeneration projects)⁴³.
- REA's long-term strategy (2013–2022) has been put forward – the REA Prospectus – for both urban and rural households, which includes a mix of on-grid and off-grid solutions⁴⁴. The REA Prospectus aims at supporting the GoT electrification strategy through a cost-effective approach. Through the implementation of the REA Prospectus, it is estimated that by 2022 around 5,500 settlements would be electrified through the grid connection plan and 6,000 settlements through off-grid electrification and distributed technologies, thus contributing to achieve the 30% overall electrification rate by 2016.
- BRN, which will be the main driver for the implementation of Tanzania's goals and targets up to 2016, includes the development of 14 prioritised electricity distribution projects (7 generation projects to add more than 1,300 MW of newly installed capacity and 7 transmission projects to transmit the generated energy) as well as the establishment of 590,000 new connections (corresponding to providing access to approximately 5 million Tanzanians⁴⁵).
- TANESCO's grid expansion and infrastructure reinforcement projects. Grid reinforcement projects are already committed especially for the grids that have exceeded their thermal capacity and for the areas where more electricity generation capacity was added. The expansion of the grid expects that by 2016 more than 3,000 km of transmission lines (through the implementation of the BRN) will be added and by 2035 more than 8,700 km⁴⁶.

37 TANESCO and REA, Access to Electricity for Mainland Tanzania, 2014.

38 National Bureau of Statistics, Housing Conditions, Household Amenities and Assets Monograph, January 2015.

39 For example, at the end of 2011, TANESCO connected 75,461 new customers of the 100,000 annual target set in 2007. MEM PSMP 2012.

40 MEM, Power System Master Plan (PSMP) 2012 Update, May 2013.

41 MEM, Power System Master Plan (PSMP) 2012 Update, May 2013.

42 Lighting Rural Tanzania project financed by African Renewable Energy Access (AFREA) programme and TEDAP supports private enterprises in developing new business models to supply affordable energy in rural areas.

43 MEM, Power System Master Plan (PSMP) 2012 Update, May 2013.

44 REA, National Electrification Program Prospectus, 2014.

45 NKRA Energy, Tanzania's Development Vision 2025 Big Results Now: Energy Lab Final Report, April 2013.

46 MEM, Power System Master Plan (PSMP) 2012 Update, May 2013.

- Energy Access Market Accelerator, a partnership between the UN Sustainable Energy for All, the Energy+ Technical Working Group and Accenture Development Partnerships, aims to complement the existing energy access sector and aggregate existing information and services. It will also identify gaps, and work with country partners to close them, with the objective to increase competition of energy services and achieve a rapid scale-up.
- Cross-border electricity trade. Tanzania plans to reinforce grid connections with Kenya and Zambia and to establish new connections with Uganda, Mozambique, Rwanda, Burundi and Malawi.

2.2.2 The Process Heat Sector

Biomass-to-energy, mostly for heat production is responsible for 90% of the total primary energy consumption in Tanzania. 90% of the biomass demand is for household consumption (firewood, charcoal, crop residues). The rest of the biomass demand (10%) is for commercial, institutional and industrial sectors⁴⁷.

Table 1 shows the share of the different fuels consumed for household cooking in 2012. A very small percentage of Tanzania's households use modern energy for cooking⁴⁸ (2.6%), even in urban areas (6.9% of the households use modern energy for cooking). 94.2% of the households use wood-fuel (68.6% firewood and 25.6% charcoal) as their main source of energy for cooking.

Table 1: Primary cooking and heating energy in Tanzania – share of the different fuels in household cooking energy consumption (2012)

	PERCENTAGE			HOUSEHOLDS (MILLION)			POPULATION (MILLION)		
	TOTAL	RURAL	URBAN	TOTAL	RURAL	URBAN	TOTAL	RURAL	URBAN
Electricity	1.7%	0.3%	4.4%	0.15	0.02	0.13	0.74	0.09	0.56
Kerosene/Paraffin	2.4%	1.0%	5.4%	0.22	0.06	0.16	1.05	0.31	0.69
LPG	0.9%	0.1%	2.4%	0.08	0.01	0.07	0.39	0.03	0.30
Biogas	0.0%	0.0%	0.1%	0.00	0.00	0.00	0.00	0.00	0.01
Firewood	68.6%	90.2%	24.5%	6.19	5.46	0.73	29.93	27.89	3.11
Charcoal	25.6%	7.7%	62.0%	2.31	0.47	1.84	11.17	2.38	7.87
Crop Residues	0.2%	0.3%	0.1%	0.02	0.02	0.00	0.09	0.09	0.01
Other	0.2%	0.2%	0.3%	0.02	0.01	0.01	0.09	0.07	0.04
Not Applicable	0.4%	0.1%	0.9%	0.04	0.01	0.03	0.17	0.04	0.11
Total	100.0%	100.0%	100.0%	9.03	6.05	2.97	43.63	30.91	12.71

Source: National Bureau of Statistics, *Housing Conditions, Household Amenities and Assets Monograph*, January 2015.

Charcoal demand has increased rapidly (doubled) in the last 10 years driven by rapid urbanisation and the relative high prices or scarcity of energy substitutes (such as kerosene, electricity, biogas, biomass briquettes and LPG). Nevertheless, since 2008-2009, when import duties and VAT were removed from LPG products and equipment, the use of LPG increased more than 5-fold. This growth derives from an increase in the usage of this fuel by wealthier households and some commercial establishments, and by a continuous increase in the price of charcoal, particularly in urban centres.

⁴⁷ MEM, Biomass Energy Strategy (BEST) for Tanzania, April 2014.

⁴⁸ Modern sources of energy for cooking include: electricity, solar energy, biogas and LPG.

Natural gas usage in households, an abundant fuel resource in Tanzania, still remains negligible. This is due to an almost inexistent natural gas distribution network in urban centres, apart from a pilot project in Dar-es-Salaam.

Tanzania is a partner country of the Global Alliance for Clean Cookstoves (GACC), and under this umbrella programme, an assessment of the market for improved cookstoves has been carried out that revealed an estimated penetration of cookstoves in approximately 400,000 households, with most of those being charcoal burning stoves. The market for cookstoves is very fragmented and dominated by the informal sector and, up to now, no one appears to have commercialised these technologies on a large scale. Moreover, BEST 2014, which is not yet finalised as a fully-fledged strategy, recommends the development of an improved cookstoves project with quantitative targets in Tanzania aiming at reducing fuel-wood consumption and charcoal consumption.

The BEST 2014 aims at helping to build awareness and develop a common understanding of the biomass energy sector. The Action Plan recommends the development of several actions involving the development of biomass energy policy, supply-side and demand-side actions to start being applied in Tanzania with a long-term view to the year 2030.

2.3 Investing in Tanzania – Regulatory and Enabling Instruments

Tanzania's natural resources offer a wide range of investment opportunities, such as arable land, minerals, natural tourist attractions and energy resources such as natural gas and renewable energies. Moreover, Tanzania is strategically positioned as a link in the transmission backbone between southern and eastern Africa. As a result, the Mining and Tourism sectors are the leading recipients of foreign investment flow and are to become the "growth sectors" of the economy.

Tanzania has an open environment for foreign and national investors. In terms of investment, Tanzania offers a well-balanced and competitive package of fiscal incentives with the aim to provide competitive fiscal regime on foreign trade when compared to other African countries. Tanzania has signed double taxation treaties with Denmark, India, Italy, Norway, Sweden, Kenya, Uganda, Zambia and Finland and is in negotiation with South Africa, Republic of Korea, Zimbabwe, United Arab Emirates, Russia, Seychelles, Mauritius, Egypt, Yugoslavia and Oman.

In terms of investment incentives, Tanzania has in place a soft landing platform to all investors during the initial stage of the project's implementation, these incentives being both fiscal and non-fiscal. All of these are provided by four major legislations:

- **Tanzania Investment Act of 1997:** includes a certificate of incentives; strategic investor's status and import duty drawback scheme. In terms of fiscal incentives this act includes the definition of import duty and VAT exemption on project/capital goods and Import Duty Drawback Scheme (refund of duty charged on imported inputs used for producing goods for export and goods sold to foreign institutions like UN and its agencies operating in Tanzania). In terms of non-fiscal incentives, it sets the immigration quota of up to 5 people and guaranteed transfer of net profits or dividends of the investment; payment in respect of foreign loans; remittance of proceeds net of all taxes and other obligations; royalty fees and other charges; and payment of emolument and other benefits to foreign personnel.
- **Export Processing Zones (EPZ) Act of 2002:** all inputs like raw materials and machinery which are imported and used to process or manufacture goods in the areas designated as EPZ are exempt from import duty and other taxes.
- **Mining Act 1998 and Petroleum Exploration and Production Act 1980:** Under the Mining Act, all capital goods, spare parts, fuel and oils together with explosives and other supplies are zero rated. However, corporate tax is 30% and capital allowance 50% on the first year of income and in the subsequent year can be between 12.5% and 37% of the balance per annum depending on the Class.
- **Special Economic Zones (SEZ) Act 2005:** defines geographical areas where economic activities are being promoted by a set of policy instruments that may not be applicable elsewhere in the country. The focus is on priority sectors whose economic activities have a potential for supporting domestic production and export development and in areas that provide relative advantages for attracting private investment. Economic activities under SEZ are not subject to customs duty; value added tax and any other tax payable in respect of goods purchased for use as raw materials, equipment, machinery including all goods and services used in undertaking the licensed businesses.

