



RURAL ELECTRIFICATION AGENCY

ENERGY = EMPOWERMENT = EFFICIENCY

NIGERIA ELECTRIFICATION PROJECT

TERMS OF REFERENCE
FOR THE ENGAGEMENT OF A CONSULTANT TO UNDERTAKE
A MARKET STUDY TO SUPPORT THE NIGERIA ELECTRIFICATION PROJECT - COMPONENT
2: RESULTS- BASED FINANCE PROGRAMME FOR PRODUCTIVE APPLIANCES AND
EQUIPMENT FOR OFFGRID COMMUNITIES

2020

1 BACKGROUND

- 1.1 It is estimated that 95 million people in Nigeria do not have access to electricity. Nigeria has the second largest population without access to electricity in the world (after India which has over 240 million people without access). A significant proportion of this population without access live in rural areas; approximately 36% of Nigeria's rural population does not have access to electricity.
- 1.2 The Federal Government of Nigeria (FGN) is driving strategies to fast track development initiatives towards achieving the overall objectives of the Economic Recovery and Growth Plan (ERGP) and the Power Sector Recovery Programme (PSRP).
- 1.3 In support of the FGN's efforts to improving the country's power sector and in response to a request from the FGN, the Board of the African Development Bank (AfDB or the "Bank") approved a USD 200 million sovereign facility to support and finance the Nigeria Electrification Project (NEP). NEP will be implemented by the Rural Electrification Agency (REA or the "Implementing Agency").
- 1.4 The proceeds of the AfDB's financing for NEP will be applied across the following four components (the "Project"):
 - (i) **Component 1:** a minimum subsidy tender programme awarding subsidies to private sector developers to catalyse the rollout of solar and/or hybrid mini-grid solutions across up to 300 sites split into at minimum 6 lots;
 - (ii) **Component 2:** A results-based finance programme incentivizing solar home system installation companies and mini-grid developers to incorporate the distribution and sale of energy efficient productive use appliances in their regular line of activities;
 - (iii) **Component 3:** phase 3 of the Energizing Education Programme (EEP), a government-led initiative that aims to install dedicated power systems at eight federal universities;
 - (iv) **Component 4:** technical assistance and capacity building for a wide range of public and private sector stakeholders in the country's off-grid sector.

2 ASSIGNMENT DESCRIPTION

- 2.1 The objective of Component 2 is to increase the productive use of energy in remote communities by facilitating access to energy efficient productive use appliances and equipment for agro-processing and commercial business activities within the communities. Increasing the productive use of electricity in rural communities is expected to (i) improve their economic and social development, as well as contribute to the modernization of their local economies; and (ii) improve the sustainability of the business models of mini-grid developers and off-grid solar companies – the former of which relies heavily on productive loads for revenue.

- 2.2 As observed from industry practice in other regions – e.g. East Africa and India – energy access solutions providers become the *de facto* energy appliance retailers in remote and off-grid communities. Energy access companies generally have technical and commercial staff, access to markets, access to finance, and transport facilities that enable them to move between urban areas and the remote communities they are servicing. As remote communities do not have efficient channels for sourcing, financing, buying, and maintaining electric equipment and appliances, many energy access companies are absorbing these activities within their operations.
- 2.3 Mini-grid developers in Africa, including in Nigeria, are increasing involvement in the productive use market through collaborative efforts with other companies /development agencies or by transporting and retailing energy efficient productive use equipment to the communities they are electrifying. Similarly, stand-alone solar installation companies increasingly offer ancillary electrical appliances (i.e. TVs, stereos, fans, salon kits) as part of the kits they retail to their customers. It is in the interest of mini-grid developers and other companies in the off-grid space to market and commercialize productive use appliances and equipment, as well as encourage local capacity for maintaining the equipment.
- 2.4 Considering the above, Component 2 features a results-based finance subsidy mechanism. The subsidy design, performance metrics and disbursement criteria for the allocated grant funds to the tune of USD20million, is being finalised. To this end, REA will undertake a pilot/initial roll-out in selected existing mini grid sites prior to the roll-out of the component 1 mini grids to be constructed under the Nigeria Electrification Project financed by the AfDB.
- 2.5 The REA is now seeking a qualified consulting firm (the “Consultant”) to support the development and launching of Component 2. The Consultant will perform a comprehensive market study and forecasting exercise, mapping out the opportunities and challenges to scaling up the deployment of productive use appliances and equipment in off-grid communities in Nigeria, followed by an analysis of the potential market that could be developed by leveraging through the proposed result-based finance programme.

