

# NIGERIA ELECTRIFICATION PROJECT



**RURAL ELECTRIFICATION AGENCY**

ENERGY = EMPOWERMENT = EFFICIENCY

**NIGERIA ELECTRIFICATION PROJECT**



WORLD BANK GROUP



AFRICAN DEVELOPMENT BANK GROUP

NEP...powering Nigeria, one community at a time



Rural Electrification Agency  
January 2020 - November 2022



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Nigeria Electrification Project Progress Photo Book (January 2020 - November 2022)

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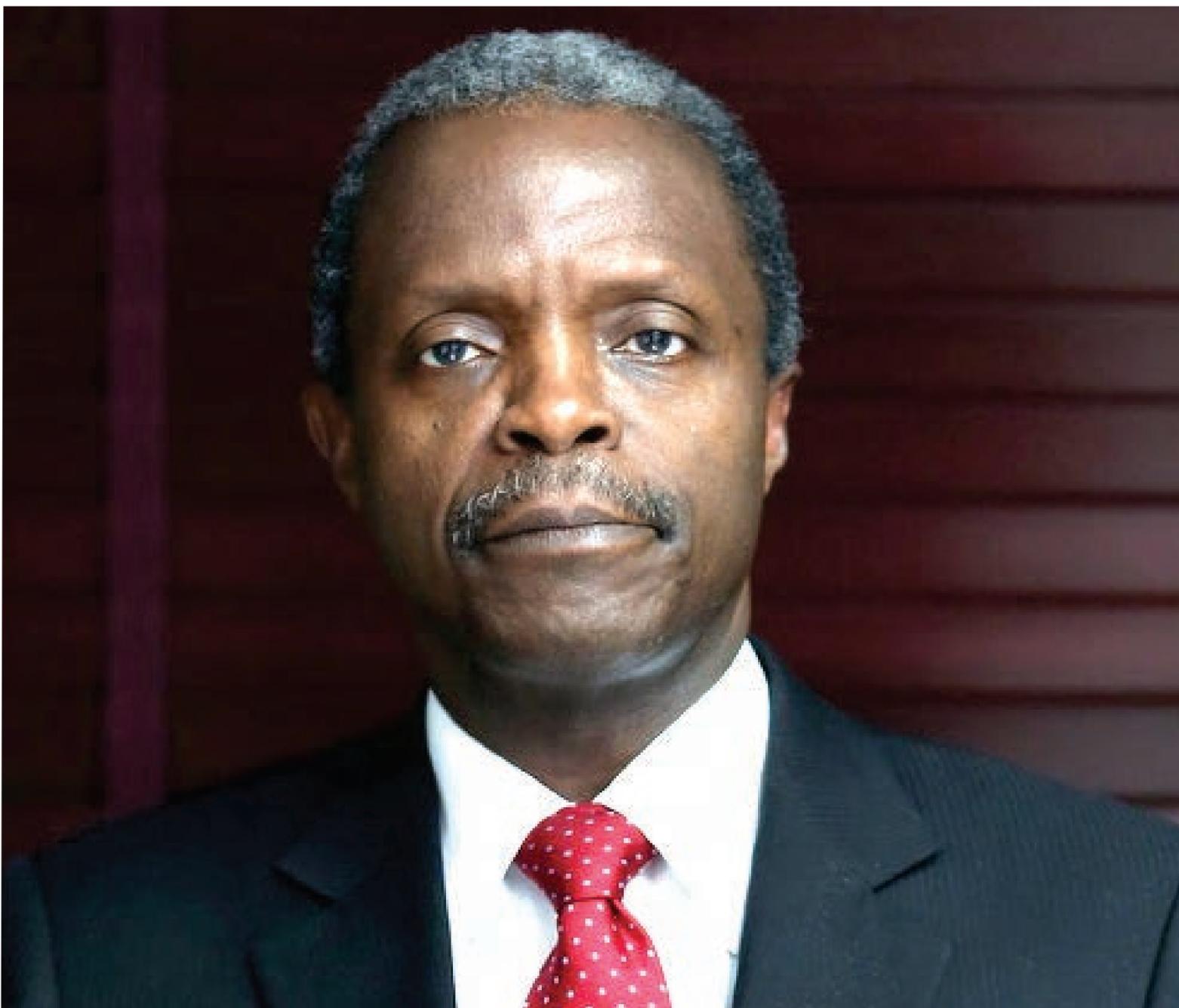
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# GOODWILL MESSAGE

It is my honour to share this goodwill message for the Nigeria Electrification Project's Progress Photobook for January 2020 - November 2022.

As humanity faces one of its worst scourges yet - climate change, developing countries in addition grapples with the problem of energy poverty or a lack of access to energy for millions.

In addressing this issue, the Federal government developed a robust renewable energy programme, the Nigeria Electrification Project, a World Bank and Africa Development Bank funded programme implemented by the Rural Electrification Agency (REA). This has been the Federal Government's flagship vehicle for promoting energy access using off-grid decentralised renewable energy solutions.

The Nigeria Electrification Project aims to deploy off-grid renewable energy systems including Solar Home Systems in sparsely populated rural locations, and solar hybrid mini-grids in densely populated unserved or under-served locations with economic activities and solar hybrid captive power plants for federal universities and affiliated teaching hospitals.

In this reporting period, the project has impacted the lives of over 5 million Nigerians (including 330,000 female-headed households and MSMEs) and created over 1000 direct jobs, through the 67 mini-grids deployed, over 995,000 Solar Home Systems sold, and 26 health centres electrified, with an aggregate generation capacity of 52MW of off-grid renewable energy systems.

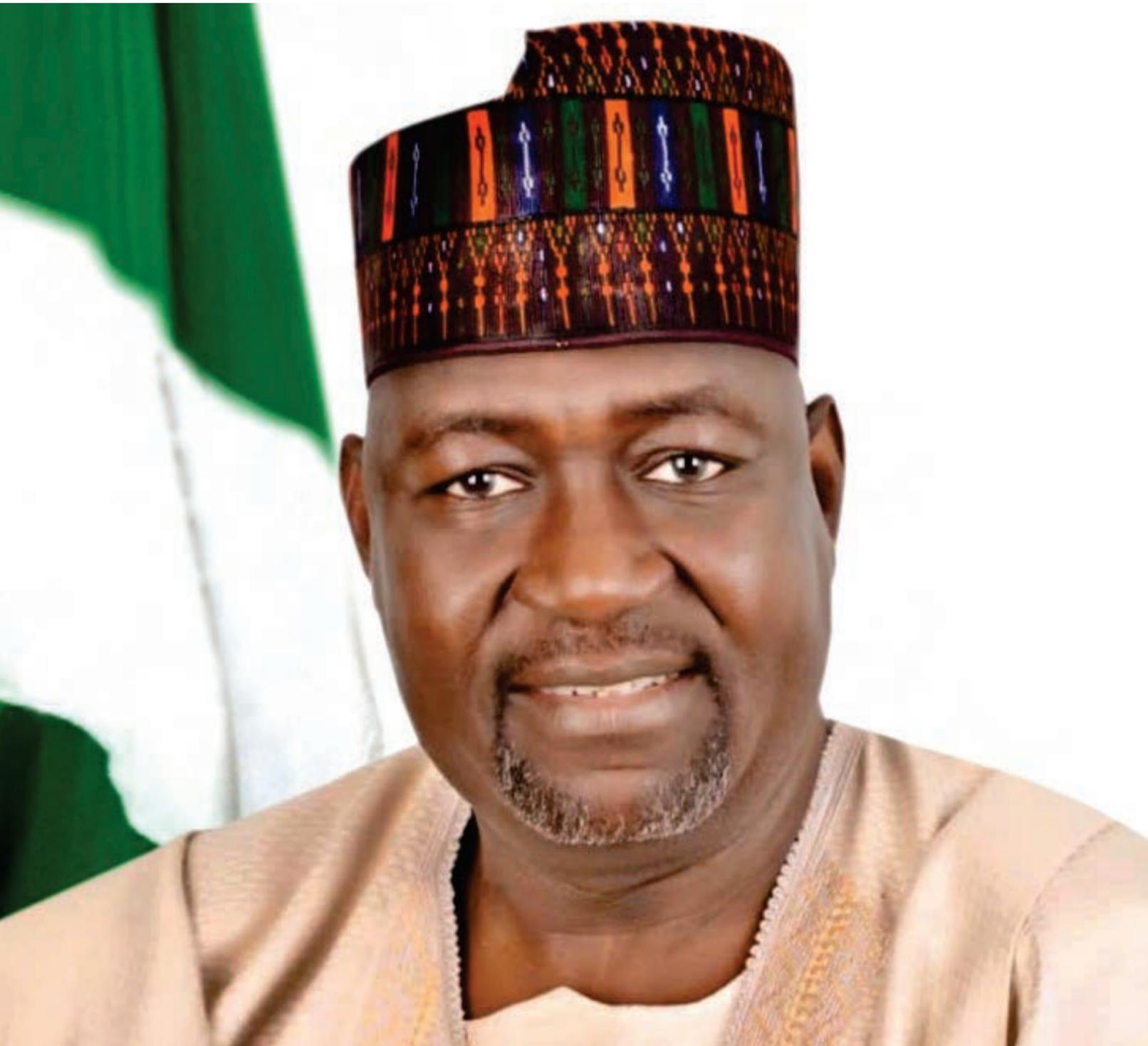
We are quite thrilled and delighted to share these achievements of the Nigeria Electrification Project for the period. Therefore, I commend the REA leadership team, the REA Project Management Unit, our development partners and private sector collaborators once again for their proficiency, passion and commitment to create a brighter Nigeria one community at a time.

The unrivalled success of the project has secured further commitments of our development funders and attracted other Sub-Saharan African countries actively working to replicate the project in their respective jurisdictions. These positive antecedents have earned the project a noteworthy status as a global reference point and a developmental success story in the off-grid renewable energy sector, something we are very proud of as a government.

A fair, inclusive and equitable energy transition is possible and within reach, and sustained interventions like the Nigeria Electrification Project will continue to play a huge part in its actualisation.

Thank you.

**His Excellency, Professor, Yemi Osinbajo, SAN, GCON  
Vice-President, Federal Republic of Nigeria**



# GOODWILL MESSAGE

Since assumption to office, the administration of His Excellency, President Muhammadu Buhari GCFR, in-keeping with its commitment to advancing electricity generation, transmission and distribution has designated multivariate resources to the power sector in partnership with International Financial Institutions and development partners. This commitment towards the expansion of on-and-off grid solutions was designed to be achieved through public-private partnerships.

It is in view of the aforementioned that the visionary leadership of His Excellency, Mr. President, birthed the Nigeria Electrification Project (NEP) amongst other outstanding projects and programmes currently being implemented across the power sector. It is therefore without gainsay that the Rural Electrification Agency (REA) through its array of innovative projects represents the Federal Government of Nigeria (FGN)'s true devotion to its social contract.

Following the unbundling of the power sector by the Electric Power Sector Reform Act (2005), the private sector has been the focal player in ensuring that electricity reaches the last mile individual across Nigeria. The activities of these private sector players and the objectives of the FGN has been further synchronized through extant policies and regulations. In this light, the Power Sector Recovery Programme (PSRP) was launched by the Federal Government of Nigeria towards solidifying Nigeria's multifaceted electrification pathway for future growth of the electricity supply industry. In accordance, the NEP is considered a flagship intervention that was designed to serve as an operational and financial anchor for the exclusive deployment of clean and reliable energy, while also strengthening the private sector market for renewable energy solutions under the PSRP.

An assignment of NEP's nature is mostly significant to the government because of its inherent design that cuts across the policy, regulatory, financial, operational and innovative value-

chain of Nigeria's energy access drive. Perusing through the line-up of achievements the NEP has recorded from its effectiveness till date, is a testament of how much we can achieve in powering Nigeria through multi-stakeholder participation. It is also intriguing to note that, without the project getting to its end-date, the number of connections and beneficiaries projected at the point of project design and launch, has been exceeded significantly.

It is therefore, with great pleasure that we at the Federal Ministry of Power, wish to state that, off-grid renewable energy generation and distribution contributing at least 30% to Nigeria's total energy mix, is achievable. This is evident from the current state of progress of the NEP and other renewable energy projects implemented across the country. However, the mission can only come to total fruition if all stakeholders in the sector properly delineate their expertise, build capacity and strengthen coordination.

On this note, I will like to commend the REA Governing Board and Management Team, the Managing Director CEO, Engr. Ahmad Salihijo Ahmad, the Head of the Project Management Unit, Ms. Anita Otubu and the entire staff of the Agency. Your passion, innovation, drive and dedication to achieving the objective of complementing the national grid and providing the country with electricity access is indeed admirable. I will also like to implore all stakeholders in the sector to offer their unfettering support to the Federal Government as we take the leadership position in championing a fair and just energy transition for Africa and the rest of the developing world.

Thank you.

**Engr. Abubakar D. Aliyu FNSE, FNICE,  
Honourable Minister of Power**



# GOODWILL MESSAGE

I am honoured to witness this very important engagement between the REA, the State Governments and our developments partners. This is a very important engagement and I must commend the team at the Rural Electrification for initiating this collaborative and knowledge-driven Workshop.

It is my belief that a multi-stakeholder engagement such as this, beyond helping to stimulate growth in our critical sectors, ultimately enables exchange of valuable ideas targeted at national development.

As always, the Ministry of Power continues to provide the needed support for the implementation of all Federal Government policies in the energy sector. I am, therefore, thrilled that our vision of electrifying Nigeria and accelerating national development is shared by critical stakeholders in the states and policy makers in the sector.

This workshop is a testament to the importance of our objectives and our passion to set the ball rolling towards providing reliable electricity in our communities across all states in the federation.

It is also impressive and commendable that the administration of His Excellency, President Muhammadu Buhari is strategically targeting more policies and interventions at the Power Sector some of which are implemented by the Rural Electrification Agency. The Rural Electrification Fund, Nigeria Electrification Project and the Solar Power Naija which is aimed at 5 million solar-based connections across Nigeria through the Economic Sustainability Plan are such valuable initiatives.

Electricity is critical to national development. Reliable and sustainable electricity plays a big part in energizing underserved sectors and rejuvenating unserved communities across the nation. This is why conversations about electricity have always been one of the most critical conversation in this country.

The world over, renewable energy solutions are being deployed to close energy gaps and accelerate development. With the forward-leaning policies and programmes of the Federal Government of Nigeria, the Rural Electrification Agency was set up and mandated to explore the renewable energy option and stimulate the market to enable us to close the energy gap and provide electricity to Nigerians.

The grid continues to provide majority of Nigerians with their energy needs. However, it is obvious that the grid will not adequately cater to the energy needs of Nigeria and Nigerians. Millions of Nigerians lack access to reliable electricity. To change this narrative, we must continue to strategically deploy renewable, off-grid technologies to power Nigeria, one community at a time.

We must continue to collaborate to do all that it takes to ensure that Nigeria's massive renewable energy resources are efficiently utilized to energize communities, schools, businesses and other critical sectors across Nigeria.

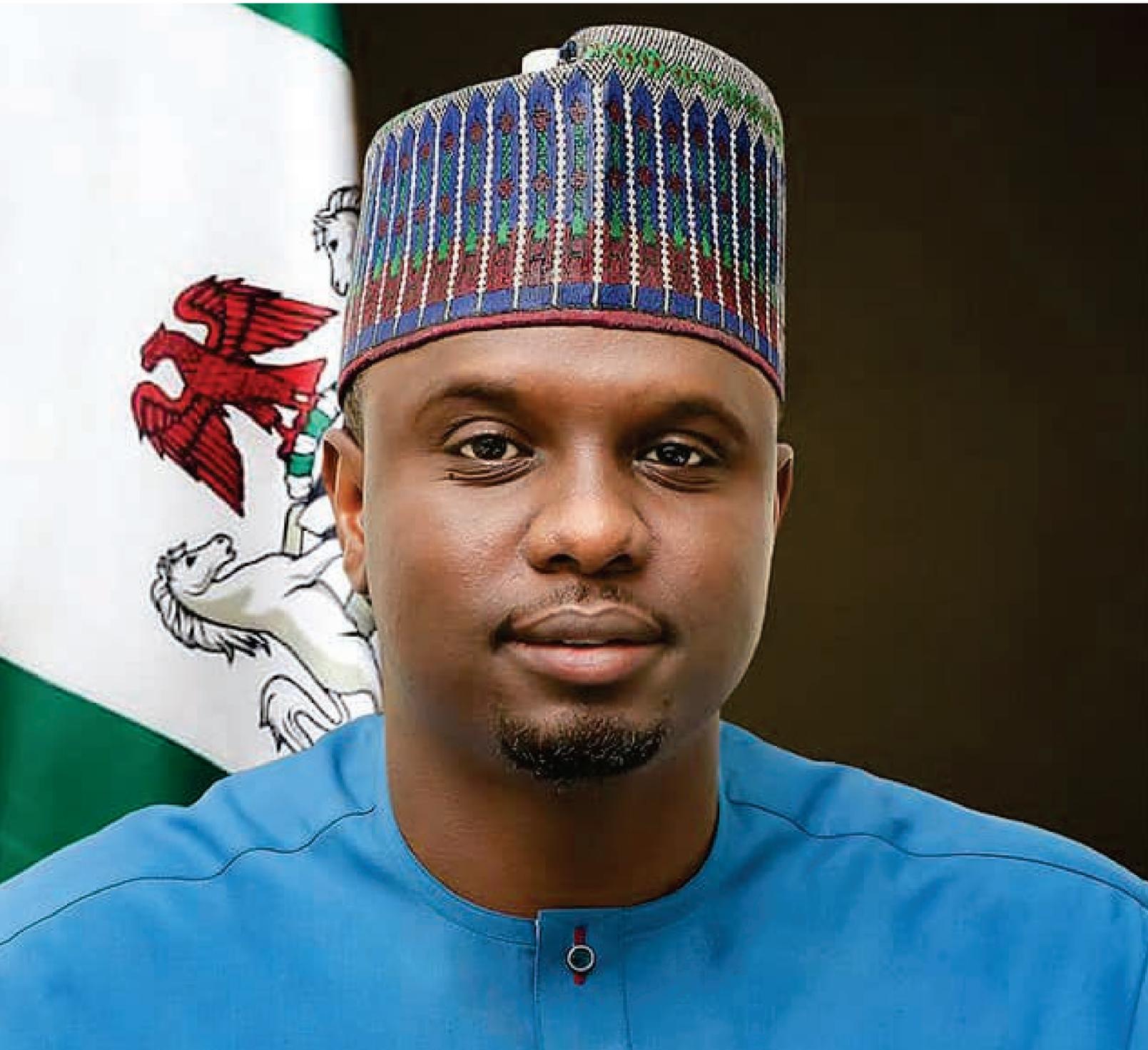
I must commend the commitment of the Rural Electrification Agency in driving change through this paradigm as well as the achievements recorded so far. With this renewed sense of urgency, I am positive that we will achieve even more.

Allow me to conclude by saying that Nigerians are hopeful and confident in our capacity and will to close the energy gap amongst the unserved and the underserved. With the crop of men and women of honour currently pushing this mandate, we shall succeed.

Thank you all. God bless you and God bless the Federal Republic of Nigeria.

**Goddy Jedy-Agba**  
**Honourable Minister of State Power**

Remarks by the Honourable Minister of State for Power at the REA - Stakeholders' Workshop: ' Collaboration with States for Accelerating Rural Electrification '. May 2022



# FOREWARD

The current rate and projections of success in Nigeria's off-grid renewable energy sector clearly exemplifies necessity truly being the mother of invention. The Nigeria Electrification Project (NEP) was borne out of a need for the government of H.E. President Muhammadu Buhari to sustainably tackle the problem of energy access, whilst stimulating economic growth and impacting positively on the lives and livelihoods of the unserved and underserved; who suffer the most from energy poverty and the adverse effects of climate change.

It is with delight therefore that we look at the achievements of the NEP from January 2020 to November 2022 in this report. Beyond being just a photo book, this report is a testament of the far-reaching impact that can be made within a short time through resilience and dedication to duty. The extent of impact as highlighted within was achieved not due to the absence of challenges but in spite of them. Suffice to state that within the period of this report, we faced a global COVID-19 pandemic and its knock-on effects on the world economy and international supply chains, yet with this headwind, the NEP has recorded remarkable results.

I would like to humbly state that, under my leadership, the REA and NEP teams deployed their most important assets; expertise, passion, commitment, and teamwork to turn challenges into opportunities, using their ingenuity to innovate around obstacles and ambiguities to produce high-quality outcomes on the project. Hence, what we now celebrate as project achievements, are not just successes of a project, but that of the

women and men of the REA Project Management Unit who made them happen.

When the Project Management Unit was set up in 2018, high expectations were held for the development outcomes it would produce, being that it was a key pillar of the Power Sector Recovery Programme (PSRP), which in turn was a critical component of the Government's Economic Recovery and Growth Plan (ERGP). With the results being showcased in this report, we can confidently affirm that the NEP has remained on track as it fulfils those expectations. At this point, we can proudly say that the remarkable feats achieved on the project have become a benchmark for the off-grid renewable energy sector across Africa and beyond.

On this note, we wish to share these wins with the World Bank, Africa Development Bank, development partners, government key stakeholders and private sector players who have tirelessly contributed to making these achievements possible through their financial support, technical assistance and partnerships. Inclusive to this list are the industry stakeholders who continue to ensure that our interventions make real impacts in the most remote communities. Please read on and enjoy this dynamic illustration of how the Federal Government of Nigeria through the NEP is 'powering Nigeria, one community at a time'.

