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| ***Please fill in the form in the grey spaces, by following the instructions in italic.*** |
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| **Requesting country:** | *Uganda* |
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| **Request title:** | *Foreign Currency PPA Risk Analysis and Assessment of Local Currency financing options for Renewable Energy Development in Uganda* |
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| **Contact information:** |
| *{Please fill in the table below with the requested information. The request proponent is the organization that the request originates from, if different from the National Designated Entity (NDE).}* |
|  | **National Designated Entity** | **Request Applicant** |
| Contact person: | *Dr. Maxwell Otim Onapa* | *Dr. Benon Mutambi* |
| Position: | *Deputy Executive Secretary* | *Chief Executive Officer* |
| Organization: | *Uganda National Council of Science and Technology (UNSCT)* | *Electricity Regulatory Authority* |
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| **Technology Needs Assessment (TNA):** |  |
| *{Select one of the three boxes below:}*[ ]  *The requesting country has conducted a TNA in* [ ]  *The requesting country is currently conducting a TNA* [x]  *The requesting country has never conducted a TNA*  |
| *{If the requesting country has completed a TNA, please indicate what climate technology priority this request directly relates to. Please indicate reference in TNA/TAP/Project Ideas.}* |
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| **CTCN Request Incubator Programme:** |
| *{Please indicate if this request was developed with support from the Request Incubator Programme:}*[ ]  *Yes* [x]  *No*  |
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| **Geographical focus:** |
| *{Select below the most relevant geographical level for this request:}*[ ]  *Community-based* [ ]  *Sub-national* [x]  *National* [ ] *Multi-country* |
| *{If the request is related to the sub-national or multi-country level, please indicate here the areas concerned (provinces, states, countries, regions, etc.)}*  |
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| **Theme:** |
| *{Select below the most relevant theme(s) for this request:}*[ ]  *Adaptation to climate change* [x]  *Mitigation to climate change* [ ]  *Combination of adaptation and mitigation to climate change*  |
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| **Sectors:**Energy |
| *{Please indicate here the main sectors related to the request. e.g. energy, industry, transport, waste, agriculture/fisheries, forestry, water, ecosystem/biodiversity, coastal zones, health, education, infrastructure/human settlement, tourism, businesses, early warning/disaster reduction, institutional design and mandates, cross-sectorial}* |
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| **Problem statement** *(up to one page):** Electricity generation is capital intensive. Strategies for attracting investment in renewable energy generation, therefore, had to target global capital flows for direct investment in renewable energy (RE). To attract foreign investors’ participation in the Ugandan electricity sector, therefore, required hard currency denominated contracts to mitigate foreign exchange (FX) risk.
* Power generation costs account for about 60% of the end-user power tariff in Uganda. About 98% of generation costs in Uganda are denominated in foreign currencies and therefore, foreign exchange exposure of the tariff is a real threat to affordability of power.
* RE projects are usually financed in USD or other hard currencies and Uganda has chosen USD The driver behind this is that the Ugandan Government wants to create a sustainable enabling environment for investors, with significant amounts of long-term debt capital only available in hard currencies. Utilising this approach tends to exclude local investors but there is an upside as hard currency power purchase agreements (PPAs) generally decrease financing costs and consequently lower required feed in Tariff (FiT) levels.
* Before 2010, the investment climate for renewable energy did not serve to attract the needed investments into energy generation despite FX denominated Power Purchase Agreements.
* Consumers pay for electricity in local currency. This creates a mismatch between revenues and costs for utilities. Uganda has addressed this with an automatic adjustment clause in end consumer tariffs, i.e. costs of FX mismatch are allocated as a pass through to the consumer.
* From a consumer perspective there is a trade-off between lower financing costs (and consequently lower FiT level and increasing FX costs
* Electricity regulatory Authority (ERA) is seeking support to assess various options to further balance economic and financial viability of RE investments. By seeking to include local lender(s) / investor(s) involvement in the RE sector, ERA needs to have a stronger understanding of the following: how to minimise adverse FX impact on consumers, potential FX indexing instruments to adjust tariffs with minimal impact and what would the effect on tariffs be by encouraging local investors / lenders.
 |
| *{Please describe here the difficulties and specific gaps of the country in relation to climate change, for which the country is seeking support from the CTCN. Please only provide information directly relevant to this request, and that justifies the need for CTCN technical assistance.}* |
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| **Past and ongoing efforts** *(up to half a page):** In order to further attract investment, Uganda was a beneficiary of the KfW-led development partner funding mechanism that offered tariff premium for new renewable energy generation investors (GET FiT Program).
