



RURAL ELECTRIFICATION AGENCY

ENERGY = EMPOWERMENT = EFFICIENCY



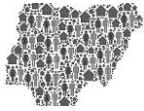
OFFICIAL DECK FOR THE COP 27 SIDE EVENT

Investing in Nigeria's Off-grid Energy Transition Opportunities

*Impact Snapshot of the REA's Off-grid
Interventions*

8th November, 2022

Nigeria: Sector Overview



Population of over 200 million people; world's most popular black nation



Electricity access rate – 55%; 36% in rural communities; over 90 million without access to electricity



Since 2012, Nigeria's electricity consumption has declined by 20 percent to about 126 kilowatt-hours (kWh) per capita



Annual self generation cost are estimated at \$14 billion



DERs can stimulate a \$20 billion investment opportunity in Nigeria; revenue opportunity of up to \$8 billion



Activation of a pathway to carbon neutrality by 2060 through a data-backed Energy Transition Plan (ETP)



Sufficient investment opportunities across value chain, guarantees and de-risking instruments to incentivize private sector activity at scale



The adoption of DERs has increased due to the need for clean and reliable energy to complement the unreliable grid supply



Stern commitment to a ratified the Paris Agreement and NDCs, with a vision 30:30:30 - 30,000MW of electricity by 2030 with renewable energy contributing 30% of the energy mix



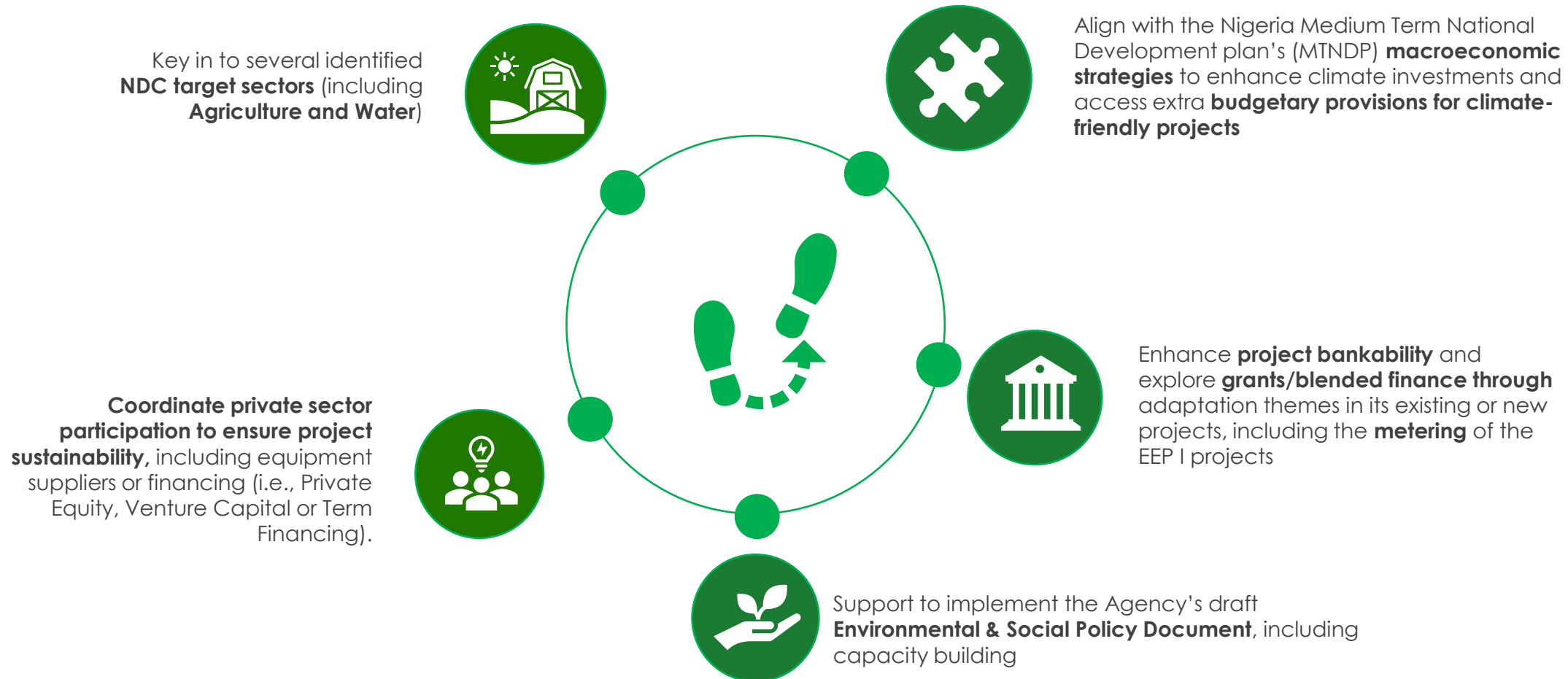
REA playing key role in implementing off-grid projects, stimulating opportunities and coordinating private sector participation