**Engr. Ahmad Salihijo Ahmad  
Managing Director/CEO, REA**

ACRONYM	DEFINITION
ACE-TAF	Africa Clean Energy Technical Assistance Facility
AfDB	African Development Bank
ALP	Africa Law Practice
AMI	Advanced Metering Infrastructure
API	Application Programme Interface
ATBU	Abubakar Tafawa Balewa University
BDM	Business Development Manager
BI	Beneficiary Institution
BPP	Bureau of Public Procurement
BUK	Bayero University Kano
CCO	Chief Communications Officer
CEO	Chief Executive Officer
CEIOF	Chief Electrical Inspector of the Federation
COMMS	Communications
COO	Chief Operations Officer
CRM	Customer Relationship Management
DART	Demand Aggregated Renewable Technology
DEV	Development
DisCos	Distribution Companies
EAC	Energy Access Companies
EEP	Energizing Education Programme
ED-CS	Executive Director, Corporate Services
ED-REF	Executive Director, Rural Electrification Fund
ED-TS	Executive Director, Technical Services
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ENGR	Engineer
ENV	Environment
EPC	Engineering Procurement Construction
ERGP	Economic Recovery Growth Plan
E&S	Environmental & Social
EPSRA	Electric Power Sector Reform Act
ESMF	Environmental & Social Management Framework
ESIA	Environmental & Social Impact Assessment

ACRONYM	DEFINITION
ESMP	Environmental & Social Management Plan
FAT	Factory Acceptance Test
FEED	Front-End Engineering Design
FGN	Federal Government of Nigeria
FIN	Finance
FMoE	Federal Ministry of Environment
FMoF	Federal Ministry of Finance
FMoP	Federal Ministry of Power
FNICE	Fellow, Nigerian Institute of Civil Engineers
FNIFE	Fellow, Nigerian Institute of Power Engineers
FNSE	Fellow, Nigerian Society of Engineers
FOREX	Foreign Exchange
PPFMD	Federal Project Financial Management Division
FUAM	Federal University of Agriculture Makurdi
FUNAI	Federal University Ndufu Alike-Ikwo
FUPRE	Federal University of Petroleum Resources, Effurun
GA	Grant Administrator
GBV	Gender Based Violence
GCFR	Grand Commander of the Federal Republic
GEAPP	Global Energy Alliance for People & Planet
GM	General Manager
GRM	Grievance Redress Mechanism
H.E	His Excellency
HMoP	Honourable Minister of Power
HMoSP	Honourable Minister of State Power
HPMU	Head Project Management Unit
ICT	Information and Communication Technology
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical & Electronics Engineers
IERD	International Economic Relations Department
IHP	Integrated Health Programme
IFI	International Financial Institution
ITC	Isolation/Treatment Centre
INTL	International

ACRONYM	DEFINITION
IVA	Independent Verification Agent
JV	Joint Venture
KW	KiloWatts
LRP	Livelihood Restoration Plan
LP	Lease Payment
M&E	Monitoring & Evaluation
MD/CEO	Managing Director/Chief Executive Officer
MGR	Manager
MoU	Memorandum of Understanding
MSCF	Market Scale-up Challenge Fund
MG	Mini grid
MSMEs	Micro Small & Medium Enterprises
MST	Minimum Subsidy Tender
MW	MegaWatts
MYTO	Multi-Year Tariff Order
NDA	Nigeria Defence Academy
NEMSA	Nigeria Electricity Management Services Agency
NEP	Nigeria Electrification Project
NERC	Nigeria Electricity Regulatory Commission
NESI	Nigeria Electricity Supply Industry
PA-NPSP	Power Africa - Nigeria Power Sector Program
NUC	National Universities Commission
OAGF	Office of the Accountant-General of the Federation
OAU	Obafemi Awolowo University
OBF	Output Based Fund
OEO	Original Equipment Owners
OEM	Original Equipment Manufacturer
OFR	Order of the Federal Republic
O&M	Operations & Maintenance
OSM	Open Street Map
PA	Project Accountant
PAD	Project Appraisal Document

ACRONYM	DEFINITION
PAR	Project Appraisal Report
PBG	Performance Based Grant
PHC	Primary Healthcare Centre
PMU	Project Management Unit
POE	Project Owner's Engineer
PROJ	Project
PS-PTL	Private Sector - Power Team Lead
PSRP	Power Sector Recovery Programme
PUE	Productive Use Appliances & Equipment
PV	Photovoltaic
PwC	PricewaterhouseCoopers
QCBS	Quality Cost-Based Selection
RACI	Responsible Accountable Consulted & Informed
RBF	Results Based Financing
REA	Rural Electrification Agency
RESIP	Rural Electrification Strategy Implementation Plan
RfB	Request for Bid
RfP	Request for Proposal
RMI	Rocky Mountain Institute
RRD	Renewable Energy & Rural Power Access Department
SCADA	Supervisory Control & Data Acquisition
SEforALL	Sustainable Energy for All
SHS	Solar Home Systems
SMEs	Small & Medium Enterprises
STEM	Science Technology Engineering & Mathematics
TA	Technical Assistance
TA	Technical Annex
TCN	Transmission Company of Nigeria
UNILAG	University of Lagos
USAID	United States Agency for International Development
VC	Vice Chancellor
WB	World Bank

# 3 KEY STAKEHOLDERS' MESSAGES



**Engr. Ahmad Zakari**  
SSA to the President on Infrastructure

"The REA is pioneering some of the most exciting models for electrification in the world. Nigeria through the REA has become a laboratory for testing and executing exciting programs that are changing lives and adding economic capacity to the country. Impressed at the current progress and looking forward to seeing the organization continue to evolve and grow".



**Engr. Aliyu Tukur Tahir, FNSE, FNIPE**  
MD/CEO & CEOF, NEMSA

"The Nigeria Electrification Project (NEP) implemented by Rural Electrification Agency is a laudable initiative by the Federal Government. It has not only contributed to delivering access to electricity in Nigeria, but also accelerated electricity infrastructure development, especially in the rural areas where access to energy is a challenge. Nigerian Electricity Management Services Agency (NEMSA) as a proud stakeholder is ensuring compliance of the projects to extant Technical Regulations and Standards, a key to long-term sustainability of the NEP".



**Arsh Shama**  
Task Team Lead, WB-NEP

"NEP is the World Bank's flagship energy access engagement that serves as a model for many sub-Saharan countries for its innovative yet flexible design. It presents the culmination of several factors including capable implementing entity, clear regulation, and a driven private sector".



**Jon Exel**  
Co-Task Team Lead, WB-NEP

"While the Nigerian government targets to tackle the electricity issues in the long term, the companies under the NEP's OBF & PBG are taking most of the risk and driving the exponential growth curve towards sustainability. This is what we see the NEP supporting in Nigeria."



**Aisha Omar**  
Director IERD, FMoF

"The Nigeria Electrification Project (NEP) is a very good initiative by the Federal Government and it has so far reduced the electricity deficit in the rural communities through the deployment of renewable energy. The project execution has also been compliant with the Nigeria's financial rules and regulations"



**Dafe C. Akpeneye**  
Commissioner Legal, NERC

"The Nigeria Electrification Project ("NEP") has proven to be a commendable policy initiative with a focus on improving energy access in Nigeria. The implementation of the initiative has been adequately aligned with the legal/regulatory frameworks in the Nigerian Electricity Supply Industry and the tiered approach has resulted in projects being deployed from universities to improve availability of supply to unserved locations with the aid of solar hybrid mini-grids and standalone solar home systems. Nigeria's Mini-Grid Regulations has received commendations as being one of the best in Africa and one of its successes has been demonstrated with the administration of the NEP."



**Chigoziri Egeruoh**  
Task Team Lead, AfDB-NEP

"The Nigeria Electrification project is a laudable initiative of the federal government of Nigeria, implemented by REA with which the Bank is happy and proud to partner with them. This initiative is in line with the Bank's strategic objectives of 'Light up and Power Africa' and will support the efforts to bridge the electricity access gap in Nigeria".



**Brook Adam, PS&PTL**  
USAID/Nigeria

"Power Africa is excited with the progress achieved under the NEP in a short period of time. NEP has clearly shown there are more jobs in renewables than in fossil fuels, through the various initiatives to improve energy access. NEP has clearly proven to be a great program that should be accelerated, whether to improve healthcare electrification, cold storage or overall productive use. At Power Africa we do not follow the market, we try to accelerate it, hence a viable partnership with the REA and the NEP program".



**Abba Sule**  
Director EIA, FMoE

"The concept and programmes of the Nigeria Electrification Project (NEP) has proven to be a veritable way of solving the energy crisis that engulfed Nigeria over four decades ago, which has contributed largely to the incidence of poverty by paralyzing industrial and commercial activities especially in the rural communities. I must say that since inception, the project has surpassed our expectations especially the solar mini grid projects. I must also add that the Energizing Education Programme is another of the NEP that deserves commendation".

I wish the project well as we together strive to achieve our energy goals.



**Danladi Korau Shuiabu**  
Director FPFMD, OAGoF

"The Nigeria Electrification Project (NEP) is an exemplary government policy that is impacting the lives and economic well-being of rural dwellers. The project is providing affordable energy with its multiplier effect and funds are being judiciously deployed".



# 4 NIGERIA ELECTRIFICATION PROJECT

The Nigeria Electrification Project (NEP) is an initiative of the Federal Government of Nigeria (FGN) implemented by the Rural Electrification Agency (REA) to accelerate the off-grid renewable energy private sector market and bridge the overall energy access deficit. The NEP aims to achieve this by providing electricity to households, Micro, Small and Medium Enterprises (MSMEs), educational and healthcare facilities in unserved and underserved rural communities through the deployment of solar hybrid mini grids, Solar Home Systems (SHS), captive hybrid power plants and Energy Efficient Productive Use Appliances and Equipment (PUE).

In 2018, the FGN secured \$550m financing from both the World Bank (\$350m) and the African Development Bank (\$200m) for the implementation of the NEP in alignment with the Rural Electrification Strategy and Implementation Plan (RESIP) and the Power Sector Recovery Plan (PSRP).

The World Bank's \$350m is being implemented through four (4) components, which are the Solar Hybrid Mini Grid, Standalone Solar Home Systems (SHS), Energizing Education Programme Phase II (EEP II) and Technical Assistance (TA); while the AfDB's \$200m is being implemented through the Solar Hybrid Mini Grid, Energy Efficient Productive Use Appliances and Equipment (PUE), Energizing Education Programme Phase III (EEP III) and Technical Assistance components.

Through these five (5) consolidated components, the NEP was designed to provide new or improved electricity access to approximately 2.5 million people, 705,000 households, 90,000 MSMEs, healthcare facilities, 15 Universities and 3 associated Teaching Hospitals, while deploying 22,692 productive use equipment and appliances to mini-grid communities for demand stimulation and sustainability.

Since its effectiveness in 2019, the NEP has been managed by the Project Management Unit (PMU) which comprises of consultants with expertise in various technical fields, seconded staff from the REA, Office of the Accountant General of the Federation (OAGF), as well as a team of support staff.

For a transparent and methodical implementation of projects under the NEP, the PMU also engages a robust monitoring, evaluation, learning and due diligence framework which involves the engagement of a web-based Monitoring and Evaluation (M&E) platform, Independent Verification Agent (IVA), Grant Administrator (GA), Project Owners Engineer (POE) and Legal Support etc.



# NEP ACHIEVEMENTS



**~5,000,000**  
PEOPLE ELECTRIFIED



**1,021,510**  
TOTAL CONNECTIONS



**52MW**  
TOTAL PV CAPACITY DEPLOYED



**36**  
STATES + FCT IMPACTED



**995,396**  
TOTAL SHS DEPLOYED



**67**  
MINI GRIDS COMPLETED



**26**  
CONTAINERIZED SOLAR SYSTEMS  
DEPLOYED TO HEALTH FACILITIES



**15**  
PUE's DEPLOYED INCLUDING  
FIRST OF ITS KIND GREENHOUSE



**569**  
APPLICATIONS RECEIVED



**267**  
GRANT AGREEMENTS  
SIGNED



**7**  
EPC CONTRACTS SIGNED TO  
POWER SEVEN UNIVERSITIES



**8**  
RFB DEVELOPED FOR  
EEP PHASE III



**328,765**  
FEMALE HEADED  
HOUSEHOLDS ELECTRIFIED



**1,206**  
FEMALE HEADED  
MSMEs ELECTRIFIED



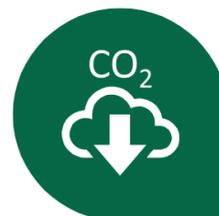
**\$75m**  
TOTAL AMOUNT DISBURSED



**~\$392m**  
TOTAL AMOUNT COMMITTED

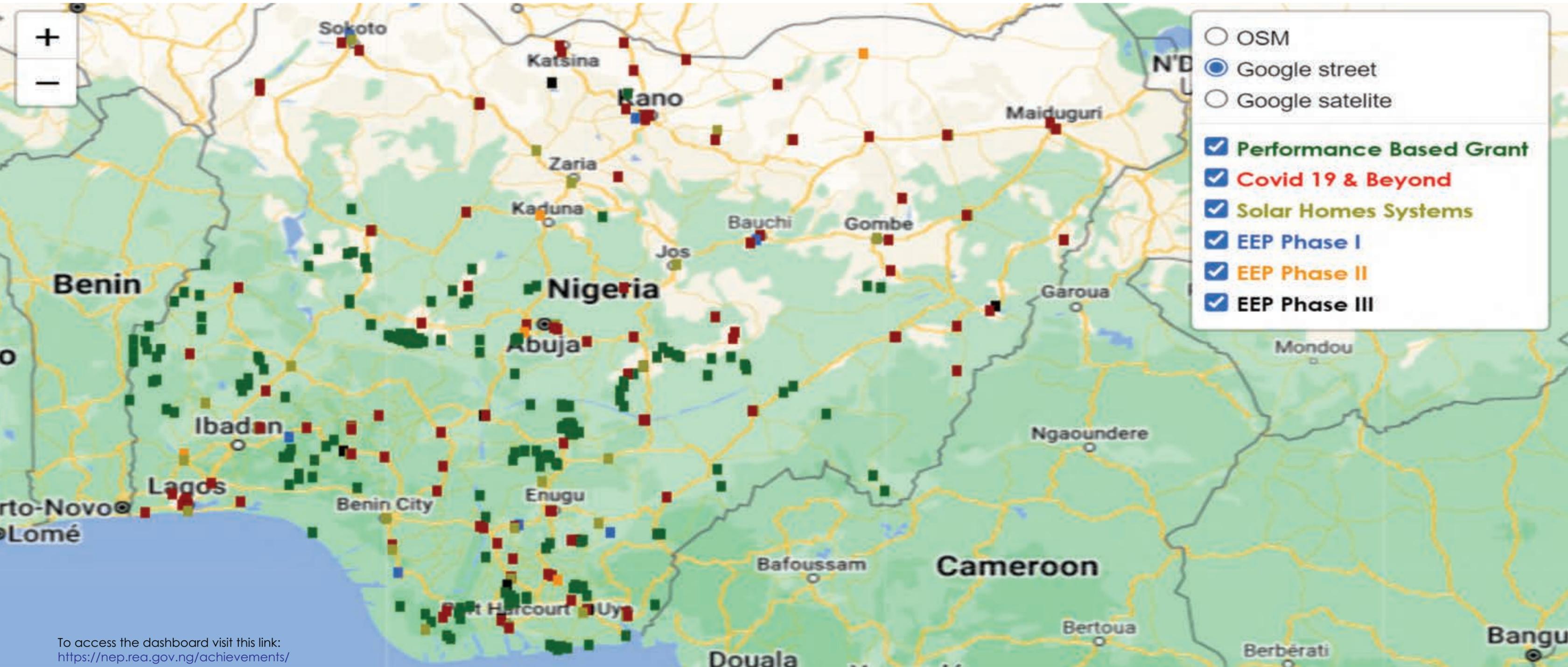


**1,151**  
JOBS CREATED



**249,193**  
TONNES OF CO<sub>2</sub> eq. SAVED

NEP Completed and Some Ongoing Projects Geospatial Dashboard



To access the dashboard visit this link:  
<https://nep.rea.gov.ng/achievements/>

# 5 IMPLEMENTATION REPORT

## COMPONENT 1: SOLAR HYBRID MINI GRIDS FOR ECONOMIC DEVELOPMENT

The solar hybrid mini grid component aims to support the development of private sector isolated and interconnected mini grids across Nigeria with a total fund allocation of \$195m. The component targets to electrify 405,000 households, 50,000 MSMEs, 100 Isolation and Treatment Centres (ITCs) as well as 400 Primary Healthcare Centres (PHCs). The objectives of this component are to provide clean, safe, affordable electricity to unserved and underserved communities; and increase business productivity.

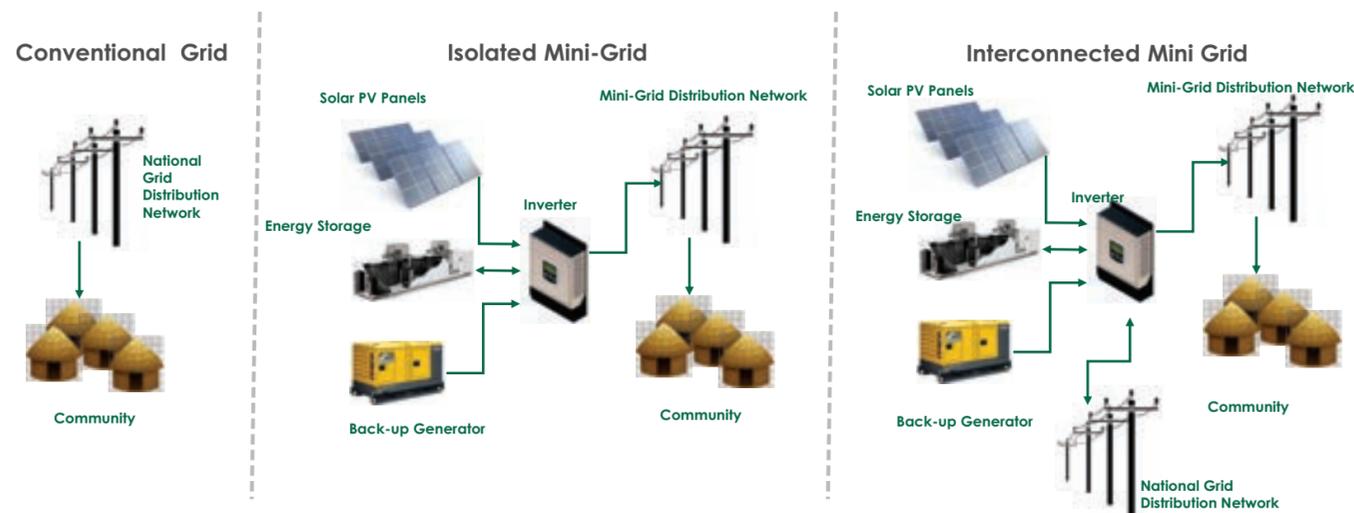
As part of the component's strategy for continuous engagement with grantees, periodic roundtable events are organized for information sharing and brainstorming on solutions to challenges developers encounter in the course of deploying mini grids. From January 2020 till date, a total of 8 mini grid Roundtable events have been held.

These roundtable events transitioned from physical gatherings to

virtual meetings following the outbreak of the COVID-19 pandemic. As a result of these events, REA-NEP was able to connect developers with financiers interested in investing in the mini grid industry; assign dedicated fast-track platforms and personnel to NEMSA, Federal Ministry of Environment as well as NERC; and make substantial changes to the component's design and grant amount, which led to the significant increase in pipeline connections, projections and disbursements.

The component consists of three subcomponents:

- Performance Based Grant (PBG)
- Minimum Subsidy Tender (MST)
- COVID-19 & Beyond Initiative

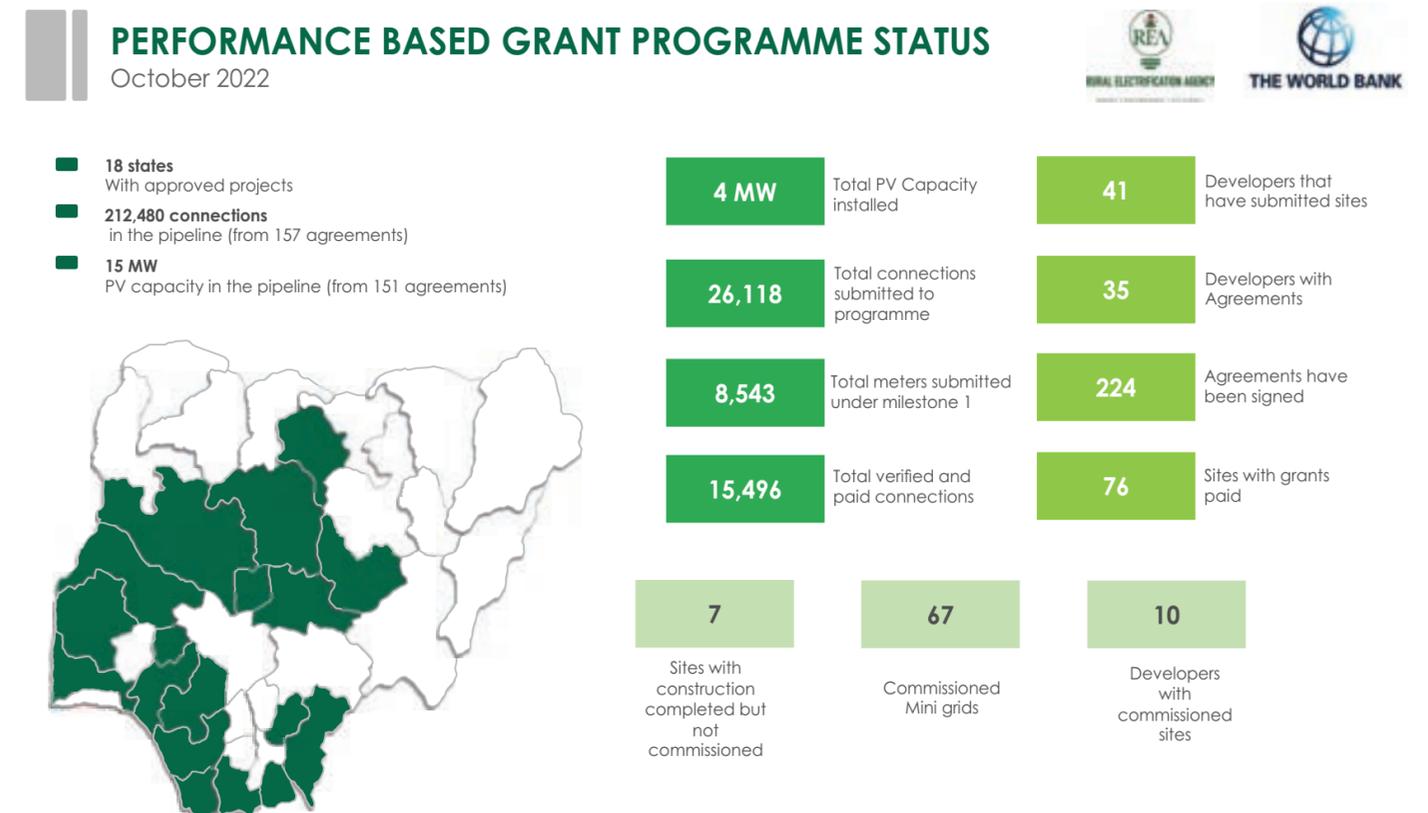


### a. Performance Based Grant (PBG)

The Performance-Based Grant (PBG) subcomponent with a total of \$48m allocated in funds aims to support the development of mini grids to unserved rural and peri-urban communities on a rolling basis.

The communities are identified, verified and sensitized by mini grid developers who may also use this window to support development of pre-planned projects in their portfolios. Eligible projects are solar hybrid systems in unserved and underserved areas, with generation capacity of not more than 1MW.

Following the process of continuous review of the NEP's design and implementation strategy, in October 2021, a number of changes were made to the sub-component which included; the increase in grant amount from US\$350 to US\$600 per connection, the acceptance of Interconnected Mini Grids, the inclusion of Small & Medium Enterprises (SMEs) and Micro, Small & Medium Enterprises (MSMEs) (for urban, peri-urban and rural) areas as well as the adoption of a 3-Milestone disbursement process.

