



RURAL ELECTRIFICATION AGENCY
ENERGY=EMPOWERMENT=EFFICIENCY

SPOTLIGHT ON RURAL ELECTRIFICATION AGENCY (REA)

ABOUT THE AGENCY

- Rural Electrification Agency (REA) is the Implementing Agency of the Federal Government of Nigeria (FGN), under the Federal Ministry of Power tasked with the electrification of unserved and underserved communities with the aim to catalyze economic growth and improve quality of life for Nigerians.
- The REA is currently administering the Rural Electrification Fund (REF) and implementing the Nigeria Electrification Project (NEP) and a number of initiatives in furtherance of its mandate: Energizing Education Programme (EEP), Grid Extension (Capital Projects), Energizing Economies Initiative (EEI), Solar Power Naija Programme, Energy for All - 'Mass Rural Electrification' and Research and Innovation Hub.
- The Agency is responsible for creating an enabling environment for private sector-led projects, which includes conducting pre-feasibility assessments, energy audits, enumeration, data analysis, identification of qualified private sector developers, and project stakeholder engagements and community engagements for awareness creation.
- To give effect to some of its initiatives, REA has successfully secured \$550 million from the World Bank (\$350m) and the African Development Bank (\$200m) in financing for the Nigeria Electrification Project, and an additional \$11million for the Rural Electrification Fund for the deployment of solar hybrid mini grids and solar home systems. These funds will ensure that millions of Nigerians have access to clean, safe, reliable and affordable electricity.

KEY PROGRAMMES, ACTIVITIES & ACHIEVEMENTS

Rural Electrification Fund (REF)

Through the Rural Electrification Fund (REF), the REA aims to provide electricity access to 31 million rural dwellers by 2025. In August 2017, the Board of the REA approved the Rural Electrification Fund Operational Guidelines (REFOG). The approved REFOG establishes:

- objectives and transparent criteria for the geographical allocation of resources from REF;
- framework for an open, competitive, and transparent procedure for making disbursement from REF to individual projects; and
- eligibility and Selection Criteria. These criteria set out in the Operational Guidelines give due weight to the developmental benefits and cost-effectiveness of the project, as well as to equity and regional balance of project development.

The REFOG (2017) also establishes the basis for the functioning of REF. In a nutshell, REF supports all types of rural electrification solutions with a bias for renewable energy, through grants to cover part of the development, capital costs and technical assistance of the awarded projects. This support is provided to selected developers to enable affordable electricity tariffs for rural end-users. Successful bidders are selected through open competitive procurement processes and based on objective technical and financial criteria as described in the mentioned Guidelines and in line with the public procurement law of the Nation.

REF forms part of a package established by the Government to enable inter alia a friendly environment for private investment in the mini-grid sector. The Mini-grid Regulations (2016) of the Nigerian Electricity Regulatory Commission (NERC) also forms part of this package.

REF Call 1

REF through the provision of capital subsidies, in a clear and transparent competitive process to qualified rural electrification schemes developed by public and private sector entities focusing on Mini Grids, Solar Home Systems and Grid Extension is currently in the implementing USS 3.3million project for the development of off grid solutions across the six geo-political zones in Nigeria. These include the deployment of 12 Mini-grids and +19,000 Solar Home Systems Units.

TABLE 1: REF CALL 1 MINI-GRID SITES

S/N	Name of Project	Geo-Political Zone
1.	80 kWp solar mini-grid at an isolated community in Upake, Ajaokuta LGA - Kogi State	North Central
2.	90 kWp solar mini-grid at Kare and Dadin Kowa villages in Arewa LGA - Kebbi State	North West
3.	100 kWp solar hybrid mini-grid at Akpabom community in Onna LGA - Akwa Ibom State	South South
4.	100 kWp solar mini-grid at Eka-Awoke community, Ikwo LGA - Ebonyi State	South East
5.	40 kWp solar mini-grid at Goto Sarki community in Paikoro LGA - Niger State	North Central
6.	85 kWp solar mini-grid at Dakiti community in Akko LGA - Gombe State	North East
7.	100 kWp solar hybrid mini-grid at Olooji community in Ijebu East LGA - Ogun State	South West
8.	100 kWp solar hybrid mini-grid at Adebayo community in Ovia South LGA - Edo State	South South
9.	100 kWp solar mini-grid at Obegu Isu, Amanator Onicha, Agueun Umunik0 & su Achara communities in Onicha LGA - Ebonyi State	South East
10.	30 kwsp solar mini-grid at Bambani village in Batagarawa LGA - Katsina State	North West
11.	100 kwsp solar hybrid mini-grid at Budo Arc community in Itesiwaju LGA - Oyo State	South West

