

The Nigeria Rural Electrification Agency



**Accelerating Finance For Sustainable Low Carbon Opportunities
in Nigeria**

November 4, 2021



The Rural Electrification Agency

is the implementation Agency of the Federal Government of Nigeria under the Federal Ministry of Power, tasked with the electrification of unserved and underserved communities across the country



REA Strategy



Implement and Coordinate

Increasing Sector Coordination

Support greater collective impact through increased coordination of rural electrification efforts throughout Nigeria

Promote a Sustainable Market

Enabling Electricity Markets

Electricity markets for unserved and underserved users strengthened across the value chain by an effective enabling environment

Focus on the Unserved and Underserved

Reaching Unserved & Underserved Communities

Improved quality of life through the electrification of unserved and underserved households & institutions (health, education, etc.) and economic sectors

Increasing Economic Opportunity

Increased economic opportunities in rural areas through electrification initiatives that reach SMEs, agriculture, healthcare sector, and other priority industry segments

Excellence in Delivery and Talent

Shaping REA into a Top-Tier Agency

Providing internal development programs, employee support initiatives, and transparent work practices to solidify REA as an agency that builds and maintains its institutional capacity

RENEWABLE ENERGY PROJECT IMPLEMENTATION VEHICLES OF THE REA



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ENERGY • EMPOWERMENT • EFFICIENCY

NIGERIA ELECTRIFICATION PROJECT

The NEP is an innovative initiative of the FGN, conceptualized to catalyze off-grid development in Nigeria, through the provision of grant funding

ENERGIZING EDUCATION PROGRAMME

The EEP is an initiative of the Federal Government of Nigeria (FGN), aimed at providing sustainable and clean power supply to 37 Federal Universities and 7 University Teaching Hospitals across Nigeria

SOLAR POWER NAIJA

FGN has adopted a solar strategy for the electrification of 5 million households, serving about 25 million Nigerians, in the Economic Sustainability Plan. The program is intended to achieve three main objectives

RURAL ELECTRIFICATION FUND

REF aims to attract project developers with a track record of deploying rural electrification systems who can commit private capital to viable project sites

ENERGIZING ECONOMIES INITIATIVE

The Energizing Economies Initiative (EEI) is an FGN sponsored programme targeting macro, small and medium enterprises (MSMEs)

FUNDING

\$350 Million from the World Bank

NGN12 Billion from the Green Bond

NGN140 Billion

NGN 1.9 Billion

\$37 Million

\$200 Million from the African Development Bank

IMPACT

405,000 Households
50,000 MSMEs, **100** Treatment/Isolation centers,
400 PHCs, **15** Universities and
2 Teaching Hospitals

8 Federal Universities
1 Teaching Hospital

5 million households;
25 million Nigerians to be served;
250,000 Jobs to be created

5,272 Households electrified;
1,016 KW capacity installed;
19,130 Units of SHS to be deployed;
400 jobs created

12,927 Installed connections;
86,909 SMEs connected;;
126,931,680* CO2 savings Annually

NIGERIA, NDCS AND THE ENERGY TRANSITION CONVERSATION



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Nigeria's ongoing efforts on energy transition is a reflection of the nation's commitment to the Paris Agreement on Climate Change. Transition in energy terms means moving from fossil fuel-fired energy to renewable energy in a manner that ensures the inclusion of all stakeholders, ensures equity and reduce the negative impacts of such a transition to a bearable level. Nigeria was among the few countries to set an economy-wide target in 2015, submitting a transparent and ambitious NDC. The recently submitted review of the nation's Nationally Determined Contributions (NDCs) has received global recognition. **Nigeria has now committed to Net-Zero Emissions by 2060.**

Unconditional Target: 20% Reduction from business-as-usual (BAU) by 2030.

Conditional Target: 45% Reduction from Business-as-Usual (BAU) by 2030.