Table 2 shows a summary of some incentives available for investors in Tanzania.

Table 2: Investment Incentives in Place in Tanzania⁴⁹

Investment Incentives	Brief description
Attractive Investment Fiscal Regime	The country has a very stable and predictable Investment Fiscal Regime, which provides a soft landing for investors. The regime in place recognises the fact that investors need to recover their investment expenses before paying corporate taxes.
Investment Incentives	<p>Tanzania offers investors a well-balanced and competitive package of fiscal incentives in comparison with other African countries. Some of these incentives are:</p> <p>Investment tax incentives: a number of tax incentives are granted to both local and foreign investors in a variety of sectors to encourage investment. Some of these are:</p> <ul style="list-style-type: none"> • Corporate Tax: the income tax rate for resident and non-resident companies is 30%. Newly listed companies on Dar es Salaam's Stock Exchange (at least 35% of equity share issued to the public) can benefit from a reduced rate of 25% charged for three years. • Withholding tax: dividends (10%) and (10%) on loan interest, on Rental Income (10%). • Import Duty and VAT exemptions on Capital / Deemed Capital Goods: The investors who are in lead and priority sectors, are allowed Import Duty and VAT exemptions on their Capital / Deemed Capital Goods; these sectors are: agriculture including livestock; aviation; commercial buildings; development and microfinance; banks; export oriented projects; geographical special development areas; human resources development; manufacturing; natural resources including fisheries, timber and beekeeping; rehabilitation and expansion; tourism and tour operations; radio and television broadcasting; transportation (cargo and marine); and economic infrastructure. • Import duty and VAT exemption can be obtained for building materials, utility vehicles, equipment etc. According to the 2013/2014 budgetary changes the import duty exemption granted to Deemed Capital Goods is now 75% whereby the investors shall pay 25% of import duty due. While VAT Exemption on Deemed Capital Goods is 45% of VAT payable, whereby the investor shall pay 55% of the VAT payable. • Import duty of 0% on imported 4 WDs designed and built for tourist purposes, subject to satisfying criteria set by East Africa Community Secretariat. • VAT special relief on project capital goods: VAT special relief can be obtained for plant, machinery, forklifts, crane, boilers, furnace crushes, graders, caterpillars, excavators, angle dozers, lifts/escalators, etc. • VAT Exemption: on pesticides, fertilizers, health supplies, livestock, unprocessed agricultural products, agricultural implements, books and newspapers, educational services, financial services, petroleum products, aircrafts, aircrafts engines, aircrafts parts, computers, wind generators and liquid elevators, photovoltaic and solar thermal. Heat insulated milk cooling tanks and aluminium jerry cans used for storage and collection of milk in dairy industry. Farm services of land preparation, cultivation, planting and harvesting. <p>Moreover with the objective of providing competitive fiscal regime on foreign trade, Tanzania has signed double taxation treaties with numerous countries and is still in negotiation with others.</p>
Investment Guarantee	Investors in Tanzania are guaranteed against nationalisation and expropriation. The country has several multilateral and bilateral agreements signed on protection and promotion of investment. Examples of these are the Multilateral Investment Guarantee Agency (MIGA), Africa Trade Insurance Agency (ATIA) and International Centre for Settlement of Investment Disputes (ICSID).
Membership of Regional Blocks and Bilateral Trade Agreements	Tanzania is a member of SADC and the EAC as well as a beneficiary country under the preferential trade enhancing schemes offered by Africa Growth and Opportunity Act (AGOA) legislation, of which 6,500 products enjoy duty and quota free access to the USA market. In addition, the country enjoys benefits set by the European Union Everything But Arms (EBA) and the ACP-EU Cooperation and various bilateral cooperation agreements.
Public Private Partnerships	The Country embraces a strong and cooperative relationship between the Government, the private sector and the development partners which make it conducive to attract investors.
Business Environment	The GoT is determined to deploy whatever necessary measures to lower the costs of doing business and maintain fair completion business practices.
High Growth Potential	Tanzania is an emerging economy with high growth potential. The country was named best investment promoter of African Investment Promotion Agencies in the 2004 competition.
Plenty of natural resources	The country has plenty of untapped natural resources that offer a wide range of investment opportunities to potential investors: arable land, minerals and natural tourism's attractions.

49 TIC, Tanzania Investment Guide 2014-2015 (http://www.tic.co.tz/media/Guide_book_2014_for_flip.pdf)

The Tanzanian Government also has a pro investment attitude demonstrated by the innovative investment legislation, the increasing number of foreign direct investments in the country and economic and structural reforms that have led to substantial progress in establishing a functioning market economy. Institutional support for priority investment projects is provided by Tanzania Investment Centre (TIC) and other Government institutions. TIC is a Government investment promotion agency created by an act of Parliament that drives investment promotion and facilitation.

Improved economic performance and sustainable growth has been achieved through the successful economic and structural reforms that have been occurring in Tanzania since 1986. Moreover, Tanzania has a stable fiscal regime with sustainable level of inflation and under its economic recovery programme, has increased revenue streams and substantially reduced spending. The prudent fiscal and monetary policies in place in Tanzania have contributed and continue to contribute to a continuous decline in the rate of inflation.

Tanzania has the following priority areas of investment: agriculture and livestock development, natural resources, tourism, manufacturing, petroleum and mining, real estate, transportation, services, Information and Communication Technology (ICT), financial institutions, telecommunication, energy, human resources, economic infrastructure and broadcasting.

2.4 Investing in The Energy Sector in Tanzania

Tanzania is endowed with diverse energy sources including natural gas, biomass, hydro, geothermal, solar and wind power and uranium, much of which is untapped. Commercial energy sources such as petroleum and electricity account for 8% and 1.2% of primary energy used, respectively, while coal, solar and wind account for less than 1%.

To increase electricity consumption per capita and expand electricity access, the GoT is encouraging investment in generation capacity, distribution systems and in developing indigenous sources of energy. Moreover, scope exists to accelerate electrification to meet growing demand, especially in the rural areas through off-grid solutions.

The following investment opportunities in the energy sector exist in Tanzania⁵⁰:

- Generation, transportation and distribution of energy from various sources;
- Power infrastructure development, rehabilitation and expansion;
- Extraction of biofuels, such as ethanol from sugar, biodiesel from palm oil and jathropha;
- Construction of petroleum pipelines and petroleum products offloading terminals, and development of upcountry storage and distribution facilities;
- Geothermal exploration and development;
- Rural electrification;
- Exploration of new and renewable energy resources;
- Promotion of energy efficiency and conservation initiatives.

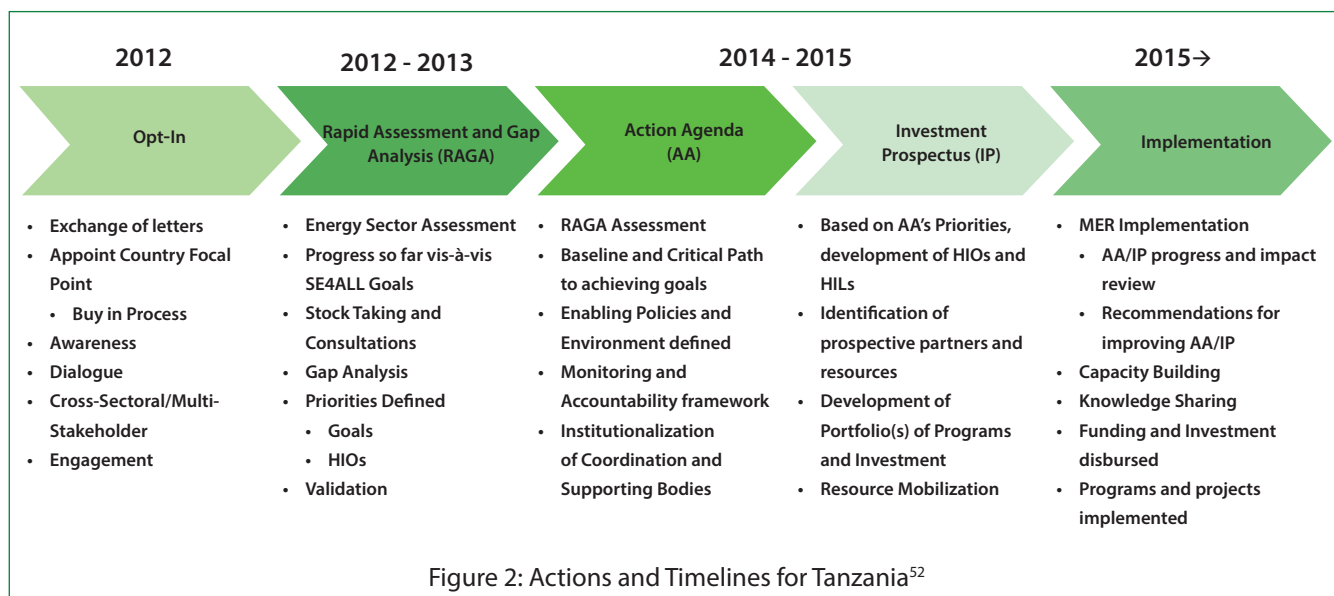
Tanzania is a participating member to the Southern African Power Pool and Eastern Africa Power Pool. The country plans to join various regional interconnectors to neighbouring countries like Zambia, Mozambique, Kenya, Ethiopia, Uganda and Rwanda. These interconnections also provide opportunities for power trading in the region.

