



DEEP DIVE #1

Stakeholder Mapping & Key Policies

Powering Healthcare – Nigeria Market Assessment and Roadmap



Deep-dive on Stakeholder Mapping and Key Policies

The Powering Healthcare Market Assessment and Roadmap for Nigeria was developed by Sustainable Energy for All (SEforALL), under the Power Africa-funded Powering Healthcare Africa Project. It includes a main report, and 5 technical deep-dives.

The main report is accessible [here](#).

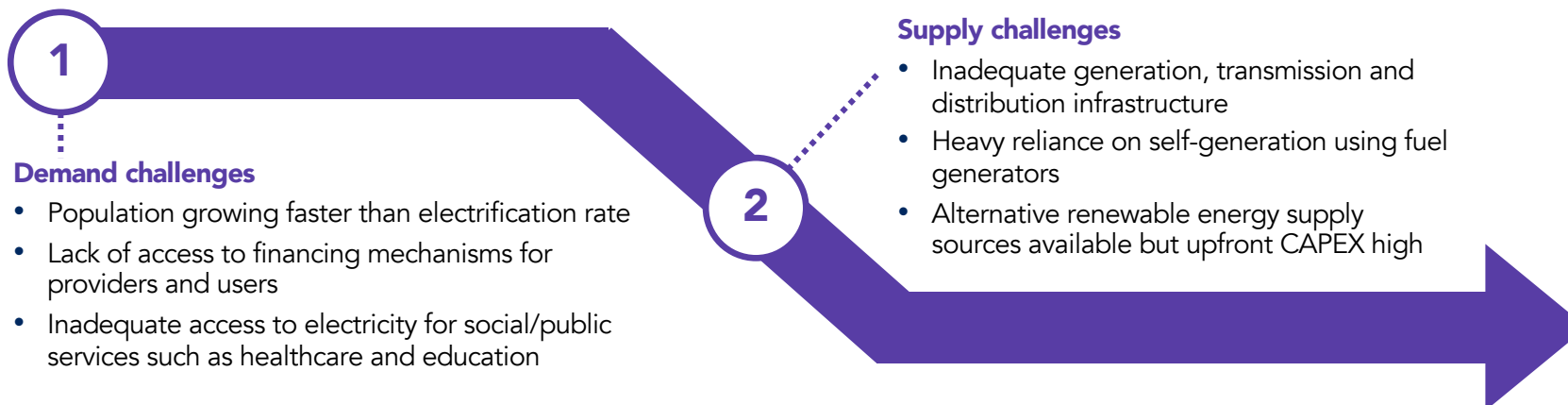
Market Assessment and Roadmap: deep-dives

- 01 Deep-dive on Stakeholder Mapping and Key Policies
- 02 Deep-dive on Data Insights
- 03 Deep-dive on Technology and Costing
- 04 Deep-dive on Funding and Financing
- 05 Deep-dive on Delivery Models and Financing Mechanisms