Mitigation Sectors Energy, Transport, Agriculture and Land use, and industry

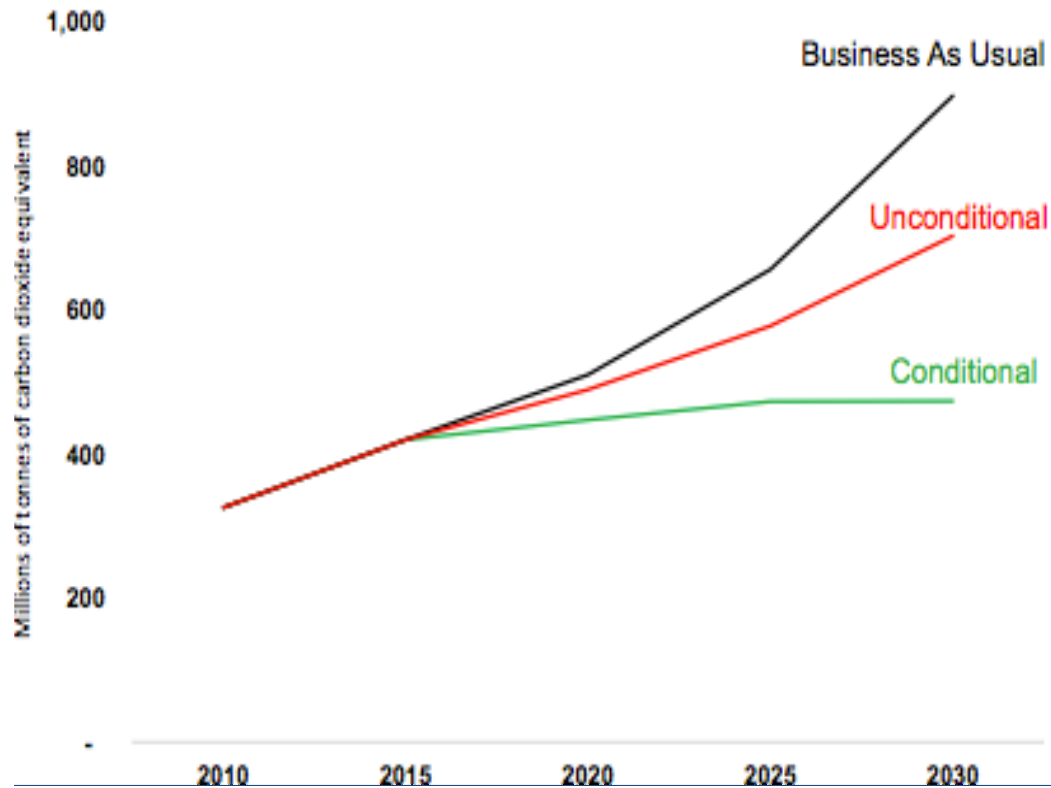
Adaptation Sectors Agriculture, coastal zones, disaster risk reduction, environment, and health.

Adaptation Sectors Mainstream gender across all sectors. To this end, the Federal Executive Council approved the National Action Plan on Gender and Climate.



BACKGROUND OF NIGERIA'S NDC: MITIGATION

Trajectory under Business-as-Usual



With economic growth of 5% per year, emissions are expected to grow to about 900 million tonnes per year in 2030.

Measure	Potential GHG reduction (million tonnes per year in 2030)
Economy-wide energy efficiency	179
Efficient gas power stations	102
Work toward ending of gas flaring	64
Climate smart agriculture	74
Reduce transmission losses	26
Renewable energy	31

*The fact that the bulk of the emissions reduction is to come from electricity generation with Renewable Energy and Rural Electrification, the REA is mandated to play a critical role

THE REF IMPACT



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100kWp mini-grid, Eka Awoke Community, Ebonyi 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

- Successfully deployed **12 Solar hybrid mini grid** projects.
- Over **24, 000** households connected.
- Successfully deployed over **19, 000** solar home systems.
- Created over **5, 000** jobs during the construction phase of these projects.
- Over 1140kg of Co2 emissions saved annually.

THE NEP IMPACT



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
- Commissioned **12 Solar mini grid** projects with over **5,760** connections and **66,000** connections in the pipeline
- Deployed **315,128** solar home systems across all 36 states in Nigeria
- Signed Agreements with mini-grid and SHS developers

THE EEP IMPACT



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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.

GREEN BOND FUNDED PROJECTS



Benefits / Impact



156,414 + students will have access to uninterrupted power supply



180 female STEM student will gain hands-on practical training and experience in the design and construction of power systems



3,000+ medical staff have access to uninterrupted power supply



46 MW of new installed captive power to be deployed. **100+** generators have been decommissioned and the current CO2 savings is **788.83Kts CO2***



1,500 jobs created across 9 universities



127,757 selected students will be trained by the EPCC's on renewable energy courses at the (WTC)

* This a sum of cumulate CO2 savings from the Power Plant's operational date till present.