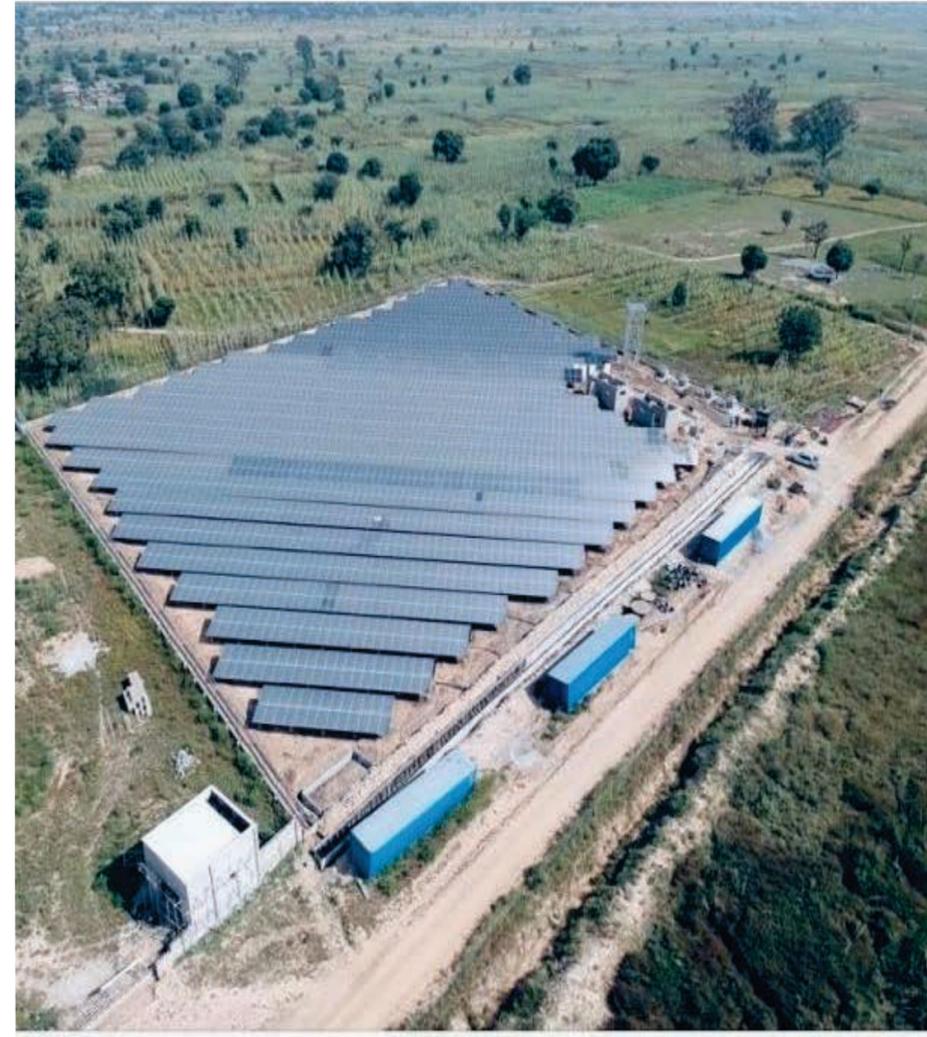


**Disclaimer:** Under PBG, developers identify States themselves

Signing ceremonies of PBG grant agreements with various mini grid developers



Site visit by the Honourable Minister of Power, Engr. Abubakar D. Aliyu FNSE, FNICE to the 1MW interconnected solar hybrid mini grid project located in Zawaciki, Kumbotso LGA, Kano State



Completed and commissioned solar hybrid minigrid projects under PBG sub-component - Northern States



Shimankar Community, Plateau State (GVE Projects Ltd)



Sabon Rijiya Community, Niger State (Nayo Tropical Technology Ltd)



Rokola Community, Niger State (PowerGen Renewable Energy Nig. Ltd)



Bukoro Community, Kwara State (Havenhill Synergy Ltd)



Fadama Bauna Community, Nasarawa State (Husk Power Energy Systems Nig. Ltd)



Dancitagi Community, Niger State (PowerGen Renewable Energy Nig. Ltd)



Sosa Community, Niger State (PowerGen Renewable Energy Nig. Ltd)



Petti Community, FCT, Abuja (Nayo Tropical Technology)



Makami Community, Kaduna State (ACOB Lighting Technology Ltd)



Gbade Community, Niger State (PowerGen Renewable Energy Nig. Ltd)



Dukugi Community, Niger State (PowerGen Renewable Energy Nig. Ltd)



Ebangi Community, Niger State (PowerGen Renewable Energy Ltd)



Bokani Community, Niger State (Nayo Tropical Technology)



Old Chikuku Community, FCT, Abuja (Nayo Tropical Technology)



Yelwa Community, Nasarawa State (Husk Power Energy Systems Nig. Ltd)



The United States Special Presidential Envoy for Climate, Senator John Kerry visited a pilot PBG interconnected mini grid project in Wuse Market, Abuja. The MD, CEO REA, PA-NPSP Reps., MD GVE, AEDC Reps., amongst other senior delegation were also present.



Completed and commissioned solar hybrid minigrid projects under PBG sub-component - Northern States



Kiguna Community, Nasarawa State (Husk Power Energy Systems Nig. Ltd)



Gbangba Community, Niger State (ENGIE Energy Access Nig. Ltd)



Gbara Community, Niger State (PowerGen Renewable Energy Nig. Ltd)



Moshi-Gbofa Community, Kwara State (Havenhill Synergy Ltd)



Sabon Gida Community, Nasarawa State (Husk Power Energy Systems Nig. Ltd)



Kilankwa II Community, FCT, Abuja (Nayo Tropical Technology Ltd)



Ma'agi Bukun Community, Niger State (PowerGen Renewable Energy Nig. Ltd)



Gidan Buba Community, Nasarawa State (Husk Power Energy Systems Nig. Ltd)



Nantu Community, Niger State (PowerGen Renewable Energy Nig. Ltd)



Rukubi Community, Nasarawa State (Husk Power Energy Systems Nig. Ltd)



Kpanbo Community, Niger State (PowerGen Renewable Energy Nig. Ltd)



Igbador Community, Nasarawa State (Husk Power Energy Systems Nig. Ltd)



Kilankwa I Community, FCT, Abuja (Nayo Tropical Technology Ltd)



Gwane Community, Kwara State (Havenhill Synergy Ltd)



Idadu Community, Niger State (PowerGen Renewable Energy Nig. Ltd)



Akura Community, Nasarawa State (Husk Power Energy Systems Nig. Ltd)



Ndejiko Community, Niger State (PowerGen Renewable Energy Nig. Ltd)



Sa'achi Community, Niger State (PowerGen Renewable Energy Nig. Ltd)

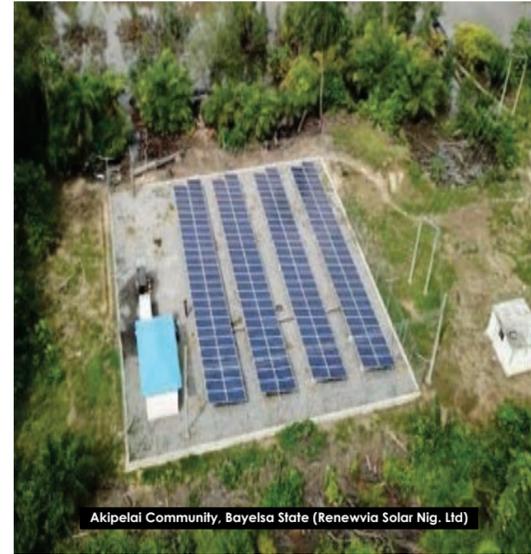
Completed and commissioned solar hybrid minigrid projects under PBG sub-component - Southern States



Obadore Community, Ondo (ACOB Lighting Technology Ltd)



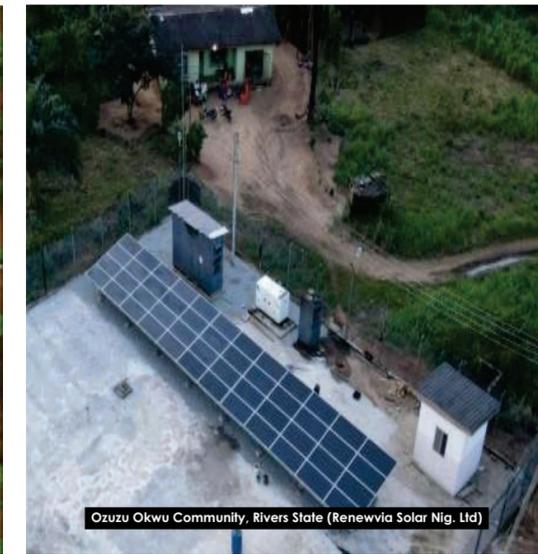
Ekong Anaku Community, Cross River State (Renewvia Solar Nig. Ltd)



Akipelal Community, Bayelsa State (Renewvia Solar Nig. Ltd)



Adafia Community, Oyo State (Havenhill Synergy Ltd)



Ozuzu Okwu Community, Rivers State (Renewvia Solar Nig. Ltd)



Lomileju Community, Ondo State (A4&T Power Solutions Ltd)



Arget Community, Oyo State (Havenhill Synergy Ltd)



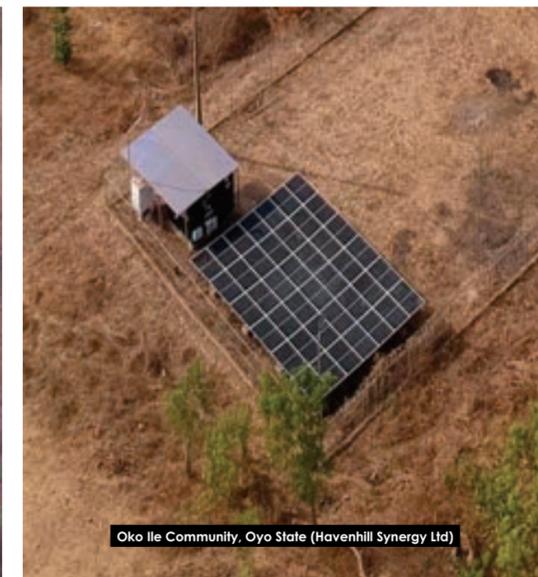
Sanni Sala Community, Oyo State (Havenhill Synergy Ltd)



Ugbo-Nia Community, Ondo State (A4&T Power Solutions Ltd)



Alaropo Nia Community, Oyo State (Havenhill Synergy Ltd)



Oko Ile Community, Oyo State (Havenhill Synergy Ltd)



Bendeghe-Afi Community, Cross River State (Renewvia Solar Nig. Ltd)



Emeroke Community, Akwa-Ibom State (Renewvia Solar Nig. Ltd)

Completed and commissioned solar hybrid minigrid projects under PBG sub-component - Southern States



Okerete Community, Oyo State (Havenhill Synergy Ltd)



Kofeogun Community, Oyo State (Havenhill Synergy Ltd)



Oloibiri Community, Bayelsa State (Renewvia Energy Ltd)



Igbori, Community, Oyo State (Havenhill Synergy Ltd)



Elekonkan Community, Oyo State (Havenhill Synergy Ltd)



Ayegun Wasimi Community, Oyo State (Havenhill Synergy Ltd)



Balep Community, Cross River State (Renewvia Solar Nig. Ltd)



Abuja Leather Community, Oyo State (Havenhill Synergy Ltd)



Ahara Dada Community, Oyo State (Havenhill Synergy Ltd)



Orita Orisumbare Community, Oyo State (Havenhill Synergy Ltd)



Olokoto Community, Oyo State (Havenhill Synergy Ltd)



Opu Community, Cross River State (Renewvia Solar Nig. Ltd)

## List of qualified developers under the PBG

S/N	COMPANY NAME
1.	A4&T POWER SOLUTIONS LTD.
2.	ACOB LIGHTING TECHNOLOGY LTD.
3.	ASHIPA ELECTRIC LTD.
4.	BLUE CAMEL CONSULT/BAGAJA RENEWABLES LTD.
5.	CEESOLAR ENERGY LTD.
6.	COMMUNITY ENERGY SOCIAL ENTERPRISE LTD. (CESEL)
7.	DARWAY COAST NIGERIA LTD.
8.	ENGIE ENERGY ACCESS NIGERIA LTD.
9.	EVERLINK TELESAT NETWORK LTD.
10.	GVE PROJECTS LTD.
11.	HAVENHILL SYNERGY LTD.
12.	HUSK POWER ENERGY SYSTEMS NIGERIA LTD.
13.	LEADING DIAGONAL ENGINEERING NIG. LTD.
14.	MASKH NIGERIA LTD.
15.	NAYO TROPICAL TECHNOLOGY
16.	NEBULAR ENGINEERING SOLUTIONS LTD.
17.	NEWS ENGINEERING NIGERIA LTD.
18.	NEXGEN ENERGY AND ALLIED SERVICE LTD.
19.	NXT GRID B.V
20.	PRADO POWER LTD.
21.	PRIVIDA POWER LTD.
22.	RENEWVIA SOLAR NIGERIA LTD.
23.	RIVET ENGINEERING LTD.
24.	SANDSTREAM NIGERIA LTD.
25.	SOLAD INTEGRATED POWER SOLUTIONS LTD.
26.	SOLMENZ ENGINEERING NIGERIA LIMITED
27.	SOLONIC ENERGY LTD.
28.	VENTURA LOGISTICS SERVICES LTD.
29.	VERTMANCE ENGINEERING & CONSTRUCTION LTD.
30.	VESSELNET INTEGRATED SERVICE LTD.
31.	WAVE-LENGTH INTEGRATED POWER SERVICES LTD.
32.	WINDGEN (POWERGEN) RENEWABLE ENERGY NIGERIA
33.	ZYLAB TECHNOLOGIES NIGERIA. LTD.

## b. Minimum Subsidy Tender (MST)

This sub-component has a total allocation of \$70m funded by both the World Bank (WB) and the African Development Bank (AfDB). The MST aims to electrify a total of 293 pre-selected communities that have high economic growth potential through a competitive tender, ensuring that capital subsidies are granted to mini-grid developers with business plans requiring the least amount of subsidy to enable them operate on a commercially viable basis while ensuring that their tariffs are affordable to average consumers.

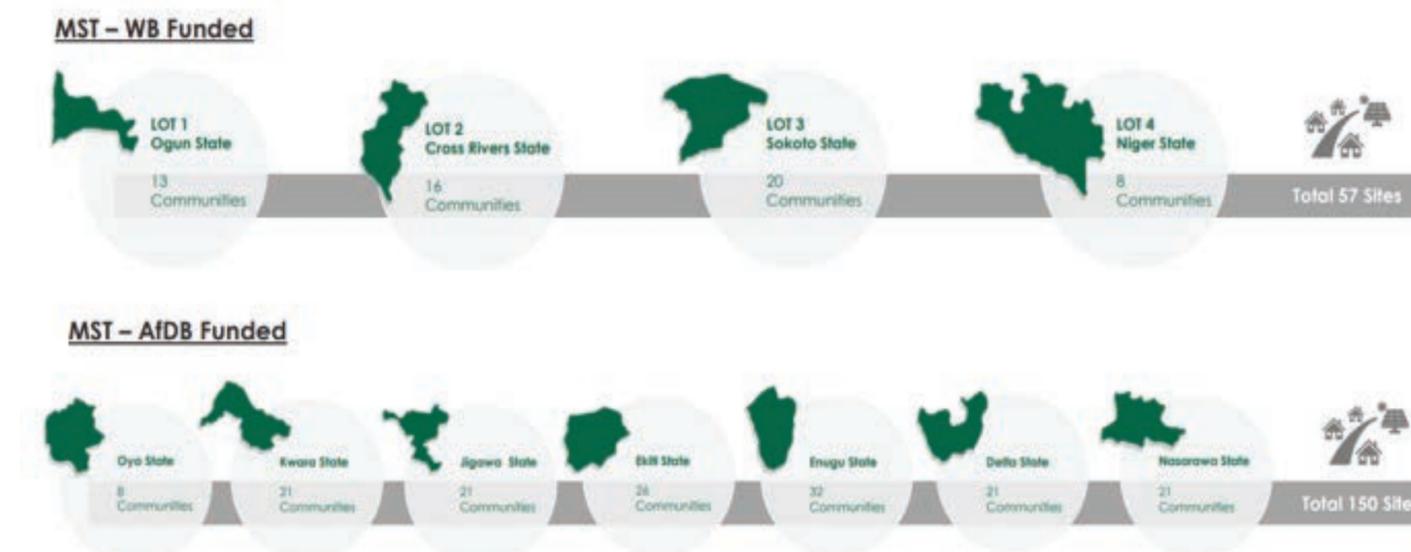
As part of market intelligence which the NEP offers to the developers, the communities to be electrified under the MST are identified, verified, and sensitized. These activities are done through rigorous and robust Electrification Verification, Energy Audit and comprehensive Community Engagement exercises conducted by the REA-NEP Team.

Under the World Bank funded MST, 143 communities have been identified for electrification in two (2) phases with a funding allocation of \$25m. Phase 1 has prioritized 57 sites, which have

been tendered and spread across the following States: Cross River, Niger, Ogun, and Sokoto States. These sites have been packaged into Lots, by State, to encourage economies of scale in procurement and efficiency in operations, maintenance and management. While the Phase one Request for Proposal (RfP) has been successfully issued to the preferred bidders, the remaining sites are scheduled to be tendered in the second phase.

Similarly, the AfDB MST with a funding allocation of \$45m has a pipeline of about 150 communities for electrification. The priority States targeted are; Nasarawa, Oyo, Kwara, Enugu, Jigawa, Delta and Ekiti with plans to expand across all six (6) geo-political zones in Nigeria.

Under the AfDB MST, Load Profiling, System Sizing and Financial Modelling of 150 sites spread across seven (7) States (approx. 10MW) has been successfully completed with ten (10) interconnected mini grid sites selected in collaboration with Abuja and Ibadan DisCos. The RfP is set in motion to be launched.



MST Community Engagement



Plateau State (WB)



Ogun State (WB)



Cross River State (WB)



Niger State (WB)



MST Community Engagement



Sokoto State (WB)



Oyo State (AfDB)



Nasarawa State (AfDB)



Kwara State (AfDB)



**MST Community Engagement**



**Delta State (AfDB)**



**Jigawa State (AfDB)**



**Ekiti State (AfDB)**



**Enugu State (AfDB)**



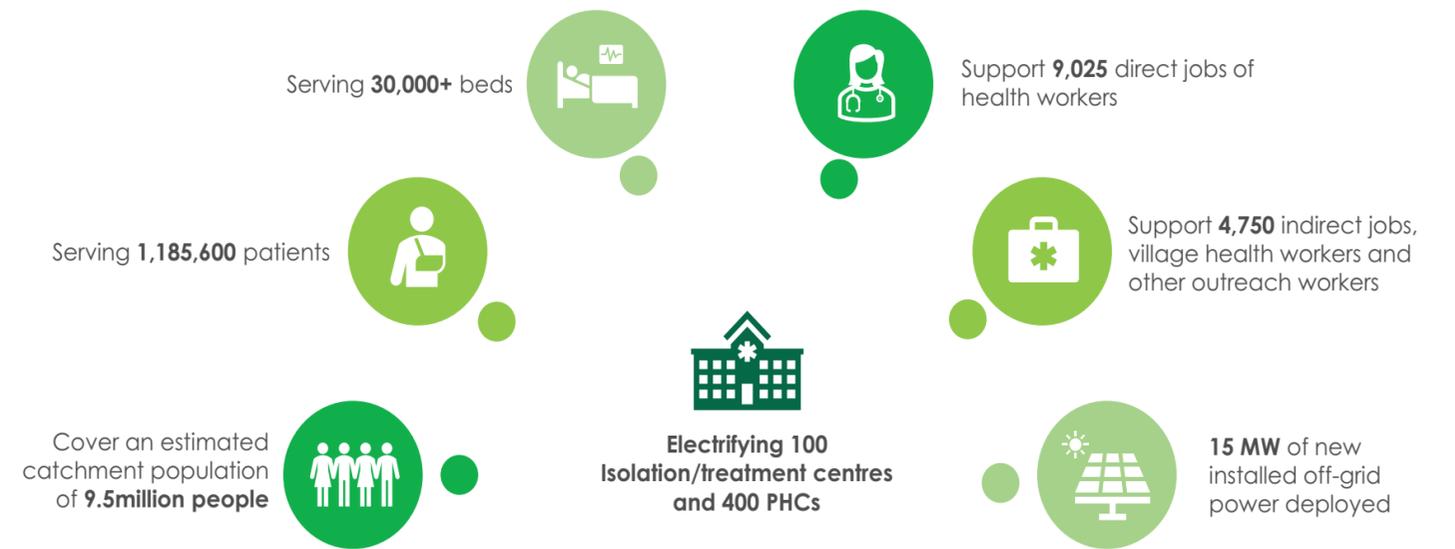
**c. COVID - 19 & Beyond Initiative**

COVID-19 & Beyond Initiative was conceptualized in view of the outbreak of the COVID-19 pandemic which demanded a response for the strengthening of capabilities of healthcare facilities across Nigeria. The subcomponent aims to provide power supply for equipment (ventilators, cooling systems, laboratory devices etc.) used in the testing and treatment of medical conditions as well as COVID 19 related cases. This objective will be achieved through solar hybrid systems providing clean, reliable and sustainable power to 100

Isolation/Treatment Centers and 400 Primary Healthcare Centers (PHCs).

Phase 1 of the sub-component aims to supply 50KW solar hybrid power plants each to 100 ITCs across Nigeria through a selective tendering process. While, Phase 2 targets the provision of solar power supply to 400 Primary Healthcare Centres and their host communities across the six geopolitical zones in Nigeria.