12	91kWp solar hybrid mini-grid in Sarkin Kudu community, Ibi LGA of Taraba State	North East
S/N	Name of Project	Geo-Political Zone
1.	Supply & installation of 1,000 units of 15W SHS in Mbaka-ange village, Benue State	North Central
2.	Supply & installation of 1,135 units of 40W SHS in Boto/Lisuru-gida, Kaduna State	North West
3.	Supply & installation of 1,000 units of 15W SHS in Atami, Nagazi Farm Centre - Kogi State	North Central
4.	Supply & installation of 300 units of 15W SHS in Alu-mamagi & Nuku villages - FCT	North Central
5.	Supply & installation of 1,370 units of 20W SHS in Ibaka, Esuk Ewang & Odu communities - Akwa Ibom State	South South
6.	Supply & installation of 2,000 units of 20W SHS in Efire, Campi, Agbon-ojodu, Kajola, Oba ecerin, Okeegan, Asero, Igeasu, Ilawo, Ajade Ogundipe, Ode - Ogun State	South West
7.	Supply & installation of 2,000 units of 15W SHS in Abu community, Cross River State	South South
8.	Supply & installation of 1,400 units of 15W SHS in Amaorji - Abia State	South East
9.	Supply & installation of 1,280 units of 20W SHS in Pami, Damboa, Densheirk, Gasua - Borno/Yobe State	North East
10.	Supply & installation of 1,000 units of 15W SHS in Hiktup, Wushik, Kobwang, Kombun, Mper, Tiduu, Plateau State	North Central
11.	Supply & installation of 1,445 units of 15W SHS in Idi Aba village, Ogun State	South West
12.	Supply & installation of 1,300 units of 15W SHS in Katsalle, Tabobi, Takatsaba, Ruwangamiji, Katsina State	North West
13.	Supply & installation of 2,000 units of 15W SHS in Okposi District, Ebonyi State	South East
14.	Supply & installation of 1,900 units of 20W SHS in Dolen Sarki, Gamadaji, Mariri, Wanzamai, Birniwa Kadiri, Dange Babba, Ngolori, Nelbejam, Gadukku Sabuwa, Jauro Madi, Kiyawa, Gombe State	North East

TABLE 2: REF CALL 1 SHS SITES

SUMMARY IMPACT OF REF CALL 1

MINI-GRIDS	SOLAR HOME SYSTEMS
5,272	19,000

Jobs Created Over The Course of REF Call 1

The jobs created during REF Call 1 varied from bricklayers, labourers, security, village power committee members, site administrator, etc. The jobs were direct and indirect jobs incorporating elements of capacity building. The creation of jobs was a key criterion, established by the department, placed on the developer to access the grant funding.

Below are the jobs created by Geo-Political zones:

	NC	NW	NE	SW	SE	SS	Total
Direct Jobs	34	22	62	44	42	60	264
Indirect Jobs	691	766	886	927	975	1,027	5,272
Total	725	788	948	971	1,017	1,087	5,536

- The direct jobs were outsourced primarily to the youths of the community.
- 75% of the indirect jobs had youth as beneficiaries.

REF CALL 2

The REA Board approved the disbursement of 4.6 Billion Naira for this implementation phase. Out of this, 3.9 Billion Naira has been allocated to the REF Call, 400 Million Naira is allocated to the REF Research and Innovation Hub and 300 Million Naira is allocated to the State Matching Fund. Under the REF Call 2, the Expressions of Interest were invited on 6th July 2020 and are currently at the Grant Signing stage upon which project implementation is set to begin. 51 mini-grid projects would be developed across the 6 geo-political zones. The implementation has been broken into 2 phases.

REF RESEARCH AND INNOVATION HUB

Although commendable feat has been achieved in the deployment of solar-PV systems, alternative decentralized renewable energy technologies/systems are yet to become established and the existing business models, regardless of the technology employed, are constrained by a myriad of technical, economic, social and institutional obstacles. This is further compounded by considerable knowledge gaps. To this effect, the REF recently unveiled the REF Research and Innovation Hub, which is aimed at addressing these identified challenges. Thus, the REF Research and Innovation Hub seeks to harvest and nurture innovative approaches to rural electrification by providing grant funding to support promising renewable energy technologies, systems and business models and related research in a bid to improve rural electrification and/or development. Innovation is never a single event; it is a long cumulative and iterative process that is stimulated through forethought, experimentation and subsequent experiential and observational learning. As innovation requires experimentation, the uncertainty inherent in the process means that it will sometimes fail. By following a structured approach that entails monitoring, evaluation and learning (ME&L) and critical

research, the failures and successes of the process become learning opportunities and the associated circular transfer of knowledge plays a key role in the effort to establish a sustainable rural electrification market. Underpinned by this principle, a number of initiatives are proposed in section 2 for the innovation and Start-ups program.

