TF071411

The World Bank
INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
INTERNATIONAL DEVELOPMENT ASSOCIATION

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April 18, 2013

Maria Van Berlekom
Head of Development Cooperation, Sida Tanzania
Mirambo St./Garden Avenue
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Tanzania

ADMINISTRATION AGREEMENT FOR SWEDISH SUPPORT TO ELECTRICITY ACCESS AND REGULATION IN TANZANIA (TF071411)
AMENDMENT NO. 2 TO ADMINISTRATION AGREEMENT

Dear Ms. Maria Van Berlekom:

We refer to the Administration Agreement (the "Agreement") dated December 17, 2009, between Sweden, represented by the Swedish International Development Cooperation Agency ("Sida"), and the International Bank for Reconstruction and Development ("IBRD") and the Development Association ("IDA") (collectively the "Bank") for the Trust Fund ("Trust Fund No. 071411") ("Project") to Support the Electricity Access and Regulation in Tanzania.

We propose to amend the Agreement in respect of the provisions below:

1. Section 1.01 in Article I is amended to read as follows:

"Section 1.01 In pursuance of the Trust Funds Framework Agreement between Sweden, represented by the Swedish International Development Cooperation Agency, Sida ("Sweden") and the International Bank for Reconstruction and Development ("IBRD") and the International Development Association (the "IDA") (collectively the "Bank") dated June 10, 2005 (the "Framework Agreement"), I am pleased to inform you that Sweden will make available a grant (the Grant) of: (a) Swedish Kronor Thirty Million (SEK 30,000,000 – Initial Grant); and (b) **Swedish Kronor Twenty Five Million (SEK 25,000,000 – Additional Grant)**, to be administered by the Bank for Swedish Support to the Electricity Access and Regulation in Tanzania (Trust Fund No. 071411)."

2. Section 1.04 in Article I is amended to read as follows:

"Section 1.04 The Grant shall be used exclusively for the activities described in the **Amended and Restated Program Document ("Amended and Restated Program Document")** attached as an Annex hereto, which forms an integral part of this Agreement. The Grant shall be used to finance the following categories of expenditure: Consultant fees, **Staff Costs**, Travel cost Media/workshop costs. Notwithstanding the foregoing, the Bank may allocate the United States Dollar amounts obtained by the Bank following receipt of the Grant funds as the Bank deems necessary to achieve the purposes of the Grant. In so doing, the Bank will endeavor to use the United States Dollar amounts to the extent feasible in proportion to the allocation of the SEK amounts stated herein."

3. Article 3 is amended to read as follows:

"**ARTICLE 3**

Commencement and Completion Dates

Section 3.01 The Grant funds may be used to finance expenditures for the Project commencing on 1 January 2010 and ending on October 31, 2014. For Bank-executed trust funds, the Bank may make disbursements of the Grant funds up to four (4) months after such later for expenditures incurred on or before such date, in accordance with the Bank's applicable policies and procedures."

4. Sida shall deposit the Additional Grant into such bank account designated by the Bank promptly following countersignature of this Agreement by Sida and submission of a payment request by the Bank.

5. For the purpose of Section 4.02 of the Agreement, in order to assist in the defrayment of the costs of administration and other expenses incurred by the Bank under this Agreement, the Bank may, following deposit of the Additional Grant by Sida, deduct and retain for its own account an amount equal to five percent (5%) of the Additional Grant.

6. All other terms of the Agreement shall remain the same.

7. The Bank will disclose this Agreement and related information on this Trust Fund in accordance with the World Bank Policy on Access to Information. By entering into this Agreement, Sida consents to disclosure of this Agreement and related information on this Trust Fund.

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Please confirm your agreement with the foregoing by signing, dating and returning to us the enclosed copy of this letter. Upon receipt by the Bank of the copy of this letter countersigned by you, this amendment will become effective as of the date of the countersignature.

Sincerely,

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
INTERNATIONAL DEVELOPMENT ASSOCIATION

Philippe Dongier
Country Director for Tanzania

AGREED:

SWEDEN (Represented by the Swedish International Development Cooperation Agency - Sida)

By: _____ Date: 25 April 2017

Name: Maria Van Berlekom

Title: Head of Development Cooperation, Sida Tanzania

Attachment:

Amended and Restated Program Document - Swedish Support to the Electricity Access and Regulation in Tanzania (TF No. 071411)

Annex

AMENDED AND RESTATED PROGRAM DOCUMENT

SIDA TRUST FUND / WORLD BANK SUPPORT TO RURAL / RENEWABLE ENERGY/ACCESS SCALE-UP AND THE ELECTRICITY REGULATORY SYSTEM

(Proposed expansion - April 2013 to October 2014)

A. Background

1. On December 17, 2009, Sida and the World Bank signed an Administrative Agreement for a grant to support capacity building of REA and EWURA, and to lesser extent also other sector institutions, including TANESCO and MEM. The total amount of the grant was SEK30 million.

2. The objective of the grant was (i) for REA to gain capacity to develop, finance and implement a scale-up rural electrification program with renewable energy and grid and off-grid components, and (ii) for EWURA to gain capacity to develop a credible and clear regulatory system to promote the efficient and financially sustainable operation of TANESCO, Small Power Producers (SPPs) and other sector enterprises.

3. The grant is expected to reach these objectives. EWURA, REA and developers received a number of technical assistance and capacity-building activities. As a result of these activities, the viability of Tanzania's small power program has been confirmed, with three SPPs now in operation, one in construction and two at the verge of reaching financial closure. This SPP program is also now supported by the light-handed regulatory framework overseen by EWURA. The design of the low-cost electrification approach for grid expansion is also about to be completed, to be applied by REA in their future rural electrification programs.

4. The grant also provided technical assistance to EWURA to provide EWURA with global knowledge that allowed them to develop a regulatory review system for monitoring of technical, financial and commercial performance entities operating within the electricity system. This system has been developed now and EWURA and TANESCO plan to implement it.

5. Considering the positive outcomes of the original Sida Trust Fund (TF) (see section C), it is proposed to extend and expand the Sida TF with an additional SEK25 million (USD3.8 million

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equivalent), to be executed from January 1, 2013 to October 31, 2014, in order to provide technical assistance and capacity building to REA and EWURA for the implementation and consolidation of electrification and regulatory review approaches and frameworks developed with the assistance of the original Sida TF. As with the original Sida TF, this 18-month extension would focus on providing "just in time" advisory services that would allow REA and TANESCO to expand and consolidate their ongoing programs and to help EWURA improve its regulatory processes and decisions.

B. Sector situation

Key Facts

- Population – 43 million growing @ 2.9%/yr
- GDP growing @ 6.5% per annum (2011)
- Inflation ca 15.7% (2011),
- Diverse energy sources: hydro, coal, natural gas, geothermal, solar, wind, biomass etc.
- Access Rate 15%
- Current Average Retail Tariff: 190 TSh/kWh (US cents 12/kWh)
- TANESCO – Vertically integrated state owned utility with about 900,000 customers
- Installed Capacity – 1,438 MW; 562 hydro, 876 thermal (incl. 617 MW IPP)
- Max available capacity about 906 MW (operational). Max Demand 806 MW.
- Estimated Level of Distribution and Transmission Losses: 23%
- Estimated Collection rate: 96%

6. Tanzania is endowed with diverse energy sources including natural gas, wind power, hydropower, coal, biomass, geothermal and solar, much of which is untapped. The country's main installed generation capacities are based on hydropower (39 percent) and natural gas (34 percent). According to TANESCO's short to medium term generation expansion plan (up to 2017) the majority of the planned generation capacity additions are expected to be based on natural gas, wind, coal and hydropower.