Access to electricity challenges

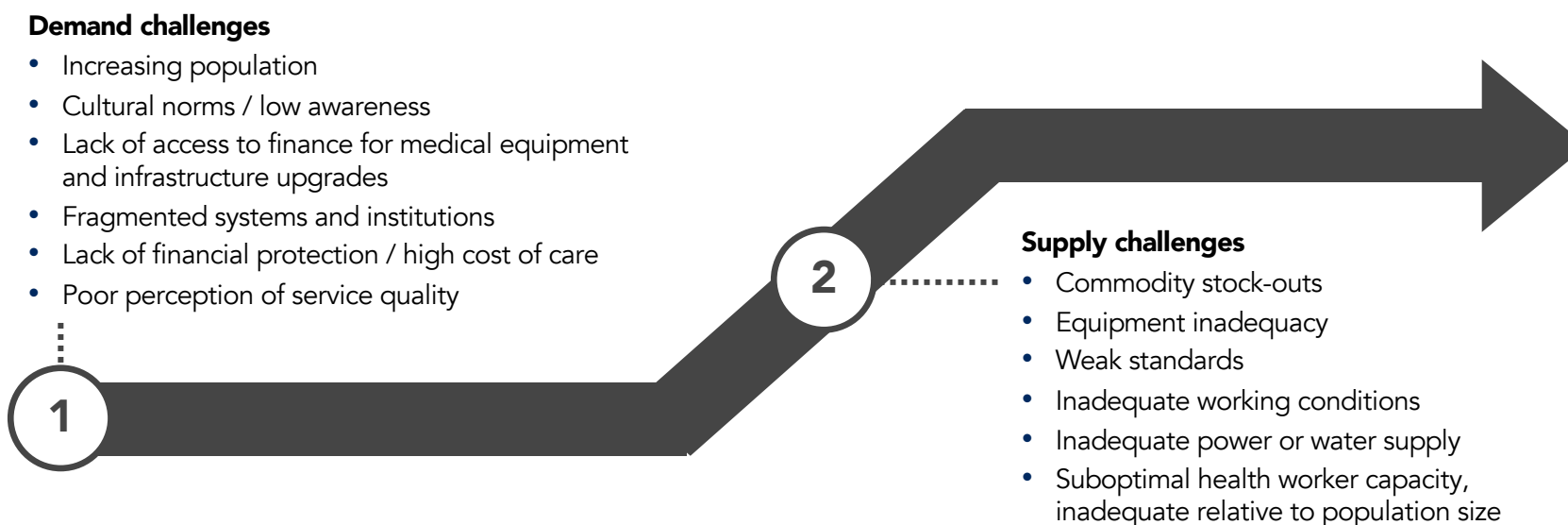


Poor energy access outcomes for health facilities

- 57% of population have access to electricity
- 40% of PHCs without access to electricity
- 6-10 hours average power supply from any combination of sources
- Absence of electronic health, logistics and financial information systems



Health system challenges



Poor quality of health care services and sub-optimal health outcomes

- Poor preservation of vaccines
- Poor water supply, sanitation and hygiene
- Maternal mortality 512/100,000 live births rank: 165/183
- Infant mortality 70/1,000 live births rank: 185/193
- Life expectancy rank: 205/208

Sources: IHP Data Analysis, Improving Primary Healthcare (Nigeria) 2008 for % of PHCs without electricity; SEforALL IEP, eHealth Africa (2021), Fraym (2018), Nigeria Demographic and Health Survey, 2018, WHO Ranking (2019), World Bank, RISE 2020

Regulatory Indicators for Sustainable Energy (RISE)



Nigeria

Global Score



Access to electricity: 57% of population

Access to clean cooking: 10% of population

Renewable energy: 83% of Total Final Energy Consumption

Energy efficiency: 6.40 MJ per US\$ PPP 2011

2019	Global average	Regional one down Ethiopia	Nigeria	Regional one up Ghana	Regional average Sub-Saharan Africa
	61	55	56	60	38

Note: The overall country score is based on the average score of Electricity Assess, Clean Cooking, Energy Efficiency and Renewable Energy indicators.
*<https://trackingsdg7.esmap.org>
Source: World Bank, RISE 2020