Expected Impact of the Program

The REF Research and Innovation Hub will seek partnerships and investment to expand sustainable access to electricity, especially in rural communities, while also stimulating economic activities for the shared benefits of all stakeholders. Some of the expected benefits of the innovation and start-ups program include:

- Access to seed investment in the form of grants, needed to refine and deploy solutions for entry into wider funding market
- Nurture sustainable solutions, products, and/or technologies that would boost and promote business operations and stimulate socio-economic growth in rural communities in Nigeria.
- Access to a wide network of mentors, innovators, enterprises, and professionals that share passion and drive towards an integrated multi-layered support and feedback system
- Promote and strengthen knowledge capacity through fostering of knowledge sharing among strategic partners and funding agents

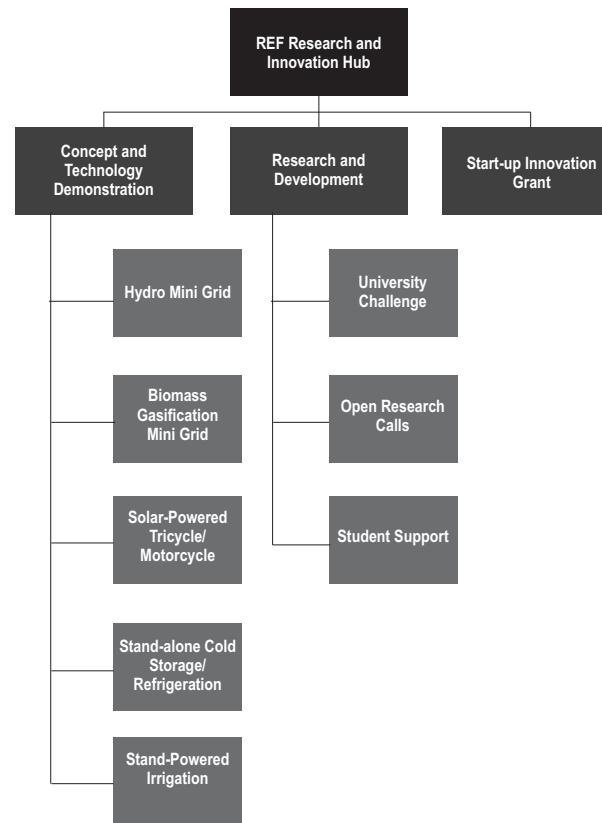


Figure 1: REF Research and Innovation Hub

MINI-GRID ACCELERATION SCHEME

Mini-grid Acceleration scheme (MAS) is a nationwide non-site specific open competitive tender designed to select local mini-grid companies. The winners of the tender will be supported in deploying their proposed interconnected mini-grid projects with an in-kind partial capital grant (in the form of procured distribution and metering equipment) and technical assistance. It aims at providing a minimum of 21,000 customers including residential, public, commercial or productive users across Nigeria with access to reliable electricity services at an affordable tariff via privately-led off-grid solar mini-grid projects

The funding for MAS is an in-kind grant with total amount of 6 Million Euros divided into 6 equal parts of 1 Million Euros each i.e. 1/6th to be allocated to one geopolitical zone lot. Bidders submit project per lot on Odyssey Energy Solutions platform, with plans to achieve 3,500 effective connections with requisite minimum 50% of total investment by private investment. Submissions are ranked per lot. Grant resources allocated to first ranked bidder for each lot and for maximum grant allowed per lot.

The proposals have been evaluated and the winners announced;

Region	Company Name	State Projects are Located
North Central	Nayo Tropical Technology	Niger
South West	Havenhill Synergy Ltd	Oyo
South East	GVE Projects Ltd	Anambra
South South	ACOB Lighting Technology Limited	Delta, Edo

INTERCONNECTED MINI-GRID ACCELERATION SCHEME

Interconnected Mini-grid Acceleration Scheme (IMAS) is a nationwide non-site specific open competitive tender designed to select local mini-grid companies. The winners of the tender will be supported in deploying their proposed interconnected mini-grid projects with an in-kind partial capital grant (in the form of procured distribution and metering equipment) and technical assistance. It aims at providing a minimum of 15,000 customers including residential, public, commercial or productive users across Nigeria with access to reliable electricity services at an affordable tariff via privately-led solar interconnected mini-grid projects

The funding for IMAS is an in-kind grant with total amount of 3 Million Euros which is divided into 10 even parts of 300,000 Euros according to the number of interested DisCos. Under IMAS, Bidders submitted projects per lot, with plan to achieve aggregate 1,500 effective connections. A minimum Private investment of 50% of total investment is required. Submissions were ranked per lot. Grant resources were allocated to first ranked bidder for each lot and for maximum grant allowed per lot.