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Highlighted in the TIC, Tanzania Investment Guide 2014-2015

2.5 The SE4ALL Initiative in Tanzania

The Government of Tanzania (GoT) has shown strong global leadership by becoming one of the first countries to opt-in on the SE4ALL Initiative. It was in April 2012 when a Tanzanian Delegation (led by two Ministers) attended the SE4ALL Forum where the Global AA was endorsed. Subsequently, an energy sector meeting was convened whereby a group of stakeholders led by the Ministry of Energy and Minerals was assigned to prepare a Rapid Assessment and Gap Analysis Report, which was completed in May 2013. The following steps consisted in the development of the AA and IP starting in November 2014. This process is reflected in Figure 2, which includes the Tanzanian timeline.⁵¹



During the implementation stage, Tanzania will start executing its SE4ALL plans, and integrating these within the broader policy framework, notably the Tanzania National Development Vision 2025, the National Energy Policy of 2003, and the National Strategy for Economic Growth and Reduction of Poverty, as well as the key principles of the National Climate Change Strategy.

Tanzania regards the SE4ALL AA as an implementation tool for the emerging Sustainable Development Goal on Energy (SDG 7) and as part of its energy sector mid-term planning. The SE4ALL AA for Tanzania has been developed in line with the guiding principles contained in the Guidelines for Developing National Sustainable Energy for All Action Agendas in Africa that were developed by African stakeholders, notably: (i) **Building on existing plans/programmes/strategies**; (ii) **Political commitment and leadership**; (iii) **A balanced and integrated approach**; (iv) **An inter-ministerial and cross-sectoral approach**; (v) **Adherence to sustainable development principles**; (vi) **Participation and meaningful involvement from all stakeholders**; (vii) **Gender equality and inclusiveness**; and (viii) **Transparency and accountability**.

It should be noted that Tanzania's SE4ALL process does not include the semi-autonomous region of Zanzibar as energy is not a sector governed by the United Republic of Tanzania. Energy in Zanzibar is within the competences of the Ministry of Land, Housing, Water and Energy of the autonomous region while on the mainland it is the responsibility of the Ministry of Energy and Minerals.

⁵¹ The Process has four steps, for purpose of illustrating the activities pertaining the AA and IP, step four was split in two and therefore five steps are shown.
⁵² Based on Sustainable Energy For All, presentation by Venkata Ramana Putti: Energy Access in Africa - WB/ESMAP Initiatives, October 2012

3 OUTLINE OF INVESTMENT OPPORTUNITIES

This section is presented with four components:

- Programme Investment Opportunities. This focuses on the immediate needs of MEM and the SE4ALL Secretariat in support of the implementation of the AA. The main point of contact for these opportunities is SE4ALL Country Focal Point (CFP) at MEM.
- Project Investment Opportunities Associated to REA's Prospectus. These are priority projects that require funding to close current gaps in the implementation of the Prospectus. The main point of contact for these opportunities is REA.
- Project Investment Opportunities Associated to TANESCO's Prospectus. These are primarily focused on on-grid power generation and grid infrastructure. The main point of contact for these opportunities are TANESCO, the National Development Corporation, or the Tanzanian Investment Centre.
- Other Project Investment Opportunities.

3.1 Programme Investment Opportunities

Programme investment opportunities that the GoT would like to develop to achieve its SE4ALL objectives are summarised below in section 3.1.1, 3.1.2 and 3.1.3. Details on the programmes will be provided to interested Donors by SE4ALL CFP, Eng. Styden Rwebangila (stydenr@gmail.com).

3.1.1 Programme 1: Management Support to SE4ALL Secretariat at Tanzania's MEM

<p>Programme Description:</p> <p>This programme aims to provide SE4ALL Technical Advisory services to MEM on the establishment of the SE4ALL Secretariat that will be responsible for the overall development, implementation and monitoring of the SE4ALL activities in the Country.</p>	<p>Implementation: Searching for TA implementation partners Lead: MEM Partners: To be defined.</p>
<p>Specific Objectives/Outcomes:</p> <ul style="list-style-type: none"> • SE4ALL Secretariat established with a clear mandate, defined functions, implementation programme and an operational budget to fund its SE4ALL activities. • SE4ALL Secretariat with personnel's capacity developed in the different areas integrated in Tanzania's SE4ALL AA. • Tanzania SE4ALL AA revised and updated, with clear defined actions for the post-transitional period (including specific actions at regional level). • Regional Energy Desks to work with the SE4ALL Secretariat, to lead, identify, implement and monitor SE4ALL activities in their region. • SE4ALL and Regional Energy Desks' personnel's capacity developed on SE4ALL related activities. • Information on SE4ALL AA initiatives and objectives and IP investment opportunities disseminated. 	<p>Financing: Proposal for TA assistance facility solicited.</p> <p>Cost Overview: 284,400€</p> <p>Funding Allocated: 0€</p> <p>Funding Needs: 284,400€</p>

Proposed activities

(i) Prepare a programme document in support of the institutionalisation and operation of Tanzania's SE4ALL Secretariat. This document should include a budget and proposed sources of funding. Once this programme document is approved, support should be provided to MEM in pursuing the funding request.

(ii) Review and completion of the Tanzania's SE4ALL AA:

- Review of Tanzania's SE4ALL Action Agenda, which includes current initiatives by Government, Development Partners, Multilateral Development Banks and other key stakeholders.
- Develop a Plan for Energy Data Collection and Processing.
- Develop and implement a SE4ALL Information Database (which should include a Biomass Information System (BIS), Renewable Energy Resource System (RERS) and an RET Database and technology vendors) and a Tanzania's SE4ALL Website.
- Further develop the SE4ALL Monitoring, Evaluation and Reporting (MER) Plan.
- Develop bottom-up approach to needs and gaps, and stakeholders dialogues to re-assess and define the Tanzania's AA for the post transitional periods.

(iii) Support the SE4ALL Secretariat in designing and implementing SE4ALL AA on a regional level:

- Creation of regional energy desks to report on SE4ALL planning and implementation and monitoring activities.
- SE4ALL secretariat to support the energy desks in piloting a needs assessment and gap analysis for five regions (to be decided according to the representativeness of the regions) to build a bottom-up approach to improve and update actions under the SE4ALL AA and the identification of initiatives/projects suitable for funding (to update and extend the Investment Prospectuses, expand the SE4ALL Information Database on a regional level).
- Establish a programme for institutional and human resources on a regional level to increase the role of Regional Governments on local and regional energy planning needs and monitoring.

(iv) Development of a communication, awareness, sensitisation campaign regarding the Tanzania's:

- SE4ALL AA objectives and initiatives;
- IP investment opportunities.

(v) Build capacity of SE4ALL Secretariat and regional energy desk personnel:

- Management of SE4ALL activities implementation;
- SE4ALL related subjects and nexus areas; and
- Monitoring, evaluation and reporting of the SE4ALL activities.

Resources: To be implemented during the transitional period, with approximately 11 man-months of resources allocated.