* Uganda has been very successful in creating an enabling environment for RE investments and is now in a position to think about further adjustments to the scheme to further reduce societal costs of electricity generation and to broaden the investor base to potentially include more local investors.
* ERA has received technical assistance to develop capacities on the REFiT calculation mechanism with tools (financial models in hard currency) to guide the viability of investments and make decisions to foster the development of the sector.
 |
| *{Please describe here past and on-going processes, projects and initiatives implemented in the country to tackle the difficulties and gaps explained above. Explain why CTCN technical assistance is needed to complement these efforts, and how the assistance can link or build on this previous work.}* |
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| **Assistance requested** *(up to one page):** ERA received technical assistance to create an enabling environment for the development of the renewable energy sector with the GET FiT program of KfW. After the phasing out of GET FiT in 2016, ERA aims to maintain the positive investment climate and to further upgrade the FiT scheme to broaden investor base.
* Another important consideration to ERA is incorporating local content (local investors) in RE financing and, consequently, reducing the exposure of the sector to FX risk and strengthening the local financial sector.
* Local investors such as the National Social Security Fund (Provident Fund) prefer local currency investments. Their involvement in the sector would further stabilize the system by aligning interests and reducing the regulatory risk, i.e. retroactive policy changes.
* There is, therefore, need to adapt the FiT framework to the needs and aspirations of local currency providers of investment capital while balancing the requirements of international developers and financiers.
* The TA shall assess the capacity and needs of local investors/lenders and the expected impact of their involvement on societal costs of electricity generation {quantify positive (no cost increase in UGX due to UGX/USD devaluation) and negative effects (potentially higher financing costs)}
* Assess the impact on the FiT rate by including local investors / lenders who have higher financing costs. A local FiT (potentially lower due to the removal of FX risk) with local investors / lenders (higher financing cost) has the potential to offset one another.
* This technical assistance will provide ERA with the technical know-how, tools including financial models to implement FiTs (partially) in UGX along with current structure of USD denominated FiT policy and the effect on the FiT if they bring on board local investors / lenders. Processes and tools need to ensure limitation of arbitrage driven activity.
 |
| *{Please describe here the scope and nature of the technical assistance requested from the CTCN and how this could help address the problem stated above and add value vis-à-vis the past and on-going efforts. Please note that the CTCN facilitates technical assistance and is not a project financing mechanism.}* |
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| **Expected benefits** *(up to half a page):*Benefits of the assessment:* Quantification and further analysis of negative effects from UGX devaluation.
* Impact of RE FiT policy on overall FX exposure of UETCL (the purchaser of bulk energy/off-taker) and the effects on the end-user who the FX costs are passed on to.
* Evaluate the possibility of local investor/lender participation in RE financing and its impact on LCOE and therefore the required FiT level.

The following are the expected benefits of the PPA-FX option:* Mitigate currency risk and improve- the local financial sector opportunities.
* Enable options for IPPs to seek out financing denominated in local currency rather than international currency, thereby addressing the pervasive currency risk issue.
* Once approved and implemented the (partial) local currency denominated FiT has the potential to facilitate the development of the local financial sector.
* Availing investors would have the option to select either FiT, depending on their risk appetite and sources of financing. The (partial) UGX FiT could be adjusted on a quarterly basis, based on a model to be prepared to avoid arbitrage.
* Uganda could become a blue print for other African nations which struggle with the impact of USD dominated FiTs.
* By including local investors and lenders in the programme it will have tremendous upside for the local economy. It will allow investors to earn the steady long-term returns associated with RE projects and allow lenders to build up their asset base and gain key know-how in the RE sector which could be transferred across to other infrastructure projects the country is pursuing.
* By enabling local consumers an opportunity to invest in energy generation, it acts as a hedge for them against rising energy prices, improves social satisfaction and helps improve sector sustainability.