The proposals have been evaluated and the winners announced;

DisCo-Region	Company Name	State Projects are Located
Abuja DisCo	GVE Projects Ltd	Kogi
Benin DisCo	Rubitec Solar	Ondo
Ikeja DisCo	A4&T	Alimosho
Ibadan DisCo	Nayo Tropical Technology	Ogun & Oyo
Jos DisCo	ACOB Lighting Technology Limited	Bauchi
Kaduna DisCo	Sosai Renewable Energies	Zamfara
Port-Harcourt DisCo	Darway Coast Nigeria	Cross-River

NIGERIA ELECTRIFICATION PROJECT (NEP)

The NEP Project Development Objective is to increase electricity access in rural areas through Mini-Grids and Stand-alone Off-grid solutions, as well as improve electricity supply to selected Federal universities and associated Teaching Hospitals, which currently have unreliable electricity supply. The Project beneficiaries are households, Micro, Small and Medium Enterprises (MSMEs), as well as students, staff and patients at Federal Universities and University Teaching Hospitals across Nigeria. It's one of the largest off-grid electrification programmes in Africa. The Federal Government has secured the funds from both World Bank (\$350m) and African Development Bank (AfDB) (\$200m) for three components as well as technical assistance. The NEP will develop solar hybrid mini grids to serve over two (2) million people and over 10,000 SMEs as well as deploy standalone solar home systems to 1.5million households and Improve educational outcomes by electrifying Federal Universities and

affiliated Teaching Hospitals as part of the EEP.

NEP ACHIEVEMENTS INCLUDE:

Minimum Subsidy Tender (MST)

The final evaluation report of the MST - Initial Selection Document was granted "No Objection" by the World Bank on 12th March 2020. A total of 13 successful companies have been approved for the request for the Request for Proposal (RFP) stage. Letters of Notification were sent out to the successful and unsuccessful companies informing them on the results of the Initial Selection Evaluation. The RFP documents are currently being finalized for onward transmission to the selected companies.

Performance Based Grant (PBG)

Since the project was launched in April 2019, 11 Mini Grid Companies have Signed Grant Agreement out of forty-four (44) companies that have applied for the Programme and 19 have been approved to advance to second stage of application, the site-specific stage. Out of the 30 companies, 19 have submitted a total of 190 sites in 14 states across Nigeria (Niger, Bayelsa, Rivers, Federal Capital Territory, Cross River, Ondo, Abia, Oyo, Ogun, Plateau, Kwara, Kaduna, Edo and Ebonyi States). The first PBG completed project under the NEP by PowerGen Renewable Energy with 64kw capacity was commissioned on 7th December, 2019 in Rokota Community, Edati Local Government Area, Niger State.

The second and third NEP PBG Mini-Grid projects with capacities of 67.32kW each were commissioned on 13th April 2020 at Oloibri and Akipelai communities, Bayelsa state by Renewvia Solar Nigeria Ltd. Also, on 3rd December, 2020, a 334kWp Solar Hybrid Mini Grid was commissioned in Shimamleju in Shimamleju Community, Shendam LGA, Plateau State and then Ugbo Nla and Lomileju in Ondo State with a total of 42.15kW capacity cumulatively. Eleven (11) companies have signed Grant Agreements for 77 sites in total. Six (6) mini grids with a total of 2,607 connections have been achieved so far in households, MSMEs and Public facilities and a total capacity of 474.7kW of energy deployed. The 6th PBG Roundtable meeting for the Solar Hybrid Mini Grid component was held with the developers to discuss the Project Milestone and Challenges.

COVID-19 & Beyond

As part of the effort to curb the spread of Covid-19, on 15th and 16th of April, 2020 completed and the REA handed over four completed solar hybrid mini grids to health facilities in its bid to support the efforts of the FG in containing the Covid-19 pandemic.

The completed projects include:

- 53.1kWp solar hybrid mini grid installed at the University of Abuja Teaching Hospital Covid-19 Isolation Center
- 25kWp solar hybrid mini grid at Nigeria Center for Disease Control (NCDC) Public Health Laboratory in Lagos
- 20kWp solar hybrid mini grid at 128 Bed Ikenne Isolation Center and 10kWp solar Mini hybrid mini grid at 100 Bed Iberekodo isolation Center in Ogun state

Following the impact of the Agency's intervention in 4 COVID-19 Isolation Centers, a series of engagement between the REA, the World Bank, Federal Ministry of Power, the Federal Ministry of Health, Federal Ministry of Finance and the Nigeria Center for Disease Control (NCDC) plan to scale up this intervention by energizing 100 additional COVID-19 centres (Phase 1) and 400 Primary Healthcare Centres (PHC) (Phase 2) across the nation. Environmental and Social (E & S) screening questionnaire was sent to the selected 100 Isolation and Treatment Centers (ITCs) to collate E & S related information from their respective health facility. The evaluation of submitted bids for eight (8) lots for development of solar power supply to 100 Isolation Treatment Centre (ITCs) has been completed.

The Bid evaluation report for the 100 ITCs was sent to the bank for review and No Objection Review was conducted on the technical and financial submissions received from the Owner's Engineer. Notification of Award for 5 Lots has been sent to the Successful Bidders for the development of Solar Power Supply to the 100 Isolation and Treatment Centers (ITCs). Draft Contract Agreement has also been sent to the successful bidders.

Standalone Solar Home Systems (SHS) for Households and MSMEs

A total of 58 applications have been received since the launch of the Output Based Fund in April 2019. Over 194,613 Solar Homes Systems have been installed in households, MSMEs and public facilities by the twenty-six (26) companies who have signed grant agreements. The capacities of the systems ranges from 6Wp to 75Wp translating to over 7,200kW (7.2Mw) of installed capacity across the 36 states in Nigeria. Additionally, Six (6) new SHS developers have signed agreements which increased the number of companies in our portfolio from 19 to 25.