Timeline: 2015-2016

Contact: MEM

3.1.2 Programme 2: Support SE4ALL Secretariat/MEM in the Revision and Alignment of Tanzania's Legal Framework with the SE4ALL AA

<p>Programme Description:</p> <p>This programme aims to provide SE4ALL Technical Advisory services to the SE4ALL Secretariat/MEM to review, refresh, consolidate or update policies and mechanisms to promote the implementation of Tanzania's SE4ALL AA and IP. It is expected that under the SE4ALL framework, the SE4ALL Secretariat/MEM will undertake the regulatory framework review to assess the need to appropriately refresh (or renew) policies, regulations and energy plans, and to reinforce synergies across sectors.</p>	<p>Implementation: Searching for TA implementation partners</p> <p>Lead: MEM</p> <p>Partners: To be defined.</p>
<p>Objectives:</p> <ul style="list-style-type: none"> • The main objective of this programme is to develop a regulatory strategy to address critical areas associated to energy planning and policies in Tanzania. 	<p>Financing: Proposal for TA assistance facility solicited.</p> <p>Cost Overview: 444,000€</p> <p>Funding Allocated: 0€</p> <p>Funding Needs: 444,000€</p>

Proposed activities

- i. Support the SE4ALL secretariat in compiling an inventory of the inter-relations between different policies and the identification of the needs for policy updates in the Energy Sector and across sectors
 - Review the Energy Sector in Tanzania's current policy, strategy and regulatory framework and assess how it correlates to Tanzania's SE4ALL Goals and AA.
 - Review current strategies in the Energy sector and improve the complementarities and alignment with SE4ALL objectives.
 - Development of nexus with other sectors like Health, Education and Water and coordination between governmental bodies: coordination of the policies developed with other sectors.
- ii. Review, refresh, consolidate or update policies to promote the implementation of the SE4ALL goals and initiatives under the AA and IP:
 - Develop a comprehensive Access Acceleration Strategy with clear links to the Rural Electrification Strategy, Renewable Energy and Energy Efficiency strategies and any other strategies in place that promote access to energy.
 - Develop a comprehensive Rural Electrification Strategy and consolidate the REMP (including strategy for mini-grids and stand-alone systems for access below 1 MW);
 - Develop a comprehensive Renewable Energy Strategy with clear goals and targets and integrate it into the Energy Sector Wide policy framework.
 - Develop a comprehensive Energy Efficiency strategy with clear goals and targets and integrate it into the Energy Sector Wide policy framework;
 - Define, develop and adopt EE standards, labelling schemes, Minimum Performance Standards (MEPS) and other necessary secondary legislation to promote EE.
 - Review, adopt and implement a Biomass Energy Strategy (BEST) including supply and demand of forestry products
 - Develop specific regulations for sustainable efficient charcoal production methods depending on availability of raw materials.
 - Develop a concrete policy, strategy and targets to regulate the clean cooking sector.
 - Develop and implement a MER system for the energy sector to monitor the performance of the different strategies and plans being implemented in Tanzania.
- iii. Review, refresh, consolidate or update investment incentives/mechanisms associated to subsidies and incentives for the energy sector, especially those that will have an impact on the IP:
 - Create a financial incentive package for the implementation of actions and initiatives in the fields of renewable energy, energy efficiency and energy access
 - Review the FiT in place to provide adequate incentives to investors in renewable energy projects.
 - Implement a governmental subsidy to support the development (pre-investment, capital and operation) of micro/mini-grids in particular for productive uses in off-grid areas;
 - Develop and implement a risk-mitigation instrument to cover delayed payments by TANESCO to IPPs and PPPs
 - Develop and implement risk-mitigation instruments in partnership with SREP, the East Africa Geothermal Risk Mitigation Facility and the Green Africa Power facilities
 - Foster the development of a number of innovative funding mechanisms such as grants, challenge funds and carbon credits to promote the development of RE and EE projects.
- (iv) Develop a programme for institutional and human capacity building for government institutions and private sector organisations (i.e. trade associations) on the new policies and incentive packages developed and the importance of its implementation for the achievement of the SE4ALL goals.

Resources: Approximately 17 man-months of work to be implemented during the transitional period.

Timeline: 2015-2016

Contact: MEM

3.1.3 Programme 3: Support SE4ALL Secretariat/MEM in the Identification and Analysis of Investment Projects to be included in Tanzania's IP

<p>Programme Description:</p> <p>This programme aims to provide Technical Advisory services to support the SE4ALL Secretariat/MEM in the identification, analysis, design, and implementation of other actions and interventions that will contribute to the achievement of SE4ALL goals in Tanzania, with a special focus on the identification of investment programmes and projects to be included in Tanzania's IP for its integration into the MTP and throughout the AA implementation process.</p>	<p>Implementation: Searching for TA implementation partners Lead: MEM Partners: To be defined.</p>
<p>Objectives:</p> <ul style="list-style-type: none"> Identify, analyse, design and implement other SE4ALL actions and initiatives; Identify projects on energy access, energy efficiency and renewable energy to be implemented in Tanzania that complement on-going projects and initiatives that contribute to the achievement of Tanzania's SE4ALL goals. 	<p>Financing: Proposal for TA assistance facility solicited Cost Overview: 162,000€ Funding Allocated: 0€ Funding Needs: 162,000€</p>
<p>Proposed activities</p> <ol style="list-style-type: none"> Support the SE4ALL Secretariat in the development of Renewable Energy programmes for solar, wind, mini-hydro and geothermal energy. Support the SE4ALL Secretariat in the implementation and consolidation of Energy Efficiency Programmes, including: <ul style="list-style-type: none"> Assessment of opportunities for energy efficiency in multiple sectors. Demand side management programmes across different sectors of activity (commercial, residential and industrial). Create a mechanism to support early stage renewable energy projects into maturity and late stage renewable energy projects into financial close; Develop a programme to identify, develop and implement renewable energy projects for heat and power, with particular emphasis in clean cooking and off-grid electricity services; Revise and update Tanzania's IP to include the identified programmes and projects; Develop a capacity building programme for SE4ALL Secretariat/MEM and Regional Energy Desks on these subjects. 	
<p>Resources: Approximately 6 man-months of work to be implemented during the transitional period.</p>	
<p>Timeline: 2015-2016</p>	
<p>Contact: MEM</p>	

3.2 Project Investment Opportunities Associated to REA Prospectus

Project investment opportunities that the GoT would like to be developed to achieve its SE4ALL objectives are summarised below. REA's Budget provides, on a yearly basis, the funding allocation for the projects for that fiscal year. Details on these can be found in REA's National Electrification Programme Prospectus. Interested investors and Donors should contact SE4ALL CFP, Eng. Styden Rwebangila (stydenr@gmail.com) or REA directly.

3.2.1 Project 1: Turnkey Phase III Project

<p>Project Description: The Project involves electrification by grid extension of settlements which are within 10 km of the 33 kV MV network which will exist at the end of 2015 or is likely to be erected until the end of 2019 (MV backbone). The MV rural backbone is supplied through existing HV/MV substations or existing isolated power plants that will be off-set by the development of the HV network. The connection is done with a 33 kV line if the settlement has more than 2,000 inhabitants. If it has more than 500 but less than 2,000 inhabitants, connection is done by Single Wire Earth Return (SWER). Connections will be done in the period 2016 – 2019. The Turnkey Phase III programme will connect 177 development centres and 1,740 localities by three phase lines and 1,256 settlements by SWER technology.</p>	<p>Implementation:</p> <p>Lead: REA</p> <p>Partners: TANESCO, EWURA</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To electrify a total of 2,996 villages which are located within 10 km from the existing MV lines and connect a total of 1,086,759 customers by the end of 2022, which will increase the access rate and improve the living standards of the communities in the electrified villages. 	<p>Financing:</p> <p>Cost Overview: US\$ 817 million</p> <p>Funding Allocation: to be defined</p> <p>Funding Need: to be defined</p>
<p>Proposed activities: Construction of HT and LV distribution networks, installation of distribution transformers and customers connection.</p>	
<p>Resources: Expecting to receive local and foreign resources</p>	
<p>Timeline: 2016-2019</p>	
<p>Contact: Rural Energy agency (REA) - Tanzania</p>	

3.2.2 Project 2: Turnkey Phase IV Project

<p>Project Description: The Project involves electrification by grid extension to development centres that are within 40 km of the MV grid networks which will exist by the end of 2019 and electrification of settlements that are within 10 km of the feeder lines constructed in Phase 3. The connection is done by a 33 kV line if the settlement has more than 2,000 inhabitants, if it has more than 500 but less than 2,000 inhabitants, connection is done by SWER. The Turnkey Phase IV project will take place in the period 2020 – 2022 and will connect 266 development centres; 506 villages by 33 kV lines and 274 small villages by SWER technology.</p>	<p>Implementation:</p> <p>Lead: REA</p> <p>Partners: TANESCO, EWURA</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To electrify a total of 1,046 villages to connect a total of 280,887 customers by the end of 2022. This will increase the access rate and improve the living standards of the communities in the electrified villages. 	<p>Financing:</p> <p>Cost Overview: US\$ 479 million</p> <p>Funding Allocation: to be defined</p> <p>Funding Need: to be defined</p>
<p>Proposed activities: Construction of HT and LV distribution networks, installation of distribution transformers and customers connection.</p>	
<p>Resources: Expecting to receive local and foreign resources</p>	
<p>Timeline: 2020 – 2022</p>	
<p>Contact: Rural Energy agency (REA) - Tanzania</p>	