7. Over the last decade, the Government of Tanzania (GoT) undertook substantial reform measures in the electricity sector, which led to the creation of an independent regulator, Energy and Water Utilities Regulatory Authority (EWURA), the Rural Energy Agency (REA) and the related Rural Energy Fund (REF) and also restructured the government owned, vertically integrated utility TANESCO, enforcing its top management structure and creating a Board of Directors with public and private sector stakeholder representations. More recently the GoT prepared and ratified a National Public-Private Partnership (PPP) Law in 2010. This law makes reference to sector level PPP nodes also in the national electricity sector. Accordingly, the MEM and TANESCO have created PPP nodes. In addition, the GoT, in its overall sector expansion strategy, is pursuing enhanced private sector participation especially on the generation side and the key parameters for an enhanced involvement have been established with a regulatory framework which is up to international standards and legal reforms which facilitate private sector participation in the field of generation.

8. Over the last four years, with assistance of the Sida TF, REA, EWURA and TANESCO also adopted the Small Power Project program to support primarily renewable energy and cogeneration projects of up to 10MW that can deliver power to the national grid, to TANESCO's isolated mini-grids or directly to communities on new non-TANESCO mini-grids, displacing higher cost fossil fuel alternatives. REA has established a comprehensive support system for SPPs, including financial assistance for pre-investment studies, connection grants and a credit line. EWURA has adopted a light-handed regulatory framework for SPPs and TANESCO has established an SPP cell to facilitate discussions with the project developers.

9. In 2011 Tanzania faced another energy generation shortage crisis, triggered by a severe regional drought which hit East Africa in the middle of 2011. Subsequently, GoT embarked on an ambitious Emergency Power Program (EPP), which eventually ended the generation shortage situation. The recent generation additions also changed the overall character of TANESCO's generation regime, which until recently was pre-dominantly based on hydropower, but at the current stage is dependent up to 61% on thermal generation solutions of which 43% are based on oil fired generation at average costs of more than US Cents 20/kWh. The main driver for the utility's enhanced focus on thermal generation solutions can also be explained by the unstable and, over the past years, slightly deteriorating hydrology situation on some of TANESCO's hydropower stations thereby posing a threat of generation shortfalls in the dry seasons.

10. While the utility managed to more or less overcome the generation shortage crisis of last year, the recent Emergency Power Program has put it in a difficult financial situation. TANESCO's financial situation has been fragile since several years. While the utility's net financial result showed a moderate loss of about US$17 million in 2010, the recently approved (January 2012) average tariff increase of 40% was too low to allow the utility to operate at cost recovery level in the current operating cost structure. The current average retail tariff is about US cents 12/kWh while the average thermal generation operating costs are estimated to be around US cents 20/kWh and higher. The regulator (EWURA) is currently reviewing the adequacy of the current tariff levels and will decide whether in its view the tariffs need to be further adapted.

11. The financial burden of the rented thermal emergency plants is significant given that in addition to already high operating costs at currently very high oil prices, the utility has also to finance monthly capacity (lease) charges to the operators, which for a 100MW plant can amount to several million US$ per month. It is also important to note that those charges will continue to accumulate even if TANESCO cannot dispatch the plants.

12. TANESCO, with the support of the WB, has regularly updated a comprehensive Power System Master Plan (PSMP); however recent developments in the sector indicate that the PSMP (of 2009) is no longer followed for planning purposes. In December 2011, TANESCO started revising the PSMP. While the final update is still outstanding TANESCO indicates that on a 10-year timeframe, the utility would require new capacities of about 1,931 MW until 2020.

13. Lack of electricity is a key constraint to growth in Tanzania, particularly for businesses and to ensuring healthy, well-educated workforce, and achievement of the MDGs. Annual per capita electricity consumption in Tanzania, at a mere 61 kilowatt hours, is extremely low even by low-income-country and Sub-Saharan African standards, where consumption averages 391 and 542 kilowatt hours, respectively. Tanzania has one of the lowest electrification rates in Sub-Saharan Africa (SSA): 15 percent compared to a 29 percent SSA average.

14. The GoT has adopted an ambitious plan to reach 30% electricity access. NORAD is currently supporting REA in developing an investment prospectus to chart a way to reach this target through a combination of grid and off-grid electricity investments. The SPP and low-cost electrification grid models designed with the contribution of the Sida TF will be used for the implementation of the prospectus in rural areas.

15. With respect to the objective of the current (and extended) Sida TF activities, the present sector situation poses the following challenges and opportunities:

a. The power shortages and the ensuing recourse to the expensive emergency generation has highlighted the potential the renewable energy SPPs can bring in terms of diversifying TANESCO's generation mix. The high generation costs of TANESCO have also led to the increase of the SPP tariff, as it is based on TANESCO's avoided costs, thereby increasing SPP financial viability. The current sector situation, however, also represents considerable vulnerabilities for SPPs, mainly in relation to the risk of TANESCO's non-payment. As the SPP program matures, there is a need for a comprehensive review of the SPP program and its regulatory framework to address the key issues raised by the developers, including designing guarantees and technology-specific tariffs to expand the program beyond small hydro and biomass technologies.

b. In addition, the crisis has also brought again to forefront the need for a transparent mechanism for procurement of electricity from IPPs. High priced emergency and non-emergency purchases have greatly weakened TANESCO's financial condition. It is generally recognized throughout the sector that TANESCO and MEM's current procurement methods — non-competitive and non-transparent — have contributed to the high cost of TANESCO's power purchases. EWURA, as the regulator, does not conduct procurements. However, it has clear legal authority to approve the initiation of power purchases (Section 5 of the 2008 Electricity Act) and to approve the pass through of TANESCO's purchases from IPPs (Section 25) in retail tariffs. With TA and capacity building from the current Sida Trust Fund, EWURA developed guidelines for regulatory review of TANESCO's future competitive and non-competitive power purchases. Moreover, a benchmarking table was developed to evaluate risk allocations proposed by IPPs in PPAs.

c. The GoT's adoption of a 30% electrification target also underlines the need to quickly consolidate and expand the REA's grid and off-grid expansion models supported by the Sida

TF. For the grid part, the Sida TF would provide capacity building to REA to implement the low-cost electrification approach developed under the original Sida TF. For off-grid, the Sida TF would allow the three key Tanzanian organizations (REA, TANESCO and EWURA) to continue engaging with the growing number of developers, commercial banks and the emerging SPP consulting industry to provide them targeted TA support (e.g. transaction advice to the project developers, capacity building for the evaluation of renewable energy projects to the banks, TA to consultants on how to conduct feasibility studies, TA to developers, NEMC and districts on how to integrate environmental and social considerations, and TA to EWURA on new feed-in tariff methodologies). Given the rapidly expanding SPP industry in Tanzania, this continued TA support is still needed. REA will, however, play an active and coordinating role in this process so that in the future REA will take over these activities with its own funding.