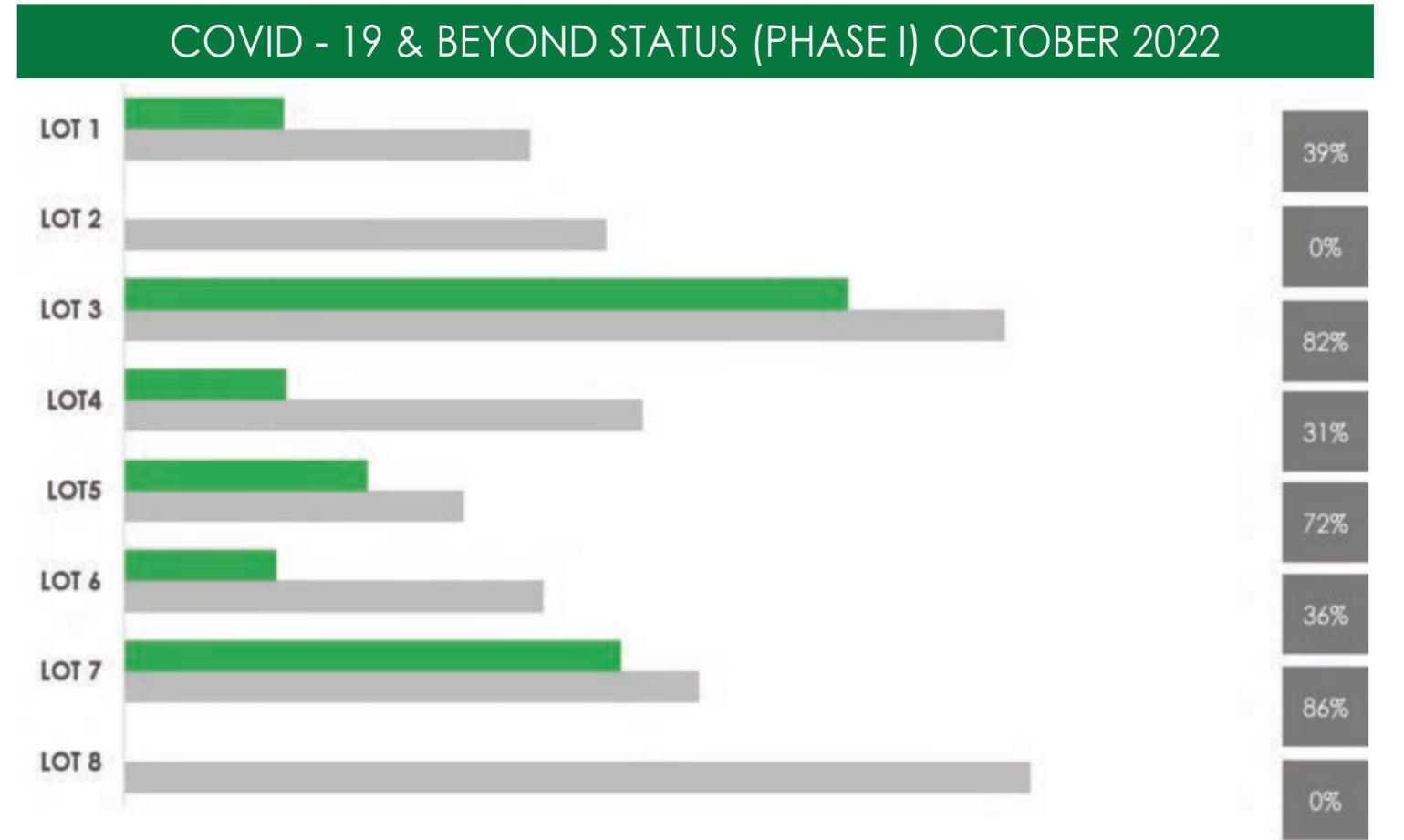
**COVID - 19 & Beyond Projected Impact**



COVID - 19 & Beyond Initiative contract agreement signing with various contractors



COVID - 19 & Beyond Initiative Progress Report



● Total Contract Target (cost inclusive) ● Current Rate of Completion (percentage)

Containerized Solar Hybrid Systems (50kW each), deployed at Health Facilities across the Northern States



Containerized Solar Hybrid Systems (50kW each), deployed at Health Facilities across the Southern States



Ogoli General Hospital (Havenhill Synergy Limited)



Auchi General Hospital, Edo (Havenhill Synergy Limited)



Niger Delta University Teaching Hospital (Havenhill Synergy Limited)



Federal Medical Center, Yenegoa (Havenhill Synergy Limited)



General Hospital Ikot Ekpene (Havenhill Synergy Limited)



University of Calabar Teaching Hospital (Havenhill Synergy Limited)



Ibom Specialist Teaching Hospital (Havenhill Synergy Limited)



Federal Medical Center Asaba (Havenhill Synergy Limited)



Irua Specialist Hospital, Irua (Havenhill Synergy Limited)



Rivers State University Teaching Hospital (Havenhill Synergy Limited)



University of Port Harcourt Teaching Hospital (Havenhill Synergy Limited)



Ikot General Hospital, Ikot (Havenhill Synergy Limited)



Nigerian Navy Reference Hospital (Havenhill Synergy Limited)



Delta State University Teaching Hospital (Havenhill Synergy Limited)



COVID 19 & Beyond Phase I project in Ibadan Specialist Hospital

### COVID 19 & Beyond (Phase II) progress

Towards ensuring that the PHCs under Phase 2 of the sub-component are electrified sustainably and in accordance with industry standards, the REA-NEP in June 2022 signed a pact with the USAID's Integrated Health Program (IHP) - a flagship program aimed at strengthening the health system, increasing access to and improving quality of primary health care services across Nigeria. Furthermore, PA-NPSP, funded by the USAID provided technical support to the NEP with regards to the development of a Sustainability Plan for the PHCs to be deployed under Phase 2. At the moment, activities are underway towards the commencement of geo-spatial mapping for the PHCs to be electrified under Phase 2 alongside other critical pre-project deployment activities.



HPMU - NEP with the USAID senior delegation



HPMU - NEP signing the IHP pact



Chief of Party PA-NPSP delivering his remarks



Reps. of USAID, IHP, Power Africa, NPSP, MG Dev. and REA



55kW Solar Hybrid Minigrid at Egbeke/Nwuba Community, Rivers State

## Component 1: Fact Sheet

67

SOLAR HYBRID MINI GRIDS COMPLETED AND COMMISSIONED

26,144

TOTAL CONNECTIONS THROUGH MINI GRIDS

5MW

PV CAPACITY OF RENEWABLE ENERGY INSTALLED

26

CONTAINERIZED SOLAR SYSTEMS DEPLOYED TO HEALTH FACILITIES

130,720

PEOPLE IMPACTED

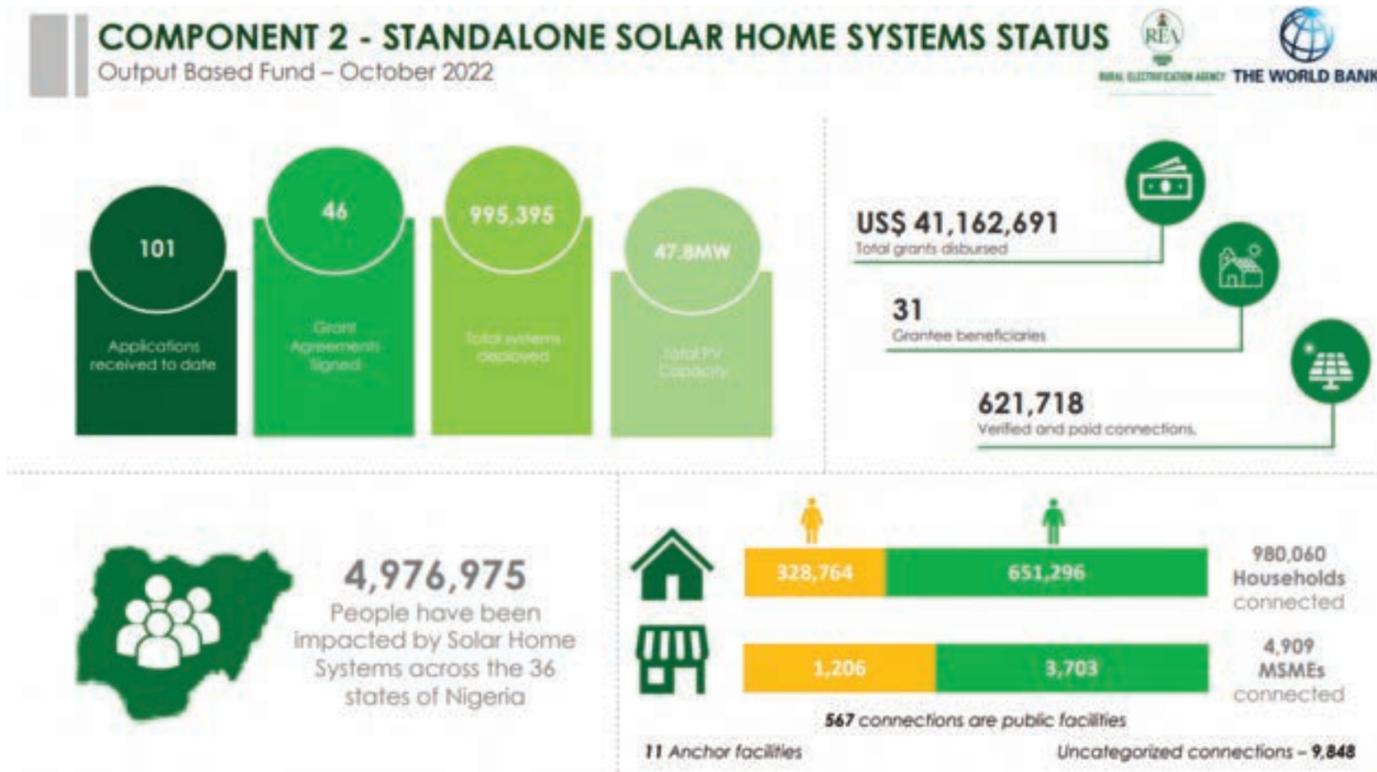
## COMPONENT 2 (WB): STANDALONE SOLAR HOME SYSTEMS FOR HOUSEHOLDS & MSMEs (SHS)

The Solar Home Systems (SHS) component with a total fund allocation of \$75m was designed to provide 300,000 Households and 40,000 MSMEs in unserved and underserved communities across Nigeria with access to quality energy services. The component's cross-cutting objective is to significantly scale up the private sector market for SHS in Nigeria and support the affordability of these systems to the end user.

The SHS component consists of two (2) sub-components namely;

- Output Based Fund (OBF)
- Market Scale-Up Challenge Fund (MSCF)

Towards ensuring the seamless achievement of the component's targets, periodic roundtable events are held with the grantees towards progress and knowledge sharing as well as addressing challenges. From January 2020 till date, 6 roundtable events have been held both physically and virtually as a result of the outbreak of the COVID 19 pandemic. These roundtable events recorded successes particularly in respect of clarifying the claims verification process to grantees and informing them on the strategic changes that were made to the component's design to the benefit of both grantees and beneficiaries. This has significantly increased the rate of disbursement on the component.



### a. Output Based Fund (OBF)

The OBF sub-component has a fund allocation of \$60m to provide fixed incentive grants of up to 60% for the retail cost of SHS to the grantees (taking a 20% end-user benefit into consideration) for each eligible system installed and verified. The application for the OBF is on a rolling basis and was designed to enable the grantee companies to finance the required investment in people, training, advertising and logistics, inclusive of gender workforce integration as informed by the NEP's gender framework.

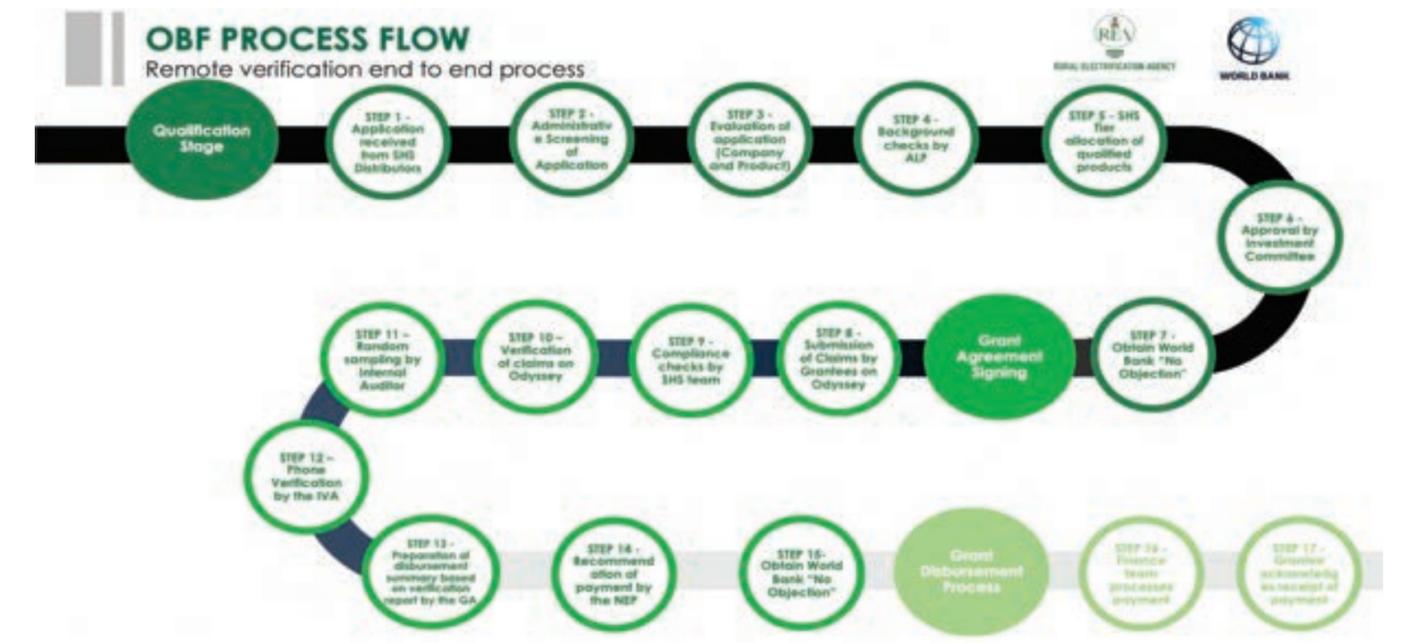
In view of the rise in macro-economic factors such as inflation and manufacturing cost of solar components as well as the necessity for increasing the rate of efficiency and disbursement under the component, significant changes were made to the OBF design in October 2021. These changes include;

- The increase of the benchmarked nominal price of systems across the different tiers of the sub-component from a

20 - 40% rate to a 40 - 60% rate with 20% marked as a price discount to the end users. The increased grant rate was implemented to steer grantees towards deploying SHS units to peri-urban and rural areas in unserved and underserved communities. The rates were revised to also increase affordability of SHS kits to the end users.

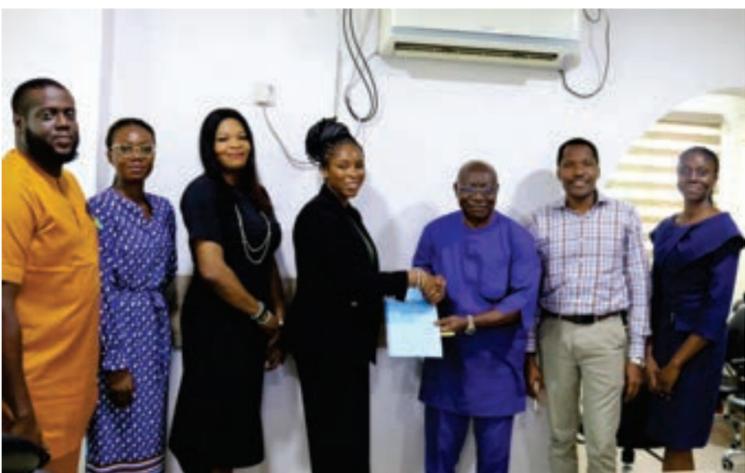
- The Remote Verification of claims through the linking of grantees' API/CRM with a web-based data monitoring and evaluation platform - Odyssey, as a result of the low verification rates which the ab initio physical verification by the Independent Verification Agent recorded.

The changes to the sub-component's design shortened the end-to-end process from Qualification to Disbursement which contributed towards the deployment of over 900,000 SHS to households, MSMEs and public facilities, exponentially exceeding the 300,000 target.

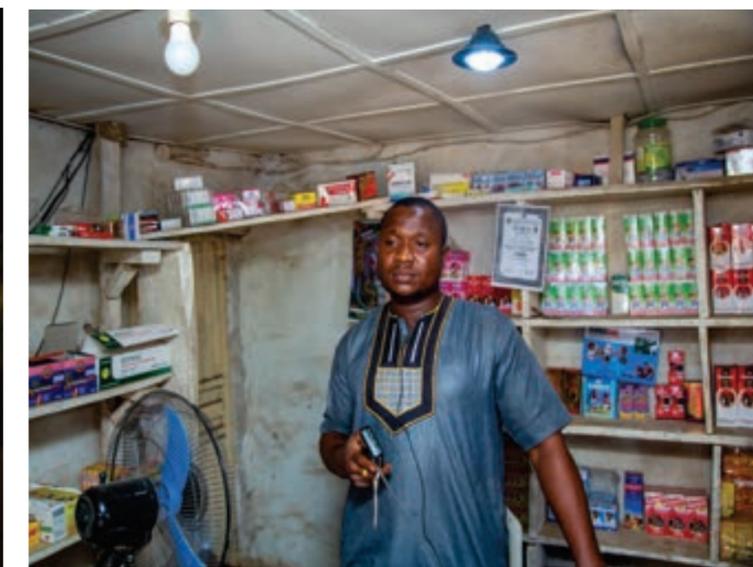


\* The evaluation can take longer for companies that need to submit additional documents.  
 \*\* The grant agreement signing timeline can be extended due to the REA Legal Department's turnaround on agreement review.  
 \*\*\* The final disbursement of grants by the finance unit is dependent on approval from the Accountant General's office and timely drawdown from the USD account.

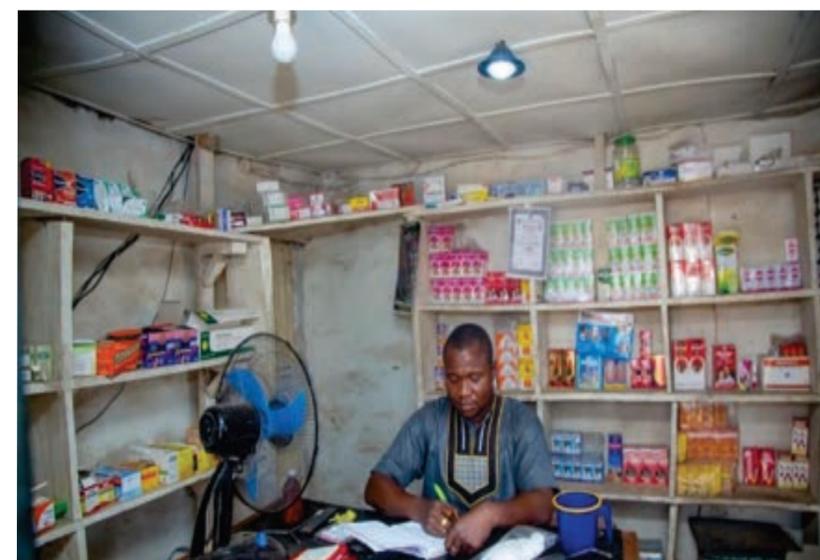
Signing ceremonies of OBF grant agreements with various SHS Grantees



SHS deployed to MSMEs & Households under the OBF subcomponent



SHS deployed to MSMEs & Households under the OBF sub-component



**List of qualified companies under the OBF**

S/N	COMPANY NAME
1.	A1 POWER TECHNOLOGIES LIMITED
2.	A4&T POWER SOLUTIONS LIMITED
3.	ARNERGY SOLAR LIMITED
4.	ASOLAR SYSTEMS NIGERIA LIMITED
5.	ASTEVEN INTERNATIONAL COMPANY LIMITED
6.	AZURI NIGERIA LIMITED
7.	BARTUM ENERGY LIMITED
8.	BAOBAB PLUS LIMITED
9.	BBOXX LIMITED (BXEAN LIMITED)
10.	BEEBEEJUMP INTERNATIONAL LIMITED
11.	BRAVO & YELLOW LTD
12.	CENTRAL ELECTRIC & UTILITIES LIMITED
13.	CLOUD ENERGY PHOTOELECTRIC LIMITED
14.	CONSISTENT ENERGY LIMITED
15.	CREEDS RENEWABLE ENERGY LTD
16.	EMEL SOLAR SOLUTIONS LIMITED
17.	ENERGY AFRIC DEVELOPERS INTERNATIONAL LIMITED
18.	ENGIE-FENIX (ENGIE ENERGY ACCESS NIGERIA LIMITED)
19.	FENCHURCH OFFGRID ENERGY SYSTEMS LIMITED (SOLARPAWA)
20.	GREENAGE ENERGY SOLUTIONS LIMITED & PAX SA JV
21.	GREENLIGHT PLANET SUNKING NIGERIA LIMITED
22.	HANSHOT SOLAR POWER LIMITED
23.	HIRST RESOURCES LIMITED
24.	HOTSPOT INTEGRATED SERVICES LIMITED
25.	KOOLBOOKS LIMITED
26.	LEMI RENEWABLE ENERGY LIMITED
27.	M-KOPA NIGERIA LIMITED
28.	METIKON ENGINEERING LIMITED
29.	MOBILE POWER LIMITED
30.	MORTON78 LIMITED
31.	NEWS ENGINEERING NIGERIA LIMITED
32.	NTA STAR TV NETWORK LIMITED
33.	ONNAN UNITY COMPANY LIMITED
34.	OOLU ENERGY NIGERIA LIMITED
35.	PAS SOLAR NIGERIA LIMITED
36.	PRADO POWER LIMITED
37.	PRINCE ALBERT COMPANY LIMITED
38.	PRIVIDA POWER LIMITED
39.	RENSOURCE ENERGY SOLUTIONS LIMITED
40.	SALPHA ENERGY LIMITED
41.	SANDSTREAM NIGERIA LIMITED
42.	SAO ENERGY SERVICES AFRICA LIMITED
43.	SKIPPER NIGERIA LIMITED
44.	SMARTER GRID INTERNATIONAL LIMITED
45.	SOLAD INTEGRATED POWER SOLUTIONS LIMITED AND LEADSUN TECHNOLOGIES CO LTD JV
46.	SOLAR ENERGY BY D.LIGHT LIMITED
47.	SOLAR SISTER INC. AND AFFILIATES
48.	SOSAI RENEWABLES LIMITED
49.	SUNPAWA ENERGY LIMITED
50.	SYGNITE POWER & ENERGY SOLUTIONS LIMITED AND BUMEX LOGISTICS NIGERIA LIMITED JV
51.	TAYALINO ENERGY SERVICES LIMITED
52.	TECHBOOKY ELITE TECHNOLOGY LTD
53.	TXTLIGHT POWER SOLUTIONS LIMITED (DOING BUSINESS IN NG AS LUMOS)
54.	WAVE-LENGTH INTEGRATED POWER SERVICES LIMITED
55.	ZOLA ELECTRIC LIMITED

**b. Market Scale-up Challenge Fund (MSCF)**

The MSCF sub-component has an allocation of \$15m targeted at offering lump sum grants in quarterly tranches as up-front funds to a small number of the strongest and most capable SHS providers with ambitious business plans that have qualified under the OBF. The grants also target being paid out depending on business needs and capability/performance of the firm, but no more than 20-30% of total funding plan (financial leverage requirement).

Following the significant rate of deployment under the OBF, the MSCF was redesigned through a consolidated team effort which led to the preparation of the MSCF Application Guidelines and other related documents.

The following documents have been developed for the subcomponent:

- 01** The MSCF Application Guidance Document
- 02** The MSCF Application Questions
- 03** The MSCF Application Templates (Excel)
- 04** The MSCF Evaluation Scoring Template
- 05** MSCF Evaluation Panel Nomination List
- 06** MSCF RACI Matrix and MSCF Gantt Chart Timeline





## Component 2 (WB): Fact Sheet

**995,395**

SOLAR HOME SYSTEMS DEPLOYED

---

**47MW**

ENERGY DEPLOYED

---

**980,060**

HOUSEHOLDS CONNECTED

---

**328,764**

HOUSEHOLDS HEADED BY FEMALES

---

**4,909**

MSMEs CONNECTED

---

**1,206**

MSMEs HEADED BY FEMALES

---

**4.9million**

PEOPLE IMPACTED

---

## COMPONENT 2 (AfDB): ENERGY EFFICIENT PRODUCTIVE USE APPLIANCES & EQUIPMENT (PUE)

The Energy Efficient Productive Use Appliances and Equipment (PUE) component is funded by the AfDB with an allocation of about \$19m. The core objective of the component is to increase the productive use of energy in rural communities and contribute towards the sustainability of mini grids deployed under the NEP. This component targets the deployment of 26,962 PUEs using a results-based finance mechanism to incentivize energy access companies to include the distribution of PUEs in their business operations, activate the PUE market, improve livelihoods and make the mini grid business model more sustainable.