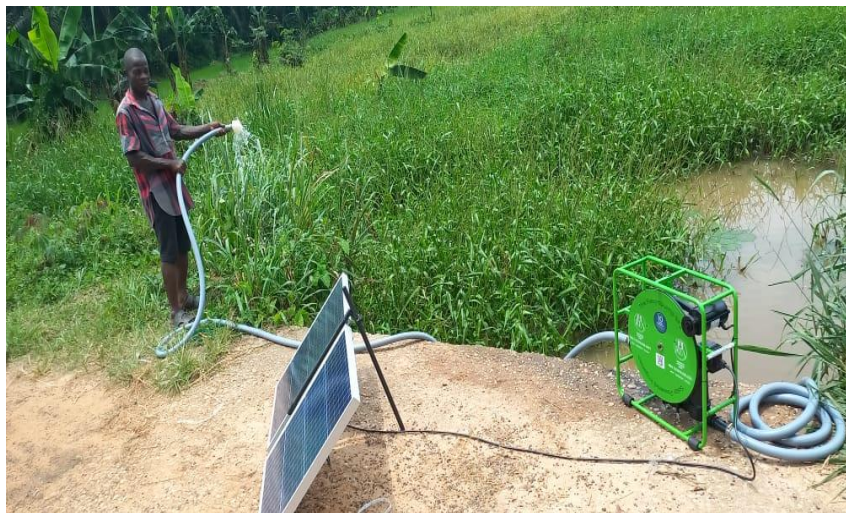
The ETP - \$1.9 Trillion is required to get to Net Zero by 2060, including \$410 Billion above projected usual spending. This additional cost translates to about \$10 billion annually

REA's Role in the Implementation of the ETP

As an implementing Agency in the nation's off-grid space, the REA has been deploying renewable energy solutions such as mini-grids and standalone home systems in last mile communities, hospitals, PHCs, schools and markets. The REA is one of the key Agency with a mandate as well as strategy already designed in line with SDG7, pre-ETP.



Programme Snapshot – Federal Government's Medium Term National Development Plan (MTNDP)



Solar-powered Pumps for Farmers



Installation of SHS systems



Solar street-lighting deployed for illumination



Installed SHS systems



Sensitization of farmers on PUE



Programme designed to **Unlock the economic potential/activities** in rural (incl. agrarian) communities



Aiding the provision of **electricity solutions** for **agro-processing** and **irrigation** purposes.



Provide **under-privileged and unserved regions** with over **2, 000 low-capacity SHS**



Deviate from subsidized electricity consumption to "productive use"



Over **1,000 solar-powered irrigation pumps** to be deployed



6 mini-grids to be deployed

Programme Snapshot - The Nigeria Electrification Project



Sensitization of beneficiary communities under the Nigeria Electrification Project (NEP)



234kWp mini-grid, Shimankar, Niger State



Accelerating connections in family units through the NEP – SHS component



Ariel view of the 64kWp mini-grid, powering Rokota community, Niger State



Grant Agreement (GA) signing with SHS, mini-grid developers at the REA headquarters



Successfully sensitized **160+** communities across Nigeria



Over **65** solar mini grid projects completed, over **11,000** connections and about **180,000** connections in the pipeline



4.0MW mini-grid capacity installed



Achieved over **955,000** SHS connections across Nigeria, **impacting over 4 million** lives



151 Grant Agreements signed, with over 20 mini-grid and SHS developers, improving the portfolio of the programme

Programme Snapshot - The Rural Electrification Fund



100kWp mini-grid, Eka Awoke Community, Ebonyi State State



80KW mini-grid, Upake, Kogi State



40 kWp mini-grid, Goton Sarki, Niger State



The village chief catching up with the news, powered by the **100KW mini grid**, Akpabom, Akwa Ibom



A tour of the battery room of the **100kWp mini-grid**, Adebayo community, Edo State



13 Solar hybrid mini grids deployed



51 additional mini-grids underway (REF Call 2)



Over **24, 000 households** connected



Over **19, 000 solar home systems** connections



Over **5, 000 jobs** created during the construction phase of these projects

Programme Snapshot - The Energizing Education Programme



The EEP All-Female STEM Interns at work



EEP WTC (Workshop and Training Centre), ATBU, Bauchi



7.1 MW solar hybrid power plant, BUK, Kano



1.35MW Solar Hybrid Project at the Federal University of Petroleum, Effurun (FUPRE), Delta State



Battery room powering the 8.2MW solar hybrid project in Federal University of Agriculture Markurdi (FUAM)



Over **80 female EEP STEM interns** trained and certified.