The REA-NEP has disbursed total grants of N1,070,063,584 Billion (~\$2.8million) to Solar Home System Companies from December 2019 to 20th May 2021 for installed systems that have been successfully verified.

ENERGIZING EDUCATION PROGRAMME (EEP) PHASE 1

The Energizing Education Programme (EEP) aims to power 37 universities and 7 teaching hospitals by providing independent power plants, 10,400 street lights will be installed across campuses in Nigeria for illumination and security, upgrade of existing distribution networks and world-class renewables training center at every university. The first phase of the programme funded by the Federal Government is under construction which consists of 9 universities and 1 affiliated teaching hospital. The Programme will provide reliable power supply to over 580,000 students, 80,000 teaching and administrative staff, 1,400 doctors and 5,500 medical professionals. As a result, 860 harmful diesel-fired generators will be decommissioned.

Achievements include:

SN	Name of University	Summary of Achievement	% Completion
1	Alex Ekwueme Nduru-Alike University Ebonyi State (AE-FUNAI)	The Project was successfully commissioned on 2nd August 2019 with +9,500 Staff and Students now receiving adequate and reliable power supply.	100
2	Bayero University Kano State (BUK)	The Project was successfully commissioned on 3rd September 2019 with +58,000 staff and students receiving adequate and reliable power.	100
3	Abubakar Tafawa Balewa University (ATBU) Bauchi State	The Project was commissioned on 11th February, 2021 and the university has been receiving adequate and reliable power.	100
4	University Petroleum Resources Effurun (FUPRE) Delta State	The Project was commissioned on 26th February, 2021 and the university has been receiving adequate and reliable power.	100
5	University of Agriculture, Makurdi, (FUAM), Benue State	The Project was commissioned on 4th December, 2021 and the university has been receiving adequate and reliable power.	100
6	Usmanu Danfodiyo University (UDUS) Sokoto State	All major equipment have been installed including, PV panels, Transformers, Inverters, Batteries, Backup Diesel Generator sets, etc. 8.65km lengths of streetlights have been installed.	92
7	Nnamdi Azikiwe University (NAU) Anambra State	All major equipment have been installed including, PV panels, Transformers, Inverters, Batteries, Backup Diesel Generator sets, etc. 9.48km of streetlights have been installed Workshop/ Training Center is 74% completed.	98
8	Obafemi Awolowo University (OAU) Osun State	All equipment foundations have been cast Second batch of materials for Workshop/Training Center delivered to site. Gas Engine Turbines and accessories delivered to the project site.	65
9	University of Lagos (UNILAG) Lagos State	All equipment foundations have been cast. Second batch of materials for Workshop/Training Center delivered to site. Gas Engine Turbines and accessories delivered to the project site. Site sand filling and fencing have been completed. Gas Engine Turbines and accessories delivered to the project site. Which includes Fresh Air Fans; Top container; Low Tension Piping; Inlet Air System; Air Conditioner; Exhaust Silencer, etc. 8Km of installed Streetlight successfully. First batch of the Work/ Training Center materials have been delivered to site	41

ENERGIZING EDUCATION PROGRAMME (PHASE II)

As part of activities towards successful implementation of the Energizing Education Programme (EEP), various preparatory activities/studies prior to the actual construction of the power plants for the beneficiary institutions have to be conducted. It is in view of this that:

- Approval of Certification for the Environmental & Social Impact Assessment have been obtained from the Federal Ministry of Environment for all EEP Phase II sites.
- Livelihood Restoration Plans have been developed for each of the EEP II institutions in accordance with International Finance Corporation/World bank Standards.

Audit of Electrical Appliances & Geotagging as well as Grid Interconnection Studies for six (6) out of the seven (7) beneficiary institutions have been completed. Currently, procurement for the Project Owner's Engineer is ongoing as Technical Proposals from shortlisted applicants are undergoing evaluations. Procurement process for the engagement of the Engineering Procurement and Construction (EPC) Contractors towards the development of the Power Plants, Streetlights and Renewable Energy Workshop Training Centre is also ongoing. The Front End Engineering Design as well as the Sustainability Plan are also being developed and nearing completion.

NIGERIA ELECTRIFICATION PROJECT (AFDB)

The Nigeria Electrification Project funded by African Development Bank (\$200m) aims to accelerate electricity access in rural areas through mini grids, standalone off-grid solution and a grant-based scheme to accelerate the proliferation of productive appliances and equipment for off-grid communities. In addition, the project will improve electricity supply to selected universities, which currently have unreliable electricity supply and can serve as anchor loads for serving nearby communities in the future. Project components include solar hybrid mini grids, productive use appliances and equipment for off grid communities, Energizing Education (Phase III) and technical assistance.