Towards refining the component for the Nigerian context, the PMU engaged with industry partners like Rocky Mountain Institute (RMI) and PA-NPSP to develop an operation manual and a Subsidy Design Framework respectively for the implementation of the component. These frameworks provided for a base subsidy of 30% and incentive factors to increase the subsidy level to up to 60% based on scalability (10%), gender targets (10%) and vulnerability index factors (10%) and a Subsidy Model to arrive at the grant amounts to be given to each qualifying site.

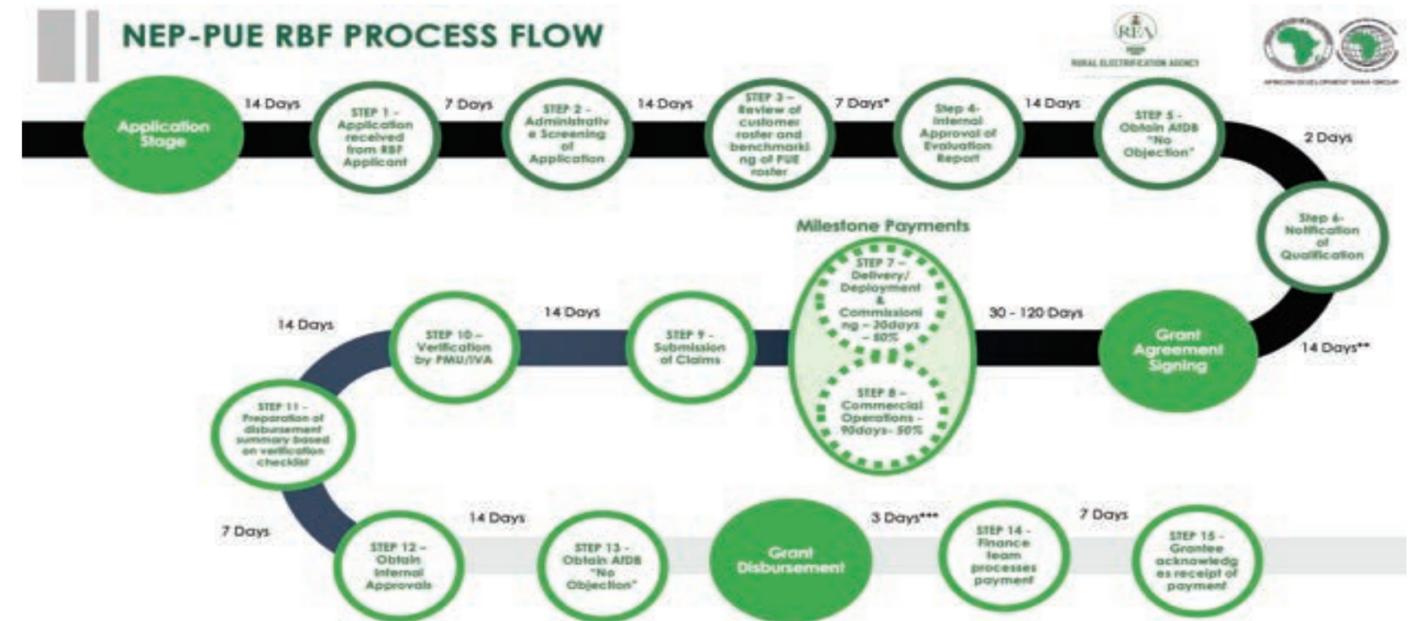
Under Phase 1 of the component, 7 companies have qualified with PUE Rosters approved for 5 Sites (Shimankar-Plateau, Onicha-Ebonyi State, Rokota-Niger, Kare -Kebbi and Dakiti Village-Gombe) and Grant Agreements signed on 2nd December, 2021 for the deployment of a total of 270 PUEs.

To ensure that customers are encouraged to purchase the PUE and are also beneficiaries of the subsidies, the grantees are mandated to ensure that the cost to the end user is reduced such that it is only the counterpart funds (invested by the Developer plus financing cost) that the Developer will recoup from the Customer. Lease payments under the component are made based on the

following formula: Customer Cost = Developer Investment (N) which can be a one-off cash payment for smaller/inexpensive appliances plus interest. For larger PUEs, customer cost will be spread as lease payments over an 18-month period. Lease Payments (LP) = Customer Cost (N)/18. It is the general expectation that the maximum repayment period for certain PUE will be 18 months.

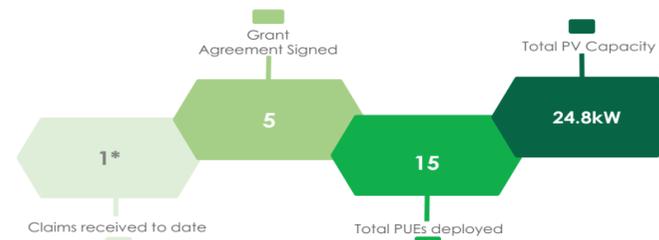
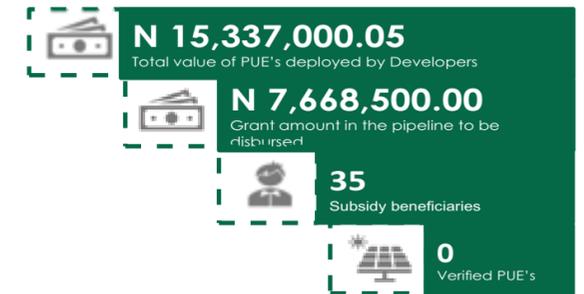
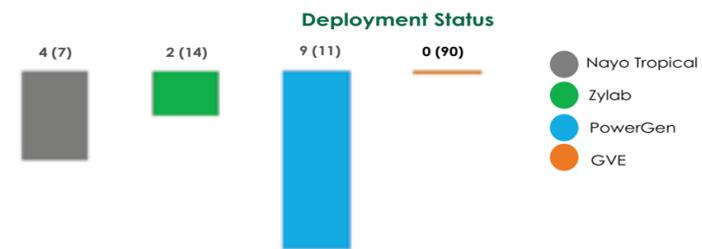
On the 21st of June, 2022 a PUE Webinar was held to inform various stakeholders (financiers, developers, PUE suppliers, and other energy access companies) of the implementation status of the project. The eligibility criteria for participation were also shared for input from stakeholders prior to the launch of the next phase of online application. The webinar had over 144 participants in attendance from about eight (8) countries.

The online application was launched on 8th August 2022 on the REA website and Odyssey platform. The application is open to various applicants such as appliance suppliers, co-operatives, appliance financiers and other companies engaged in energy access operations, as well as mini grid developers. The applications is on a rolling basis until the entire grant amount is disbursed to qualifying energy access companies.



## ENERGY EFFICIENT PRODUCTIVE USE APPLIANCES & EQUIPMENT

Result Based Finance Grant – October, 2022



PUE Pilot Site Locations

- Rokota, Niger.
- Obeagu Isu, Ebonyi.
- Kare, Kebbi.
- Shimankar, Plateau.

Signing ceremony of PUE grant agreements with Grantees



Group Photograph of the MD/CEO, ED-CS, Director Promotion, HPMU, Chief of Party NPSP, NEP-PMU Team, and the PUE grantees (GVE Ltd, Nayo Tropical Technology Ltd, PowerGen Ltd, Zylab Technologies & Leading Diagonal Engineering)

Productive Use Appliances & Equipment deployed to beneficiary communities





Component 2 (AfDB): Fact Sheet

5

GRANT AGREEMENTS SIGNED

---

25kW

CAPACITY OF EQUIPMENT & APPLIANCES DEPLOYED

---

\$14,323

VALUE OF PUEs DEPLOYED

---

15

PUEs DEPLOYED INCLUDING 1ST OF ITS KIND GREENHOUSE

---

122

PHASE I MSME BENEFICIARIES

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### COMPONENT 3: ENERGIZING EDUCATION PROGRAMME (EEP) PHASE II & III

Access to uninterrupted power supply in Federal Universities and University Teaching hospitals in Nigeria has been cited as a major challenge and barrier to effective learning, institutional operations, and student residency. Considering the role of education in economic growth and socio-economic development in Nigeria, the Federal Ministry of Power and Rural Electrification Agency resolved to embark on viable projects that will ensure the availability of reliable, sustainable, and affordable power to Nigeria's tertiary institutions. This led to the conception of the 'Energizing Education Programme (EEP)'.

The EEP seeks to provide adequate power supply (up to approximately 100MW in total) to 37 Federal Universities ("the Universities") and 7 University Teaching Hospitals across the Federal Republic of Nigeria. It also aims to upgrade the existing distribution infrastructure within the campuses, provide streetlights to promote and facilitate safe, secure, and productive learning environments and construct world-class renewable energy workshops/ training centres (WTC) for each university to train university students in renewable energy technology, and conduct STEM internships for selected female students.

There are currently 3 phases under the EEP; phases 1, 2 and 3 which consist of 24 Federal Universities and 4 Teaching Hospitals, whilst the 13 outstanding Federal Universities and 3 Teaching Hospitals are yet to be phased. Phases II and III are currently being funded by the World Bank and AfDB respectively to the tune of \$228m, while Phase I, was funded by the Federal Government of Nigeria (FGN) through the national budget.

Based on lessons learnt from Phase I towards ensuring that the EEP II & III power plants run self-sufficiently and sustainably for over a period of 15 years, grid interconnection was included in the programme's design to run in parallel with the EEP Captive Solar Power Plants, specifically to cater only for the Universities' non-critical nighttime load. In addition, Advance Metering Infrastructure (AMI) was introduced to implement Energy Efficiency Management and accountability on electricity usage, towards fostering sustainable behavioural changes on Energy utilization.

#### Energizing Education Programme Phase II (EEP II)

With the REA having achieved great success under EEP I, EEP II was reconceptualized to be executed under Component 3 of the Nigeria Electrification Project (NEP) funded by the World Bank with a funding allocation of \$105m. Under the EEP II, 7 Federal Universities and 2 affiliated University Teaching Hospitals are targeted. The Universities include:

S/N	University	State	Region	Plant Type	Proposed Modeled Plant Size (MW)*
1	Michael Okpara Fed. University of Agriculture, Umudike	Abia	South East	Solar Hybrid	3.0MW
2	Federal University of Agriculture Abeokuta	Ogun	South West	Solar Hybrid	3.0MW
3	Federal University Gashua	Yobe	North East	Solar Hybrid	1.5MW
4	Nigerian Defence Academy, Kaduna	Kaduna	North West	Solar Hybrid	2.5MW
5	University of Abuja	FCT	North Central	Solar Hybrid	3.0MW
6	University of Calabar and Teaching Hospital	Cross River	South South	Solar Hybrid	7.0MW
7	University of Maiduguri and Teaching Hospital	Borno	North East	Solar Hybrid	12.0MW

#### Energizing Education Programme Phase III (EEP III)

Following the receipt of funding from the AfDB towards the implementation of the NEP, EEP III was approved to be executed under Component 3 of the Nigeria Electrification Project (NEP) with funding allocation of \$123m. Under the EEP III 8 Federal Universities and 1 affiliated University Teaching Hospital are targeted. The Universities are as follows:

S/N	University	State	Region	Plant Type	Proposed Modeled Plant Size (MW)*
1	Modibbo Adama University	Adamawa	North East	Solar Hybrid	4.0MW
2	Federal University Dustin-Ma	Katsina	North West	Solar Hybrid	1.5MW
3	Federal University Lafia	Nasarawa	North West	Solar Hybrid	1.5MW
4	Federal University Lokoja Kaduna	Kogi	North Central	Solar Hybrid	1.5MW
5	Federal University of Technology Owerri	Imo	South East	Solar Hybrid	8.0MW
6	University of Port Harcourt and Teaching Hospital	Rivers	South South	Solar Hybrid	8.0MW
7	University of Uyo	Akwa-Ibom	South South	Solar Hybrid	2.0MW
8	Federal University of Akure	Ondo	South West	Solar Hybrid	4.0MW

#### The EEP STEM Female Student Internship Programme

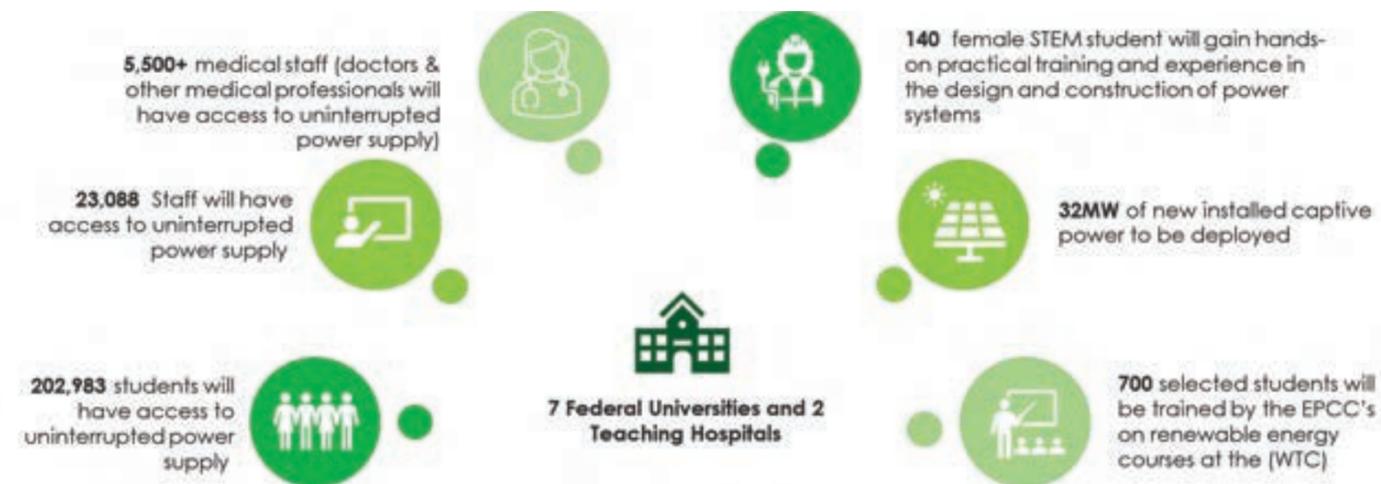
As the REA is committed to advancing gender inclusion and diversity in the energy sector, the Science, Technology, Engineering, and Mathematics (STEM) female student Internship programme, was conceptualized as a subcomponent under the EEP. The STEM programme seeks to provide 20 female students from each of the EEP Beneficiary Institutions with hands-on practical experiences in designing and constructing power systems. The goal of the initiative is to expose and encourage more women to pursue an interest in STEM-related careers. Phases II and III targets a total of 300 female students, while 140 female students have successfully completed their internship programme under Phase I.

#### Stakeholder Engagements

In line with the NEP's commitment to ensuring that all stakeholders

in the program's delivery chain are adequately carried along in the course of implementation, three (3) Stakeholders Engagement Forums have been held successfully under EEP II and two (2) held under EEP III. For EEP II, the events were held in July 2018, March 2020 and September 2022 respectively, while the EEP III engagements were held in June 2020 and November 2022. These forums were organized to officially unveil the Beneficiary Institutions and sensitize them on what the EEP seeks to achieve. They were also an avenue to provide key stakeholders with briefs on the progress of the EEP across all the technical assessments/ studies being carried out i.e., the Environmental Social Impact Assessment, Livelihood Restoration studies, Energy Audits, Front-end Engineering Design and Sustainability Plan. Ultimately, these forums led to the successful signing of a Binding Term sheet between the REA and the Beneficiary Institutions, marking the first step in creating a legally binding relationship between both parties.

## Projected Impact of the EEP



## Energizing Education Programme Phase II Stakeholders' Engagement Forum

In line with the NEP-PMU's commitment to ensuring that all beneficiaries and stakeholders of the Project are involved from inception to deployment, the NEP-PMU held a Stakeholders' Engagement Forum towards getting the buy-in of the Beneficiary Institutions (BIs). The event also had the BIs express their expectations for the Programme, while the team provided all the necessary information and timelines for delivery.



Stakeholders' Engagement Forum



Stakeholders' Engagement Forum



Stakeholders' Engagement Forum with Management of the 7 beneficiary Universities

## Energizing Education Programme (EEP) Phase II Baseline Survey

A baseline survey was carried out by REA-NEP Staff and Enumerators at 9 Universities earmarked for the deployment of solar hybrid mini grids under the EEP Phase II. 85 questions were asked to 11,706 respondents across 7 Universities and 2 Teaching Hospitals.



## Energizing Education Programme (EEP) Phase II Baseline Survey (Continued)



## Energizing Education Programme (EEP) Phase II Site Inspection Visits

Bidders for EEP Phase II EPC Contracts were given the opportunity to inspect the EEP Phase II University sites for bid preparation purposes.



Federal University of Abuja **UniAbuja**



University of Maiduguri **UniMAID**



Federal University of Agriculture Abeokuta **FUNAAB**



Michael Okpara University of Agriculture Umudike **MOUAI**

### SOME OF THE QUESTIONS ASKED AND RESPONSES

Q	R
How many hours a day do you have access to electricity at this institution?	9
How does lack of access to electricity affect your quality of life at this institution?	18
Are your lecture theaters well illuminated during lectures?	16
Are you prevented from using multimedia due to inadequate electricity supply?	19
Do you feel lack of regular electricity affects your progress?	28
Are you able to self study after dark	26



Energizing Education Programme (EEP) Phase II Site Inspection Visits (continued)



Federal University of Gashua **FUGUS**



Nigerian Defence Academy **NDA**



Federal University of Calabar **UNICAL**

Energizing Education Programme (EEP) Phase II EPC Bidders Events

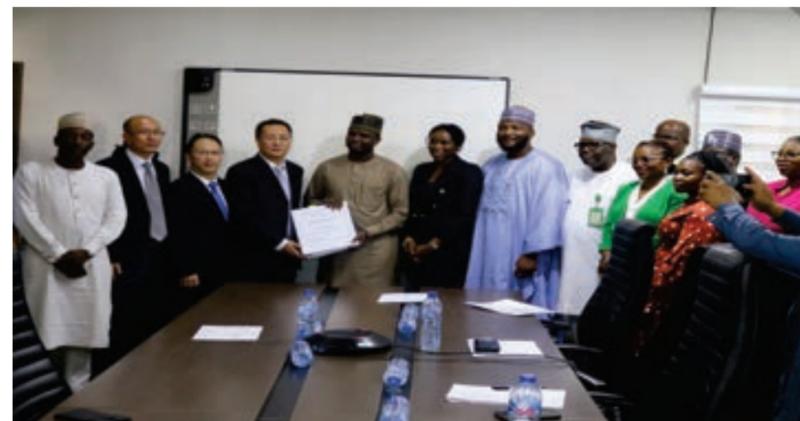


Pre-Proposal Conference



Bid opening

Signing ceremony of EEP Phase II contracts with the EPC Contractors



**Energizing Education Programme (EEP) Phase II Ground-Breaking Ceremony at Nigeria Defence Academy (NDA) Afaka Campus**



Photographs of the Honourable Minister of Defense (representative of Mr. President), Chief of Defense Staff, REA Board Members, MD/CEO, ED-TS, NDA Commandant, TTL (WB), HPMU, Senior Military Officers, Mutual Commitment Company (MCC) representatives and other dignitaries

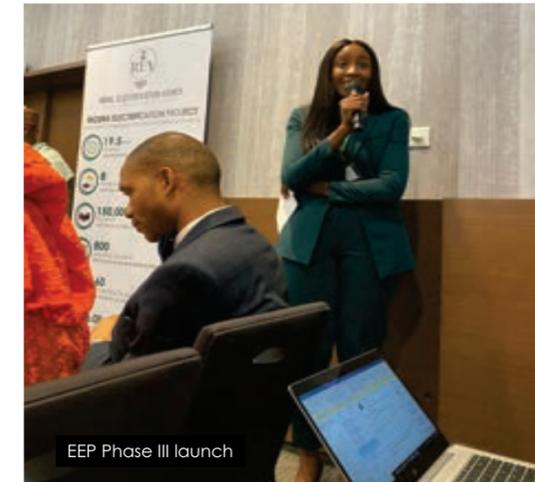
## ENERGIZING EDUCATION PROGRAMME PHASE II STATUS



ACTIVITIES	START DATE	DATE OF COMPLETION	STATUS
2 Key stakeholder workshops with all EEP Phase II institutions	July 2018 (1 <sup>st</sup> ) March 2020 (2 <sup>nd</sup> )	July 2018 (1 <sup>st</sup> ) March 2020 (2 <sup>nd</sup> )	100%
Binding Term Sheet executed with all EEP Phase II institutions	2 <sup>nd</sup> March 2020	3 <sup>rd</sup> March 2020	100%
Procurement of ESIA, PMP, LRP, SP & Energy Demand Audit, and FEED Consultants completed.	July 2019	November 2020	100%
Certification of Land Survey obtained from Office of Surveyor General	May 2019	July 2020	100%
Approval, issuance and receipt of submissions for the ISD for EPC Procurement		December 2020	100%
No Objection for Owner's Engineer EOI	2 <sup>nd</sup> June 2020	12 <sup>th</sup> November 2020	100%
ESIA Approval from the MoEnv	May 2019	2 <sup>nd</sup> February 2021	100%
Procurement of Project Owner's Engineer	2 <sup>nd</sup> June 2020	September 2021	100%

ACTIVITIES	START DATE	DATE OF COMPLETION	STATUS
Conclude LRP Assignment (finalization of reports)	28 <sup>th</sup> July 2020	March 2021	100%
Energy/Electrical appliances audit and interconnection studies in all EEP Phase II Institutions	16 <sup>th</sup> December 2020	July 2021	100%
Finalize FEED for power plant, training center and streetlights	May 2019	December 2021	100%
Finalize Sustainability Plan report.	May 2019	September 2022	100%
Procurement of EPC contracts (ISD, Shortlist, Issue RFP; Evaluation of Technical & Financial Proposals, Award Contracts and Signing of EPC Contract)	9 <sup>th</sup> October 2020	28 <sup>th</sup> October 2022	100%
3 <sup>rd</sup> Stakeholders Engagement	August 2021	November 2022	75%
Development & Signing of Collaboration Agreement with all EEP Phase II institutions	July 2021	November 2022	90%
Discussions with DisCos regarding grid interconnection	June 2021	December 2022	75%
Apply and Obtain NERC Permits	May 2022	March 2023	70%
Selection of 20 female students across the Institutions and Commencement of STEM Programme	May 2022	November 2022	55%
Handover of site for construction & Commence Construction of Power Plant, Streetlights and WTC	July 2022	December 2022	50%

## Energizing Education Programme (EEP) Phase III Events



EEP Phase III launch



EEP Phase III launch



EEP Phase III contract signing with POE



EEP Phase III Kick-off meeting with POE



EEP Phase III FEED contract signing



EEP Phase III FEED contract signing

## Energizing Education Programme (EEP) Phase III Baseline Study Visits



Federal University of Technology Abeokuta



University of PortHarcourt



Federal University Uyo



Federal University of Technology Owerri



Federal University Dutse-Ma



Federal University Lafia



Moddibo Adama Federal University of Technology, Yola

## ENERGIZING EDUCATION PROGRAMME PHASE III STATUS



■ Yet to commence 
 ■ Ongoing 
 ■ Delayed 
 ■ Completed

ACTIVITIES	START DATE	DATE OF COMPLETION	STATUS	ACTIVITIES	START DATE	DATE OF COMPLETION	STATUS
1 Key stakeholder workshop with all EEP Phase III institutions	4 <sup>th</sup> June 2020	4 <sup>th</sup> June 2020	100%	Development of Sustainability Plan	TBC	TBC	0%
Preliminary Baseline Studies Report	24 <sup>th</sup> December 2020	15 <sup>th</sup> February 2021	100%	Conduct energy/electrical appliances audit and interconnection studies in all EEP Phase III institutions)	10 <sup>th</sup> January 2022	18 <sup>th</sup> March 2022	100%
Commence Baseline Studies Activity	22 <sup>nd</sup> February 2021	15 <sup>th</sup> April 2021	100%	Finalize and Obtain ESIA Certificate from the Federal Ministry of Environment	7 <sup>th</sup> October 2022	7 <sup>th</sup> February 2023	0%
Development of Binding Term Sheet and subsequent execution with all EEP Phase III institutions	25 <sup>th</sup> January 2021	28 <sup>th</sup> July 2021	100%	Finalize FEED for power plant, training center and streetlights	28 <sup>th</sup> March 2022	25 <sup>th</sup> September 2022	100%
Procurement of ESIA and Land Survey, FEED/Energy Demand Audit, SP and Owner's Engineer (obtain 'No Objection' for respective Combined Technical & Financial Evaluation Reports and award of Contracts)	March 2020	TBC	90%	Commence procurement process for EPC contracts (preparation of bidding documents, RFP; Evaluation of Technical & Financial Proposals & Award Contracts)	7 <sup>th</sup> October 2022	28 <sup>th</sup> May 2023	5%
Development of ESIA Reports and Land Surveys	10 <sup>th</sup> January 2022	2 <sup>nd</sup> December 2022	65%	Signing of Definitive Agreement with all EEP Phase III institutions	14 <sup>th</sup> November 2022	25 <sup>th</sup> November 2022	0%
				Obtain NERC Permits	1 <sup>st</sup> March 2023	11 <sup>th</sup> September 2023	0%
				Handover of site for construction	8 <sup>th</sup> August 2023	26 <sup>th</sup> August 2023	0%
				Selection of 20 female students across the Institutions/carry out STEM programme	1 <sup>st</sup> March 2023	22 <sup>nd</sup> March 2023	0%

## Energizing Education Programme (EEP) Phase I

In view of the extent of progress recorded across both the EEP II and EEP III, the expectation is that these two (2) Phases of the programme will have similar line-up of construction and commissioning activities like the EEP Phase I (funded by the Federal Government). The Captive Power Plants will also have

similar designs with a number of technical variations. Suffice to note that the EEP across all phases has benefitted from the immense support of the National Universities Commission (NUC) towards ensuring that the expectations of the beneficiary institutions align with the objective of the programme.