3.2.3 Project 3: Off-grid Electrification

<p>Project Description: Off-grid electrification involves electrification of development centres by off-grid solutions. All development centres which will not be electrified under Turnkey Phase II, III and IV are considered candidates for off-grid electrification. The electrification is assumed to occur between 2015 and 2022. Off-grid power supply is done by power plants which use the locally available hydro, biomass, wind, and solar PV resources or by diesel - solar PV and wind – solar PV hybrid systems.</p>	<p>Implementation: Lead: Private/Public Institutions Partners: REA/TANESCO/EWURA</p>
<p>Objectives:</p> <ul style="list-style-type: none"> • Electrification of development centres/villages which are in the vicinity of hydro or biomass resources and far from the National Grid, for centres in areas without hydro or biomass potential, off-grid electrification by diesel-PV hybrid systems is an option. 	<p>Financing: Cost Overview: US\$ 176.3 million Funding Allocation: to be defined Funding Need: to be defined</p>
<p>Proposed activities: Construction of power houses/ generation plants; MV and LV networks; installation of distribution transformers and connection of customers.</p>	
<p>Resources: Expecting to receive local and foreign resources</p>	
<p>Timeline: 2015-2022</p>	
<p>Contact: Rural Energy agency (REA) - Tanzania</p>	

3.3 Project Investment Opportunities Associated to Access to TANESCO

These are the profiles of project investment opportunities contemplated by TANESCO for the period 2015 – 2017. TANESCO Budget provides, on a yearly basis, the funding allocation for the projects for that fiscal year. Interested investors and Donors should contact SE4ALL CFP, Eng. Styden Rwebangila (stydenr@gmail.com) or TANESCO directly.

3.3.1 Project 1: Ruhudji hydropower project and transmission line

<p>Project Description: The Ruhudji Hydro Power Project (HPP) is a 358 MW hydro power high head scheme. The Project involves two components:</p> <ol style="list-style-type: none"> 1) Design, construction and operation of the hydropower plant on the Ruhudji River (southern Tanzania). The scheme includes a reservoir and power plant downstream from the dam (765 m head, 4x89.5 MW Pelton turbines). 2) Design, construction and operation of a transmission line to evacuate the power generated from the power station to the National grid. The transmission line is a 400 kV single circuit running for 170 km from Ruhudji HPP to the backbone substation at Kisada. <p>A feasibility study has been undertaken and TANESCO experts are responsible for its update. The Project is expected to be completed in the period 2015 – 2020. A procurement of transaction advisory services is currently in progress.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> • To increase hydropower capacity in the National grid. 	<p>Financing: Cost Overview: US\$ 407.4 million for the power plant and US\$ 53.2 million for the transmission line. Funding Allocation: to be defined Funding Need: to be defined</p>
<p>Proposed activities: Design, construction and operation of a hydropower facility and a transmission line.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 3 to 5 years</p>	
<p>Contact: TANESCO</p>	

3.3.2 Project 2: Malagarasi hydropower project

<p>Project Description: The Project involves the construction of a 45 MW hydropower plant on the Malagarasi River in Kazuramimba Ward, Kigoma Region in western Tanzania. The proposed project is part of a hydropower scheme which was initially conceived of as a three-step (Stage I, Stage II and Stage III) hydropower development layout of the Igamba Falls. This description is for Stage III of the potential three-stage Igamba Falls development which is the most downstream dam site and hydro-power station. The power generated from the project will be distributed to a number of communities in western Tanzania.</p> <p>An engineering feasibility study and an Environmental and Social Impact Assessment (ESIA) have already been undertaken and the procurement of supervision consultant is currently in progress.</p>	<p>Implementation:</p> <p>Lead: TANESCO</p> <p>Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To add 45 MW hydropower capacity to the existing system. 	<p>Financing:</p> <p>Cost Overview: US\$ 150.2 million</p> <p>Funding Allocation: to be defined</p> <p>Funding Need: to be defined</p>
<p>Proposed activities: Construction of a hydropower facility.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 3 to 5 years</p>	
<p>Contact: TANESCO</p>	

3.3.3 Project 3: Rumakali Hydropower Project and transmission line

<p>Project Description: The project proposes to build a 222 MW hydroelectric plant on the Rumakali River, and its associated transmission line. Rumakali Hydro Power Project (HPP) is a high head scheme with the following characteristics: 1,294.5m head, 3x74 MW Pelton turbines. The transmission line is a 400 kV single circuit of 150 km long, which will evacuate the power generated from the Runakali power station to the National grid at Mbeya.</p> <p>Rumakali hydropower project was studied to a full feasibility level in 1996 – 1998. The existing feasibility study is currently being updated.</p>	<p>Implementation:</p> <p>Lead: TANESCO</p> <p>Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To increase hydropower capacity in the National grid. 	<p>Financing:</p> <p>Cost Overview: US\$ 344 million for the power plant and US\$ 44.22 million for the transmission line.</p> <p>Funding Allocation: to be defined</p> <p>Funding Need: to be defined</p>
<p>Proposed activities: Design, construction and operation of a hydropower facility and a transmission line.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 3 to 5 years</p>	
<p>Contact: TANESCO</p>	

3.3.4 Project 4: Kakono Hydro Power Project

<p>Project Description: The project involves the engineering, procurement, installation and commissioning of 87 MW hydropower plant located downstream on the Kagera River.</p> <p>The registration of the Project to the National Environment Management Council (NEMC) is currently ongoing. The selection of a consulting firm to supervise the Project activities is also in progress.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To increase hydropower capacity in the National grid. 	<p>Financing: Cost Overview: US\$ 379.4 million Funding Allocation: to be defined Funding Need: to be defined</p>
<p>Proposed activities: Engineering, procurement, installation and commissioning of a hydropower plant.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 3 to 5 years</p>	
<p>Contact: TANESCO</p>	

3.3.5 Project 5: 400 kV Chalinze to Dodoma transmission line

<p>Project Description: The Project involves the construction of a 350 km transmission line (400 kV) with associated substations between Chalinze and Dodoma. The transmission line will be linked by the backbone transmission line which is the interconnector for Zambia, Tanzania and Kenya.</p> <p>An Environmental Impact Assessment Certificate (EIA) has been issued by NEMC on February 2015. TANESCO has also prepared a contract for Consultancy Services for Feasibility Study, Supervision and Management of the Project, for submission to the Attorney General for vetting and award. Upon award of contract the selected Consultant is expected to produce a Full Feasibility Study for the Project and estimate the accurate actual cost.</p> <p>The Project is one among the BRN projects which is in line with the Government 2025 Vision.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To enhance evacuation of power from Dar-es-Salaam, where power plants are located, to the central part of the country. To enhance security and reliability of supply. 	<p>Financing: Cost Overview: US\$ 271 million Funding Allocation: to be defined Funding Need: to be defined</p>
<p>Proposed activities: Feasibility study, engineering, procurement, installation and commissioning of a transmission line and the associated substations.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 3 to 5 years</p>	
<p>Contact: TANESCO</p>	

3.3.6 Project 6: 400 kV Mtwara to Somanga transmission line

<p>Project Description: The Project will comprise of 253 km of transmission line from Mtwara to Somangafungu. It will enhance evacuation of power from the proposed Mtwara power plant to Somanga and link the South Regions to the National Grid System.</p> <p>The final pre-feasibility of the Project was completed and submitted to TANESCO on May 2015. Solicitation of funds for undertaking a full feasibility is now in progress.</p> <p>Actual cost of the Project will be established after the full feasibility study is done.</p>	<p>Implementation:</p> <p>Lead: TANESCO</p> <p>Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> • To enhance evacuation of power from the Mtwara power plant to Somanga. • To link the South Regions to the National Grid System. • To enhance security and reliability of supply. 	<p>Financing:</p> <p>Cost Overview: US\$ 231,074,238</p> <p>Funding Allocation: to be defined</p> <p>Funding Need: to be defined</p>
<p>Proposed activities: Feasibility study, engineering, procurement, installation and commissioning of a transmission line and the associated substations.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 3 to 5 years</p>	
<p>Contact: TANESCO</p>	

3.3.7 Project 7: 400 kV North West Grid transmission line

<p>Project Description: The Project will comprise 1148 km of 400 kV transmission line with associated substations. It will enhance grid connection to North West of Tanzania and will contribute to decommission expensive liquid fuel power plants at Mpanda, Kigoma, Ngara and Biharamulo.</p> <p>The Project is one among the BRN projects which is in line with the Government 2025 Vision. It will be done in three phases:</p> <ol style="list-style-type: none"> 1) Phase I: 340 km transmission line from Mbeya to Sumbawanga; 2) Phase II: 568 km transmission line from Nyakanazi – Kigoma – Mpanda 3) Phase III: 240 km transmission line from Sumbawanga to Mpanda. <p>The line route surveying and the demarcation of way-leave are 100% completed for Phase I. The properties for compensation at the new substation plot in Mbeya have also been valued and acquisition of land for the substation is now being looked at. It is expected that Phase I will be completed in 35 months for an estimated cost of US\$ 222 million.</p> <p>Phase II and III are at an earlier stage of development. The ESIA study for both phases is currently ongoing.</p> <p>Finally, TANESCO has a 4 months contract with SWECO for upgrading the feasibility study of the Project from 220 kV to 400 kV transmission lines. This will allow to estimate the financing needed for implementation of the project.</p>	<p>Implementation:</p> <p>Lead: TANESCO</p> <p>Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> • To expand the National grid. • To enhance security and reliability of supply. 	<p>Financing:</p> <p>Cost Overview: US\$ 664 million</p> <p>Funding Allocation: to be defined</p> <p>Funding Need: to be defined</p>
<p>Proposed activities: Feasibility study, engineering, procurement, installation and commissioning of a transmission line and the associated substations.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 3 to 5 years</p>	
<p>Contact: TANESCO</p>	