The objective of Component two (2) of the NEP funded by the AfDB is to scale-up the productive use of energy in remote communities by increasing access to efficient, electric productive equipment. This objective is achieved by using a results-based finance (RBF) mechanism to incentivize energy access companies to include the distribution of these types of equipment in their business operations. The component also serves to activate the productive use appliance market and make this business model more sustainable. It will encourage developers to make productive use appliances a bigger part of their overall strategy. Prior to the full roll out of the component, phase 1 will be implemented to test the following assumptions surrounding the component in the Nigeria Market; that productive uses of energy lead to:

- 1.1. Increase in demand for energy.
- 1.2. Increase in income generation and increased disposal incomes; and
- 1.3. Increase in productive uses of energy ultimately result in the concomitant benefits of mini-grid viability and socio-economic development

To launch this component, the REA is commencing Phase I with six (6) existing mini grid sites to demonstrate the effectiveness of the productive use component in rural economies and to ascertain the optimal business models and subsidy designs to be deployed in the subsequent phases of the program roll out. Developers of operational mini-grids were invited to indicate interest by submitting responses to an Application Survey launched on the REA website. Nineteen (19) applications were received, of which ten (10) sites were shortlisted for field studies (7 shortlisted and 3 reserve sites). Field studies have been completed to validate the basis for investment decisions. The approvals for grant agreements will elicit the launch of the Component 2 Phase I by the end of July 2021. \$20million has been earmarked for performance-based grants under this project over the next three (3) years.

ENERGIZING EDUCATION PROGRAMME (PHASE III)

The third phase of the programme funded by the African Development Bank will provide reliable power supply to 8 universities.

As part of activities towards successful implementation of this phase of the programme, various preparatory activities/studies prior to the actual construction of the power plants for the beneficiary institutions have to be conducted. It is in view of this that:

- Key stakeholders' workshop with all EEP Phase III institutions was conducted.
- Baseline studies at all the EEP Phase III institutions was concluded.
- Binding Terms Sheet is currently in development for all EEP Phase III institutions.
- Procurement of Environmental Social Impact Assessment (ESIA), Sustainability Plan (SP), Front End-Engineering Design (FEED) and Project Owner's Engineer Consultants are ongoing.

It is expected that a few of these assignments will have commenced and/or be concluded before the end of Q4 2021.

ENERGIZING ECONOMIES INITIATIVE (EEI)

The Energizing Economies Initiative (EEI) is a Federal Government of Nigeria (FGN) initiative being implemented by the Rural Electrification Agency (REA). The focus of the EEI is to electrify economic clusters in Nigeria - which include markets, shopping plazas/complexes and industrial clusters in line with the FGN's goal of increasing electricity access. Over 300 clusters have been identified for electrification across the country in different phases. So far, over 12,000 shops are now receiving clean, safe, reliable and affordable electricity supply.

The Pilot Phase of the Energizing Economies Initiative has commissioned the Sura Shopping Complex Independent Power Project in Lagos state powering 1,047 shops, as well as the Ariari a Market Independent Power Project, Aba, Abia State, powering over 4,000 shops and has launched over 6,000 energized shops at Sabon Gari market, Kano State with more connections in the pipeline.

Deployment is currently ongoing in markets under Phase 1 of the EEI. This phase is expected to provide clean, safe and reliable power to 12 markets across Lagos, Kano, Edo, Ogun, Ondo and Oyo. On the 18th of October 2019, a Tripartite Agreement between Abuja Electricity Distribution Company (AEDC), Green Village Electricity (GVE) and Wuse Market Association was signed for the development of 1MW Interconnected Mini-grid. The pilot of 24 shops is completed and operational with ongoing expansion activities.

The REA plans to create an enabling environment where the private sector developer handles all the project delivery steps from inception to conclusion. The Phase 2 rollout plans are currently in view and conversations have begun between the developers and State Governments.

CAPITAL PROJECTS

The core objective is to provide affordable, easily accessed, safe and efficient electricity supply to the populace especially in rural settlements across the nation through the Project Directorate which provides support in the implementation of all rural electrification projects.

The Agency from inception to date has achieved the completion of 3116 Projects under Capital Budget and 46 under All-Mass Rural Electrification Programme (Covid 19 intervention Projects). Several others are at various stages of completion.

The projects are broken down into the following categories; solar mini-grids, deployment of solar home systems, deployment of solar street lighting, injection substations, and grid extension projects across all 6 geopolitical zones. The following projects were commissioned under Capital Projects Grid Extension and Solar Mini Grids in 2020-2021:

A. Grid Extension

- 300kVA, 11/0.415kVA Transformer at Ajijola-Anabi community, Ede-South, Osun State on 25th November, 2020
- 33/0.415KV Sub-station at Unguwar Dutse community, Malamfashi, Katsina State on 19th November, 2020

