RURAL ELECTRIFICATION AGENCY

ENERGY = EMPOWERMENT = EFFICIENCY

National Electrification Strategy and Implementation Plan (NESIP)

August 2025

Content for today:

1) Introduction

2) Mapping and data collection activities – NESIP

3) Methodology, and national alignment

4) Opportunities for collaboration and alignment with stakeholders, including NCC's vision

Vision, Mission & Mandate

Vision

Nigeria achieving universal access to affordable and sustainable electricity, thus improving the quality of life and economic opportunities.

Mission

To provide access to reliable electric power supply for rural dwellers irrespective of where they live and what they do.

Mandate

- Promote Rural Electrification and Renewable Energy in the country,
- Coordinate electrification programs for unserved and underserved communities and;
- Administer the Rural Electrification Fund (REF) through PPP.

Operational Framework

The REA implements and coordinates various programmes to increase energy access **through grid extension, solar hybrid mini grids, interconnected solar mini grids, standalone solar systems, solar powered energy efficient productive use equipment** etc.

REA Capital Projects
- FGN Appropriation (National Budget)
- Grid Extension and Solar Projects

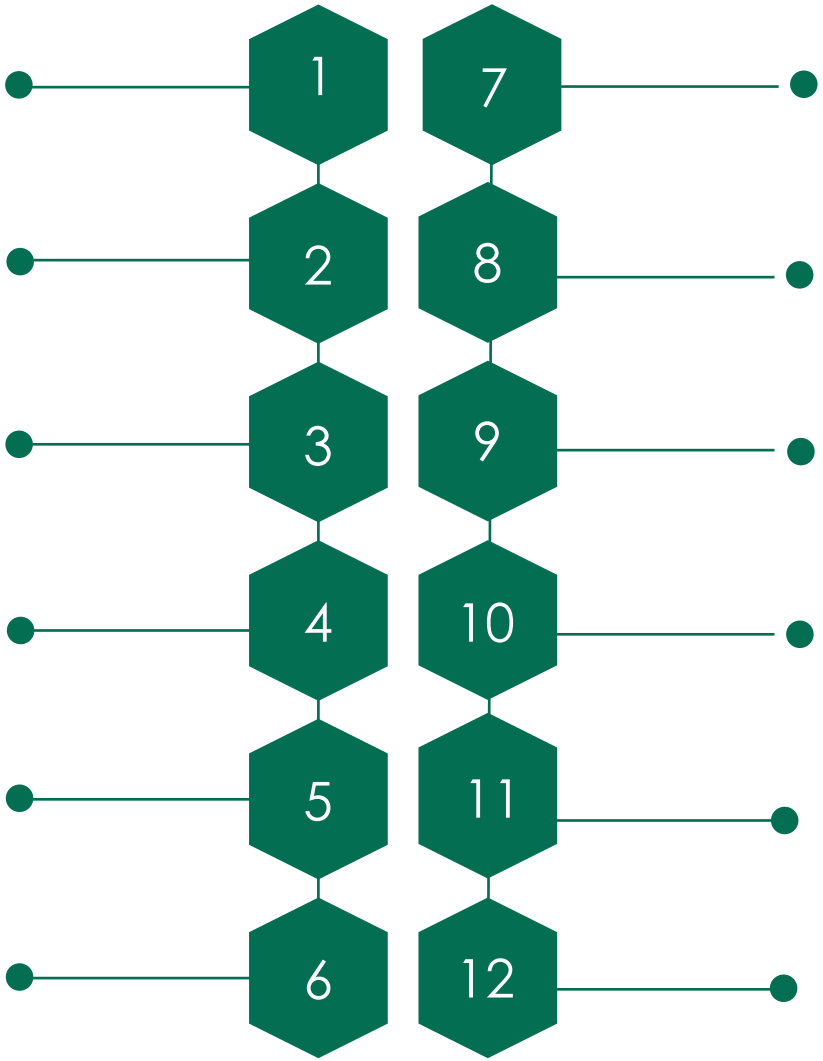
The Rural Electrification Fund
- Federal Government of Nigeria (FGN)
- REF Call 1, Call 2 & IMAS

E – H.E.A.R.T
- Initiative to electrify healthcare, education, agriculture, rural communities and transportation

Distributed Access through Renewable Energy Scale-up (DARES)
- Commenced in Q4 2024, World Bank; Scaling up Solar Mini Grids and Stand-alone Solar deployments