C. Original Sida TF activities and outcomes

16. The objective of the Trust Fund project is: (i) for REA to gain capacity to develop, finance and implement a scale-up rural electrification program, with renewable energy and grid and offgrid components, and (ii) for EWURA to gain capacity to develop a credible and clear regulatory system to promote the efficient and financially sustainable operation of TANESCO, SPPs and other sector enterprises.

17. Progress towards achieving the project objectives is measured by the following indicators:

- Access scale-up approach designed, involving not only the current bottom-up initiatives piloted by Tanzania Energy Development and Access Expansion Project (TEDAP), but also the utility (TANESCO)-led grid extension
- A regulatory system for reviewing the power purchase costs from large IPPs and monitoring of commercial, financial and operational performance of TANESCO and other sector enterprises.

1. Support for Energy Access Scale-up

18. Sida TF has provided instrumental support for successfully piloting bottom-up electrification approaches under TEDAP by assisting the sector institutions, local developers, and commercial banks in the preparation of the SPP pipeline. This technical assistance has addressed technical, economic, and financial appraisal, transaction structuring, carbon finance

and deal closure with the local banks, while also ensuring compliance of the projects with social and environmental safeguards. The TF has also assisted the working group composed by REA, TANESCO and EWURA to analyze the technical, procurement and economic challenges to rural electrification and to design a low-cost pilot for grid extension in rural areas.

a) Support for bottom-up initiatives

19. For off-grid areas, REA has now a functioning program which is widely recognized and used by the key stakeholders, including rural and renewable energy project developers and financial institutions.

20. As of early November 2012 TANESCO and project developers have signed SPPAs for 6 projects amounting to 21.7 MW, and TANESCO has issued a Letter of Intent for 7 additional projects amounting to 39MW. Three SPPs (Tanwat, TPC and Mwenga) are currently online, generating, and selling electricity under the SPPA with TANESCO and one off-grid SPP is under construction. One SPP (Mwenga) has reached financial closure and its financier (CRDB) is a beneficiary of refinancing from the credit line. Two additional SPPs (Mapembasi, Andoya) are near financial closure. Mawengi and Mwenga have received a performance grant from REA (total about 3,700 connections); the execution Andoya's performance grant agreement (922 connections) is conditioned upon financial closure. A significant pipeline of connections (24,600) is expected from additional three projects prepared by GVEP International - Ihalula, Macheke and Lingatunda. The significant request for matching grants under TEDAP (15 approved matching grants up to date) demonstrates a solid pipeline of private sector driven small renewable projects.

21. The key activities financed under the Sida TF include:

- *TA to REA and renewable energy / off-grid electrification project developers.* The TF has supported the development of SPP pipeline by providing advisors to REA and developers on matching and performance grant applications provided under TEDAP, business plan development (Andoya, mini-hydro 500kW and Njombe Resources Development, mini-hydro 10 MW), equity contribution, risk mitigation and financial closure. The consultants have assisted REA in conducting an active dialogue of the developers with international investors, banks and donors. Guidance has been provided to GVEP on screening the technical, economic and financial viability of five small renewable energy projects currently in the pipeline (Ihalua - 300KW mini-hydro, Macheke/ Mlangali - 1MW mini-hydro, Darakuta - 1MW mini-hydro, Lingatunda - 3.3MW mini-hydro, Luswisi - 2.5 MW mini-hydro). A facility aimed at filling the equity gap faced by local developers by

advancing green generation performance grants has been set up with funding provided by the Russian TF for Energy SMEs. The facility is managed by REA.

- *TA for good environmental and social practices.* Capacity building aimed at ensuring the compliance of the projects with environmental and social safeguards has been provided under the TF. The international consultant hired under Sida TF has supported the capacity building for REA, local consultants and developers. About 43 representatives of project developers, district officials, NEMC local offices, civil society and others benefited of training on environmental and social aspects of small hydro and biomass projects during the workshop organized by NEMC and REA in May 2011 in Njombe. Based on the feedback from these training activities, REA has developed simplified frameworks to guide developers in step-by-step process to apply environmental and social safeguards in developing and implementing their small power projects.

- *Solar energy development.* The TF has provided support to MEM and REA on the implementation of the Sustainable Solar Market Packages (SSMP I) for public institutions in Rukwa region and private sale development of PV systems as well as the preparation of SSMP II that will cover eight districts. The consultants under the Sida TF have provided technical inputs to equip REA better to supervise the SSMP I contractor and to scale-up SSMP (8 districts have been identified and prepared ofr the SSMP II scale-up).

- *TA to TANESCO SPP cell.* The SPP cell of TANESCO has benefited of technical assistance provided by Thai consultants under the TF. Thailand has been successful in facilitating deployment of grid-connected customer-owned renewable energy under the VSPP (Very Small Power Producer) program[1] and elements of the Thai VSPP program have served as a model for developing the SPP program in Tanzania. Several products have been developed by TANESCO under the guidance of the Thai consultants - *TANESCO Grid Code for Embedded Generation, TANESCO Manual for SPP Application Approval and Interconnection, TANESCO and SPP Operation Manual* and *TANESCO Coordination with EWURA and REA on the SPP Program*, which assist the other departments of the utility to incorporate the SPP concept in their daily work. This is one example of the targeted, "just-in-time" technical assistance that the Trust Fund has provided.

- *TA to financial institutions lending for rural and renewable energy projects.* Triodos Facet was competitively hired to provide training to PFIs on the appraisal of the renewable energy projects. Two workshops for financial institutions were organized in

[1] As of March 2012 over 1210 MW of VSPP generators are online and an additional 3,821 MW are in the pipeline with signed PPAs.

January and September 2011 that provided an overview of the risks related to all the renewable energy technologies. During the first workshop, the participants analyzed a mini-hydro case study; the second classroom training was focused on the analysis of a biomass project. The workshops have been complemented by two on-the-job-trainings for CRDB and TIB that requested assistance for the appraisal of renewable energy projects. In addition, Triodos Facet has also developed a training toolkit for the appraisal of small renewable energy projects.

- *TA to EWURA for SPP Activities:* The Sida TF has provided international best practices and targeted advisory services that assisted EWURA to develop the rules, guidelines, and standardized documents that form the regulatory foundation for Tanzania's Small Power Producer (SPP) program. Separate standardized PPAs for main-grid and mini-grid connections were finalized and adopted by EWURA in 2009. In the same year, EWURA issued a standardized SPP tariff methodology that was subject to public consultation before it was issued in final form. In 2010, Sida TF supported EWURA to develop process guidelines and guidelines for grid interconnection. In stakeholder meetings, rules based on these guidelines were formalized and adopted in 2011. In 2012, the Sida TF provided advisory services to EWURA to develop an expanded and improved set of "second generation" SPP rules. A stakeholder meeting for these 2nd generation rules was held in July 2012, and EWURA-approved "second generation" SPP rules are expected in the beginning of 2013.

b) *Access scale-up program by supporting REA to design a low cost distribution approach*

22. For the grid extension, the Sida support was used to address one of the key bottlenecks in grid electrification – high costs of connections. NRECA was contracted to assist REA to provide international best practices and assist REA in developing a low cost electrification approach suitable to Tanzanian conditions. To this end, technical, procurement and financial aspects were combined; reducing as such the costs of grid extension as well as for households and businesses to connect and thereby maximizing the number of connections that can be achieved with available funding. The approach is in the final stage of development and is expected to be concluded by April 2013 in order to accommodate REA's request to include area planning exercise in the current contract with NRECA. In addition, REA has requested Sida TF advisory services to assist REA to develop a cooperative approach, which would be included in the new activities if Sida TF is amended.