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| *{Please outline here the medium and long-term impacts that will result from the CTCN technical assistance, including how the assistance will contribute to mitigate and/or adapt to climate change.}* |
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| **Post-technical assistance plans** *(up to half a page):*The results of the work described above will give ERA all the necessary tools and information to make informed decisions on whether to introduce a (partial) UGX FiT. Based on a decision as to whether a local currency FiT makes sense, ERA will go about introducing a new local FiT at the prescribed rates that are suggested in the technical assistance. As part of the required work, ERA will receive a model they will use to update the tariffs quarterly and will be able to build internal capacity on arbitrage and understand the impacts. The main follow-up actions that will take place include: * Establish potential (partial) UGX based FiT and take into consideration the impact of local investors / lenders. By having, the necessary tools at hand will allow ERA to make informed decisions and get buy-in from all key stakeholders.
* Actively engage with local investors / lenders to get them to participate in the market, having a local FiT should increase their appetite.
* Introduction of (partial) UGX based FiTs with an updated methodology explaining the quarterly adjustments. The methodology should lay the foundations for a long-term plan and create market certainty after the phasing out of GET-FiT which is aligned with Uganda’s energy sector targets.
* The uptake of a (partial) UGX based FiT should have a positive impact on UETCL by reducing their FX risks and allow for stronger capital planning by being able to update their financials with the current FiT level quarterly and having a complete understanding of the costs and their FX exposure and thereby creating further stability in the market.
 |
| *{Please describe here how the results of the CTCN technical assistance will be concretely used by the applicant and national stakeholders, to pursue their efforts of resolving the problems stated above after the completion of the CTCN intervention (list specific follow-up actions that will be undertaken).}* |
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| **Key stakeholders:** |
| *{Please list in the table below the main stakeholders who will be involved in the implementation of the requested CTCN technical assistance, and what their role will be in supporting the assistance (for example, government agencies and ministries, academic institutions and universities, private sector, community organizations, civil society, etc.). Please indicate what organization(s) will be the main/lead counterpart(s) of CTCN experts at national level, in addition to the NDE.}* |
| **Stakeholder** | **Role to support the implementation of the assistance** |
| ERA | The electricity industry regulator will undertake (take a lead in) the study.  |
| UETCL | The single buyer and operator of the national grid, bears all currency risk exposures. |
| MEMD | The policy supervisor of the electricity industry. |
| Ministry of Finance, Planning and Economic Development | Takes leadership of planning for the country and investment climate strategies. |
| Uganda Investment Authority | A government parastatal charged with licensing and overseeing investment projects in the country. |
| Bank of Uganda | Supervisor of Commercial Banks. |
| Private Sector Foundation Uganda/Developers | Will offer private sector perceptions about implications of currency choices in financing of RE projects.  |
| Commercial Banks/Uganda Association of Bankers | Will provide insight into the capacity and appetite of commercial to lend RE projects in local currency. |
| Asset Management Companies/Mutual Funds | Will provide insight into the capacity, legal framework and appetite of commercial to lend RE projects in local currency. |
| Capital Markets Authority | Will provide insight into legal and regulatory framework for Asset Management Companies/Mutual Funds to invest in greenfield projects. |
| Provident Fund (NSSF) | Will provide insight into the capacity and regulatory framework to invest Pension Funds in greenfield projects. |
| Uganda Retirement Benefits Authority (URBRA) | Will provide insight into the legal and regulatory framework to invest Pension Funds in greenfield projects. |
| Uganda Manufacturers Association (UMA) | As the major victims of tariff fluctuations on account of foreign exchange movements, UMA will provide input in Local content (LC) financing options. |
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| **Alignment with national priorities** *(up to half a page):*The **Uganda Vision 2040** ([*http://npa.ug/wp-content/themes/npatheme/documents/vision2040.pdf*](http://npa.ug/wp-content/themes/npatheme/documents/vision2040.pdf)) sets the pace for Uganda to transit to a lower middle income country in the medium term. The medium and long term development strategy is premised on industrialization and value addition. Industrialization will only thrive on efficient, affordable and sustainable prices of electricity. Therefore, affordable sustainable renewable energy prices are prerequisite for national development. In the Vision 2040, it is Government’s strategy to develop mini and small hydro and RE sources to generate affordable electricity.Power generation costs account for about 60% of the end-user power tariff. About 98% of generation costs are denominated in FX and therefore, foreign exchange exposure of the tariff is a real threat to affordability of power. For instance, in Q3 of 2015, power tariffs were adjusted upwards by 18% (quarter on quarter) mainly on account of exchange rate depreciation. In the **National Development Plan II 2015-20** ([*http://npa.ug/wp-content/uploads/NDPII-Final.pdf*](http://npa.ug/wp-content/uploads/NDPII-Final.pdf)), the Government recognizes electricity as critical source of energy for industrial and commercial production in Uganda and is explicit about the need to tackle the challenge of high electricity costs.