3 SCOPE OF WORK AND OBJECTIVES

3.1 Market Study

- 3.1.1 Comprehensive desktop review of the market for energy-efficient productive use appliances and equipment in off-grid communities in Nigeria, with focus on agro-processing and commercial business activities in participating states of the NEP-AfDB Component 1 (Ekiti, Enugu, Delta, Jigawa, Nasarawa, Kwara, Oyo, Kogi and Gombe).
- 3.1.2 Comprehensive review of all current publications on off-grid and mini-grid sectors and business models in developing economies, particularly Sub-Saharan Africa.

- 3.1.3 Analysis of the Nigerian off-grid Market Environment for local and imported energy-efficient appliances and retrofitting of old equipment
 - 3.1.4 Analysis of existing and potential off-takers for MSME's in rural productive use market industry.
 - 3.1.5 Analysis of existing and potential end-users in off-grid rural communities, including the participation of women and how the component can achieve its gender inclusion objective of 20% of the beneficiaries of the subsidy allocation being women/targeted at women.
- 3.2 Energy Efficient Productive Use Appliance Study and Market Forecasting
- 3.2.1 Based on the market research, the Consultant will:
 - 3.2.1.1 Identify the leading companies that are operating in Nigeria and their market share, business volume, financial situation and their interest.
 - 3.2.1.2 Determine their capacity to enter the energy efficient productive use market value chain, identifying entry barriers and possible solutions.
 - 3.2.1.3 Identify and prescribe basic technical standards for energy efficient productive use appliances.
 - 3.2.1.4 Provide a database of the existing mini-grids in Nigeria specifying the existing economic activities, potential economic activities and the suitable business models for the deployment of productive use appliances in those communities.
 - 3.2.1.5 Forecast the growth of the productive use appliances/equipment business in Nigeria's off-grid market and recommend a sustainability plan for the same.
 - 3.2.2 The market forecast should include a detailed evidenced assessment of: appliance types, sales mix, price mark-ups/margins, implementation context (e.g. SHS or mini-grid), and composition of end-users (e.g. household or micro-enterprise);
- 3.3 Commercial Viability and Financial Model Review / Development
- 3.3.1 Development of appliance financing framework/models for energy access companies and MSME's for the full roll-out of the deployment of energy efficient appliances.
 - 3.3.2 Assessment and identification of financiers and financing options for energy access companies and MSME's to support the deployment of productive use appliances.
 - 3.3.3 Analysis of MSME's commercial viability/financial stability and evaluation of MSME's ability to participate in appliance financing schemes

4 FIRM'S & QUALIFICATION AND REQUIREMENTS FOR THE KEY EXPERTS

- 4.1 The Consultant must have been in existence and conducting business for at least five years as a firm (if the Consultant constitutes a consortium of firms, each firm must have been in existence and conducting business for at least five years as a firm) and must have:
- 4.1.1 Experience in conducting market assessments, market forecasting assignments for renewable energy access in Africa;
 - 4.1.2 Knowledge of agriculture and other commercial activities value chains in Rural Nigeria
 - 4.1.3 Understanding of productive uses of energy in the off-grid and mini-grid sectors.
 - 4.1.4 Knowledge/ Understanding of financing models/ financing needs for energy access businesses in off-grid and mini-grid sectors in developing markets
 - 4.1.5 Experience in verification of distributed renewable energy systems in developed and/or frontier markets to facilitate infrastructure and energy (with emphasis on renewable energy) investments;
 - 4.1.6 Deep understanding of African renewable energy access sector and market development approaches;
 - 4.1.7 Understanding of design, implementation, and monitoring of multilateral financing programmes for renewable energy market development;
 - 4.1.8 Evidence of a strong network of domestic (i.e. in Nigeria) and international private companies active in deployment of productive use appliances and equipment in off-grid market settings;
 - 4.1.9 Ability to commence activities within a short time period following conclusion of the contract.
 - 4.1.10 Knowledge of the key challenges and best practices to accelerating the adoption of productive uses of energy and productive use appliances and equipment is an advantage.
- 4.2 The Consultant's team shall comprise of the following:
- 4.2.1 **Team Lead/Energy Access Solutions Expert:** The expert shall have at least a master's degree in a relevant subject such as Engineering, economics, finance, management or business/public administration or an MBA. The expert shall have at least ten (10) years of relevant experience working at and/or for international institutions in similar assignments, especially those which have involved market research, data gathering and analysis and market forecasting, The expert is expected to have an extensive network and experience liaising with private operators in off-grid and mini-grid sectors across the continent.