Post implementation assessments

1. REA provided a majority of projects in GB1 & 2 positioning it to be a platform for post implementation assessments
2. To enhance economic sustainability of the GB funded projects, REA requires:
3. **Transaction Advisory** to develop **prefeasibility studies and full business case** to enable private sector take on the O&M of the facilities.
4. Key lesson from the project operation indicates **metering assets is desirable for effective O&M.**
5. Funding to bring to completion the **ongoing 2 gas plants** which are at 65 and 41% completions.
6. **Technical Assistance** to provide a harmonized approach to project appraisal and reporting, building internal capacity for climate reasoning

THE SPN IMPACT



Vice President of the Federal Republic of Nigeria, Prof. Yemi Osinbajo flagging off the deployment of **the first 100,000 units of SHS** under the SPN



- 5 Million connections to be achieved through the SHS technology.
- 25 million Nigerians to be impacted.
- About 250,000 jobs in the renewable energy sector to be created.

IMPACT OF THE CAPITAL PROJECTS



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



60KwP mini-grid at the Obubudu Cattle Ranch, Cross River State



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



30KwP mini-grid at Mbela Lagaje community, Adamawa State



The transparent bidding process at the REA HQ

- 48 solar hybrid mini-grids deployed through the Federal Government Capital Appropriation.
- About 2000 grid extension projects (33/11/0.415kV lines and injection substations) executed .

BEYOND OPTIMIZING THE 1ST GREEN BOND – CURRENT OPPORTUNITIES IN THE OFF-GRID SPACE

Promote a sustainable market driven by private sector in various programs including:

EEP Phase IV - further energize 13 universities and 3 affiliated teaching hospitals.

- Cumulative output of **52.96 MW**
- Creating an additional **3000+ jobs**
- To result in a cumulative **7888.36Kts*** savings in CO₂ emission
- REA anticipates it will need **N83,000,000,000.00 billion (\$202,000,000.00 USD Equivalent)** over the next 2 years to deliver and sustain its climate finance plan for EEP IV
- The resources will allocate Generation (\$123.3m); Distribution (\$12.2m); Street Lighting (\$18.9m); Workshop/Training Center (\$10m); 1st year O&M (\$4.1m); Metering (16.4m); contingencies (\$16.5m)



1

Commercialisation of mini-grids under the capital appropriation



2

3

Solar Power Naija (Part of FG's ESP)



4

Energizing healthcare:

- Covid-19 interventions (600 primary healthcare centres and 100 isolation centres).



5

Energizing Agriculture



6

Reforms of the Rural Electrification Fund – involves a redesign of the fund to produce globally acceptable frameworks and guidelines to attract development partners, donors and investors across impact funding, grants and long-term investment partners. Opportunities for blended financing.



*REA has developed a draft E&S Policy document that takes on board relevant FG commitments.

*Technical Assistance (TA) is needed for development of credible pipeline.

*Blended finance is required to scale the program.

REA's SUSTAINABILITY PLAN



REAs Approach to Sustainability

The REA E&S Policy Document will serve as a guide to all REA employees in order to ensure that all projects take into account E&S issues/risks throughout the project cycle; REA's commitment to promoting sustainable development, which contributes to economic growth, social development and environmental conservation; Project compliance with national environmental laws, and other international best practices on Environmental, Health and Safety Guidelines.

Policy Framework

REA has developed a draft E&S Policy document that takes on board relevant FG commitments as well as Financial sector commitment to sustainability guidelines of the Central Bank of Nigeria (CBN).

Impact of Interventions

EEP impacted 15 universities and 2 teaching hospitals, created 1,142 jobs across 7 universities with output over 30 MW (resulting in 788.36 savings in Co2 emissions). Phase 4 will add further energize 13 universities and 3 affiliated teaching hospitals, creating an additional 3000+ jobs with output of 52.96 MW (resulting in a cumulative savings of 59Kt per annum).

Funding

REA anticipates it will need **NGN 83 Billion (USD 202 Million Equivalent) over the next 2 years to deliver and sustain its climate plan.** The resources will allocate 10% to some TA to develop the approach, another 15% for capacity building, 10% for metering at the facilities and 65% for some project resources for a blend.