**The Energy Policy For Uganda 2002** ([*http://energyandminerals.go.ug/downloads/EnergyPolicy.pdf*](http://energyandminerals.go.ug/downloads/EnergyPolicy.pdf)): The policy states that in order to achieve its objective of increasing access to modern affordable and reliable energy services as contribution to poverty eradication the government shall work with financial institutions to establish sustainable financing mechanisms for energy programs. The government shall ensure strategies to attract private sector investments by providing appropriate financial instruments.  |
| *{Please demonstrate here that the technical assistance requested is consistent with documented national priorities (examples of relevant national priorities include: national development plans, poverty reduction plans, technology needs assessments (TNAs), LEDS, NAMAs, TAPs, NAPs, sectorial strategies and plans, etc.). For each document mentioned, please indicate where the priorities specifically relevant to this request can be found (chapter, page number, etc.).}* |
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| **Development of the request** *(up to half a page):*This request has been developed by the Electricity Regulatory Authority for the strengthening of local investors and developers in the development and sustainability of the small and medium scale renewable energy sector in Uganda. Offering local currency FiTs can have the additional advantage in terms of development of local financial institutions. The UGX FiT could then be adjusted on a quarterly basis, based on a model to be prepared to avoid arbitrage. This request has been developed as an outcome of the previous successful intervention of GET FiT which puts Uganda in an advantageous position to strengthen the local financial sector after showcasing the viability and sustainability of investments in the renewable energy sector.Development of a comprehensive mechanism for the introduction of parallel currency options requires significant time and resources, thus the assistance of CTCN is highly relevant to create an environment which fosters local development. |
| *{Please explain here how the request was developed at the national level and the process used by the NDE to approve the request before submitting it (who initiated the process, who were the stakeholders involved and what were their roles, and describe any consultations or other meetings that took place to develop and select this request, etc.)}* |
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| **Expected timeframe:**6 months |
| *{Please propose here a duration period for the assistance requested.}* |
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| **Background documents:*** Uganda Renewable Energy Feed-in Tariff (REFIT) Phase 3 Guidelines, 2016

([*http://era.or.ug/index.php/newsletters/doc\_download/383-uganda-renewable-energy-feed-in-tariff-phase-3-guidelines-2016*](http://era.or.ug/index.php/newsletters/doc_download/383-uganda-renewable-energy-feed-in-tariff-phase-3-guidelines-2016))* The Uganda Vision 2040

([*http://npa.ug/wp-content/themes/npatheme/documents/vision2040.pdf*](http://npa.ug/wp-content/themes/npatheme/documents/vision2040.pdf))* National Development Plan II 2015-20
* ([*http://npa.ug/wp-content/uploads/NDPII-Final.pdf*](http://npa.ug/wp-content/uploads/NDPII-Final.pdf))The Energy Policy For Uganda 2002*(*[*http://energyandminerals.go.ug/downloads/EnergyPolicy.pdf*](http://energyandminerals.go.ug/downloads/EnergyPolicy.pdf)*)*
* Scaling-Up Renewable Energy Program: Investment Plan *(*[*http://www.energyandminerals.go.ug/downloads/SREPInvestmentPlanforUganda.pdf*](http://www.energyandminerals.go.ug/downloads/SREPInvestmentPlanforUganda.pdf)*)*
 |
| *{Please list here relevant documents that will help the CTCN understand the context of the request and national priorities. For each document, provide weblinks if available, to attach to the submission form while submitting the request. Please note that all documents listed/provided should be mentioned in this request in the relevant question(s), and that their linkages with the request should be clearly indicated.}* |
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| **Monitoring and impact of the assistance:** |
| *{Read carefully and tick the boxes below.}* |
| [ ]  By signing this request, I affirm that processes are in place in the country to monitor and evaluate the assistance provided by the CTCN. I understand that these processes will be explicitly identified in the Response Plan in collaboration with the CTC, and that they will be used in the country to monitor the implementation of the CTCN assistance. |
| [ ]  I understand that, after the completion of the requested assistance, I shall support CTCN efforts to measure the success and effects of the support provided, including its short, medium and long-term impacts in the country. |
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