23. NRECA International, the consultant competitively selected to pursue the low cost electrification study, evaluated two service areas, with different low cost test configurations; (i) moderate density large village system and (ii) low density remote village area. The conclusions

were (i) "right sizing" of TANESCO three phase design (to include cross arm structures, three phase laterals and 25kVA transformers feeding LV sectors of 25mm^2 quadruplex) yields significant benefits; (ii) single phase construction, no matter how delivered is the low cost approach for moderate density projects; and (iii) Single Wire Earth Return (SWER) is the preferred approach for remote projects that are more than 2km from the main line. Up to 2km, long span 2 phase is preferred. As far as affordability of electricity access is concerned, NRECA's energy expenditure survey of un-electrified rural households showed that based on current income and energy spending, only the highest income groups can afford lump sum, up-front connection charges or house wiring costs, but cost of monthly service is affordable. Several options of financing connections charges were discussed in a workshop organized in January 2012, and NRECA has recommended a subsidization scheme to match affordability level. The low cost design model is expected to be completed by March, 2013.

2. Technical assistance to EWURA on IPP purchases and monitoring programs

24. The original Sida TF proposal envisaged that EWURA would develop a model PPA for IPP projects. EWURA ultimately decided not to develop a model PPA for IPP projects. It reached this conclusion after the trust fund financed visit to Kenya led by EWURA and comprised of 12 electricity sector stakeholders. Kenya was chosen because it was generally acknowledged to have the most successful IPP procurement program of any country in sub-Saharan Africa. There was universal agreement among the Kenyans that were interviewed that it was not productive to "force fit" IPP projects into a standardized PPA because there was too much variability among individual IPP projects. However, the resources that were freed up were used to provide advisory services to EWURA to develop a monitoring system bolstering EWURA's capacity to effectively regulate the sector.

25. Section 30 of the Electricity Act (2008) requires that EWURA develops systems for monitoring the technical, financial and commercial performance of the entities operating within the electricity sector. With funding from the 2010-12 Sida Trust Fund, EWURA developed a two-pronged approach to monitoring. The first prong was the development of an Electricity Regulatory Information System (ERIS) and an Asset Register. These were designed to provide objective measures of TANESCO's financial, commercial and technical performance using data that could be validated on an ongoing basis. Both systems have been developed, are on-line and have been populated with historical data from TANESCO. Under the current Trust Fund, key personnel from both TANESCO and EWURA have received training in the two systems. As part of the development efforts, audits were conducted to test the reliability of the underlying data and to develop key performance indicators (KPIs) that could be used by TANESCO, EWURA and Ministry personnel to monitor TANESCO's performance on an ongoing basis. The system is now in use on a trial basis. The trial has been used for fine-tuning the monitoring systems,

including for improving the quality of the data provided by TANESCO. Once the trial is completed in April, EWURA will be able to use the data from ERIS for regulatory purposes. The second prong was designed to obtain unbiased and statistically significant information on how TANESCO's customers perceive the company's performance. This was accomplished by commissioning a stratified, random survey of 2,000 TANESCO customers in different regions in November 2011. The survey was designed to provide customer opinions on different dimensions (e.g. billing, reliability of service and ease of connections) of TANESCO's performance. The survey provided useful complementary data to ERIS, given that it measured also the perceptions of the public about TANESCO's quality of service. The results have been provided to TANESCO and serve as a baseline against which further improvements will be compared to. EWURA is planning to carry out surveys periodically, at least every two years.

26. The current Sida TF has financed the development of the two monitoring prongs. To the best of our knowledge, the two monitoring initiatives go beyond any monitoring systems that currently exist in any other sub-Saharan African country. The challenge is now to implement both systems on an ongoing basis so they go beyond being just proposed "pilot systems", for which EWURA will seek capacity building from the expanded Sida TF.

D. Project Development Objective(s) and key Indicators of the expanded activities

27. The objective of the expanded Trust Fund will remain the same as the original one, with the exception of expanding the capacity building objective for the first component also to other sector stakeholders, including primarily Tanesco, EWURA, MEM, private sector developers and commercial banks. The objective is to (i) assist REA and other sector stakeholders in gaining the capacity to develop, finance and implement a scaled-up rural electrification program, with renewable energy and grid and off-grid components, and (ii) assist EWURA to gain capacity to develop a clear and credible regulatory system to promote the efficient and financially sustainable operation of TANESCO, SPPs and other sector enterprises.

28. Progress towards achieving the project objectives is measured by the following indicators:

- REA gains capacity to implement an access scale-up approach, involving not only the current bottom-up initiatives piloted by Tanzania Energy Development and Access Expansion Project (TEDAP), but also the utility (TANESCO)-led grid extension
- EWURA gains capacity to develop a regulatory system for reviewing the power purchase costs from large IPPs, promoting efficient and financially sustainable grid and off-grid

small power producers (SPPs) and implement a credible system to monitor the commercial, financial and operational performance of TANESCO and other sector enterprises.

29. These indicators are presented in more details in the attached results framework at the end of this document.

E. Description of the expanded activities

1. Support For Energy Access Scale-up

30. Sida TF would continue supporting REA and other sector institutions in providing capacity building and advisory services for scaling up energy access through the consolidation of approaches developed under the original Sida TF.

a) Bottom-up electrification initiatives

31. While the decentralized access scale-up approach is designed and its potential is confirmed, it is by no means a certain success. As highlighted in the sector background section, REA and the project developers face many challenges that require additional support. Additional support to REA for the SPP program development is therefore sought in order to achieve consolidation and further implementation of the SPP approach.

32. The TF will continue providing capacity building and advisory services to REA, SPPs, EWURA, TANESCO, and commercial banks and other key stakeholders to scale-up the bottom-up electrification approaches. The TF will focus on (i) covering key knowledge gaps (e.g. through renewable energy resource mapping), (ii) identification of the key remaining barriers for scaling up the SPP model, (iii) identification of the key capacity constraints by key players, and (iv) provision of targeted advisory services and capacity building activities to remove the capacity constraints.