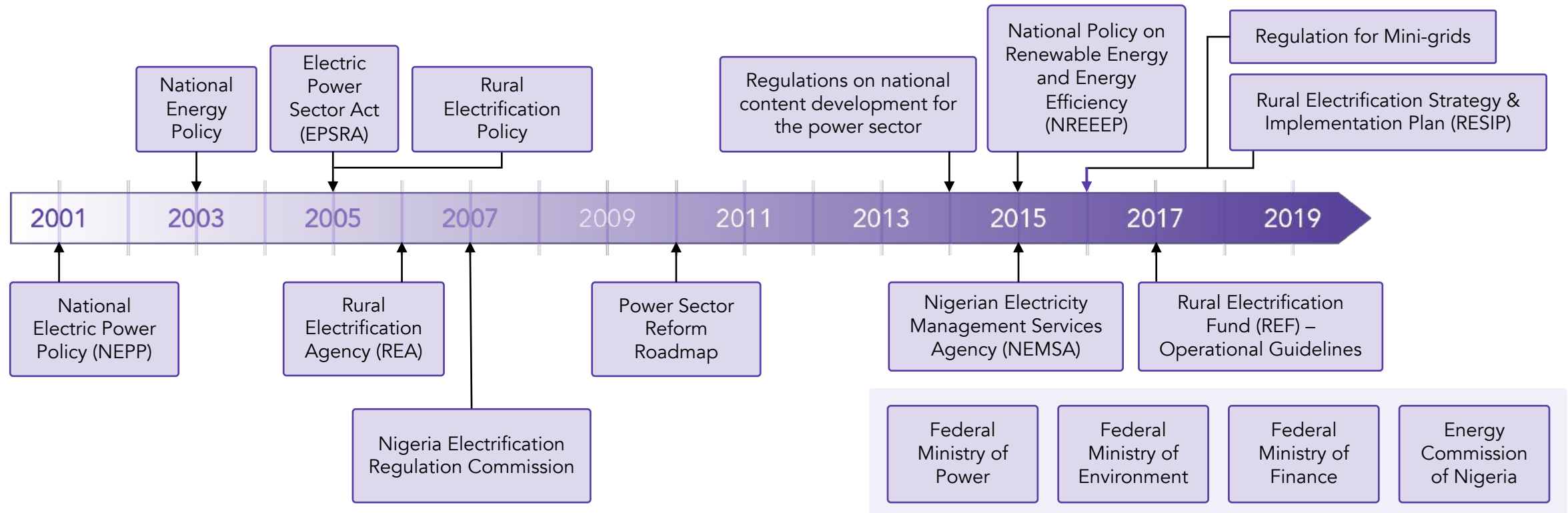


Renewable Energy Policy and Regulatory Guidelines

Policy/regulation	Description & relevance to the SAS sector
National Renewable Energy and Energy Efficiency Policy (NREEEP)	Policy guiding the renewable energy sector. Addresses renewable energy supply, utilization and financing, capacity building, and gender and environmental issues. Recommends increasing local investment in renewable energy via Nigerian capital markets.
National Renewable Energy Action Plan (NREAP)	Implementation framework for the NREEEP. Includes baseline data on renewable energy sources including standalone solar, and a total off-grid renewable energy target of 5,545MW by 2030. Provides for development of professional and technical courses on renewable energy, and increased investments of SAS projects.
National Energy Efficiency Action Plan (NEEAP)	Rollout of the Minimum Energy Performance Standards (MEPS) for refrigerators and air conditioners in September 2019. Includes baseline data and information on energy efficiency activities as well as energy efficiency targets.
Rural Electrification Strategy and Implementation (RESIP)	Continued inclusion of mini-grids and standalone solar systems in rural electrification efforts. The Rural Electrification Fund (REF) provides grants to mini-grid and SHS providers. REF Call 2 is currently underway.
ECOWAS Common External Tariff (CET)	In March 2020, Nigeria Customs Service aligned to the regional CET that fixes 10% duty for inputs and intermediate goods, which SAS components fall under. A standalone solar importation guide was developed by ACE TAF in 2019.

Policy/regulation	Description & relevance to the SAS sector
The Finance Act 2020	<p>FIRS increased VAT to 7.5% from 5% in early 2020.</p> <p>Company income tax is currently 0% for small companies, 20% for medium-sized companies, and 30% for large companies.</p> <p>Under the Solar Power Naija programme, qualified solar assemblers will be given tax waivers.</p>
Nationally Determined Contribution (NDC)	<p>As Inter-Ministerial Committee on Climate Change has been set up to coordinate line ministries and agencies on Nigeria's action to mitigate climate change. NDC Sectoral Action Plan developed.</p> <p>Promotes adoption of SAS products to combat climate change.</p>
Standards Organisation of Nigeria Conformity Assessment Programme (SONCAP)	<p>The Standard Organisation of Nigeria (SON), in July 2020, released the first ever Nigerian National Standardisation Strategy (NNSS) for 2020-2022 and approved 168 standards, including for 'renewable energy and hybrid systems for rural electrification'.</p> <p>SON, with support from ACE TAF, approved quality standards for SAS products ≤350W. With technical assistance from GIZ/Nigerian Energy Support Programme (NESP), they are now developing standards for components such as PV panels, batteries, charge controllers, energy meters and inverters.</p> <p>SONCAP is a pre-shipment verification of conformity to standards process used to verify that SAS products for import into Nigeria conform to the applicable Nigerian industrial standards and technical regulations before shipment. This will help to provide the technical quality assurance needed for components that are deployed in the Nigerian market.</p>
Sustainable Energy for All – Action Agenda (SEforALL AA)	<p>Launch in 2020 of the Nigerian SEforALL Platform to provide access to digital, on-the-ground data to support electrification efforts.</p> <p>The AA promotes sustainable energy and energy access. Includes a target to increase total off-grid renewable energy capacity to 8,000MW by 2030.</p>