THE CLIMATE FINANCE ACCELERATOR IN NIGERIA



Create bankable low-carbon pipelines

Projects in the CFA pipeline – accessible to financial institutions – will be in a good position to achieve financial close



Facilitate suitable financing options

The CFA will connect project developers to finance, working with financial institutions in Nigeria and the UK



Handhold early-stage projects

We will shape innovative early-stage projects to finetune their structure, feasibility and governance



Provide technical assistance

The CFA will advise the Federal Government of Nigeria to overcome enabling environment barriers



Convene actors and raise visibility

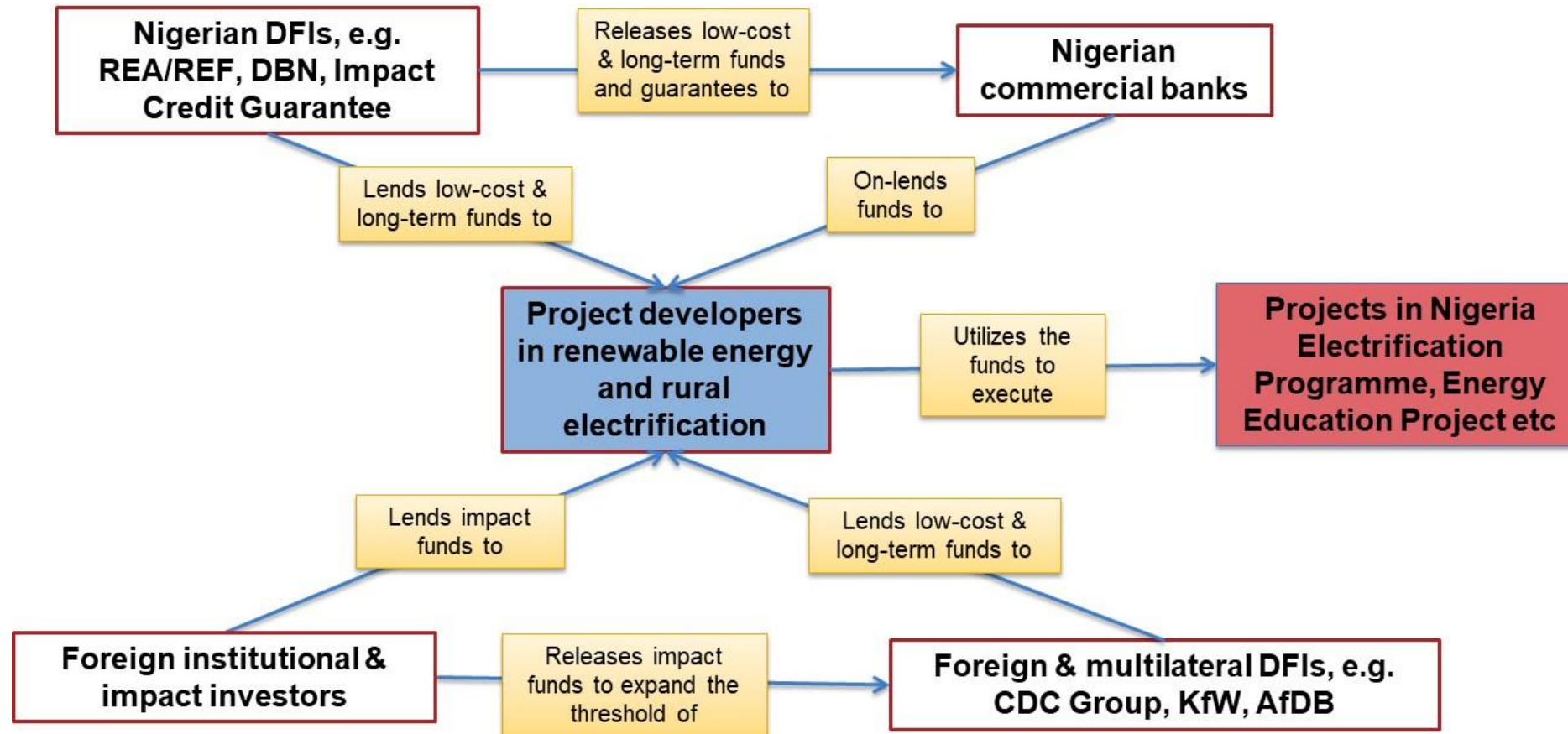
Through partnerships and awareness raising, the CFA promotes the huge potential of climate finance within finance, business and policy