UNILAG

EEP Phase I Project Handover



OAU



FUPRE



FAT



FAT

EEP Phase I Factory Acceptance Test and Inspection



INSPECTION



INSPECTION

Energizing Education Programme (EEP) Phases I Events



EEP Phase I trained non-academic staff

Students undergoing the EEP female STEM internship programme

**Energizing Education Programme (EEP) Phase I Commissioning Events**



EEP I commissioning at FUPRE

Group photograph of the Deputy Senate President, HMoSP, Ag REA Board Chairman, MD/CEO, ED-REF, Vice Chancellor, FUPRE, traditional rulers and other dignitaries at the commissioning of the 1.35MW captive solar hybrid power plant, FUPRE



EEP I commissioning at FUAM

Group photograph of the Pro-Chancellor FUAM, Chairman, Senate committee on power, Tor-Tiv, MD/CEO, VC FUAM, ED REF & ED CS, HPMU and MD, SWNL at the commissioning of the 8.25MW captive solar hybrid power plant at FUAM



EEP I commissioning at FUPRE



EEP I commissioning at FUPRE

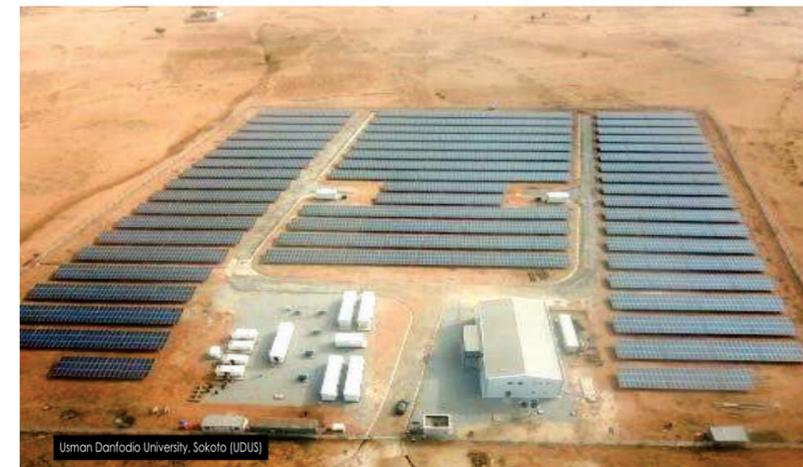
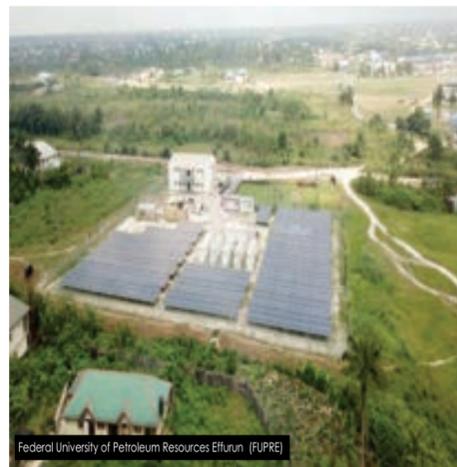
Deputy Senate President presenting certificate of completion for the female STEM internship programme to one of the beneficiaries



EEP I commissioning at ATBU

Group photograph of the HMoP, HMoSP, HRM Emir of Bauchi, MD/CEO, ED-REF, ED-TS, HPMU and other dignitaries at the commissioning of the 1.12MW captive solar hybrid power plant at ATBU

Energizing Education Programme (EEP) Phase I completed and commissioned projects



## Training of Beneficiary Institution's Staff on Renewable Energy at the WTC under EEP I

As part of the deliverables under the EEP, staff and students of the beneficiary institutions are expected to receive methodical training on renewable energy technologies and power systems at the Workshop Training Centres. The outcome of the training is to equip the BI staff with the requisite skills and knowledge for long-term effective O&M of the power plants, whilst preparing and inspiring the students for careers and innovative action in the renewable energy sector. Under the EEP I, batches of students and staff were trained across the various institutions as seen in the images below. The same methodical training will be delivered to staff and students of the BIs under EEP phases II & III towards increasing the overall number of individuals across Nigeria with practical knowledge and skill in renewable energy technology, as the country thrives towards energy transition.



## Feedback From Energizing Education Programme (EEP) Phase I

With the successful completion of seven (7) power plants and the commissioning/handover of five (5) of the utilities to the beneficiary institutions under EEP Phase 1, an assessment/feedback meeting was held between the REA, NUC and Management of the beneficiary institutions in September 2022. The objective of the meeting was for the institutions to present the economic, technical and institutional impact of the power plant to the universities, the attendant challenges being experienced and subsequent recommendations. In turn, the REA noted all the challenges, provided responses to the issues raised and strengthened the synergy between all parties.

The outline of feedback has since been collated and the team are on course towards adopting a number of them into the framework of implementation for the EEP Phases 2 & 3 as well as subsequent phases of the programme towards ensuring efficient project delivery and energy access for increased educational and economic outcomes.

### Economic Impact of Solar Plant in AE-FUNAI

- The SPP has improved the efficiency of teaching and learning in the University, especially in terms of time-savings. Lectures now run into late evening and weekends.
- The laboratories and workshops for teaching and learning in the SET also run efficiently without interruption.
- The impact is also felt in the area of improved water supply, based on SPP-powered sumos for the boreholes in the Campus.
- Improved security of lives and property in the Campus by providing all-night lightening vis-à-vis street and security lights – reducing incidents of crimes and students' harassment to a bearing scale.

### Economic CHALLENGES

- High costs of maintenance, due to access challenges for critical spare parts. e.g Motorized breaker
- Rising periods of down time of the Solar plant whenever there is a breakdown e.g Analogue and Digital Inputs & outputs cards.
- Funding challenges impeding regular maintenance of the plant.
- Lack of internal financial capacity to replace the warning out batteries.
- Inability to afford the costs of retaining the experienced technical operators of the Plant. A number of them have since left.
- Financial losses due to disruption by farmers and illegal power connectors

### RECOMMENDATIONS

- Provision of critical Spare parts for the Solar Plant to the University at handover of plant to the university.
  - Including the offering supports for the replacement of the batteries
- The REA is expected to conduct training programs for staff of the Department who will be involved in operation and maintenance of the power plant.
- Regular meeting of benefiting universities such as this can be created for interaction of benefiting universities to brainstorm on challenges and successes.
- Facilitating MOUs with the Original Equipment Owners (OEO) for the provision of good after sale supports to the benefiting universities.
- Plant Upgrade to a higher Mega Watt Capacity in the nearest future.
- There is need for proper synchronization of existing and future power infrastructure with an electronically controlled station that would serve as a one-stop turn-up and shutdown point.
- An extensive load diagnosis should be carried out to verify the individual load capacity of the different zones on campus, surface distribution network should be looked at and plant simulation would be done to free-up energy for further distribution to up-coming buildings.
- It is necessary to carry out an extensive audit on the plant to ascertain and authenticate the installed power plant capacity, the volume of spare-parts consumables that are available and general health of the plant prior to take-over.

Feedback From Energizing Education Programme (EEP) Phase I continued

### EEP IMPACT ASSESSMENT FOR BAYERO UNIVERSITY, KANO

#### IMPACT

**Economic Impact of Solar Plant in Bayero University, Kano.**

- There is a significant savings in the electricity bills for the University.
- There is also a significant savings in the diesel consumed by the available generators of the University.
- Provision of a conducive environment for social and commercial activities in the University.

**Technical Impact of Solar Plant in Bayero University, Kano.**

- Technical training of University Staff on operation and maintenance of solar power plant.
- Serve as an avenue for training of students on industrial attachment.

**Institutional Impact of Solar Plant in Bayero University, Kano.**

- Provide a reliable and uninterrupted power supply for research and learning activities in the University.
- Significant improvement on the security coverage and enhancement in the university.
- Smooth conduct of laboratory practicals and provision conducive environment for the storage of reagents for practicals and research samples.

#### CHALLENGES

**Economic Challenges of solar plant in Bayero University, Kano.**

- ❑ High cost of diesel procurement.
- ❑ Cost of generator servicing and maintenance.
- ❑ Cost of periodic cleaning of solar panels.
- ❑ High cost of replacement of energy storage system(battery).

**Technical Challenges of solar plant in Bayero University, Kano.**

- ❑ The type of technology deployed on the system is not easy to maintain by the technical team of the University.
- ❑ Spare components and parts are not readily available within the region.
- ❑ The system is not flexible for expansion in an event of load increase by technical experts within the University.

**Institutional Challenges of solar plant in Bayero University, Kano.**

- ❑ University power demand exceed the low installed capacity.
- ❑ The 3MW plant is dedicated to academic areas only.
- ❑ There is a rapid growth in the University structures hence the urgent need for a system upgrade in the near future.

### EEP IMPACT ASSESSMENT

#### Technical Challenges @ UNIZIK Awka

1. Sufficient time is required to achieve capacity in the training of required manpower to run the solar plant after commissioning.
2. Development of technical knowledge and skills required for the maintenance of the power plant.
3. Effect of Non-rehabilitation of existing distribution infrastructure.
4. In view of the hybrid nature of the solar plant, there is the challenge in the provision of effective protective devices on all power installations in the university from the buildings to the distribution network.
5. Constant tripping of the solar plant was experienced during the first testing of the plant and it has persist up to now

### EEP IMPACT ASSESSMENT

#### Institutional Challenges @ UNIZIK Awka

1. **The low power rating of the solar power plant.** Presently the rating of the Unizik power plant is 2MW, and the load in the university presently has grown up to 5MW. This means that the solar power plant cannot carry the university load at the moment. The load will still grow with the improvement of the infrastructure in the University.
2. **Location of RMU.** The present location of the RMU is a big challenge, presently for the operation of the solar power plant and the national grid. It is presently on stand-alone location without an MV panel. This makes it impossible to operate the plant without the grid.
3. **Evacuation of Power to RMU.** The armoured cable used in evacuating power from the plant to the RMU has up to six joints, it has the tendency to introduce faults in power evacuation.

### EEP IMPACT ASSESSMENT

#### RECOMMENDATIONS

1. For the efficient and steady operation of the plant, the university distribution needs to be reconfigured and reconstructed.
2. There is an urgent need for provision of MV Panels in the distribution network to segregate University loads in case of occurrence of fault in any part of the network and also to prioritize supply to the distribution network.
3. Spare parts should be provided in case of breakdown of any component part/s of the plant.
4. Adequate training should be provided to the technical staff that will take over the plant when the project is commissioned.
5. There is a need to relocate the RMU to be closer to the plant with an overhead line to avoid the present long transmission line. This will reduce transmission losses.

Visit to EEP Phase I sites by an EEP Phase II Contractor's Design Team

Following the successful signing of EPC contracts for the construction of solar hybrid power plants and WTC under the EEP II, one of the EPC contractors' Design Team undertook site visits to the Federal University of Agriculture Makurdi and Bayero University Kano projects deployed under EEP I. During the course of the visit, the Design Team met with the university team in-charge of overseeing the power plant and other project utilities towards understanding what worked well, the peculiar challenges and mitigative measures, critical for the design and operation of their projects under EEP II.



MCC's Design Team with Dr. Buhari from BUK who played a key role towards the implementation of the EEP I project at BUK



MCC's Design Team with the FUAM Works Department Staff who have been instrumental in the operation of the captive solar hybrid power plant

MCC's Design Team with the FUAM Works Department Staff who have been instrumental in the operation of the captive solar hybrid power plant

## COMPONENT 4: TECHNICAL ASSISTANCE (TA)

The Technical Assistance component of the NEP with a funding allocation of \$39m was designed to strengthen the implementation capabilities of the PMU and build capacity for a wide range of public and private sector stakeholders in Nigeria's off-grid sector. The TA supports the funding of the PMU's technical, management, financial and administrative staff as well as other consultancies crucial to the successful achievement of the Project's Development Objectives.

Beyond the remunerative function of the TA, its funds have been successfully applied towards the procurement of a secure and an innovative web-based data and workflow platform (Odyssey) for key interfacing aspects of the NEP's program management. Furthermore, the PMU engaged the services of an Independent

Verification Agency, Grant Administrator, Legal and Compliance support, Project Owners Engineer etc. as well as the design and hosting of dedicated portals on the NERC and Federal Ministry of Environment websites towards creating ease for developers in obtaining their NERC registrations and permits as well as their ESIA certifications respectively.

In compliance with building capacity for seconded staff and stakeholders, the TA has funded series of trainings within and outside Nigeria for the financial management team who are mostly seconded from the OAGF. It also funded the organization of a Retreat for PMU staff and stakeholders Representatives from the Federal Ministry of Power (FMoP), OAGF and Federal Ministry of Finance.



Held at KSG Nairobi, March 14 - 25, 2022



## NEP-PMU Strategic Productivity Retreat

In line with Rural Electrification Agency's (REA) policy on managing challenges that arise in the unserved and underserved electrification value chain as well as the Agency's commitment to driving gender inclusion in the energy sector, the NEP's PMU held a 3-day 'Strategic Productivity' Retreat from 26<sup>th</sup> – 28<sup>th</sup> January 2022. The retreat which had in attendance, senior/management staff from the REA, FMoP, OAGF and FMOF focused on addressing the challenges around design, processes and targets of the NEP that were identified as lessons learnt since the project's effectiveness.

At the retreat, the MD/CEO REA emphasized the significance of setting aggressive electrification targets in addition to measuring and reporting the REA and NEP's electrification results towards

reducing the 80 million people without electricity access demography that has been reported recurrently. At the end of the retreat, members of the PMU were poised with more methodical project planning and strategy, communication models were strengthened, inclusion and diversity were further engendered amongst team members and a Performance Appraisal Framework was developed to facilitate responsibility and accountability for members of the PMU in the discharge of their daily activities. The Framework currently assesses the overall delivery quotient of all members of the PMU towards ensuring that tasks and deliverables are executed in the most timely and professional manner for the achievement of the project's development objectives.

**Actual Number of connections**

Target	Actual	Percentage
100,000	14,000	14%

**5x Weekly Status Update**  
19<sup>th</sup> - 20<sup>th</sup> August 2022

**Nigeria Electrification Project**

**Implementation Status & Results for Q2 (April - June, 2022)**

Project Status	Start Date	End Date	Completion Rate
Phase 1	1st April 2022	30th June 2022	100%
Phase 2	1st April 2022	30th June 2022	100%
Phase 3	1st April 2022	30th June 2022	100%

NEP Project Management Unit Retreat



NEP Project Management Unit Retreat Group Photograph



## REA Stakeholders' Workshop: Collaboration with States for Accelerating Rural Electrification

In the course of implementing rural access projects, the REA came to an understanding that; state governments must be engaged directly in order to achieve project deployment at scale.

Hence, in May 2022, the REA in collaboration with Nigeria Governor's Forum and ACE-TAF organized a Stakeholders' Workshop for State Governments and other key players in the sector.

The workshop was geared towards presenting state governments with the various projects and programmes REA currently implements and what role they can play in ensuring the success of these interventions. For the NEP, it was an avenue to showcase the extent of impact state collaboration with private sector developers can play in closing the electricity access gap. At the end of the event, a working group was established towards maintaining synergy between the REA and state governments.



Group photograph of the HMoSP, REA Board Members, MD/CEO, ED-REF, ED-CS, ED-TS, NEP TTL (WB), Head of Economic Dev. Nig. UK-FCDO and Country Manager, ACE-TAF



Hon. Minister of State Power, Goddy Jedy-Agba, OFR Visit to NEP - Project Management Unit Office

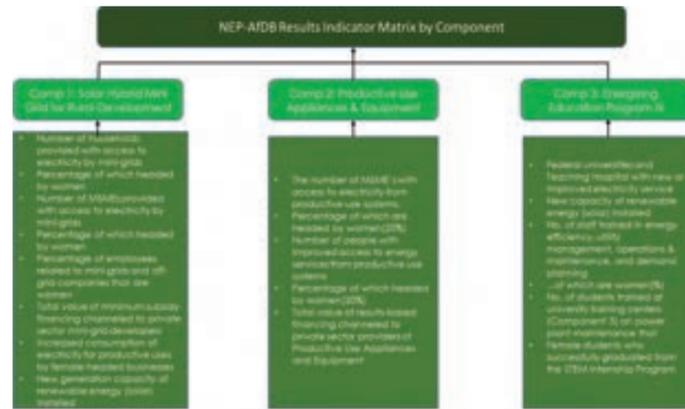
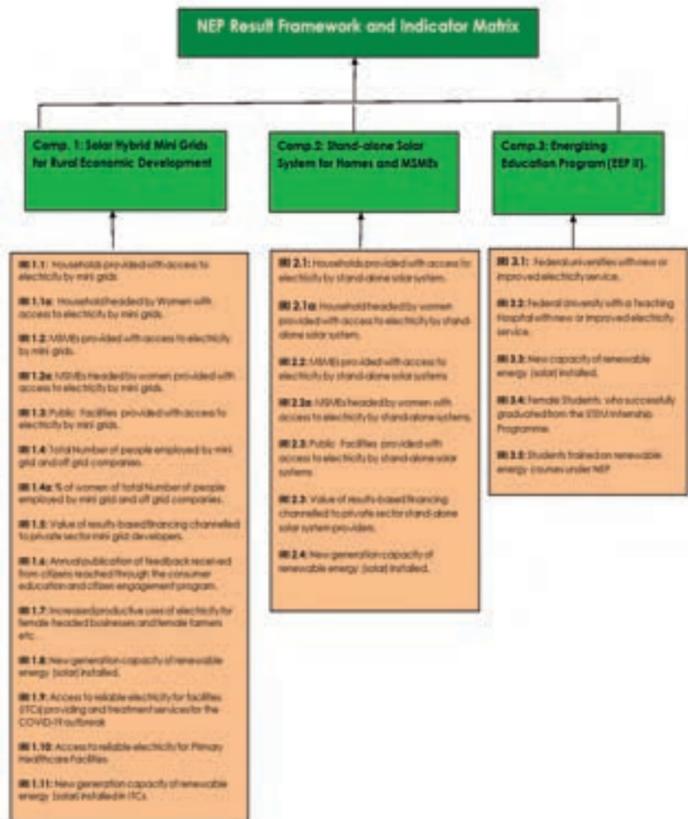


# 6 MONITORING, EVALUATION AND SUSTAINABILITY

## Monitoring and Evaluation

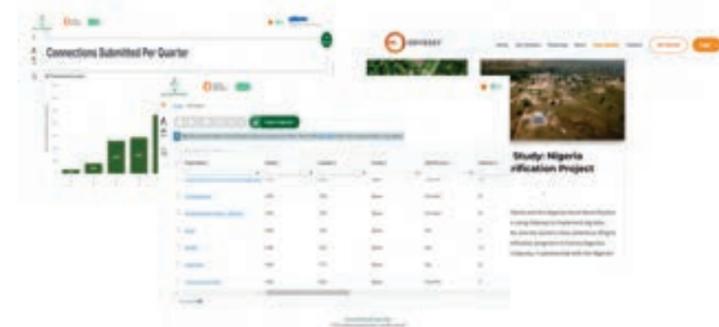
The NEP has a comprehensive Monitoring and Evaluation (M&E) Plan/Framework prepared to guide the quality of Results and Learning which each project indicator was designed to achieve so as not to connote developers and grantees as the only primary stakeholders of the entire NEP.

The framework is standardized for end-to-end management of the NEP's project deliverables and to strengthen the capacity of project developers and grantees to sustainably manage data reporting and feedback on information throughout the project cycle. The M&E framework also provides a harmonized system to gather, analyze and apply data to decision making within the NEP.



The NEP's M&E Specialists work directly across all components towards ensuring that the indicators are tracked frequently, results are analyzed objectively and progress reports are compiled in the timeliest manner. They also ensure constant engagements with developers and grantees, informing them on the type of data they need to gather, the precise modalities for analysis and reporting towards harmonizing the results on deliverables and targets. Amongst the series of technical reports which the M&E unit prepares along components and unit lines, the most comprehensive reports showing results achieved under the project are the; NEP Bi-Weekly Progress Status Report and the Quarterly Status and Implementation Progress Report.