National Public Sector Solarization Initiative (NPSSI)
- FGN Appropriation (National Budget)
- Powering public institutions

Africa Mini-Grid Programme (AMP)
- GEF & UNDP
- Stimulating commercial investments in Mini Grids



De-risking Sustainable Off-Grid Lighting Systems (DSOLS)
- GEF & UNDP
- Promoting off-grid SHS to rural communities

Korean Energy Project (KEP)
- Government of Korea, in-kind grants
- Energy Management Centre and 4 Mini Grids

Renewed Hope Infrastructure Development Fund (RHIDF)
- Federal Government of Nigeria
- Standalone solar systems and PUE

Energizing Agriculture Programme (EAP)
- GEAPP & RMI
- Enabling Market-led Solutions to Stimulate Agricultural Mini Grid PUE

Energizing Economies Initiative (EEI)
- Private Sector, FGN & Rockefeller
- Powering High Growth Areas In The Economy

Nigeria Electrification Project
- World Bank and AfDB
- Mini grids, SHS, PUE and Captive power

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NESIP is REA's response to Nigeria's changing energy landscape

An introduction to National Electrification Strategy and Implementation Plan (NESIP)

Background

Recent shifts in the electricity sector — particularly the **Electricity Act 2023** — have strengthened States' mandate to set their own energy policies, **increasing the need for a unified, well-coordinated strategy**. As electrification efforts become more decentralized, **ensuring alignment across stakeholders is crucial for achieving universal access.**

How NESIP is supporting the journey towards universal energy access

- Defining a unified, measurable **definition of energy access** and developing tracking metrics to align stakeholders
- Creating a **geospatial electrification model** and tool to inform least-cost planning across the country
- Establishing a **Sector Wide Approach (SWAp)** to clarify roles, responsibilities, and coordination mechanisms to form the **interaction model**
- Assessing **State-level readiness** and engaging stakeholders through structured workshops and consultations
- Anchoring the strategy in an **Electrification Pact** to ensure long-term institutional alignment and commitment

Federal Ministry of Power

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NESIP complements existing national policies and anchors the energy access agenda

Provides a comprehensive framework for power generation and distribution across the nation

- Generation
- Transmission
- Distribution

National Integrated Resource Plan (NIRP)

NIRP ensures the structured allocation of resources to meet NIEP's targets, guiding investment decisions across electrification generation, transmission, and distribution

- Last mile electrification

National Electrification Strategy & Implementation Plan (NESIP)

NESIP underpins the One plan, outlining energy access, standards, and cost-effective mini-grid/off-grid pathways, with clear stakeholder roles

State Level Electrification Plan and Strategy

NESIP provides a foundation, standard and guidelines for States to develop individual electrification plan that aligns with the national targets

The first phase of NESIP development is structured around three key areas and nine workstreams