Many of the new activities are related to providing capacity building to REA, project developers and commercial banks to scale up the number of SPPs, and to EWURA to fine-tune the SPP framework in order to take into account the comments received from the developers. Apart from the continued capacity building of these new project developers and of commercial banks, the new Sida TF will focus now also on training of local consultants who are now serving the

expanding renewable energy industry, in order to ensure quality of feasibility studies and other pre-investment and investment activities. Additional capacity building is also required for the SPP cell of Tanesco to be able to respond rapidly to the growing demand for interconnection from the growing number of SPPs. The key activities expected to be financed from the expanded Sida TF include:

Technical assistance to REA for scaling-up SPP model and off-grid electrification

33. This activity will assist REA in fine-tuning and expanding the SPP support and for solar energy development. The SPP support will include primarily (i) technical guidance on how to promote, evaluate and supervise matching grants given the rapidly expanding matching grant demand, (ii) review of the existing SPP instruments (matching grants, performance grants, credit line) and their possible adjustments and/or introduction of new instruments (e.g. guarantees). With respect to the solar market development, the implementation of Sustainable Solar Market Packages (SSMP) and Lighting Rural Tanzania (LRT) have emphasized the need for enhanced local technical capacity on solar technology, business and financing models that would make the PV products affordable to rural customers and foster the engagement of the commercial banks, MFIs, and associations/communities in solar energy development. Sida TF would provide support to REA for technical capacity building to scale-up SSMP approach and supervise SSMP contractors, for the review and development of potential credit schemes for private sales, and other market development activities. The TA provided under Sida TF additional funds will also aim to strengthen the monitoring capacity of REA and MEM to successfully scale up the solar Technical assistance to consultants specialized in SPP pre-investment studies.

34. REA has requested this activity to complement the training and assistance provided directly to the project developers, based on its experience with the matching grants which are provided to developers for pre-investment studies. As the number of SPPs in development is increasing, there is now an growing demand for consultants to carry out feasibility and other pre-investment studies. The quality of consultant outputs, however, has been uneven. There is a need, therefore, to train local consultants to increase the availability of qualified consultants and to ensure quality of feasibility and other pre-investment studies.

Technical assistance to commercial banks

35. This is a continuation from the original Sida TF. After the initial classroom training, Sida TF has been providing one-on-one training to the commercial banks for the evaluation of renewable energy loans. This one-on-one training was highly appreciated by the banks and will therefore continue also in the expanded period, based on demands by the commercial banks. REA will continue proactively engaging the commercial banks to inform them about the instruments available for them under TEDAP, including the credit line, the risk mitigation scheme (potentially to be established under SREP), and the training for the evaluation of renewable energy projects.

Technical assistance for EWURA on renewable energy regulation for SPPs and larger systems

36. With the capacity building from the 2010-12 Sida Trust Fund, EWURA developed the regulatory framework for SPPs. This included rules consistent with Tanzanian laws, guidelines, standardized power purchase agreements, and standardized tariffs. In mid-2012, a second generation set of rules was drafted by EWURA with the advisory services provided by the consultants funded by the current Sida Trust Fund – which addresses regulatory issues that surfaced in the initial phase of SPP development in Tanzania. However, it has become clear that several other challenging but important refinements are still needed if the SPP program is going to take off and make a significant contribution to the Tanzanian power sector. In all cases, these are pioneering policy issues that arise from the challenging Tanzanian power system context: insolvency of TANESCO (the current single buyer), contract issues made complicated by frequent load shedding and electricity of variable quality, and high risks associated with currency fluctuations. The proposed 2013-14 Sida Trust Fund extension would provide technical assistance to EWURA to provide international best practices and other targeted advisory services to EWURA to refine the current regulatory framework for SPPs and to establish a regulatory framework for larger renewable generators. Sida TF consultancy will assist EWURA to identify potential solutions and examples of how similar issues were resolved in other countries with successful SPP programs, such as:

i) *"Back-up" power tariffs*. Backup power in this context is the flow of electricity from TANESCO back to an SPP (including the SPP's captive customers). SPPs are billed as if backup power is a failure of their generator. But a more frequent cause of backup power flows is a short period of time after one of TANESCO's frequent load-shedding events when the SPP is still re-synchronizing. Tariffs for backup power are currently based on peak power usage in a 3-month period and are a very significant expense for SPPs. A more equitable and efficient arrangement is necessary or many SPP projects are likely to be abandoned. A related issue is the possible implementation of "deemed generation clauses" – a payment expected by an SPP when it could generate but is unable to off-load power because of an outage on the TANESCO network. EWURA will be provided with advisory services that will draw on the experience of other countries.

ii) *Research on commercial and technical integration on "larger than SPP" generators.* The existing SPP framework addresses generators exporting up to 10MW. Renewable energy and cogeneration projects in the 50MW range are under development – but are stymied by lack of a standardized regulatory framework. Commercial issues include tariffs and the development of PPAs that would be considerably more complicated for these larger projects. At capacities above 10MW, grid integration issues with TANESCO's transmission network become considerably more complicated than for SPPs. This TA would do research on commercial (tariff, PPA) and technical (grid integration, load flow) issues of these larger clean energy projects. Where there is

available information, it would draw on the recent experience of other developing countries and projects that appear to be relevant for Tanzania.

iii) *Developing risk guarantees or other mechanisms* to address the substantial risk of non-payment arising from TANESCO's financial problems.

iv) *Third Generation SPP Rules and First Generation Rules for Larger Renewable Projects.* The tasks listed above (i-iii) together with the "*Developing technology-specific feed-in tariffs*" task below will produce many different analytical outputs, which the EWURA staff team will translate into workable rules, guidelines and procedures.

Developing technology-specific feed-in tariffs for SPPs

37. The current SPP tariff is based on TANESCO's avoided costs. While this has benefits of being revenue-neutral to TANESCO, it provides sufficient revenues for grid-interconnection of only two types of renewable energy: biomass from large agro-industries, and a limited number of ideal hydropower sites. It also creates considerable price risk to both renewable energy developers (in the event of low fossil fuel prices) as well as TANESCO (in the event of high fossil fuel prices). Technology-specific feed-in tariffs have proven extremely successful in catalyzing considerable deployment of renewable energy in countries in Europe, Asia and North America. Technology-specific tariffs provide a stable and predictable revenue stream to renewable energy SPPs, in turn eliminating tariff risk premiums reflected in finance costs of current SPPs. Noting these successes, EWURA, the Ministry of Energy, and SPP developers have expressed interest in developing a technology-specific feed-in tariff regime.

38. A key sticking point preventing the development of technology-specific feed-in tariffs was the required funding to cover the incremental costs above avoided cost FITs. In OECD countries it is common for these costs to be passed on to electricity consumers in the form of higher retail tariffs. In the Tanzanian context, where TANESCO's existing revenues are insufficient to cover costs, asking customers to pay higher tariffs to support renewable energy is unfeasible. An emerging solution to this problem has been a model in which donor countries pay the incremental costs of renewable energy. In a country like Tanzania with abundant renewable energy resources, this approach holds great promise for cost-effective leveraging of substantial increases in the portion of renewable energy in Tanzania's power system. The purpose of the study would therefore be to design a feed-in tariff system and a fund that could be financed by donors (such as Sida) to provide technology-specific premiums to the base tariff that would be paid by Tanesco. Next steps include:

i) designing the technology-specific tariff system and determining suitable tariffs, including determining what technologies should be eligible in what context, at what tariff levels, up to what share of the generation mix, while including mechanisms that recalibrate tariffs to address changing renewable energy costs over time. This work

will both draw on experiences in Africa and globally, as well as on analysis of in-country renewable energy cost data; and as such determine if the system should be applicable (or how it should be adapted) also for medium-size renewables. Further, it will explore changing the design of the tariff portion that TANESCO pays for electricity for renewable energy to a system that harnesses renewable energy's inherent benefit of fixed prices to reduce TANESCO's exposure to fuel price risk; and design such a tariff;

ii) establishing a fund that would pay the difference between the feed-in tariff for different technologies and what TANESCO pays, and determining the most appropriate mechanisms. The fund would need to be set up in such a way that it provides secured funding over a period of a PPA.

iii) determining how currency risk should be apportioned between SPPs, TANESCO, and donors covering incremental costs.