Renewable Energy Policy and Regulatory Guidelines



Health policy context

Landmark policies and plans

2004 Health Policy

Primary Health Care became the entry point and cornerstone of the National Health System.

2014 National Health Act

Legislative framework for all health-related matters. Basis for the regulation, development and management of a Health System and set standards for rendering health services in Nigeria.

2016 National Health Policy

Factored in global and national targets signalled by the Sustainable Development Goals (SDGs) and the push for countries to attain Universal Health Coverage.

2018-2022 National Strategic Health Development Plan (NSHDP)

Designed to operationalise targets specified in the National Health Act 2014 and National Health Policy 2016. Hinged on a vision “to ensure healthy lives and promote the wellbeing of the Nigerian populace at all ages”.

Landmark programmes and interventions

- **Primary Healthcare Under One Roof programme (PHCUOR):** Backed by the 2014 National Health Act, the programme is designed to address the fragmentation in PHC delivery and bring the governance of primary care under a central body in each State.
- **One PHC per ward programme:** In line with 2016 National Health Policy and NSHDP, the programme was designed to make at least one PHC fully functional in each of the approximately 10,000 political wards in Nigeria.
- **Basic Healthcare Provision Fund (BHCPF):** A major financing reform introduced by the 2014 National Health Act is the establishment of the BHCPF to address critical supply and demand funding gaps that have limited access to healthcare services.

Health System Structure

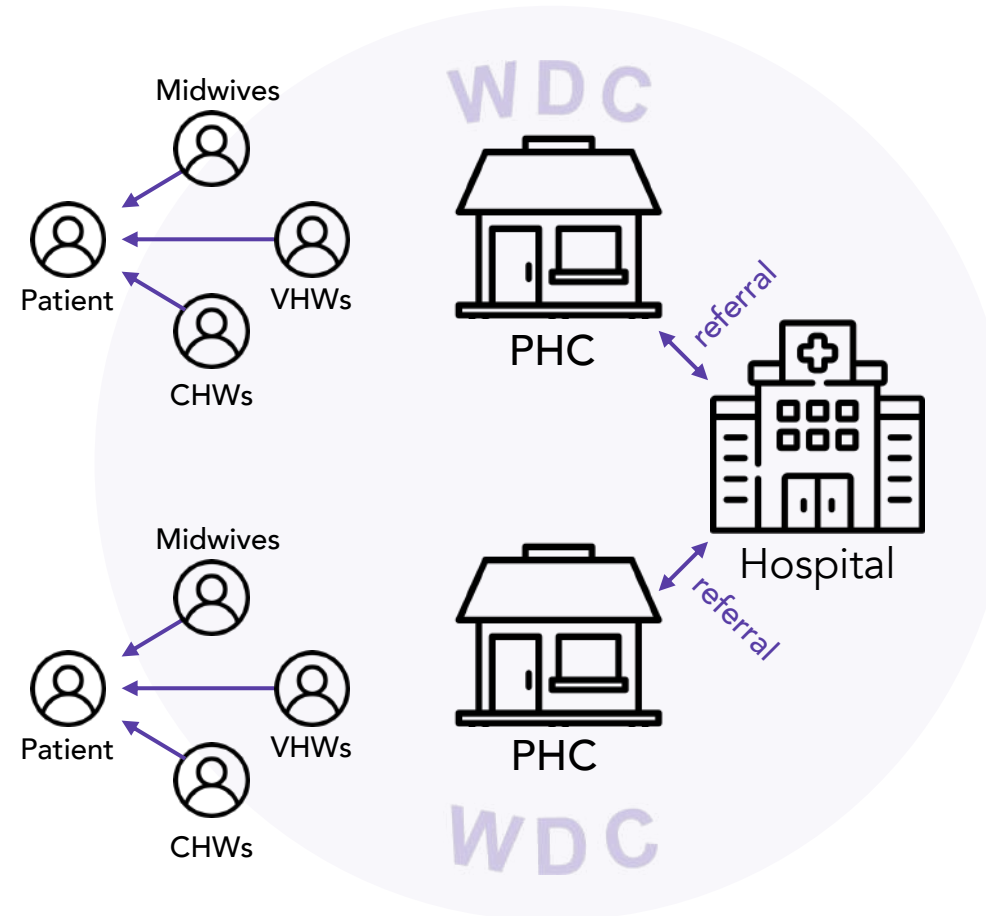
The public health sector is complex, with shared responsibility across the various levels of government