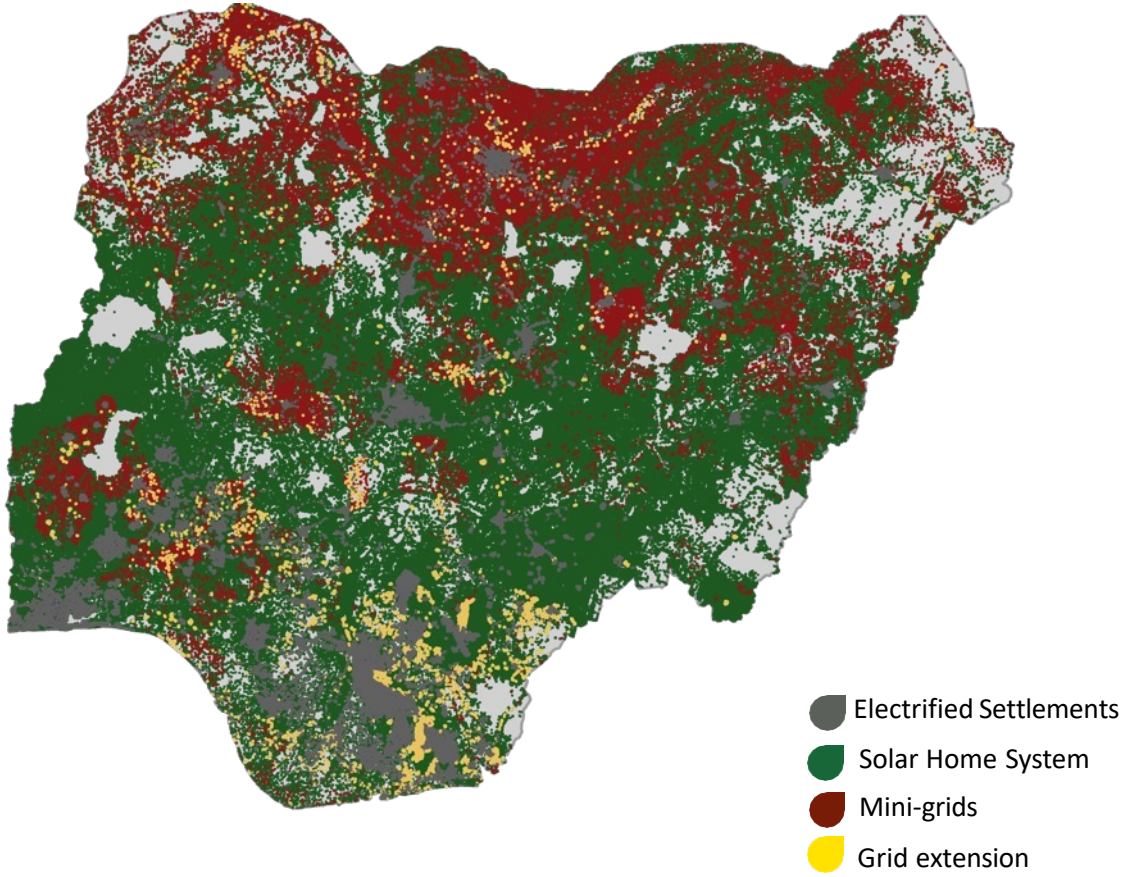
In today's spotlight

	Workstream	Intent of workstream
1.1	**Definition of Energy Access**	Land a shared definition of energy access in Nigerian context
1.2	**Stakeholder Identification & Role**	Provide a comprehensive list of stakeholders for engagement
2.1	**Data Strategy and Analysis**	Compile list of (geo-)spatial data to be included in tool
2.2	**Integration of Geospatial Tools**	Identify features to include in IEPT[1] based on benchmarking
2.3	**Geospatial Mapping**	Refresh IEPT data layers to reflect latest electrification status
2.4	**Least Cost Development Plan**	Calculate least-cost technology by settlement (incl. scenarios)
3.1	**Subnational readiness assessment**	Present comprehensive dashboard of State-level readiness
3.2	**Sector Wide Approach (SWAp)**	Lay out principles and operating model for energy access SWAp
3.3	**Interaction Model for Sub-Nationals**	Determine Federal and State actors' roles based on consultation

1. Integrated Energy Planning Tool

We mapped Nigeria's least- cost to universal electrification …

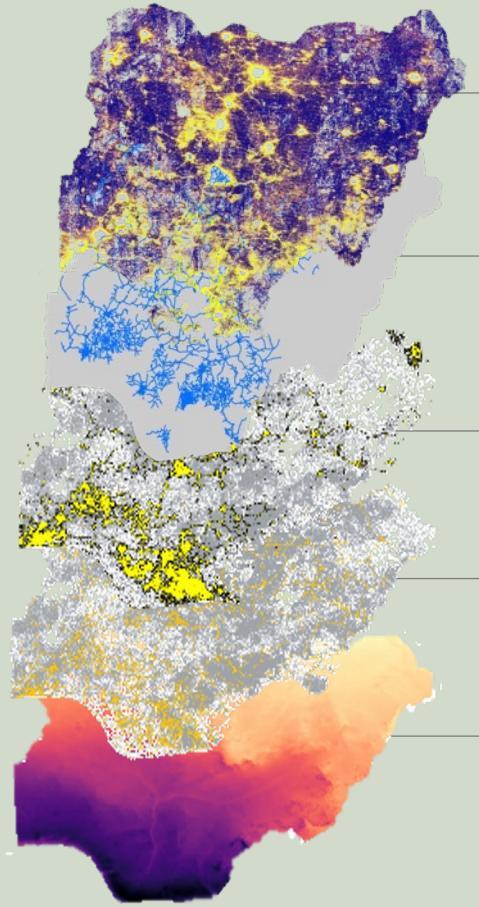
Geospatial model output: Least-cost mix (2030)