To further strengthen the effective Monitoring and Evaluation of the NEP's activities, a number of consultancies were engaged, key of which is an innovative web-based platform that manages the NEP's data and application processes for components. The specific assignments of these consultancies are:



## Web-based platform for M&E

Odyssey Solutions is the consultant who owns and manages the Odyssey platform which is an innovative big-data platform that supports the NEP to implement bulk data processing, additional technical analysis, including distribution design costing. Odyssey collects data from every company applying onto the project at every phase, tracks their connections and supports remote verification of solar home systems and mini grid for authenticity. Ultimately, the consultant offers services that encompass a set of graphical analyses on the software platform, as well as the generation of formatted reports for each site for distribution outside the platform. These services saves the NEP a significant amount of resources that would have otherwise been spent on physical verifications considering the amount of connections being deployed under the NEP.

## Independent Verification Agent (IVA)

Finpact Advisory is the IVA which supports the determination and justification of appropriate field/phone verification strategy and sample, using justifiable sampling methods based on the relevant claims. Upon completion of the verification process, the IVA proceeds to undertake field verification if more than 10% of the customers called cannot be reached. In the case irregularities are present during the verification process of the two key methods above and the grantee fails the systems audit, the IVA proceeds to conduct a full audit.

## Grant Administrator

PriceWaterCoopers (PwC) is the Grant Administrator that facilitates the applications, screen applicants against the eligibility criteria for pre-qualification, request and review reports of grantees, assist with the contracting of grantees, prepare disbursement forecasts and disbursement instructions for the PMU and generally administer the grants. They review and evaluate incoming applications and select pre-qualified solar operators that meet the basic eligibility criteria for Performance Based Grant (PBG), as well as separate those applications eligible for the Market Scale-up Challenge Fund (MSCF).

## Project Owners Engineer (POE)

The POEs ensures that the Engineering Procurement and Construction (EPC) projects under the NEP are implemented on schedule, within budget, in accordance with the specifications and drawings of the EPC Contract and with a high standard of quality and workmanship which is in accordance with engineering best practices as given by the International Electrotechnical Commission (IEC) and the Institute of Electric and Electronics Engineers (IEEE). The POEs also ensure that

these standard practices are in accordance with the REA's requirement and the World Bank's Safeguard Policies. Advad Ltd. is the POE for the Energizing Education Programme Phase II and COVID 19 & Beyond Phase I, while the O.T. Otis Engineering and Tractebel Engineering GmbH JV are the POEs for the Energizing Education Programme Phase III.

## Legal Support

Africa Law Practice (ALP) is the legal firm engaged to provide legal support by reviewing laws, policies and regulations, providing legal opinions towards the execution of the NEP as well as assisting in the development and revision of the plan to meet present and future market requirements.

ALP also provides financial advise and transactional support for the components' workstreams of the NEP by conducting due diligence aimed at providing findings from searches conducted on applicant's companies during the evaluation stage.

With regards to the interface between M&E and the sustainability of projects deployed, the NEP's M&E methodology aligns with specifications set out in the Project Appraisal Document (PAD) and Project Appraisal Report (PAR) for the World Bank and African Development Bank respectively, for various sub-components. The M&E is put in place to:

- Set performance targets and assess progress towards achieving them;
- Improve the quality of the project by the use of performance indicators, as well as assessment of risks.
- Provide an objective basis for activity review to improve planning and management.
- Compare the actual NEP results with the targets established in the project design and result framework.
- Provide expeditious feedback for management decision-making, especially at the project level.
- Draw lessons learnt towards improving the design and management of future activities and strengthen accountability for results.
- Objectively evaluate the effectiveness and sustainability of the project in meeting desired measurable targets to Nigeria's population.

## Environmental Impact Assessments (EIA)

The EIA concept and process was adopted as a safeguard instrument for mitigation against and, or minimizing project negative impacts on the environment, public health and property, whilst also highlighting the positive impacts. The EIA Act makes it mandatory for EIA to be conducted for projects, which are likely to have significant effects on the environment.

For EIA study purposes, projects are usually classified into categories (1, 2 or 3). Most mini-grid projects are classified under Category 2 hence; they are exempted from the full EIA or Environmental and Social Impact Assessment (ESIA) study, because usually the Environmental and Social footprint/impacts for mini-grid projects with less than 1MW are considered minimal. Thus, the Impact Mitigation Monitoring (IMM) instrument necessary for projects such as the mini-grids (in most cases) is the Environmental and Social Management Plan (ESMP), which is a more simplified instrument compared to the full EIA/ESIA.

The implementation of the Nigeria Electrification Project (NEP) requires and promotes full adherence to the principles of environmental and social management sustainability that meet best international practice and standard. The E&S unit of the Project Management Unit (PMU), oversees these processes towards ensuring that all required instruments as laid out in the Environmental and Social Management Framework (ESMF) are

submitted by all developers and distributors that wish to gain qualification into the programme.

With considerations to the time gap between application and receipt of EIA permits experienced by developers, the PMU made a formal request to the Federal Ministry of Environment (FMOE) for a simplified EIA process. On 27th July 2018, FMOE granted an approval to the NEP's request. The approval allowed for developers to pay N50,000 registration fee per State irrespective of the number of projects sites in that State, provided that similar technology is being used, sub-projects are being implemented at the same time, by the same proponent and projects are not located in an environmentally sensitive/conflict prone area. In addition, a one-off EIA baseline study was approved for mini grid projects less than 10MW capacity and a final assessment charge for mini grids with less than 1MW was placed between N150,000 to N600,000 only. Lastly, the NEP received approval to develop EIA Guidelines as well as the hosting of an EIA Application Portal on the FMOE's website for an accelerated process.

At the moment, NEP mini grid developers are experiencing a faster turn around time in receiving EIA permits/certificates and the PMU has successfully received the ESIA certificates for all seven (7) solar hybrid captive power plant projects under the Energizing Education Programme Phase II.



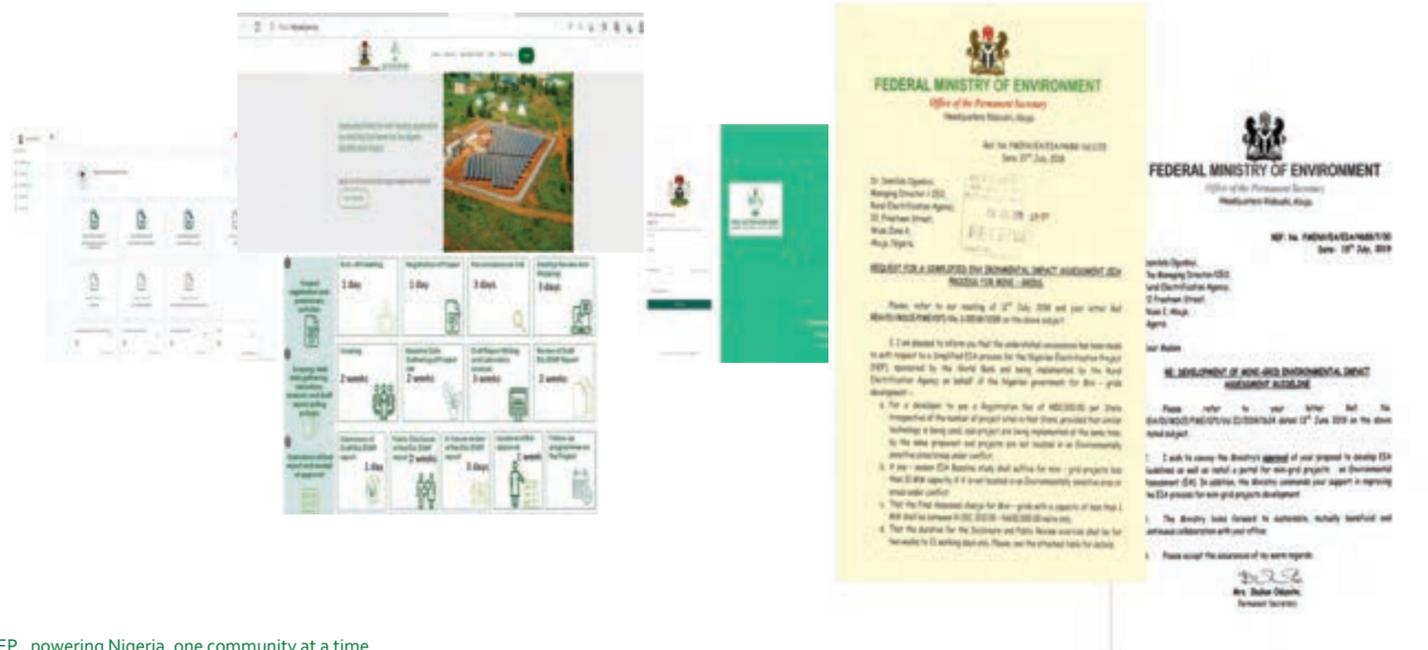
In addition to the efforts of the NEP-PMU in streamlining the ESIA regulatory approval process at the FMOE, the GIZ NESP also worked with the FMOE in this regard and developed the NESP ESMP Guidelines. The ESMP Guidelines was designed to save costs, enhance productivity and assure environmental protection for developers in the course of deploying mini grid projects across Nigeria. As a result of these common efforts, the NEP-PMU and GIZ NESP teams held a technical collaboration meeting to further streamline the regulatory processes across board towards strengthening the ESIA framework of the off-grid sector.

## NEP Policy Documents

In terms of managerial compliance, the workings of the PMU are currently guided by the Project Implementation Manual (World Bank & AfDB), Project Appraisal Document (World Bank), Project Appraisal Report (AfDB), Technical Annex (AfDB) as well as the Project/Loan Agreement (World Bank & AfDB). In addition, the Livelihood Restoration Plan (LRP), Environmental & Social Management Framework (ESMF), Grievance Redress Mechanism

(GRM) and Gender-Based Violence (GBV) Action Plan were developed by the PMU in order to guide the activities and conduct of developers, contractors and stakeholders of the project in the discharge of their duties and obligations under the NEP.

## Environmental Impact Assessments (EIA) Portal



# 7 POLICY & REGULATORY COMPLIANCE

By its design, the NEP was mandated to achieve its development objectives through a robust interface with the extant policies and regulatory frameworks that guide operations in Nigeria's off-grid electrification sector. The Project also facilitates the development of strategic solutions for Environmental and Social (E&S) Risk Management.

Since effectiveness, the NEP has been implemented in accordance to the provisions of the following; Electric Power Sector Reform Act (EPSRA, 2005) which formally opened up the Nigeria Energy Supply Industry (NESI) to the private sector; Nigeria Electricity Regulatory Commission (NERC) Mini-Grid Regulation (2016) and Multi-Year Tariff Order (MYTO, 2008, 2015, 2020, 2022) which has been instrumental towards the deployment of mini-grids; Captive Power Generation Regulation (2008) which guides the NEP towards obtaining Captive Permits for projects under the Energizing Education Programme; Environmental Impact Assessment Act (1992) and National Social Protection Policy (2016,

revised 2021) which guides the E&S Risk Management.

Towards ensuring that the NEP remains compliant to regulatory and policy commitments, the PMU has maintained cordial engagements with the NERC, Federal Ministry of Environment (FMoE) and NEMSA. In the light of regulatory-related complaints made by developers along the bureaucratic process of getting their required approvals for the deployment of projects, the PMU in collaboration with the institutions in question, established dedicated Desk Offices at all three (3) institutions.

Also, dedicated web portals on the NERC and FMoE website were launched to ease the process of obtaining EIA certification, NERC registrations and permits. Most recently, a portal was developed for the REA on the NEMSA website towards ensuring the seamless application for site inspection and subsequent receipt of clearance certificates from the Agency.

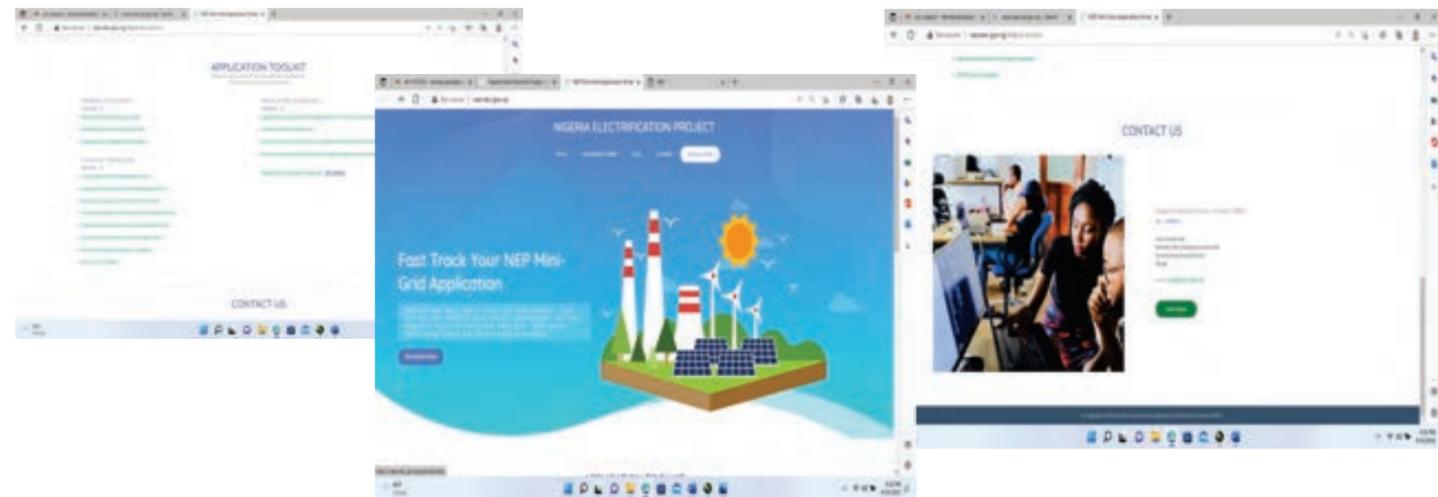
## Call Center

In line with the implementation of the NEP's Grievance Redress Mechanism (GRM) and ensuring that an evidence-based feedback framework is established and functional, the PMU set up a Call Center. Here, experienced Agents manage the NEP's Toll-Free Call Lines as well as the website Live Chat channel under the supervision

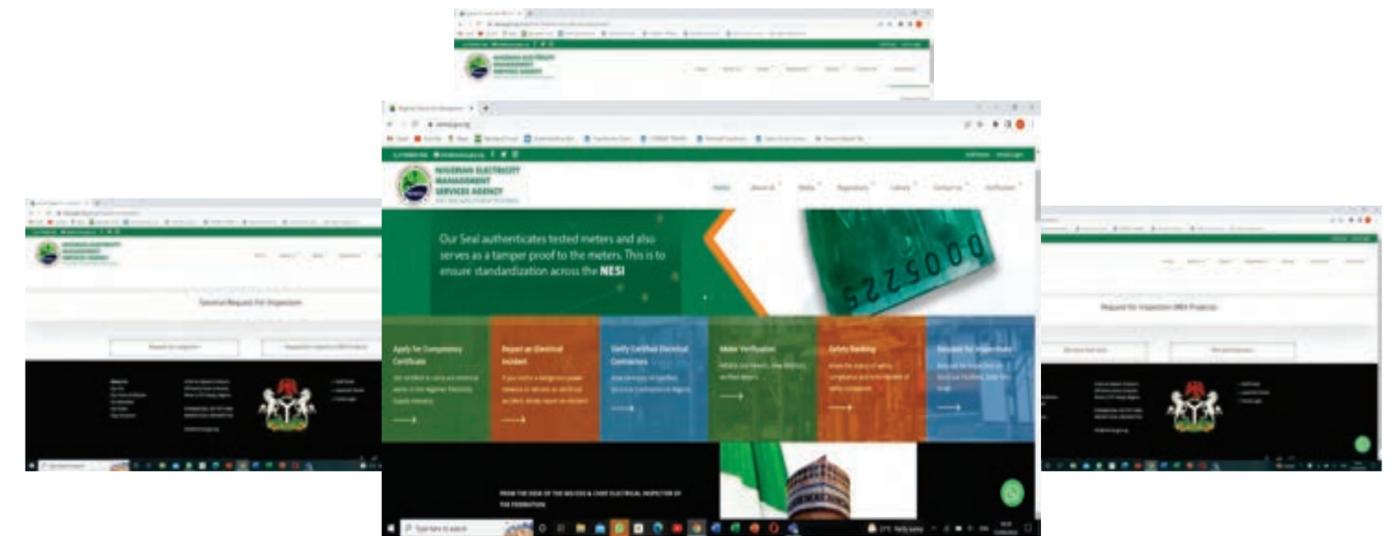
of the Social Safeguard, Communication and ICT Specialists. So far, the Call Center has recorded over 2,000 interactions with prospective applicants and the general public all targeted towards providing information to enquiries and addressing issues raised.



Nigerian Electricity Regulatory Commission (NERC) Portal



Nigerian Electricity Management Services Agency (NEMSA) Portal



# 8 GENDER MAINSTREAMING

As gender inclusion is a core objective of the REA, the NEP has played an active role in bridging the gender gap within the power sector by promoting and driving female participation in electrification initiatives. The NEP's most notable efforts in achieving the aforementioned is in the development of a Gender Mainstreaming Plan which is designed to facilitate increased participation of women across the power sector through the creation of targeted policies, programmes and projects across the Project value chain.

## POLICIES

The NEP requires that private companies seeking to partner with or provide technical assistance to the Project have a workforce that is at least 30% female.

In addition, the NEP employs the services of a Gender Based Violence (GBV) Specialist who is tasked with promoting, organising, managing and coordinating GBV interventions across all components and interrelated units across the NEP.

## PROGRAMMES

### EEP STEM Female Internship Programme

As part of REA's continued commitment to advancing gender inclusion and diversity in the power sector, the Energizing Education Programme (EEP) Science, Technology, Engineering and Mathematics (STEM) Female Student Internship Programme (EEP STEM Internship Programme) was also incorporated under NEP's EEP Phases II & III components. The objective of this programme; is to provide hands-on foundational training and capacity building in the design and installation of solar hybrid power plants, to 20 female students from each of the EEP beneficiary institutions (as was done under EEP Phase I).

In addition, the EEP STEM Internship Programme seeks to:

- Assist the students excel academically in their various STEM courses, as well as encourage them to further advance their studies in STEM-related courses/ disciplines.
- Expose and give the students the confidence to take up STEM related careers with experts (indigenous and foreign) companies within the energy sector.

- Equip the students with the skills/expertise required to thrive in the renewable energy sector.



## Orange The World

The NEP also participates in the annual UN Women 16 day "Orange the World" campaign which focuses on eliminating violence against women as well as calling for global action to increase awareness, promote advocacy and create opportunities for discussions on challenges and solutions.

As part of this, several capacity building workshops were held with the NEP PMU staff in order to raise awareness on GBV as well as proper mitigation measures across the REA.



## Capacity Building

In recognition of the female deficit in the energy sector, the NEP has been committed towards ensuring that female members of the Team are constantly engaged in gender-focused conferences, seminars and workshops etc. At these events, female representatives of the PMU offer insights to support women's participation and growth in the workforce, whilst also gathering new information on gender inclusion within the sector.



## PROJECTS

### NEP Team Members & Beneficiaries

Upon the initial establishment of the World Bank NEP-Project Management Unit (PMU) in 2019, the Head of the PMU, as well as the three Component Leads, were female. In addition both the Component Heads Under the African Development Bank NEP-PMU were also female. Currently, females make up 41% of the entire PMU Team with 43% of them in management positions, which further highlights the REA's focus on equal opportunity and gender inclusivity within the power sector.

Furthermore, the NEP ensures that women across all beneficiary groups will receive increased opportunities through a range of integrated activities including, the collection of gender disaggregated data across all components (e.g. number of female headed households/MSME's electrified by the mini-grids or SHS's), gender-targeted marketing and community outreach. Training programs are also delivered to beneficiary groups at various levels of project implementation to encourage and facilitate women's participation on the Project.



# 9

## LESSONS LEARNT & WHAT WORKED

### LESSONS LEARNED:

#### A. Mini Grid Component

1. Due to the increase in FOREX, developers under the Mini grid component experienced difficulties in securing financing for their projects. This led to a decrease in the frequency of project submissions.

2. Private sector developers/companies applying for Results-based Financing programmes like the NEP need some form of hand-holding assistance/capacity building to strengthen their capabilities for preparing economically viable projects and proper application documentation in order to cut-down delays in evaluation and qualification.

3. Whilst we believe the 90 days supply of power milestone for payment is important towards ensuring that projects delivered are fit for purpose, we also believe that additional & earlier milestones for payments within the results-based financing framework are essential towards attracting and securing private sector investments.

#### B. SHS Component

1. Incorporating the API linkage system into Results-based financing programmes is identified as a necessity towards achieving higher verification rates than would have been gotten through the erstwhile telephone verification, thus more disbursements.

#### C. Productive Use Appliances & Equipment Component

1. The PUE market is still at its infancy stage in Nigeria, therefore developers could benefit from technical support/trainings that would help them in managing multifaceted roles like EPC contracting, appliance supply and

financing as well as Operations & Maintenance. It is also pertinent to actively facilitate synergies amongst various actors across the value chain.

#### D. Energizing Education Programme

1. As part of the lessons learned from the EEP phase I, in order to ensure more sustainable projects under the EEP phase II, the grid interconnection element was introduced to help cut down the cost of battery replacement, thereby saving costs for the Beneficiary Institutions in the long run.

2. The EEP Beneficiary Institutions (BIs) were ensured to participate in all technical studies/ assessments carried out such as the Environmental and Social Impact Assessment, Livelihood Restoration Plan, Front-end Engineering Design, Energy Audits, Sustainability Plan, etc. Part of the lessons learned in this case is that hands-on continuous stakeholders' engagement with the BIs has proved to be extremely beneficial to the EEP projects towards ensuring a more seamless implementation flow.

3. Upon commencement and completion of the Livelihood Restoration Plan (LRP), the LRP was shared with the Beneficiary Institutions (BIs) for adoption which they did. This is in order to avoid cases of unsuitable (encumbered, swampy, etc.) project lands being allotted for projects' construction, as was in some cases under the EEP phase I.

4. Upon completion of the Front-end Engineering Design, the Energy Appliance Audits and grid interconnection studies, the reports were shared with the BIs for contribution, adoption and sign off of the projects' design. This is in order to avoid cases of disassociation with the project designs by the BIs. As part of the lessons learnt from phase I, the EEP II employed a robust stakeholder engagement strategy

that identified and engaged key stakeholders such as the relevant Distribution Companies (DisCos) from the projects' inception, so as to avoid delays in securing collaborations with them, as a result of their organizational bureaucratic processes.

5. Previously, project timelines did not take into account certain variables that will possibly impact the programme's targets. Some of these variables include unforeseen circumstances such as the COVID-19 pandemic, frequent approvals and No-objects from the World Bank, as well as delays owed to the bureaucracy involved in obtaining feedback from key stakeholders such as the Beneficiary Institutions and relevant DisCos. However, having learnt from this, the programme timelines are periodically revised to factor these variables.

6. One of the lessons learned from EEP I is that the universities do not necessarily have the funds available for continuous Operations and Maintenance (O&M) of the plants after the 1-year O&M period thus undermining plant performance. A comprehensive Sustainability Plan has been developed for EEP II as a mitigative strategy. The plan is designed to ensure the sustainable operation, maintenance, and financial management of the projects to guarantee the desired longevity of these plants for 14 years after the 1-year O&M period.