B. Solar Mini Grid

- 65kWp Solar Mini-Grid at 250-bed cottage hospital at Okpogo community, Okene, Kogi State on 2nd December, 2020
- 5.4kWp Solar Mini-Grid at Government Cottage Hospital, Adavi-Eba, Adavi LGA, Kogi State on 2nd December, 2020
- 7.5kWp Solar Mini-Grid at Joint Hospital, Ozubulu, Ekwuesigo LGA, Anambra State 13th November, 2020
- 30kWp Solar Mini-Grid at Mbela Lagaje Community, Mayo Belwa LGA, Adamawa State on 16th February, 2021
- 60kWp Solar Mini-Grid at Obudu Cattle Ranch, Obanliku LGA, Cross River State on 30th March, 2021
- 60kWp solar mini grid at Okangha Mkpansi community, Ikom LGA, Cross River State on 7th April, 2021

ENERGY ACCESS DATABASE

Data-driven decision-making form the basis of REA's strategy. Using energy audits, community engagement surveys, communication surveys, customer profiling and community profiling, the agency ensures that data is effectively captured and analyzed for all of its initiatives. Furthermore, REA has prioritized developing a comprehensive Nigerian Energy Database (NED) to facilitate understanding of and entry into the Nigerian energy sector. The database also supports private sector developers to make informed decisions on project development and financing.

The NED is an initiative of REA, which seeks to provide vital energy, community and grid data for stakeholders in Nigeria's power sector. The energy database is a collaborative online platform for finding and sharing data and analytics towards increasing access to affordable, sustainable, modern and reliable energy in Nigeria. It encourages transparency by creating a central home for energy statistics and community data collected by government agencies, donors and private entities. It is hoped that with easily accessible data, an enabling private sector investment climate will be established in the power sector.

On the energy database, users can view specific information by using filtering parameters such as states (borders, capital borders, Local Government Areas, community name) and electricity distribution coverage (states, Local Government Areas, population, head office GPS coordinates, communities). The database provides information on potential mini grid sites, potential solar home systems sites, distribution infrastructure, water access data, mines data, road networks, poverty rate (demographic data), healthcare centre locations, school locations, existing gas lines, existing transmission lines, power plant locations, and government agency locations.

GENDER MAINSTREAMING

As a concept, gender mainstreaming fosters more equal representation between men and women, by ensuring that both gender perspectives and participation are considered. Specifically, in Nigeria, narrowing those disparities is critical to reducing poverty and boosting economic development.

As primary users and managers of electricity, women are most affected by energy poverty. They play an essential role in resource management as well as in other productive activities in their homes and communities. This puts women in a unique position to contribute to livelihood and economic growth; and yet they make up a small percentage of those working to increase access to electricity. To that end, REA is taking significant steps towards ensuring gender mainstreaming within the Nigerian power sector.

Under its Gender Strategy, the agency ensures that gender disaggregated data is captured for all of its projects. This means that during community surveys, consultations, audits, etc. data is captured along gender lines. This ensures that solutions are developed according to the needs of men and, specifically, women.

Gender inclusion is a core strategy objective to promote and drive female participation in electrification initiatives. Under the Nigeria Electrification Project (NEP), private sector companies bidding for NEP grants must also meet its gender criteria of 30% female staffing for eligibility.

REA holds gender workshops to improve the contribution of women in the power sector and promote knowledge sharing and mentorship. The first gender workshop was held on February 9, 2019, in collaboration with USAID Nigeria Power Sector Programme (NPSF). The workshop, themed "Amplifying Gender in the Energy Sector" was an avenue to discuss the challenges and capacity development needs of women in the power sector. REA plans to hold regular gender-focused workshops to encourage female balancing in its programmes.

Under REA's Energizing Education Programme (EEP), 37 federal universities and 7 University teaching hospitals will have access to clean, safe and reliable electricity. Throughout the construction phase, 20 female University students from each beneficiary university have been participating in its Female Science, Technology, Engineering and Mathematics (STEM) Students Internship Programme. Already, 20 female STEM students respectively at Bayero University, Kano state, Alex Ekwueme Federal University Ndufu-Alike Ikwo, Ebonyi state, Abubakar Tafawa Balewa University, Bauchi State, Federal University of Agriculture, Makurdi, Benue State and Federal University of Petroleum Resources, Delta State graduated from the STEM internship programme. Through this programme, over 700 young women in the fields of Science, Technology, Engineering and Mathematics will receive hands-on training in renewable energy technologies.

In addition, a conference was held on November 28-30, 2019 for 180 female STEM students in the first nine EEP universities. The conference was a platform for students and professionals to network, share knowledge and, ultimately, facilitate gender mainstreaming in the power sector. At the conference, one million prize was won by students of Bayero University, Kano.

With its robust gender mainstreaming strategy, REA will continue to empower women in the rural communities and the power sector by promoting women participation across all its initiatives.

SUSTAINABILITY OF REA PROJECTS: Operation and Maintenance (O&M) and Rural Electricity Users Cooperative Society (REUCS)

The Rural Electricity Users Cooperative Society (REUCS) is an initiative of the REA that is aimed at mobilizing benefiting communities to achieve sustainability of electrification projects.