7 Federal Universities energized.



Over **3km of solar street lights** deployed to illuminate campuses and provide security on-campus.



The World Bank has committed to EEP Phase 2, enabling us to **energize 7 additional universities and 2 university teaching hospitals**

Programme Snapshot – Energizing Healthcare



Community clinic energized by a 60kWP Solar Hybrid Mini-Grid In Ikom, Cross River



Impact of one of the 14 health centres energized with a 50Kwp containerized solar system



7.5Kwp mini-grid at the Joint Hospital, Ozubulu, Anambra State



50Kwp containerized system at Irrua Specialist Hospital, Edo State



50 KW solar system at Federal Medical Center Yenagoo, Bayelsa State



100 Treatment/Isolation centers and **400 PHCs** to be energized



Over **190 solar mini-grids** ranging from **5kW to 15kW** to be deployed across health centers nationwide

Programme Snapshot – Energizing Economies Initiative (EEI)



Diesel-powered generating sets being decommissioned at Sura market following the activation of the IPP



Improved customer service and response time through the dedicated customer service centers



Installed solar PVs powering **shops and businesses** at the Edaiken market



The IPP plant deployed in Ariaria market, Abia State



Wasiu Akerele, a printing press business owner now energized by the **EEI**



Over 19, 000 MSMEs connected to clean, safe and reliable energy



Over 190 solar mini-grids ranging from **5kW to 15kW** to be deployed across health centers nationwide



Over 300 jobs created

The REA Impact Snapshot, Aggregated across all programmes



Over 70
MINI GRIDS
COMPLETED



Over 995,000
TOTAL SHS
DEPLOYED



16
PUE'S DEPLOYED
INCLUDING FIRST OF ITS
KIND GREENHOUSE



2.25M
TOTAL
CONNECTIONS



28,524
TOTAL MINI GRID
CONNECTIONS



305,381
HOUSEHOLDS
HEADED BY FEMALE



11.25M
NIGERIANS
ELECTRIFIED



7.5 MW
TOTAL MINI GRID
SIZE



1,140
MSMEs
HEADED BY WOMEN



26
CONTAINERIZED
SOLAR SYSTEMS
DEPLOYED
TO HEALTH FACILITIES



Over 260
COMMUNITIES
SENSITIZED



Over 80,624 tons
CO2 EMISSION
REDUCTION

Other REA Programmes Targeted at Improving the Off-grid, Renewable Energy Ecosystem

SOLAR POWER NAIJA (SPN)

FGN has adopted a solar strategy for the electrification of **5 million households, serving about 25 million Nigerians**, in the Economic Sustainability Plan

ENERGISING AGRICULTURE PROGRAM (EAP)

EAP Seeks to **stimulate the productive use of minigrid electricity in agriculture** by enabling market-led deployment of appliances, **breaking the silos** separating electrification and agricultural development programs

AFRICA MINI-GRIDS PROGRAMME (AMP)

Supporting access to clean energy by **increasing the financial viability and promoting scaled-up commercial investment** in minigrids in Nigeria; designed as a Child Project to implement the Energizing Agriculture Programme (EAP)

DERISKING SUSTAINABLE OFF-GRID LIGHTING SYSTEMS (DSOLS)

The program aims to **promote private sector investment** in sustainable off-grid lighting technologies by **establishing a sound policy environment** that facilitates the creation of a self-functioning and sustainable market in Nigeria

SCOPE AND FUNDING

- Increase **Energy Access** through **5 million new solar connections**
- Increase **local content** in the off-grid solar value chain
- Create **250,000 new jobs** in the energy sectors

- o **Accelerate** deployment of agriculture electrification interventions by testing business models
- o **Scale** proven solutions to **200 communities through finance and data**

- Deploy **25 pilot Mini-grids** to **ground-truth** the electrification of agricultural value chains
- Knowledge management through **networking, lessons learnt** dissemination, **database of sites** and **financing scheme** for rapid deployment

- **Policy derisking** for SHS by setting up enabling policies and regulations that address policy, awareness and financial barriers to facilitate investment
- **Financial derisking** by providing SHS distributors access to working capital and equipment for scale-up