Source: Geo-Referenced Infrastructure and Demographic Data for Development (GRID3, 2020), Fraym – Access to Electricity (2024), University of Michigan – High Resolution Electricity Access (2020), The World Bank – Global Solar Atlas 2025

… using data on demand, infrastructure and cost

Inputs: demand, generation capacity, and cost data



Fraym / University of Michigan night light emissions electrification status

Electrification status by settlement

MV Grid Lines

GIZ-led dataset with MV lines

Grid 3 Settlement Boundaries

Including number of buildings[1]

Grid 3 Health Facilities

Locations of health facilities

Solar Irradiation Map

The World Bank – Global Solar Atlas, Nigeria

We followed a systematic approach to assess State readiness

Develop Assessment Approach	Determine Assessment Criteria	Determine Scoring Criteria	Assessment Analysis and Results
Desktop research to review existing data: • Direct interviews with key State-level stakeholders for contextual insights. • Structured questionnaires to capture standardized responses across State	**Focused on 5 Key Dimensions:** • Policy Readiness • Funding and Investment Readiness • Infrastructure Readiness • Capacity Readiness • Data Readiness	**Applied a 5-point readiness scale:** • Early Stage • Developing • Progressing • Advanced • Optimized	**Aggregated and analyzed data across:** • State Levels • Specific criteria

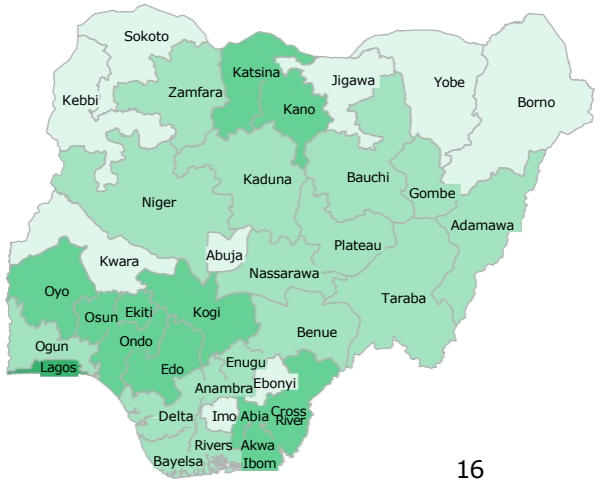
The subnational assessment was carried out using three different approaches

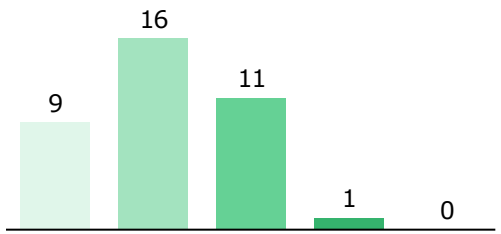
Desktop Research Data **37** States → **Stakeholder Interviews** **18** States → **Stakeholder Questionnaires** **27** States

Across the five thematic areas, the nation remains largely in a developing phase of electrification

Early stage | Developing | Progressing | Advanced | Optimized

2/5[1]





Awareness and preliminary actions in policy, infrastructure, funding, capacity, or data aligning with EA 23

Foundational work underway in key readiness areas.

Draft frameworks, electrifcation projects and investment plans in place.

Significant progress in policy, infrastructure, funding, capacity, and data.

Active execution with tangible outcomes across multiple readiness areas.

Summary of assessment

Policy

- Most states have adopted the Electricity Act 2023 but remain early in implementation. Legal gaps, weak inter-agency coordination, and limited capacity stall progress from planning to execution. A quarter of states require intensive support to kick-start reforms.

Capacity readiness

- While many states have set up electricity agencies, most are under-resourced and lack authority. Skilled personnel are scarce — especially in regulation, renewables, and finance. Capacity-building is inconsistent, and even where institutions exist, operational readiness remains low

Funding and investment

- Few states have dedicated electricity budgets or financing strategies. Spending is often buried within broader infrastructure plans, with low transparency. PPPs and donor engagements exist but are fragmented and rarely linked to long-term plans. National readiness on financing remains low (avg. 5.2/15), with major regional gaps

Infrastructure readiness

- Many states rely on single transmission lines with no redundancies, resulting in frequent outages. Mini-grids and hybrid pilots exist but are small, donor-driven, and poorly integrated. Core grid infrastructure — from transformers to metering — is weak and outdated