3.3.8 Project 8: 220 kV Kyaka – Nyakanazi transmission line

<p>Project Description: The Project will comprise 232 km of 220 kV transmission line with terminal substations at Kyaka and Nyakanazi. The transmission line will connect the power plants of Kakono and Rusumo.</p> <p>The Project will stabilize power in Bukoba and the North West Regions of Tanzania.</p> <p>The final pre-feasibility study of the Project was completed on May 2015.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> • To stabilize power in the North West Regions of Tanzania. 	<p>Financing: Cost Overview: US\$ 92.6 million Funding Allocation: to be defined Funding Need: to be defined</p>
<p>Proposed activities: ESIA, engineering, procurement, installation and commissioning of a transmission line and the associated substations.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 3 to 5 years</p>	
<p>Contact: TANESCO</p>	

3.3.9 Project 9: Urban Electrification

<p>Project Description: The Project aims in carrying out Urban Electrification Programme in urban areas in Tanzania. The Project scope covers all regions.</p> <p>Currently, Millennium Challenge Corporation (MCC) have agreed to finance 11 regions with large number of customers.</p>	<p>Implementation: Lead: TANESCO Partners: MCC</p>
<p>Objectives:</p> <ul style="list-style-type: none"> • To improve access to electricity. 	<p>Financing: Cost Overview: TZS 418,705,525,004 Funding Allocation: to be defined Funding Need: to be defined</p>
<p>Proposed activities: To carry out an Urban Electrification Programme in all urban areas of Tanzania</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 3 to 5 years</p>	
<p>Contact: TANESCO</p>	

3.3.10 Project 10: 220 kV Masaka – Mwanza transmission line

<p>Project Description: This project comprises of 640 km of transmission line from Masaka in Uganda to Mwanza – Mabuku substation in Tanzania.</p> <p>The line routing consists of the following line sections:</p> <ul style="list-style-type: none"> • Masaka substation to Uganda / Tanzanian border near Mutukula (82 km), • Uganda / Tanzanian border near Mutukula to Kyaka (170 km), • Kyaka Substation to Rusumo (170 km), • Rusumo to Bwanga via Lusahunga and Nyakanazi (178 km), • Bwanga to Geita Substation (58 km), • Geita Substation to Mabuki Substation (134 km). <p>The total estimated cost for the Project is US\$ 324.262 million to be split between Tanzania and Uganda. The Tanzania part is evaluated at US\$ 279.275 million.</p> <p>The total cost for Geita - Nyakanazi part is EURO 39.632 million and will be financed by KfW, TANESCO (executive agency), AFD and EU. KfW has committed to finance EURO 20 million, AfDB EURO 14.0 million, European Union EURO 7.6 million and TANESCO has to finance EURO 1.586 million.</p> <p>The Rusumo - Nyakanazi will be financed by AfDB and the cost is US\$ 14.85 million. There is a proposal to establish a substation in Rusumo/Ngara for distributing power to the commercial and load centre in Kagera Region which is not included in this cost.</p> <p>The estimated cost for Geita - Mabuki part (134 km) is US\$ 40 million.</p> <p>Currently, TANESCO is looking for financing the construction of the Mutukula - Kyaka-Rusumo/Ngara part and the upgrade of Kyaka substation. The estimated cost for the transmission line on this portion is US\$ 56.42 million and upgrading the Kyaka substation is US\$ 10.65 million.</p>	<p>Implementation:</p> <p>Lead: TANESCO</p> <p>Partners: KfW, AFD, EU, AfDB</p>
<p>Objectives:</p> <ul style="list-style-type: none"> • To strengthen security of supply, connecting of off grid part in North West Tanzania and facilitate interconnection and trade among EAC. 	<p>Financing:</p> <p>Cost Overview: US\$ 279.275 million</p> <p>Funding Allocation: See Project Description</p> <p>Funding Need: to be defined</p>
<p>Proposed activities: Engineering, procurement, installation and commissioning of transmission lines and the associated substations</p>	
<p>Resources: Financial resources from KfW, AFD, EU, AfDB.</p>	
<p>Timeline: 3 to 5 years</p>	
<p>Contact: TANESCO</p>	

3.3.11 Project 11: 132 kV distribution line from Sumbawanga to Momba

<p>Project Description: The Project involves the establishment of substations at Sumbawanga (132/33 kV), and Mpui (132/33 kV) and the construction of a 132 kV distribution line from Sumbawanga to Momba through Mpui (172.6 km).</p> <p>The Project is at an early stage and a feasibility study is needed.</p>	<p>Implementation:</p> <p>Lead: TANESCO</p> <p>Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> • To improve the distribution of electricity in the region. • To enhance reliability of supply. 	<p>Financing:</p> <p>Cost Overview: US\$ 93,953,000</p> <p>Funding Allocation: to be defined</p> <p>Funding Need: to be defined</p>
<p>Proposed activities: Feasibility study, engineering, procurement, installation and commissioning of a distribution line and the associated substations</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 2015-2017</p>	
<p>Contact: TANESCO</p>	

3.3.12 Project 12: 132 kV distribution line from Mbeya to Momba

<p>Project Description: The Project involves the establishment of substations at Mbeya (220/132 kV), Vwawa (132/33 kV) and Momba (132/33 kV), and the construction of a 132 kV distribution line from Mbeya to Momba (153.4 km).</p> <p>The Project is at an early stage and a feasibility study is needed.</p>	<p>Implementation:</p> <p>Lead: TANESCO</p> <p>Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> • To improve the distribution of electricity in the region. • To enhance reliability of supply. 	<p>Financing:</p> <p>Cost Overview: US\$ 73,947,000</p> <p>Funding Allocation: to be defined</p> <p>Funding Need: to be defined</p>
<p>Proposed activities: Feasibility study, engineering, procurement, installation and commissioning of a distribution line and the associated substations</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 2015-2017</p>	
<p>Contact: TANESCO</p>	

3.3.13 Project 13: Establishment of GIS Database in 23 regions

<p>Project Description: The Project comprises the establishment of GIS Database in Mwanza, Kagera, Mara, Shinyanga, Kigoma, Tabora, Arusha, Manayara, Kilimanjaro, Morogoro, Dodoma, Singida, Rukwa, Ruvuma, Mbeya, Lindi, Mtwara, Tanga, Simiyu, Njombe, Katavi and Geita.</p>	<p>Implementation:</p> <p>Lead: TANESCO</p> <p>Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> • To improve the operations in the selected regions. 	<p>Financing:</p> <p>Cost Overview: US\$ 45,142,905</p> <p>Funding Allocation: to be defined</p> <p>Funding Need: to be defined</p>

Proposed activities: All activities related to the establishment of the database including data collection and mapping.
Resources: Expecting to receive local and foreign resources.
Timeline: 2015-2017
Contact: TANESCO

3.3.14 Project 14: Establishment of Distribution Control Centre (DCC)

<p>Project Description: The Project involves the establishment of a DCC (SCADA and DMS) in Mwanza, Arusha and Mbeya.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> • To improve the operations in the regions. 	<p>Financing: Cost Overview: US\$ 29,110,536 Funding Allocation: to be defined Funding Need: to be defined</p>
Proposed activities: Establishment of the DCC.	
Resources: Expecting to receive local and foreign resources.	
Timeline: 2015-2017	
Contact: TANESCO	

3.3.15 Project 15: Substations and distribution lines at Dodoma

<p>Project Description: The Project involves the establishment of substations at Dodoma (132/33 kV, 2x20 MVA) and the construction of a 100 km long 132 kV distribution line.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> • To improve the distribution of electricity in the region. • To enhance reliability of supply. 	<p>Financing: Cost Overview: US\$ 15,000,000 Funding Allocation: to be defined Funding Need: to be defined</p>
Proposed activities: Engineering, procurement, installation and commissioning of a distribution line and the associated substations.	
Resources: Expecting to receive local and foreign resources.	
Timeline: 2015-2017	
Contact: TANESCO	