7. For the EEP female Science, Technology, Engineering, and Mathematics (STEM) Internship Programme, one of the major challenges faced under EEP I was lack of interest from some of the nominated female STEM students. As a lesson learned, a more interactive approach will be adopted in the selection and induction process of the female STEM students, towards engaging only those who are interested in participating in the STEM programme.

### WHAT WORKED:

1. NEP's implementation through a results-based financing framework worked well as it attracted millions of private sector investment (over \$200m) to blend with the NEP grant funds. It also ensured that projects were delivered efficiently and fit for purpose.

2. Having dedicated teams to administer components and units of the PMU facilitated effective achievement of the project deliverables. Beyond the dedicated teams, the PMU comprises of an array of specialists and project managers with M & E, legal, environmental, social, project finance and engineering technical expertise. The presence of these teams and experts ensured the effective hand-holding of NEP applicants and their subsequent qualification to participate on the Project.

3. The adoption of flexibility in the PMU's project management approach supported the advancement of the project. This flexibility enabled the team listen to the market, understand the challenges and make adjustments to the design of the Project where and when necessary.

4. Having Task Team counterpart heads of components also played a significant role towards the successes achieved under the NEP. This arrangement afforded the NEP component heads the opportunity to align project activities, ideas and objectives with that of the Banks, thereby cutting down the timeframe for the receipt of approvals and No Objections etc.

5. Collaborating with key government stakeholders enabled the

streamlining of processes to obtain various approvals, permits, licenses etc. Such streamlined processes enabled the development of web portals (for NERC and FMoE), which allows applications to be submitted online from the comfort of one's home or office.

6. The formation of dedicated team members stationed at NERC, FMoE and NEMSA towards providing fast-track support for application processes and subsequent receipt of various permits, certificates, approvals etc., was also a top-tier strategy that works for the Project.

7. The NEP thrived working with development partners such as USAID's NPSP, who provided capacity building support for private sector companies, enabling them to put together requisite documentation for securing finance required to blend with the NEP grant funds.

8. Working with other development partners allowed for brainstorming and subsequent development of supporting programmes that address challenges that hinder the quick pace of implementation. For example, despite the amount per connection/SHS tier being designated in USD, developers/grantees get paid the Naira equivalent. This caused shortfalls to the grantees in view of the FX fluctuations in the country. Furthermore, considering that CAPEX per project is spent on procuring major equipment from abroad with hard currency, project delivery timelines are obstructed and increased tariffs are charged to end users etc. In view of these challenges, Global Energy Alliance for People & Planet (GEAPP), AIIOn and Odyssey established the Demand Aggregation for Renewable Technology ("DART") program to combine

demand pooling, aggregate purchasing of solar equipment, provide access to affordable finance and coordinate logistics processes to unlock economies of scale for solar companies, towards achieving cost savings for end users, accelerating project delivery and growing the renewable energy sector in Nigeria.

9. The close collaboration with the FMoE, OAGF-FPFMD and BPP (AfDB NEP only) enabled the NEP to avoid noncompliance with relevant fiscal and procurement rules, laws and principles etc. as well as the reduction of ineligible expenditures and incidences of mis-procurement.

10. Working in close collaboration with the FMoE was beneficial to the project as it facilitated the receipt of approvals from the Ministry for a simplified EMP/EIA application process. These approvals allowed for the hosting of a dedicate EIA web portal, for developers to pay a single registration fee per State irrespective of the number of projects and applications towards the receipt of certifications/permits were fast-tracked leading to more project deployment and increased disbursements amongst other things.

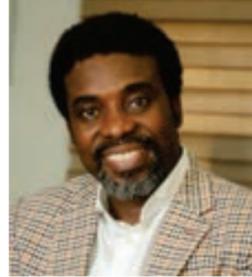
11. The inculcation of gender mainstreaming into the NEP's implementation framework demonstrated the REA's commitment to gender inclusion where specific beneficiary percentages were allocated to female-headed households and MSMEs. Furthermore, the NEP's Management Team consisting of approximately 43% female indicated to the public that women in management positions can lead and achieve results.

# 10 NEP GRANTEES FEEDBACK



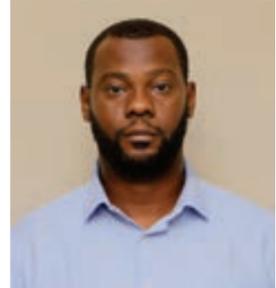
**Olusegun Odunaiya, MD/CEO**  
Havenhill Synergy Limited

"The NEP Programme has been catalytic to the growth of the energy access space in Nigeria. In addition, the programme has helped us maximize impact to at least 80,000 people".



**Ayo Ademilola, MD/CEO**  
A4&T Power Solutions Limited

"NEP has given remarkable support to the players in the renewable energy sector that has fostered rapid and increasing energy access to unserved and the underserved."



**Olu Aruike, Country Mgr. Nig.**  
Husk Power Limited

The Nigeria Electrification Project's commitment to public-private partnership has been a major accelerator for Husk's growth in Nigeria. We are proud to be partnering with NEP in democratizing sustainable development for rural Nigeria.



**Okenwa Anayo, MD/CEO**  
Nayo Tropical Technologies Ltd

"NEP has provided a huge growth leverage for our Mini-grid operations across Nigeria. We are happy with the dynamic NEP team and the visionary leadership and support from REA."



**Chris Ebiware, Country Mgr. Nig.**  
Renewvia Energy Corporation

"The REA WB/NEP PBG program has encouraged Public Private Partnership in the rural development using the nation's abundant renewable energy sources to provide off-grid solutions to rural dwellers with deployment of solar mini-grids and solar home systems. I believe the NEP/WB/PBG program for off grid communities is gradually preparing Nigeria for another industrial revolution".



**Engr. Ifeanyi Orajaka, MD/CEO**  
GVE Projects Ltd

"The impact of the project since inception has been phenomenal which is evident in the number of households and businesses in several communities across the country that now have access to reliable, sustainable and affordable energy. We are confident that the program is rightly structured to drive Nigeria's energy transition aspirations".



**Alexandar Obiechima, MD/CEO**  
ACOB Lighting Technology Limited

"The NEP has done wonderfully well in seeking to bridge the energy access deficit by providing support to enable ACOB provide electricity to last mile households, MSMEs, and educational and healthcare facilities."



**Emeka Obienyi, MD**  
Zylab Technologies Nigeria Ltd

"NEP under the supervision of a dynamic manager Engr Ahmad Salihjo Ahmad is one of the best performing project in Nigeria. We at Zylab Technologies Nigeria Ltd have had a wonderful experience working with them in the past and currently still working with them and we are satisfied with their approach to work".



**Bankole Cardoso, MD/CEO**  
ENGIE Access Limited

"The NEP program has been highly transformative for our business. The program illustrates exemplary ethical standards through transparent, efficient, and supportive processes that has made operational scale and profitability attainable".



**Joyce Chen, Chairlady**  
Lemi Technology Dev. Co. Ltd

"NEP is a successful project which attracts many solar companies to Nigeria to develop the solar market and close the existing energy gap. Hence millions of Nigerians have access to affordable electricity and improve their life quality."



**Halima Y. Moh'd. Partnership & BDM**  
Asolar Nigeria Limited

"NEP has helped boost our coverage in providing energy access to off-grid communities. Our company has tremendously benefitted from the program, we are proud to be a NEP Partner."



**Olawale Alao, CCO**  
LUMOS

"Lumos is proud to partner with the REA's NEP. The OBF has helped us provide affordable and reliable access to electricity for our customers thereby improving their quality of life."



**Kristoffer Laurson, Co-founder & CEO**  
PAS Solar

"PAS Solar's success with our Energy as a Service (EaaS) model was accelerated thanks to the grants obtained from NEP. The economic hardship and disruption caused by the lockdown was reduced, and as a grantee of NEP the business has been able to grow by over 30% so far this year".



**Zhang Gang, GM**  
Beebeejump International Ltd

"On behalf of the management of Beebeejump Int Ltd, we sincerely appreciate the Rural Electrification Agency (REA) and NEP for the initiative and management of OBF grant. Through our participation, we have been able to deploy over 200,000 SHS systems to rural communities all over the country at affordable prices".



**Kenneth Esenwah, MD**  
d.light Nigeria

"Our partnership with the Rural Electrification Agency (REA) and the World Bank have enabled us to drive affordability and accessibility of our Solar Home Systems and in the process, transformed the lives of millions of Nigerians by improving energy access and creating employment. We are now well positioned to meet the renewable energy demands of the future and achieve the goals set-out in the Nigeria Energy Transition Plan that was recently unveiled by the Federal Government".



**Olasimbo Sojinrin, COO**  
Solar Sisters

"We commend the huge effort of the NEP to electrify Nigeria. As beneficiaries of the OBF grant, we have enabled clean energy access in last-mile communities through women's entrepreneurship. The process has been simple, transparent, and reliable and the NEP team has provided adequate hands-on support to us. Thank you once again for understanding the importance of gender equity in energy access".



**Tuga Omoyemi, Head PAYGo**  
Greenlight Nigeria

"The NEP program has been catalytic in supporting the rapid expansion of access to clean solar energy in Nigeria. The program is very well run and professionally managed with a proactive team. We look forward to deepening our partnership in the years to come.."



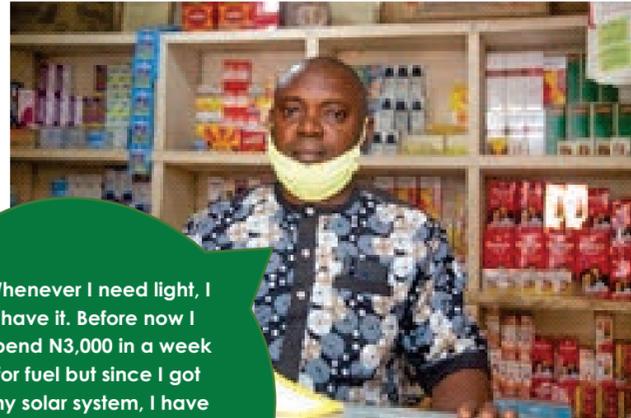
**Mir Islam, CEO**  
EM -ONE Energy Solutions Ltd

"NEP is a vital force championing sustainable energy as the path for the development in Nigeria. EM - ONE is proud to partner with REA to advance universal energy access for the country."

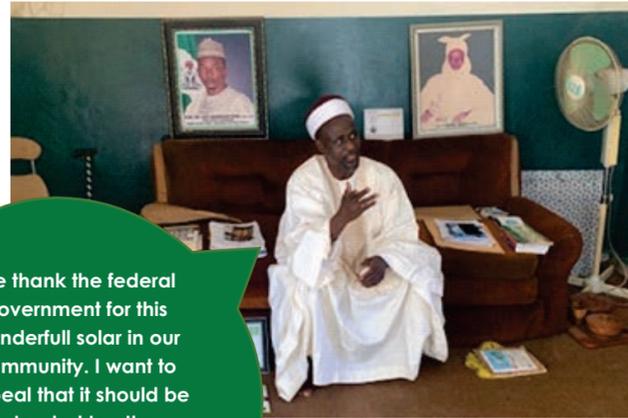
# 11 TESTIMONIES OF BENEFICIARIES



“Before I started using solar system, I used to have issues with my generator but now I have stopped using generator and with less than N100 I can use the solar system without stress”



“Whenever I need light, I have it. Before now I spend N3,000 in a week for fuel but since I got my solar system, I have saved a lot of money for my children's school fees”



“We thank the federal government for this wonderful solar in our community. I want to appeal that it should be extended to other neighboring communities too”



“We are enjoying light now in our community every day. This solar is very good. Thank you REA”



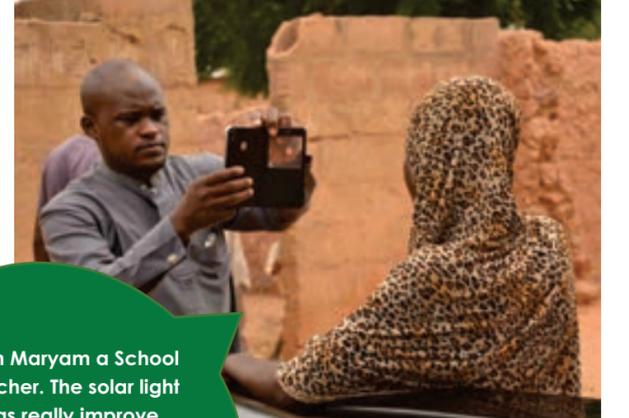
“My name is Bola Olorunfemi and I am in Primary 5. The light helps me to see whenever I want to play with my brother and also to do my assignment”



“Since I come this place for 2008, we never see light, no generator we use. But since I buy this my system I no use generator again. I use the light for evening to take do my business”



“I am Garba the youth leader in this community and also a Teacher. We thank the federal government for this solar and will protect it very well”



“I am Maryam a School Teacher. The solar light has really improve security in our community and my pupils have been doing their homework in the night”

# 12

## NEP - PMU MANAGEMENT TEAM



Engr. Uche Honnah  
MG Component Coordinator



Engr. Aminu Dahiru  
Mini Grid Lead (AfDB)



Lande Abdu  
S&S Component Coordinator



Temitope George  
PUE Component Coordinator



Engr. Sallau Joro  
EEP II Component Coordinator



Funmi Jones  
EEP III Component Coordinator



Adejoke Odumosu  
Inter-Govt. Relations Lead



Blessing Agbabokha  
PA Unit Lead (WB)



Vera Ufaruna  
PA Unit Lead (AfDB)



Engr. Ahmad Salihijo Ahmad  
MD/CEO, REA



Anita Otubu  
HPMU - NEP



Susan Igata  
Senior Social Specialist



Abubakar Usman  
Audit Unit Lead (AfDB)



Ali Lawal  
Audit Unit Lead (WB)



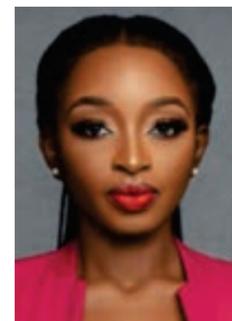
Engr. Tunde Seriki  
Procurement Specialist (WB)



Taiwo Olawoyin  
Procurement Lead (AfDB)



Edi Ekhomu  
Proj. Dev. Fin. Specialist (WB)



Barbara Izilein  
Senior Advisor to MD/CEO



Ahmed Abubakar  
Communications Lead (WB)



Samuel Bradford  
Head Admin. (WB)



Clinton Amadi  
M&E Unit Lead (WB)



Uche Ugoji  
M&E Unit Lead (AfDB)

# NEP - PMU TEAM

MINI GRID TEAM



PUE TEAM



SHS TEAM



EEP TEAM



NERC FAST-TRACK TEAM



ENGINEERING TECHNICAL TEAM



NEMSA FAST-TRACK TEAM



PROCUREMENT TEAM



HPMU OFFICE



CALL CENTER TEAM



ACCOUNTS TEAM



COMMS/ICT TEAM



E&S TEAM



ADMIN TEAM



**NEP- Task Team (WB & AfDB)**



**Arsh Shama**  
Task Team Lead (WB)



**Chigoziri Egeruoh**  
Task Team Lead (AfDB)



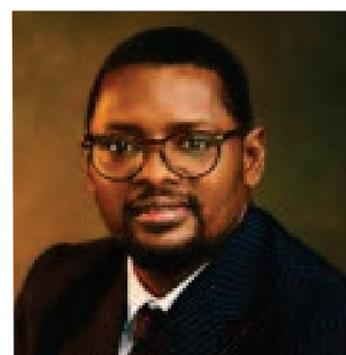
**Jon Exel**  
Co-Task Team Lead (WB)



**Tatia Lemondzhava**  
Snr. Energy Specialist (EEP II - WB)



**Ashish Shrestha**  
Snr. Energy Specialist (Mini Grid)- WB



**Bunu Bukar**  
Energy Specialist (WB)



**Patricia Adeniyi Mong**  
Energy Specialist (AfDB)



**PMU Supporting Consultancy Firms**



WORLD BANK GROUP

S/N	FIRM	ASSIGNMENT
1.	ADVAD Limited	Project Owners Engineer
2.	Africa Law Practice (ALP) NG & Co.	Legal Support
3.	Datech Nigeria Limited	Energy demand and appliance audit
4.	Environmental ACCORD	ESIA
5.	FinPact Advisory	Independent Verification
6.	INENSUS GmbH	Review of Bidding Documents
7.	McKinsey & Co.	EEP Sustainability Plan
8.	Odyssey Solutions Limited	Development of web-based platform for M&E
9.	PricewaterhouseCoopers	Grant administration
10.	Soltech Nig. Limited	Front-end Engineering Design (FEED)
11.	TFE Energy GmbH	Geospatial Mapping for COVID 19 & Beyond Phase 2
12.	Value Minds Limited	Development of Project Management and Work Plan for EEP II



S/N	FIRM	ASSIGNMENT
1.	Cagewox Dot Net Limited	Training on productive use of energy and energy efficient equipment
2.	Micro energy Intl. & Creeds Energy Limited JV	Market study of PUE
3.	Sustainabiliti Limited	ESIA
4.	Tractebel GmbH & Otis Engineering JV	Project Owners Engineer
5.	Solanke & Suleimanu	External Auditors

# 13 HPMU NEP's MESSAGE



Leading the Project Management Unit (PMU) for one of Africa's largest off-grid renewable energy access projects under the Rural Electrification Agency has been both daring and exciting. This affirmation is in line with the level of programmatic innovation and stakeholder participation that led to the achievement of the NEP's milestones in Nigeria's off-grid sector.

Within the last decade, Nigeria has been classified as one of the countries with the highest electrification access deficits across the world; a statistical designation unbefitting for a nation with immense human capital and natural resources requisite for her

transformation into a global economy. Various studies have shown the direct correlation between electrification access and economic development; therefore, we can estimate that Nigeria's prior complete reliance on the national grid has stalled economic development. With this understanding in view, the Federal Government of Nigeria secured financing from the World Bank and African Development Bank (AfDB) for the development and implementation of Nigeria Electrification Project (NEP) which leverages on off-grid solutions to supplement the national grid.

From 2020 to date, remarkable milestones have been achieved by the NEP as detailed in the preceding sections of this report. We have successfully deployed mini-grids and solar home system connections on an exponential scale, provided reliable constant power supply to healthcare facilities, launched the deployment of Productive Use Equipment and Appliances for demand stimulation and financial sustainability of mini-grids as well as set activities in motion to provide tertiary institution staff and students with clean reliable electricity, all for the advancement of livelihoods, wellbeing and the national economy. At the moment, we have concluded activities that guarantee a pipeline of mini-grid and SHS connections that will further electrify the unserved and underserved communities.

These activities were done methodically over a short period of time. Firstly, the PMU was restructured towards ensuring that dedicated teams were setup for specific tasks, fast-track mechanisms were formed to create ease for NEP grantees to navigate regulatory hurdles and digital platforms were designed to further shorten the overall timeframe required to obtain regulatory permits, approvals and certifications as applicable. In addition, a robust hand-holding methodology was adopted to aid private sector companies in their application process as well as an evidence-based feedback mechanisms targeted at aggregating complaints, concerns and enquiries from project applicants and the general public. Furthermore, team members were encouraged to apply innovation and disruptive thinking towards solving problems that were encountered in the course of implementation, considering the innovative and timely nature of the project and the larger off-grid renewable energy sector.

in addition, we created a substantive data and knowledge management framework that ensures that reports, policy documents and analysis of data were produced, collated and utilized as appropriate, while leveraging on intense stakeholder engagement across the entire sector towards ensuring that no one is left behind on this intriguing journey of energy transition.

At this point, I would like to express my immense gratitude to the Vice President, Federal Republic of Nigeria, Honorable Minister of Power, Honorable Minister of State for Power, the Renewable Energy & Rural Access Department and staff members of the Federal Ministry of Power for the exceptional supervisory role they played towards ensuring that the NEP is implemented in-line with the overarching vision of the Ministry and power sector at large. I will also like to convey my appreciation to all the stakeholders in the sector that played very vital roles towards the NEP's progress so far. These stakeholders include but are not limited to; the Federal Ministry of Finance (IERD), Office of the Accountant General of the Federation (FPFMD), Federal Ministry of Environment (EIA Department), NERC, NEMSA, NUC, BPP, TCN and State Governments across the federation.

Furthermore, I extend my sincere gratitude to the International Financial Institutions (IFI) and development partners who have in no small measure partnered with the PMU in the course of project implementation. These partners played strategic roles in terms of technical and collaborative assistance, financing as well as knowledge exchange. They include but are not limited to; World Bank, African Development Bank, USAID-NPSP, GIZ-NESP, RMI, GEAPP, CrossBoundary, AllOn and SEforALL as well as the Investors/Commercial Banks; InfraCredit, ARM-Harith, FCMB, Sterling Bank etc.

To the mini grid developers, solar home system suppliers/services providers, EPC contractors amongst other private sector actors whom we have worked tirelessly with within the period of this report, I wish to state emphatically that you all are truly the champions of the off-grid electrification access drive. The level of commitment you have all shown towards developing the renewable energy market in Nigeria and ensuring that rural communities, educational and healthcare facilities are

electrified is truly commendable and noble. It is imperative to note that, the aggregate of your actions are the bedrock upon which Nigeria's energy transition will become a reality within the shortest possible time. Therefore, I would like to encourage the private sector players to strive towards adopting innovative strategies for the deployment of renewable energy solutions, whilst ensuring that quality service delivery remains the standard across the sector.

My sincerest appreciation goes to the REA Board, the former MD/CEO, REA, Damilola Ogunbiyi under whose tenure the NEP was conceptualized and the current MD/CEO REA, Engr. Ahmad Salihijo Ahmad, whose excellent leadership facilitated the successes that the NEP has achieved thus far, the REA's Executive Directors, Management and Staff, the very supportive World Bank and AfDB NEP Task Teams, as well as all members of the extremely hard working and results driven NEP PMU. I will also like to thank all the PMU's supporting consultancy firms. I commend the constructive feedback, strategic brainstorming sessions, flexibility, innovative project management and support skills as well as the extent of interpersonal relationships which made the assignment a lot easier than I could have imagined.

As the NEP continues to support private sector companies and contribute towards closing the electrification gap, it is my expectation that we will double down on our efforts, foster more strategic partnerships and leave an indelible footprint in Nigeria's energy transition and electrification access pathway.

Thank you.

**Anita Otubu**  
Head Project Management Unit - NEP

## EDITORIAL TEAM



**Anita Otubu**  
Head Project Management Unit - NEP  
Twitter: @AnitaOtubu, LinkedIn: AnitaOtubu



**Ahmed Abubakar**  
Communications Lead  
Twitter: @AhmedMbamoi1960, LinkedIn: AhmedAbubakar



**Buchi Gabriella Azuka**  
Communications Assistant  
Twitter: @Boo\_chiee, LinkedIn: GabbyBuchiAzuka



**Onyeka P. Okoye**  
TA to HPMU - NEP  
Twitter: @OnyekaPrynce, LinkedIn: OnyekaPOkoye



# RURAL ELECTRIFICATION AGENCY NIGERIA ELECTRIFICATION PROJECT

Nigeria Electrification Project (NEP) 🏠  
Project Management Unit  
16 Umaru Dikko Street  
Jabi, Abuja

[info@rea.gov.ng](mailto:info@rea.gov.ng) 📧  
[www.nep.rea.gov.ng](http://www.nep.rea.gov.ng) 🌐