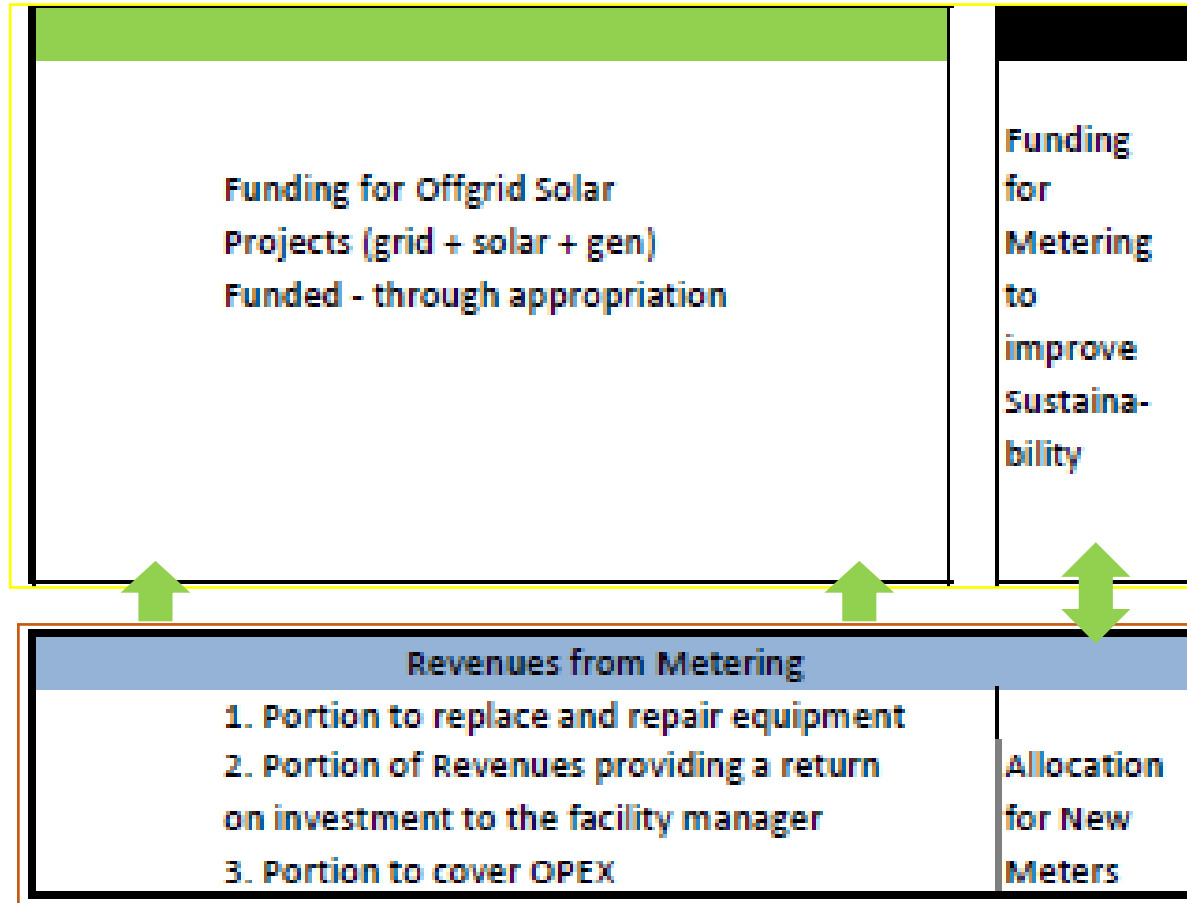
Produce guidance

The CFA will supply materials on the climate finance landscape, low-carbon transition, sources of finance, and capacity building resources

CFA-REA BLENDED FINANCE MODEL (LOCAL CURRENCY)



REA-CFA PROJECT FINANCIAL PROFILE



Total project cost needs to be determined and disaggregated into components that directly address “sustainability” to be presented to 3rd party financiers. Cost of metering being one of such options

Flows from metering under the agreed co-governance arrangement may need to be reallocated to the components of the total project cost to enable “sustainability”

Flows from installation of meters may need to be captured within an “escrow” with a co-governance arrangement determined in discussions between REA/CFA/3rd Party Financiers



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