3.3.16 Project 16: Substations and distribution lines at Muleba

<p>Project Description: The Project involves the establishment of substations at Muleba (132/33 kV, 2x10 MVA) and the construction of 132 kV distribution lines to supply with electricity the residences of Muleba in Kagera region.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To supply reliable electricity to the residences of Muleba in Kagera region. 	<p>Financing: Cost Overview: US\$ 12,000,000 Funding Allocation: to be defined Funding Need: to be defined</p>
<p>Proposed activities: Supply of 132/33 kV, 2x10 MVA transformers with accessories; civil works including substations and office building; commissioning of all installed equipment; construction of four new outgoing 33 kV feeders.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 2015-2017</p>	
<p>Contact: TANESCO</p>	

3.3.17 Project 17: Substation and distribution lines at Kyaka - Karagwe (Murushaka)

<p>Project Description: The Project involves the establishment of substations at Kyaka - Karagwe (132/33 kV, 2x10 MVA) and the construction of 132 kV distribution lines to supply electricity to the residences of Karagwe.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To supply reliable electricity to the residences of Karagwe in Kagera region 	<p>Financing: Cost Overview: US\$ TBD Funding Allocation: TBD Funding Need: TBD</p>
<p>Proposed activities: Supply of 132/33 kV, 2x10 MVA transformers with accessories; civil works including substations and office building; commissioning of all installed equipment; construction of four new outgoing 33 kV feeders.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 2015-2017</p>	
<p>Contact: TANESCO</p>	

3.3.18 Project 18: Kwa Mrombo substation

<p>Project Description: The Project involves the establishment of a substation at Kwa Mrombo (220/33 kV, 2x30 MVA) to supply reliable electricity to the residences of 'Kwa Mrombo' and the surroundings, and to release load from Njiro substation.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To supply reliable electricity to the residence of 'Kwa Mrombo' and the surroundings. 	<p>Financing: Cost Overview: US\$ 10,674,757 Funding Allocation: to be defined Funding Need: to be defined</p>

Proposed activities: Supply of 220/33 kV, 2x30 MVA transformers with accessories; civil works including substation and office building; commissioning of all installed equipment; construction of five new outgoing 33 kV feeders of 50 km.
Resources: Expecting to receive local and foreign resources.
Timeline: 2015-2017
Contact: TANESCO

3.3.19 Project 19: Tengeru substation

Project Description: The Project involves the establishment of a substation at Tengeru (132/33 kV, 2x20 MVA) to supply power to Usa Districts and the surrounding areas, and to release load from Kia and Njiro substations.	Implementation: Lead: TANESCO Partners: No
Objectives: <ul style="list-style-type: none"> To supply power to Usa Districts and the surrounding areas 	Financing: Cost Overview: US\$ 7,397,362 Funding Allocation: to be defined Funding Need: to be defined
Proposed activities: Supply of 132/33 kV, 2x20 MVA transformers with accessories; civil works including substation and office building; commissioning of all installed equipment; construction of four new outgoing 33 kV feeders of 60 km.	
Resources: Expecting to receive local and foreign resources.	
Timeline: 2015-2017	
Contact: TANESCO	

3.3.20 Project 20: Handeni substation

Project Description: The Project involves the establishment of a substation at Handeni (132/33 kV, 2x10 MVA). The existing 33 kV distribution line supplies power to Handeni and Kilindi.	Implementation: Lead: TANESCO Partners: No
Objectives: <ul style="list-style-type: none"> To supply reliable electricity. 	Financing: Cost Overview: US\$ 7,397,362 Funding Allocation: to be defined Funding Need: to be defined
Proposed activities: Supply of 132/33 kV, 2x10 MVA transformers with accessories; civil works including substation and office building; commissioning of all installed equipment; construction of four new outgoing 33 kV feeders of 50 km.	
Resources: Expecting to receive local and foreign resources.	
Timeline: 2015-2017	
Contact: TANESCO	

3.3.21 Project 21: 132/33 kV substations in Mwanza region

<p>Project Description: The Project involves the establishment of substations in Mwanza region (132/33 kV, 2x10 MVA) to supply reliable electricity to residences of Mwanza city and the surroundings.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To supply reliable electricity to the residences of Mwanza city and the surroundings. 	<p>Financing: Cost Overview: US\$ 7,397,362 Funding Allocation: to be defined Funding Need: to be defined</p>
<p>Proposed activities: Supply of 132/33 kV, 2x10 MVA transformers with accessories; civil works including substation and office building; commissioning of all installed equipment; construction of four new outgoing 33 kV feeders of 50 km each.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 2015-2017</p>	
<p>Contact: TANESCO</p>	

3.3.22 Project 22: Substations in Mwanza region at the Sabasaba s/s

<p>Project Description: The Project involves the establishment of substations in Mwanza region (132/33 kV, 1x20 MVA) at the Sabasaba s/s.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To supply reliable electricity to the residences of Mwanza city and the surroundings 	<p>Financing: Cost Overview: US\$ 3,698,681 Funding Allocation: to be defined Funding Need: to be defined</p>
<p>Proposed activities: Supply of 132/33 kV, 1x20 MVA transformers with accessories; civil works including substation and office building; commissioning of all installed equipment; construction of three new outgoing 33 kV feeders.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 2015-2017</p>	
<p>Contact: TANESCO</p>	

3.3.23 Project 23: Upgrade of the town substation in Dodoma

<p>Project Description: The Project comprises the upgrade of the 33/11 kV town substation in Dodoma by installing 2x5 MVA transformers with associated accessories at the power station and constructing the associated switching yard.</p> <p>The Project answers to the fast growing demand for electricity services in Dodoma.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To enhance the reliability of the power supply at Dodoma. 	<p>Financing: Cost Overview: US\$ 2,460,557 Funding Allocation: to be defined Funding Need: to be defined</p>
<p>Proposed activities: Supply and installation of 2x15 MVA transformers with associated accessories; upgrading feeder capacities (3 feeders); supply and installation of two 11 kV spare breakers for feeders and one 33 kV incomer breaker; civil work for expanding control building and substation switching yard; commissioning of all installed equipment.</p>	

Resources: Expecting to receive local and foreign resources.
Timeline: 2015-2017
Contact: TANESCO

3.3.24 Project 24: Upgrade of the power station substation in Dodoma

<p>Project Description: The Project comprises of the upgrade of the 33/11 kV power station substation in Dodoma by installing 2x5 MVA transformers with associated accessories and by constructing the associated switching yard.</p> <p>The Project answers to the fast growing demand for electricity services in Dodoma.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To enhance the reliability of the power supply at Dodoma. 	<p>Financing: Cost Overview: US\$ 1,336,500 Funding Allocation: to be defined Funding Need: to be defined</p>
<p>Proposed activities: Supply and installation of 2x5 MVA transformers with associated accessories; civil work for expanding control building and substation switching yard; commissioning of all installed equipment.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 2015-2017</p>	
<p>Contact: TANESCO</p>	

3.3.25 Project 25: 33 kV distribution line between Mugumu feeder and Nyamongo substation

<p>Project Description: The Project comprises the construction of 50 km of 33 kV line to link Mugumu feeder from Nyamongo substation.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To increase power reliability and enable interconnection of feeders. 	<p>Financing: Cost Overview: US\$ 1,099,101 Funding Allocation: to be defined Funding Need: to be defined</p>
<p>Proposed activities: Construction a distribution line.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 2015-2017</p>	
<p>Contact: TANESCO</p>	

3.3.26 Project 26: 66/33 kV underline to Mabogini Substation.

<p>Project Description: The Project comprises of the establishment of a 2x10 MVA, 66/33 kV substation c/w with three outgoing feeders to Kahe, Mandaka and Newland.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
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<p>Objectives:</p> <ul style="list-style-type: none"> To capture more customers and improve the reliability of the power supply. 	<p>Financing:</p> <p>Cost Overview: US\$ 1,300,000</p> <p>Funding Allocation: to be defined</p> <p>Funding Need: to be defined</p>
<p>Proposed activities: Construction of the substation and the associated outgoing feeders.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 2015-2017</p>	
<p>Contact: TANESCO</p>	

3.3.27 Project 27: Gomberi substation

<p>Project Description: The Project involves the establishment of a 1x15 MVA 33/11 kV substation c/w with three outgoing feeders to Mweka, Mwenge University and Masoka University.</p>	<p>Implementation:</p> <p>Lead: TANESCO</p> <p>Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To capture more customers and improve the reliability of the power supply. 	<p>Financing:</p> <p>Cost Overview: US\$ 1,300,000</p> <p>Funding Allocation: to be defined</p> <p>Funding Need: to be defined</p>
<p>Proposed activities: Construction of the substation and the associated outgoing feeders.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 2015-2017</p>	
<p>Contact: TANESCO</p>	