In pursuit of its vision and mandate of achieving universal access to affordable and sustainable electricity, thus improving the quality of life and economic opportunities for unserved and underserved communities, the Agency carries out community engagement exercises and campaigns to mobilize and sensitize rural communities across the country to form Rural Electricity Users Cooperative Society (REUCS).

The Agency has developed a robust framework for this initiative. It is also strengthening this by implementing a robust sustainability plan which incorporates Operation and Maintenance (O&M).

For Solar mini grids, solar home systems and solar street lights deployed under appropriation act, rural communities are expected to Own, Operate and Maintain their electricity networks with REA and technical experts providing the training required to operate such systems effectively and efficiently.

In respect of Grid Extension Projects, the communities are expected to collaborate with the Distribution Companies (DISCOs) in its operations

Goals

The goals of the REUCS initiative are to create a forum and a platform that will achieve the following:

- To promote community participation in rural electrification projects through training on ownership, operation, maintenance and safety of facility (where applicable)
- Enable community members to learn about productive usage of electricity as well as educate members on energy conservation and efficiency
- Ensure community members work together to protect electricity equipment against theft and vandalism
- To partner with Electricity Distribution Companies and Independent Power Producers (IPPs) in their localities for the provision of electricity at an affordable price.
- Ensure prompt payment of electricity bills by members and also through the cooperative society (where applicable)
- Encourage all relevant stakeholders to work together to solve community electricity related problems

An appreciable progress has been recorded since the introduction of this initiative in the 36 States of the Federation and FCT Abuja. So far, 855 communities across the Six (6) geo-political zones of the country have been sensitized under Grid Extension (Capital Projects) and Nigeria Electrification Project (World Bank and African Development Bank) programmes with 128 REUCS formed and registered with certificates.

SOLAR POWER NAIJA - Enabling 5 Million New Connections

The Federal Government of Nigeria to support the economic recovery in response to the COVID-19 pandemic launched an initiative as part of the Economic Sustainability Plan (ESP) to achieve the roll out of 5 million new solar connections in off grid communities. This program is expected to generate an additional N7 billion increase in tax revenues per annum and \$10 million in annual import substitution. The Solar Power Naija Programme is being implemented by the Rural Electrification Agency.

The solar connection Scheme is a Federal government initiative whose objectives are:

1. Expand energy access to 25 million individuals (5 million new connections) through the provision of Solar Home Systems (SHS) or connection to a mini grid;
2. Increase local content in the off grid solar value chain and facilitate the growth of the local manufacturing and assembly industry
3. Incentivize the creation of 250,000 new jobs in the energy sector.

The Solar Connection Intervention Facility from the Central Bank of Nigeria (CBN), will complement the Federal government's effort of providing affordable electricity to unserved rural communities through the provision of long-term low interest credit facilities to the Nigeria Electrification Project (NEP) pre-qualified SHS distributors and mini grid development companies. This also include qualified home solar value chain players such as manufacturers and assemblers of solar components.

On 9th April, 2021, the FG Launched the Deployment of 100,000 Solar Home Systems under the Solar Power Naija Programme of the FG Economic Sustainability Plan in Jangefe community at Roni LGA, Jigawa State.

ENERGY FOR ALL - 'MASS RURAL ELECTRIFICATION' PROGRAMME

The Federal Government of Nigeria (FGN) is implementing an off-grid electrification programme for the deployment of solar electrification projects in primary healthcare centers, unity schools and households in vulnerable off-grid communities across the country tagged Energy for All - Mass Rural Electrification'. This programme is being delivered by the Federal Ministry of Power through the Rural Electrification Agency (REA) under the National Economic Sustainability Plan (ESP) geared towards supporting the country's economic recovery in response to the COVID-19 pandemic. The initiative has the following components which are complemented by technical assistance and program management:

1. Deployment of minigrids at 200 PHC's and provision of Solar Street Lights to adjoining communities.
2. Distribution of Solar Home Systems (SHS's) to 104 unity schools and provision of Solar Street Lights within the campuses.

Upon completion, the programme will enable, job creation, energy access to unserved and underserved areas across the geopolitical zones of the country, while contributing to the attainment of Federal Government's plan of having at least 30 per cent of its total electricity supply from renewable sources, majorly solar power by 2030.

In addition, processes are in advanced stages for World Bank financing under the Nigeria Electrification Project (NEP) to further close the energy gap in the health sector through the deployment of solar-hybrid captive power solutions to 100 secondary and tertiary health facilities which have also served as isolation and treatment centres across the country.

Through these programmes, health centers, unity schools and communities will be strengthened with reliable power to deal with health cases, provide a conducive environment for quality education delivery and an improved standard of living.

In line with global best practice, all components and interventions being driven under the ESP of the Federal Government of Nigeria have been deliberately designed to optimize the best in renewable energy technologies, mitigating the impact of the COVID-19 pandemic while closing the energy gap across the nation.

Signed Management

ENERGY=EMPOWERMENT=EFFICIENCY