- **NGN140 Billion** Concessional Debt facility from Central Bank of Nigeria
- CAPEX grant through the NEP
- Funding from other Financial Investors

- **\$ 5 million** GEAPP / Rockerfeller Foundation Grant

- **\$ 5.91 million** GEF Grant

- **\$2.64 million** GEF Grant
- **\$300,000** UNDP Grant

INVESTMENT OPPORTUNITIES

- Debt and equity Investment in Manufacturing and Assembly
- Debt and Equity investment in **Mini-Grid projects and SHS distribution**
- **Subordinate debt** to de-risk transactions
- Technical Assistance for Project Development

- **Participate as project developer** (on power generation and productive use)
- Participate in **Manufacturing / assembly** of energy efficient productive
- **Provide Equity and Debt** to developers for programme scale-up

- Participate as **pilot project developer** (there will be an open Call for Proposal)
- **Provide Equity and Debt** to private sector project developers

- **Participate as SHS Distributor or Investor**

Climate Finance Support Opportunities



RURAL ELECTRIFICATION AGENCY
ENERGY • EMPOWERMENT • EFFICIENCY



Investment Capital

~\$10 billion (**Debt, equity, in-kind investments, ..**)



Interventions

- **Upstream:** Local Manufacturing and Assembly
- **Downstream:** Mini-grids, Standalone Solar Systems and Home Systems, Solar Irrigation Systems, Productive-use equipment, Clean cooking, e-mobility, Biomass, hydropower, other technologies
- **Impact Fund:** Rural Electrification Impact Fund
- **Energizing Education** Project, **Energizing Economies** Initiatives, **Energizing Agriculture Clusters**



Grant Funding

~ \$ 5 billion



Impact

- Increase affordability, de-risk transactions and support quick deployments in communities



Technical Assistance

- Technical studies, project preparation and project management support
- Transaction advisory support and Impact assessment

Other Climate Finance Support Opportunities

SOLAR POWER NAIJA (SPN)

- Provide **Debt and Equity investment** for **upstream and downstream** for **Mini-Grid projects and SHS distribution**
- **Subordinate debt to de-risk** transactions
- Technical Assistance for Project Development
- **PARTNERSHIP OPPORTUNITIES**
- Currently require about \$8 billion naira to meet the needs of

ENERGISING AGRICULTURE PROGRAM (EAP)

- Provide **funding and technical assistance** to REA for programme scale-up
- Participate as **project developer** (on power generation and productive use)
- Participate in **Manufacturing / assembly** of energy efficient productive
- Provide **Equity and Debt** to developers for programme scale-up

AFRICA MINI-GRIDS PROGRAMME (AMP)

- Participate as **pilot project developer** (there will be an open Call for Proposal)
- **Provide Equity and Debt** to private sector project developers

DERISKING SUSTAINABLE OFF-GRID LIGHTING SYSTEMS (DSOLS)

- **Participate as SHS Distributor or Investor**

RURAL ELECTRIFICATION FUND (REF)

- Provide Technical Assistance
- Participate as a **project developer**
- Provide **debt and equity** in mini-grid projects and SHS distribution
- **Deploy** innovative technologies and concepts under the R&I Hub

CAPITAL PROJECTS

- Participate as EPC Contractor
- Provide Technical Assistance
- Other Support

NIGERIA ELECTRIFICATION PROJECT (NEP)

- **Debt and equity** investment in mini-grid and SHS projects / companies and SHS distribution to enable Developers and Distributors qualify for the grant provided

ENERGIZING EDUCATION PROGRAMME (EEP)

- funding for **EEP Phase IV**
- **Technical Assistance**

ENERGISING ECONOMIES INITIATIVE (EEI)

- Technical Assistance
- **Partnership / Investment in projects**
- Other Support: Communications, Impact assessment and M&E:
- Participate as Power project developer or investor (debt or equity) (200 kW– 10 MW project size)

KOREAN ENERGY PROJECT

- **Participate as project developer**
- **Provide Equity and Debt** to developers

JIGAWA ENERGY CITY

- Implement recommendation from the feasibility study (Phase 1) working with MASEN.
- Fund Phase 2 of the Feasibility Study

INTERCONNECTED MINI-GRID ACCELERATION SCHEME (IMAS)

- Provide **funding and technical assistance** to REA for programme scale-up



RURAL ELECTRIFICATION AGENCY

ENERGY ≡ EMPOWERMENT ≡ EFFICIENCY

Website: www.rea.gov.ng

Email: info@rea.gov.ng



@REANigeria



@realREANigeria

Fdd



@REANigeria



@realREANigeria