3.3.28 Project 28: Underline 132/66/33 kV Mkata substation

<p>Project Description: The Project involves the establishment of a 132/66/33 kV underline to Mkata substation. It aims to supply reliable electricity to the districts of Kilindi, Handeni and Korogwe.</p>	<p>Implementation:</p> <p>Lead: TANESCO</p> <p>Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To improve the reliability of the power supply. 	<p>Financing:</p> <p>Cost Overview: US\$ 600,000</p> <p>Funding Allocation: to be defined</p> <p>Funding Need: to be defined</p>
<p>Proposed activities: Supply of 132/66/33 kV, 1x20 MVA transformers with accessories; civil works including substation and office building; commissioning of all installed equipment; construction of four new outgoing 66 kV feeders of 50 km and one 33 kV feeder.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 2015-2017</p>	
<p>Contact: TANESCO</p>	

3.3.29 Project 29: Upgrade of Machame substation

<p>Project Description: The Project comprises the upgrading of the 2.5 MVA, 33/11 kV Machame substation to a 10 MVA, 33/11 kV substation in order to improve the reliability of power supply.</p> <p>The Project involves the establishment of the new substation with four outgoing feeders to Kibo, Hospital, Masama and Protea.</p>	<p>Implementation:</p> <p>Lead: TANESCO</p> <p>Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To capture more customers and to improve reliability of the power supply. 	<p>Financing:</p> <p>Cost Overview: to be defined</p> <p>Funding Allocation: to be defined</p> <p>Funding Need: to be defined</p>
<p>Proposed activities: Upgrade of the substation and the associated outgoing feeders.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 2015-2017</p>	
<p>Contact: TANESCO</p>	

3.3.30 Project 30: Upgrade of Nyumba ya Mungu substation

<p>Project Description: The Project involves the upgrade of Nyumba ya Mungu substation from a 1x5 MVA to a 2x20 MVA 66/33 kV substation.</p>	<p>Implementation:</p> <p>Lead: TANESCO</p> <p>Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To improve reliability and enable more customers to be connected. 	<p>Financing:</p> <p>Cost Overview: US\$ 134,000</p> <p>Funding Allocation: to be defined</p> <p>Funding Need: to be defined</p>
<p>Proposed activities: Upgrade of the substation.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 2015-2017</p>	
<p>Contact: TANESCO</p>	

3.3.31 Project 31: Upgrade of Gonja substation

<p>Project Description: The Project involves the upgrade of the Gonja substation from a 1x1 MVA to a 2x5 MVA 33/11 kV substation.</p>	<p>Implementation:</p> <p>Lead: TANESCO</p> <p>Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To improve reliability and enable more customers to be connected. 	<p>Financing:</p> <p>Cost Overview: US\$ 165,000</p> <p>Funding Allocation: to be defined</p> <p>Funding Need: to be defined</p>
<p>Proposed activities: Upgrade of the substation.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 2015-2017</p>	
<p>Contact: TANESCO</p>	

3.3.32 Project 32: Rehabilitation of Kilole substation

<p>Project Description: The Project involves the rehabilitation of the 33/11 kV 2x5 MVA Kilole substation for improving the power supply at Korogwe district.</p> <p>It includes the supply and installation of new 33/11 kV switchgears, metering facilities and fencing.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To improve reliability of the power supply at Korogwe district. 	<p>Financing: Cost Overview: US\$ 300,000 Funding Allocation: to be defined Funding Need: to be defined</p>
<p>Proposed activities: Supply and install 33/11 kV switchgears, metering facilities, and fencing; commissioning of all equipment.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 2015-2017</p>	
<p>Contact: TANESCO</p>	

3.3.33 Project 33: Rehabilitation of Pangani Bushiri substation

<p>Project Description: The Project involves the rehabilitation of the 33/11 kV 1 MVA Pangani Bushiri substation to a 2x5 MVA substation.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To improve reliability of the power supply at Pangani district. 	<p>Financing: Cost Overview: US\$ 240,000 Funding Allocation: to be defined Funding Need: to be defined</p>
<p>Proposed activities: Supply and install switchgears, metering facilities, and fencing; commissioning of all equipment.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 2015-2017</p>	
<p>Contact: TANESCO</p>	

3.3.34 Project 34: Bunda substation

<p>Project Description: The Project involves the upgrade of the 66/33 kV, 3 MVA Bunda substation to a 2x3 MVA substation.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> • To improve reliability of the power supply. 	<p>Financing: Cost Overview: US\$ 134,000 Funding Allocation: to be defined Funding Need: to be defined</p>
<p>Proposed activities: Upgrade of the substation.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 2015-2017</p>	
<p>Contact: TANESCO</p>	

3.3.35 Project 35: Switching station at Marangu

<p>Project Description: The Project comprises of the establishment of a 33 kV switching station at Marangu for Makuyuni-Marangu incoming outgoing feeders to Mwika, Marangu and Kilema.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> • To improve reliability and enable more customers to be connected. 	<p>Financing: Cost Overview: US\$ 80,440 Funding Allocation: to be defined Funding Need: to be defined</p>
<p>Proposed activities: Supply and installation of 4X33 kV circuit breakers bays with associated protection, A/R+4X200amp-33kV LBS; civil works and electro mechanical works: supply and installation of 50 kVA auxiliary transformer and DC auxiliary supply.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 2015-2017</p>	
<p>Contact: TANESCO</p>	

3.3.36 Project 36: Switching station at Mkuu Rombo

<p>Project Description: The Project comprises the establishment a 33 kV switching station at Mkuu Rombo for Makuyuni-Rombo incoming and outgoing feeders to Rongai, Mamsera and Mkuu Town.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To improve reliability and enable more customers to be connected. 	<p>Financing: Cost Overview: US\$ 80,440 Funding Allocation: to be defined Funding Need: to be defined</p>
<p>Proposed activities: Supply and installation of 4X33 kV circuit breakers bays c/w protections panels (A/R+4X200 amp), 33 kV LBS; civil and electro mechanical works; supply and installation of 50 kVA auxiliary transformer and DC auxiliary supply.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 2015-2017</p>	
<p>Contact: TANESCO</p>	

3.3.37 Project 37: Acceleration of urban electrification of Dar es Salaam

<p>Project Description: The Project aims at accelerating the urban electrification of Dar es Salaam to cover a population of 2.3 million. In the first year, the Project is expected to achieve the initial number of 94,133 customers who will pay to be connected to supply. At the conclusion of the project in a period of three years, 409,443 customers are expected to be connected.</p> <p>The scope of the project is threefold:</p> <ol style="list-style-type: none"> 1) To extend 242.37 km of HT lines (33 or 11 kV); 2) To extend 771.23 km of LV lines (both three phase and single phase); and 3) To establish 332 distribution transformers of various sizes. <p>The source of finance to implement this project is through bank loan. Loan repayment will be through customer's contribution towards service connection and partly from the electricity bills. The initial 94,133 expected customers will contribute to about TZS 27 billion in the first two years if going by the current subsidized service line connection rates.</p>	<p>Implementation: Lead: TANESCO Partners: No</p>
<p>Objectives:</p> <ul style="list-style-type: none"> To increase the supply of electricity services to cover a population of 2.3 million. 	<p>Financing: Cost Overview: TZS 43.4 billion Funding Allocation: to be defined Funding Need: to be defined</p>
<p>Proposed activities: Extension of HT and LV lines; supply and installation of distribution transformers; commissioning of all equipment.</p>	
<p>Resources: Expecting to receive local and foreign resources.</p>	
<p>Timeline: 3 years</p>	
<p>Contact: TANESCO</p>	

3.4 Other Project Investment Opportunities

Interested investors and Donors should contact SE4ALL CFP, Eng. Styden Rwebangila (stydenr@gmail.com) or directly to the project implementing authority.

Name of the project/ Implementing Authority	Project Description	Project Cost Estimate	Project Status / Financial Status
Makambako Wind Power Project – Njombe Region / National Development Corporation (NDC)	<p>The Makambako Wind Power Project is expected to generate up to 200 MW based on wind as a renewable source of energy. The project's wind farm has 1,400 Ha.</p> <p>Location: Makambakoin Njombe Region, southern part of Tanzania about 730 km from Dar es Salaam.</p>	To be known after completion of a feasibility study	<p>Project Status: Survey conducted by Lahmeyer International (wind energy specialist consultant) from Germany between 2009 and 2010, has recommended that the site is technically viable for wind power generation.</p> <p>Financing Status: Proposal from Investors solicited</p>
Ngozi geothermal project/ Tanzania Geothermal Development Company Limited (TGDC)	<p>TDGC intends to develop Ngozi geothermal project for generation of 100 MW (preliminary estimates) and utilize heat in the brines for various direct commercial and social uses such as space heating, aquaculture, drying of grains and many other viable uses.</p> <p>Implementation of the project shall involve carrying out infrastructure development, test drilling appraisal drilling, feasibility study, EPC tendering plant design and construction and construction of transmission line.</p> <p>Location: Ngozi, South-East of Mbeya Region Tanzania</p>	USD 445 million	<p>Project Status: Detailed geo-scientific surface studies are on-going to fill the gaps and determine the best drilling locations for reservoir confirmation.</p> <p>Financing Status: AUC/GRMF grant application made for co-financing of two full sized exploration drilling wells and infrastructure development for the project.</p>



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