Technical assistance to TANESCO SPP Cell

39. Thailand has a very successful small power producer program, currently with over 1200 MW of renewable energy generation on line. Starting in 2010 consultants led by a recently retired high level engineer from Thailand's Provincial Electricity Authority (PEA) have worked with TANESCO engineers to develop the capacity of TANESCO's SPP cell. The cell serves as a 'one-stop-shop' for SPP developers and integrates all aspects of TANESCO's responsibilities under the SPP program including processing applications, conducting engineering studies, interfacing with distribution and billing departments, and distribution system protocols in the presence of distributed generation. Much of these consultants' work has been codified in the development of a TANESCO SPP grid-code that comprises two parts. Part one addresses each of the steps necessary to progress from the receipt of an SPP application by TANESCO to the SPP's final approval and interconnection to the power grid. Part two provides detailed operational guidelines for TANESCO operation and maintenance staff working on distribution systems connected with SPPs. This TA focuses on refinements to this grid code, on developing technical manuals on specific aspects SPP grid integration such as intentional islanding and engineering assessment; and as well as trainings to operationalize the grid code. Three trainings in Thailand have been designed for TANESCO management and engineers on aspects of grid integration of SPPs. Further trainings have also been proposed for this TA at TANESCO request on power quality, SCADA, and rural electrification.

40. Additional manuals and training are envisaged for TANESCO staff on Protection Testing, Initial Interconnection and COD (Commercial Operation Date) Manual, Intentional Islanding Operation Manual, Engineering Assessment Manual, and Training for Effective Use of The Three Manuals. Additional trainings will be identified if necessary.

Workshops and other consensus building activities

41. This component would also support consensus building activities, such as workshops and consultations on the proposed revisions of the SPP framework. This will also include consultations in the field with the project developers. For example, it is proposed that REA-EWURA jointly carryout field trips to SPP and SPD installations with a follow-up analysis. Both REA and EWURA are directly involved in promoting off-grid SPPs. Over the last two years, it has become clear that their legally mandated tasks overlap—REA requires business plans for awarding of grants and EWURA requires similar information for granting provisional and permanent licenses. Hence, there is a need to streamline and better coordinate these related tasks to avoid unnecessary duplication. At the same time, there is a general need for an independent review of the overall SPP and SPD program after more than two years of operation. To evaluate the strengths and weaknesses of the overall REA and EWURA programs and to open up better lines of communication at the policy and operational levels, we are proposing one or two field trips by a combined REA-EWURA team to visit individual SPP and SPD (small power distributor) installations. The output of this task would be a report that presents lessons learned, recommendations for improving REA and EWURA activities and recommendations for improved coordination between the two entities.

b) Grid electrification with TANESCO

42. The additional assistance will build on the development of the low cost grid extension approach launched under Sida TF, including: a) low cost electrification study with the three components – technical, procurement and financing schemes for the poor, and b) area planning. In addition, the support will be extended to (i) assisting REA in developing an approach for supporting cooperatives as electricity service providers, and (ii) provision of capacity building for planning units of Tanesco and REA. The Sida TF will provide capacity building to the key sector institutions, including TANESCO, REA, MEM, and EWURA to demonstrate that the low cost electrification approach is feasible, that the TANESCO and REA planning units have a capacity to carry out area planning exercises, and for the development of the cooperative approach.

43. *Low-cost electrification pilot implementation.* REA, TANESCO, EWURA, MEM will receive advisory services and capacity building to support their roles in the application of the low cost approach in the next grid extension projects. This will include, among others, technical support for supervising low cost electrification contractors and consumer outreach activities to ensure local acceptance of the low-cost technical solutions.

44. *Capacity building for improved planning.* The TF will provide capacity building to the planning units of TANESCO, and to REA on the low cost network expansion, system improvements, further training on GIS data gathering, load forecasting and area planning. The TF will provide assistance to the PIU on the procedures and techniques to follow up on prospectus and subsequent Master Plan.

45. *Cooperatives.* The new TF activities will also finance a study on cooperatives requested by REA, which would develop locally-adapted approaches for incentivizing communities in creating electricity cooperatives. The studies will include review of legal framework, identification of barriers, through meetings with institutional stakeholders, field review of existing cooperatives operating isolated systems (including financial and operations evaluation and community surveys of attitudes and satisfaction with service), development of guidelines for cooperative formation, and organizational structure adjustments proposed for REA to provide oversight and support to cooperatives. Based on the recommendations of the study of cooperatives as electricity service providers, capacity building will be provided to REA and cooperatives for piloting this electrification model in rural areas in Tanzania.

46. As the SPP, low cost electrification program develops and more experience is gained with existing generators and those in the pipeline, other issues may arise that require TA. Additional activities would be included per request from REA, EWURA or TANESCO and subject to an agreement between the World Bank and Sida.

2. Support for EWURA's Electricity Regulatory Systems

a) Regulatory Review of Power Purchases from IPPs

47. Tanzania has had controversial and checkered history in making power purchases from privately-owned independent power producers. There have been frequent allegations of corruption. It is also widely recognized that high prices paid by TANESCO for regular and emergency power purchases has been a major contributing factor to TANESCO's poor financial condition. Two sections of Tanzania's Electricity Act (2008), Sections 5 and 25, require that EWURA review TANESCO's proposed purchases from IPPs before the cost of these purchases can pass through in tariffs to TANESCO's retail customers. Under the 2010-12 Sida Trust Fund, EWURA conducted major public consultations on how best to implement its responsibilities under these two sections. Among the specific outputs were: 1. A field trip with 12 electricity sector stakeholders to examine the more successful Kenyan power procurement system. The lessons learned were summarized in two reports issued by EWURA. 2. Draft guidelines on how EWURA intended to implement Sections 5 (approval of initiation of IPP purchases) and 25

(approval of pass through of IPP purchases in the tariffs of retail customers) along with a user's manual, all of which were the subject of extensive public consultations. 3. A consultation paper on how best to coordinate EWURA's power procurement review responsibilities with the legally mandated PPP responsibilities of TANESCO, the Ministry of Energy and Minerals, the Ministry of Finance and the Prime Minister's Office. This paper was the subject of a formal public consultation conducted by EWURA.

48. The focus of a 2013-2014 Sida Trust Fund would be to build directly on earlier work under Sida TF which resulted in EWURA drafting guidelines on how to implement Section 5 (approval of initiation of IPP purchases), and 25 (approval of pass through of IPP purchases in the tariffs of retail customers), along with a user's manual, all of which were the subject of extensive public consultations conducted by EWURA with assistance of consultants hired under the trust fund. The Sida TF will provide advisory services to EWURA on how to develop various regulatory tools to implement the approaches developed with the assistance of the original Sida TF.