Data readiness

- Reliable data systems are largely absent. Where they exist, they are fragmented, manual, and outdated. States depend on federal and utility actors for data access, which is often limited. Without structured, validated data, effective planning and investment mobilization are impossible

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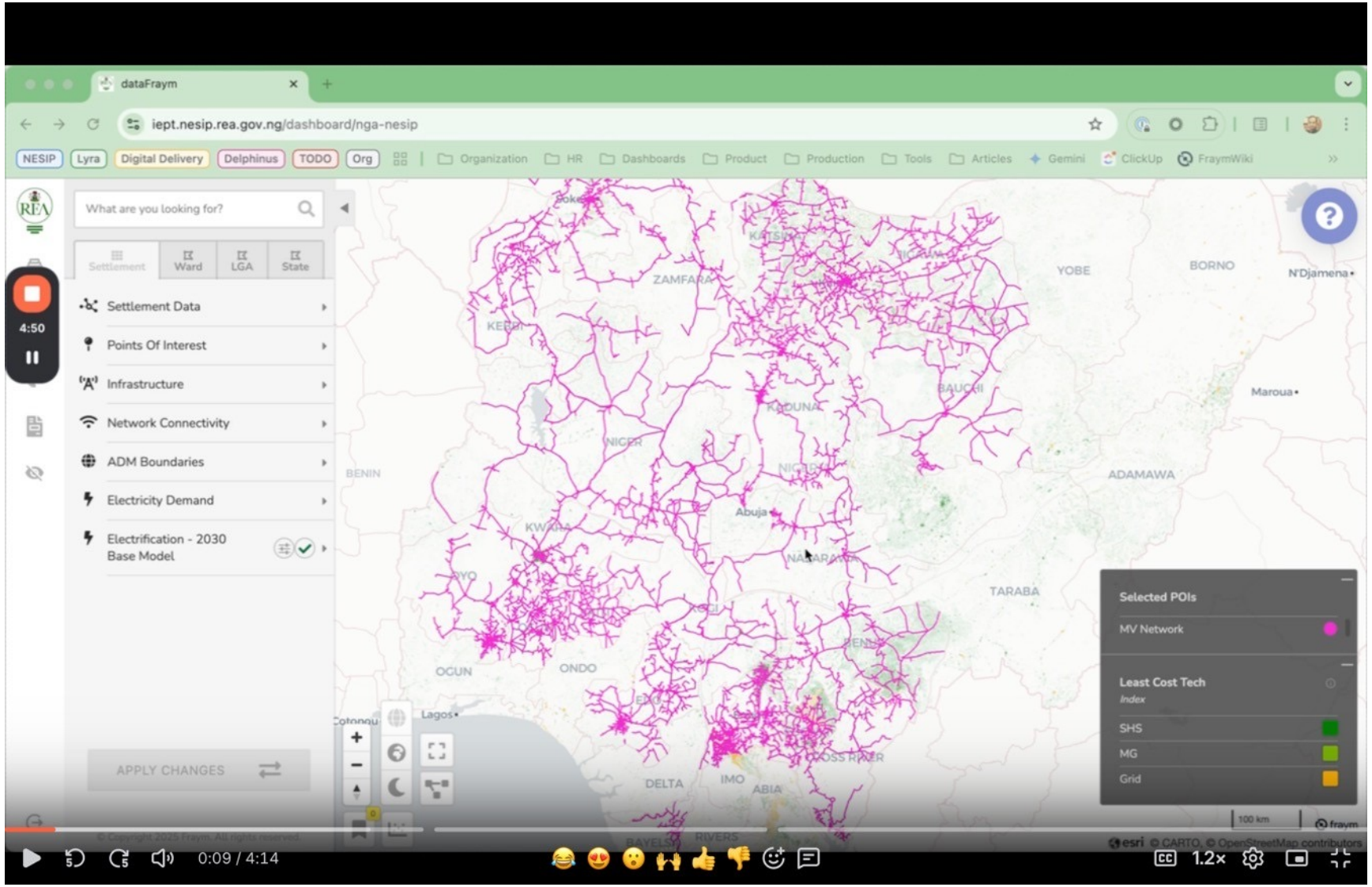
Demo of Integrated Energy Planning Tool



Links to topic-specific demos

1. Overview of the tool
2. Mini grid filter use case
3. Use of dashboard across devices and tips & tricks

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