4.2.2 **Market Research Expert:** The expert shall have at least a master's degree in a relevant subject such as economics, statistics, finance, management or business/public administration or an MBA. The expert shall have at least five (5) years of relevant experience working at and/or for international institutions in similar market research (data gathering & analysis) activities. The expert is expected to have a track record of market research in the energy access sector and specific experience related to market research of the productive use/demand stimulation sector.

4.2.3 **Commercial Finance/ Fund raising Expert:** The expert shall have a master's degree in a relevant subject such as Economics, Finance or Business Administration and will have proven experience of raising debt and equity for projects and providing funding strategies for SMEs and MSMEs.

In addition, members of the Proposed Team must have the following qualifications:

4.2.4 Previous experience in, or working on similar topics and technical inputs;

4.2.5 Extensive experience in the energy access sector, with experience in developing and operationalizing relevant facilities in Africa/emerging markets;

4.2.6 Proven ability in report-writing, analytical skills and capacity to deliver outputs in a timely manner;

4.2.7 Client and results-oriented with strong analytical and communication (verbal and written) skills, sense of accuracy and attention to detail; and

4.2.8 Fluency in English as a working language.

5 DURATION AND DELIVERABLES

5.1 The Assignment is expected to last no longer than three (3) months.

5.2 Reports of each deliverables will be submitted as follows: One Electronic copy and three hard copies. After the delivery of each deliverable, REA-NEP will review the submissions (Deliverables) and confirm that the reports are satisfactory or not within one week. The consultant will incorporate comments into the final copies of the reports, which will be submitted in three hard copies and two soft copies.

S/N	Delivery Description	Delivery Timelines	Payment milestones
1.	Submit Inception report	T + 2 Weeks	10%
2.	<ul style="list-style-type: none"> • Desktop Review Report • Detailed review and itemize comprehensive list of productive use suppliers and productive use appliances and equipment including cost implications. • Review of key market environment considerations, including but not limited to: import procedures, costs, timelines, relevant standards and regulations in Nigeria. • Analysis & list of existing and potential off-takers for MSME's in rural productive use market industry. • Analysis of existing and potential end-users of productive use appliances in off-grid rural communities and how the component can achieve its gender inclusion target of 20%. • Provide a database of the existing mini-grids in Nigeria specifying the existing economic activities, potential economic activities and the suitable business models for the deployment of productive use appliances in those communities. 	T+4weeks	20%
3.	<ul style="list-style-type: none"> • Market Forecasting report • including productive use appliance/equipment deployment in Nigeria over the Project period (five years), with informed/evidenced based assumptions detailing: <ul style="list-style-type: none"> ○ Appliance and equipment types ○ Database of equipment suppliers/manufacturers available locally and offshore. ○ Implementation setting (e.g. appliance/equipment in use with mini-grid or off-grid systems) ○ FOB (or CIF) Costs, Distribution and Retail margins per piece of appliance/equipment not available locally 	T + 8Weeks	30%
4.	<ul style="list-style-type: none"> • Development of appliance financing framework/financial models for Mini-grids and MSME's for the full roll-out of the energy efficient appliances 	T 12 Weeks	40%

	<ul style="list-style-type: none"> • Assessment and identification of financiers and financing options for energy access companies and MSME's to support the deployment of productive use appliances. • Assess the market and identify potential financiers for mini-grid developers that can part finance the business to enable deployment of productive use appliances and provide applicable funding structures. • Analysis of MSME's commercial viability/financial stability and evaluation of MSME's ability to participate in appliance financing schemes • Final report including sustainability plan for the energy efficient productive use appliances and equipment market. 		
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6 TERMS OF PAYMENT

Payment shall be made to the Consultant after submission and approval of the reports in line with the terms stated in the table above and acceptable to the client.

7 TRANSFER OF KNOWLEDGE

The Consultant shall ensure transfer of knowledge to the selected REA and PMU staff that will be assigned to work on the assignment by developing key strategies to facilitating inclusive, practical, hands-on engagement of the staff through all the stages of the project implementation.

8 SELECTION METHOD

The Consultant is to be selected in accordance with the QCBS Method set out in the African Development Bank's "Rules and Procedures for the use of Consultants" May 2008 Edition Revised July 2012, which is available on the Bank's website at <http://www.afdb.org>.

9 COPYRIGHT AND OWNERSHIP

The REA will own all raw and finished materials. The Consultant shall maintain in strict confidence all information received from the REA concerning all data and insights obtained during the course of the Project.