49. The specific tasks proposed for funding under a 2013-14 Trust Fund for component 2a. include:

i. *Section 5 Reviews.* Capacity building to EWURA for processing two Section 5 initiations of procurement applications from TANESCO under EWURA's new power procurement rules and guidelines issued under the 2008 Electricity Act.
ii. *Operational Coordination with PPP Implementation.* Advisory services and capacity building to EWURA in how to develop an efficient system to coordinate Section 5 and Section 25 reviews with implementation of Public-Private Partnership Operating Guidelines/Rules being developed by TIC, MEM, the Ministry of Finance and TANESCO. This work will provide review of similar mechanisms for coordination used in other countries and propose workable arrangements in the implementation of the Electricity Act and the Public Private Partnership Act to avoid unnecessary delays and duplication in the development of new private generation supply options. EWURA will also receive capacity building on how to apply the Operational Guidelines on PPPs in Electricity Generation.
iii. *Emergency Power Purchases.* Sida TF will provide advisory services to EWURA and TANESCO aimed at developing possible approaches on how to standardize emergency power procurement process – e.g. with a standardized tender package and a standardized PPA. The rationale for this technical assistance can be found in the EWURA power procurement rules. The rules state that if TANESCO follows a standardized emergency power procurement process, EWURA will pass the costs of the emergency power purchases through to TANESCO's customers. However, for TANESCO to use a standardized process, it must have been *pre-approved* by EWURA – i.e., developed *before* the next power crisis.

iv. ***Workshop on implementation of a matrix approach for analyzing risk allocations in proposed purchases from IPPs.*** It is widely recognized that "getting value for money" in a power purchase from an IPP depends both on the prices paid and how risks are allocated between the buyer (TANESCO), the seller (an IPP) and the government. The guidelines that EWURA developed with technical assistance with the Sida TF recommended that EWURA conduct a systematic review of the often hidden risk allocation embedded in proposed PPAs and related documents. Subsequently, EWURA developed a specific matrix for analyzing risk allocations that would allow for benchmarking of risk allocations across different proposed PPAs. This task would involve bringing together a cross-section of key electricity sector stakeholders under an EWURA workshop to use this matrix (or a variant of it) as a tool to analyze the risk allocation in three real world PPAs (e.g., a gas fired IPP, a hydro IPP and a wind IPP). The purpose is to develop capacity of key electricity sector actors to analyze risks in PPAs.

b. Performance Monitoring Systems

50. Section 30 of the Electricity Act (2008) requires that EWURA develops systems for monitoring the technical, financial and commercial performance of the entities operating within the electricity sector. With funding from the 2010-12 Sida Trust Fund, EWURA developed a two-pronged approach to monitoring. The first prong was the development of an Electricity Regulatory Information System (ERIS) and an Asset Register. These were designed to provide objective measures of TANESCO's performance. The second prong was to commission a stratified, random survey of 2,000 TANESCO customers in different regions in November 2011. This was intended to provide customer opinions on different dimensions of TANESCO's performance. Under the proposed 2013-14 Trust Fund, technical assistance would be provided to build on these two earlier initiatives. The focus would shift to provide technical advisory services and capacity building for the implementation of these two initiatives.

51. *Operationalization of the ERIS and Asset Register Systems.* Under the current Trust Fund, functional web-based versions of the ERIS and Asset Register systems have been put into place and populated with historic data. In September, the TANESCO senior management was briefed on both systems. Under a new Trust Fund, it is proposed that efforts would now be shifted to improving the quality of the data that is entered into the systems and initiating the development of periodic reporting systems that rely on the data that is being reported by TANESCO. Particular attention would be paid to development of key performance indicators (KPIs). An effort would also be made to reach out to other electricity regulators in sub-Saharan Africa to see if there would be interest in developing common standards and definitions for similar ERIS systems in several African countries. As with the survey of customer opinions, this would open

the possibility of credible benchmarking of the technical, financial and commercial performance of African utilities. It has been the experience of regulators in other countries and regions that publication of credible "league" tables that rate utilities against neighboring utilities leads to improvements in performance because no individual or electricity supplier wants to be publicly labeled as being in last place.

52. *Refinement of the surveys of customer opinion of TANESCO.* The 2011 survey instrument would be refined. Two additional stratified random surveys would be conducted at the end of 2013 and in 2014. This will allow for the possibility of comparing TANESCO's performance over time. In addition, this task would involve a preliminary outreach effort to other African electricity regulators through RERA (Regional Electricity Regulatory Association of Southern Africa) and AFUR (African Forum of Utility Regulators) to see if the same survey instrument could be used by electricity regulators in other African countries. If the survey instrument were to be adopted by other African electricity regulators, it would allow for cross-country benchmarking of customer views on the performance of national utilities in several African countries. Such cross-country benchmarking is now routinely performed among electricity companies in Latin America. This would allow for initiating a similar effort in Africa.

c. Regulation of a Vertically De-integrated Electricity Sector

53. *Field trip to Uganda.* One of the most successful activities in the 2010-2012 Trust Funding was a one week field trip for 12 Tanzanian stakeholders to learn about different features of the Kenyan IPP power procurement and regulator system for possible applicability to Tanzania. Even before the trip, it was generally recognized that the Kenyan system has produced much better results than Tanzania's system. This was confirmed by the field trip. An unexpected benefit of the trip was that it opened informal channels of communication between different stakeholders in Tanzania. Under the proposed 2013-14 Trust Fund, we are proposing a similar field trip of about 12 Tanzanian electricity stakeholders to Uganda.

54. The Uganda field trip would have a different focus. It would examine the details of the current Ugandan regulatory system that uses a multi-year tariff setting system with specific performance targets embedded in the equivalent of a regulatory contract. The regulatory contract, in turn, is supported by a World Bank partial risk guarantee. To make full use of the trip, interviews would also be arranged to learn about existing customer service charter and the KPIs that are employed to evaluate UMEME's (the distribution utility) performance. An additional benefit of the trip would be to learn about the operation of Uganda's vertically de-integrated power sector. This is relevant for Tanzania because vertical de-integration of the power sector is one option being considered by the GoT. So it would be very useful to see how it has worked in a neighboring country. As with the earlier trip to Kenya, a report would be prepared after the trip

that summarizes key lessons learned. This report would be circulated widely throughout the Tanzanian electricity sector and would be the subject of a workshop convened by EWURA. This would help to ensure that the lessons from the field trip would be shared with a broad cross-section of Tanzania's electricity sector.

3. Energy Efficiency

Energy Efficiency Strategy Study

55. In the United States, as well as many European and Asian countries, energy efficiency has been a major contributor to meeting energy needs for several decades, stimulating economic growth while reducing environmental burdens. Energy efficiency is a substantial and under-examined resource in Tanzania which can play a crucial role in substantially increasing the reliability of electricity supply by reducing the severity and frequency of power outages, and reducing the investments required in generation, transmission, and distribution. World-wide experience with energy efficiency programs demonstrates that it is several-fold less costly to save electricity than to build new power plants and fuel them. Energy efficiency measures can also often be deployed faster than permitting and constructing a new power plant – a characteristic of key importance in the current power sector in Tanzania in which generation is in short supply and there are rotating blackouts. This activity will focus on developing a strategy with EWURA to systematically deploy energy efficiency measures. While the program will include interaction with many other actors (TANESCO, Ministry of Energy and Minerals (MEM), REA, etc.) the lead agency for this activity will be EWURA because of the key role of a regulator in structuring systematic energy efficiency. The details of this strategy will be worked out with EWURA, and will include consideration of the following:

i. Analysis of sectorial electricity usage and demand forecasts;
ii. Analysis of key energy efficiency opportunities;
iii. Current taxation and excise, tariff structure, and legal impacts on energy efficiency and demand side measures (DSM);
iv. Analysis of institutional arrangements and regulatory mechanisms suitable for energy efficiency in the Tanzanian context.

F. Institutional capacity

56. Both REA and EWURA have shown a satisfactory implementation capacity for the implementation of the Sida TF. Given that this Sida TF is Bank-executed, REA and EWURA did

not carry out procurement, but they were actively participating otherwise in all stages of the implementation of Sida TF activities – from the identification of the activities and preparation of the TORs to supervision of consultants. For each activity REA and EWURA has assigned counterpart staff.

G. Coordination with the Sida's capacity building project to REA

57. The implementation of this Sida TF will be coordinated closely with the Sida capacity building project implemented by REA to avoid any potential duplication. While in principle, this coordination will be carried out by REA, it will also be carried out directly by the World Bank and Sida teams by sharing annual implementation plans to check for potential duplications as well as potential for leveraging each other's activities.

H. Staff costs

58. An amendment to the Administrative Agreement is sought to include staff costs as eligible expenditure up to an amount of US$250,000 to ensure technical inputs and supervision of activities by the World Bank energy staff.

Sida Trust Fund activities – January 1st, 2013 – October 31, 2014

Ref No.	Description of Assignment	Estimated Cost (US$)	Collaborating Agency
1. Support For Energy Access Scale-up.			
1a. Implementation and scale-up of bottom-up renewable energy and offgrid electrification projects:			
	TA to REA on SPP pipeline development and SSMP scale-up	400,000	REA
	TA to project developers, local consultants/contractors and financial intermediaries	300,000	REA
	TA to TANESCO SPP cell	300,000	TANESCO
	TA to EWURA for improving the SPP regulatory framework	400,000	EWURA
	TA to EWURA for developing technology-specific feed-in tariffs and funding mechanism for SPPs	500,000	EWURA
	Subtotal	***1,900,000***	
1b. Scaling up grid extension models:			
	Technical assistance and capacity building for low cost distribution approach implementation	100,000	PIU – REA, TANESCO, EWURA, MEM
	Technical assistance for cooperatives as electricity service providers	300,000	REA
	TA for distribution planning units and implementation of Rural Electrification Prospectus	200,000	TANESCO, REA

	Subtotal	***600,000***	
Coordination and consultations		100,000	
Total for Support For Energy Access Scale-up (1).		**2,600,000**	
2. Support To EWURA In Developing Electricity Regulatory Systems			**EWURA**
2a.	Regulatory Review of Power Purchases	270,000	
2b.	Performance Monitoring Systems	275,000	
2c.	Regulation of a Vertically De-integrated Electricity Sector	55,000	
	Coordination and consultations	100,000	
	Total for EWURA Technical Assistance ("2")	**700,000**	
3. Energy Efficiency			EWURA
3a.	**Energy Efficiency Strategy Study**	150,000	
Total for Energy Efficiency ("3")		**150,000**	
Total Technical Assistance		**3,450,000**	
World Bank staff costs for technical inputs and supervision of activities		**200,000**	WB
TF Administration Fee 5%		**180,000**	WB
Total		**3,830,000**	

Technical Assistance Support to Grid and Off-Grid Electricity Access Scale-up, Renewable Energy, Energy Efficiency and Improvements To Electricity Regulatory Systems

Results Framework

PDO	Project Outcome Indicators	Use of Project Outcome Information
REA to gain capacity to develop, finance and implement a scale-up rural electrification program, with renewable energy and grid and off-grid components.	• Access scale-up approach consolidated, involving not only the current bottom-up initiatives piloted by TEDAP, but also the utility (TANESCO)-led grid extension.	• REA, MEM and TANESCO will use this information to attract both public and private investments to rural electrification and renewable energy. • Lessons learnt from pilot approaches will be used to improve their design under the scale-up.
Development of regulatory oversight system for power purchases and regulatory monitoring systems for	• A regulatory system for reviewing the power purchase costs from large IPPs, promoting efficient and financially sustainable grid and off-grid small power producers (SPPs) and the	• GoT would use this information to attract private sector investors and investments to larger green field

monitoring the performance of power sector enterprises.	development and implementation of credible systems to monitor the commercial, financial and operational performance of TANESCO and other sector enterprises.	projects. EWURA would use the monitoring systems for its regulatory needs and to provide information to help MEM make sector policies.
Intermediate Outcomes	**Intermediate Outcome Indicators**	**Use of Intermediate Outcome Monitoring**
Outcome 1a: Implementation of existing renewable energy / access expansion interventions, including SPPs, village mini-grids, PV applications and low-cost lighting products.	• At least 5 SPPs have reached financial closure, having benefitted from the Sida grant TA. • At least 2 Tanzanian commercial banks have provided at least 5 loans to SPPs. • At least 50 local consultants are providing services to the developers for pre-investment work, having benefited from Sida grant training. • REA and TANESCO implement at least two low-cost electrification pilots. • REA adopts a cooperative model, based on the assistance received under the Sida TF. • EWURA's SPP framework updated. • Technology specific tariffs adopted, supported by a sustainable funding mechanism covering the premium above Tanesco's avoided costs.	• Serves for REA to evaluate effectiveness of the approaches to reach its electrification targets. • Serves as inputs to policy development, sector wide access expansion program and design. • Information will be part of the Annual Sector Review Report.

Outcome 1b: Design of an access scale-up program, incorporating lessons learnt from the pilot approaches described above, and including both grid (TANESCO) and offgrid electrification.	• SPP cell functioning, receiving positive feedback from SPP developers. • REA has implemented the low cost electrification pilots and lessons learned have been disseminated widely among SPPs and TANESCO, highlighting that reduced investment costs will significantly increase the viability of mini-grid projects and reduce the need for subsidies. • An area "master plan" that predicts present and future load and establishes the system investments necessary to serve that load in a rational fashion. • The necessary legal, regulatory, and financial conditions have been defined for long-term sustainability of cooperatives as electric service providers, including adjustments that were required in the Tanzanian rural energy program.	
Outcome 2: Improved Governance, Competitive Procurement and Commercial Performance in the Power Sector.	• At least one Section 5 (approval of initiation of procurement from an IPP) and 25 (approval of pass through of power purchase costs from an IPP) order issued by EWURA (if TANESCO makes the requisite filings). • Improvements in the quality of the data going into the financial, commercial and technical	• Serves as input to creating more transparency, certainty and efficiency in the national electricity regulatory system.

	performance monitoring systems. • One new survey of TANESCO customer opinion. • Field trip reporting providing recommendations on opportunities for improving coordination between REA and EWURA. • Energy efficiency plan adopted by EWURA or MEM identifies over 100 MW of cost-effective energy efficiency and DSM measures.	