- 1. National Primary Health Care Development Agency (NPHCDA)
- 2. National Health Insurance Scheme (NHIS)
- 3. National Institute for Medical Research (NIMR)
- 4. National Agency for Food, Drug Administration and Control (NAFDAC)
- 5. National Institute for Pharmaceutical Research and Development (NIPRD)
- 6. Primary Health Care Development Agency
- 7. Local Government Area

	Levels of government	Main healthcare role	Facility type managed
Federal	Federal Ministry of Health (FMOH)	Develops policies, strategies, guidelines, and plans that provide direction for the national health-care delivery system	Tertiary facilities (including Teaching hospitals and Federal medical centres)
	National Health Institutions and Agencies - NPHCDA ¹ , NHIS ² , NIMR ³ , NAFDAC ⁴ & NIPRD ⁵	Provides tertiary health-care services, technical knowledge & expertise on the provision of PHC and monitors the delivery of PHC services through NPHCDA	
State	State Ministries of Health and State PHCDA ⁶ - 36	State MOHs provide assistance to LGAs for PHC and themselves manage secondary healthcare services	Secondary facilities (including general and secondary hospitals)
LGA ⁷	LGAs – 774 Wards – 8,809	LGAs are responsible for direct delivery of primary healthcare services to the communities	Primary healthcare centres

NPHCDA '1 PHC per ward' revitalization plan

NPHCDA has outlined a vision to revitalize at least 10,000 PHCs across the country (~1 PHC ward), improve PHC service availability to communities and strengthen linkages to referral hospitals. Type 2 PHCs have been prioritized in the plan.



Source: Post polio PHC summit (2021 - 2030) Discussion Document . WDC: Ward Development Committee.

* Type 2 PHCs focus on mid-level, local referral services and emergency care; antenatal/postnatal care, higher-risk pregnancy delivery, newborn care; IUD insertion, nutrition assessment, malaria treatment and other curative care; injectable immunization and STI treatment, measles treatment. See page 28.

- **National target of 10,000 Type 2 PHCs; with 3,433 PHCs so far renovated** by Federal, State and various stakeholders.
- **Adopts political wards** as the operational implementing units for PHC programmes with a goal to improve and ensure sustainable health services in each ward, with full and active participation of people at the community level.
- **Ward development committees (WDCs)** play important roles in this system:
 - Ensure beneficiaries are aware and receive the benefits.
 - Monitor implementation within the community.
- **Referral hospitals** key for providing services for complicated births.
- The '1 PHC Per Ward' investment plan has **explicit provisions for solar power infrastructure and OPEX for maintenance.**

HFE governance and coordination

Public sector HFE governance arrangement

- On the public side, the NPHCDA and REA have important roles to play in the stewardship, planning, resource mobilization and coordination required to provide sustainable energy solutions in primary healthcare centres in Nigeria.
- Early synergies in planning, selection of criteria and intent on facility audits on both COVID-19 and ESP interventions. This collaboration can be sustained and enhanced for future health and energy related interventions.



Multi-sectoral coalition

Coalition objective

The Coalition for Sustainable Electrification of PHCs is a collective of cross-cutting, like-minded entities focused on increasing sustainable electricity access for PHCs and other critical services across Nigeria.

A call to action

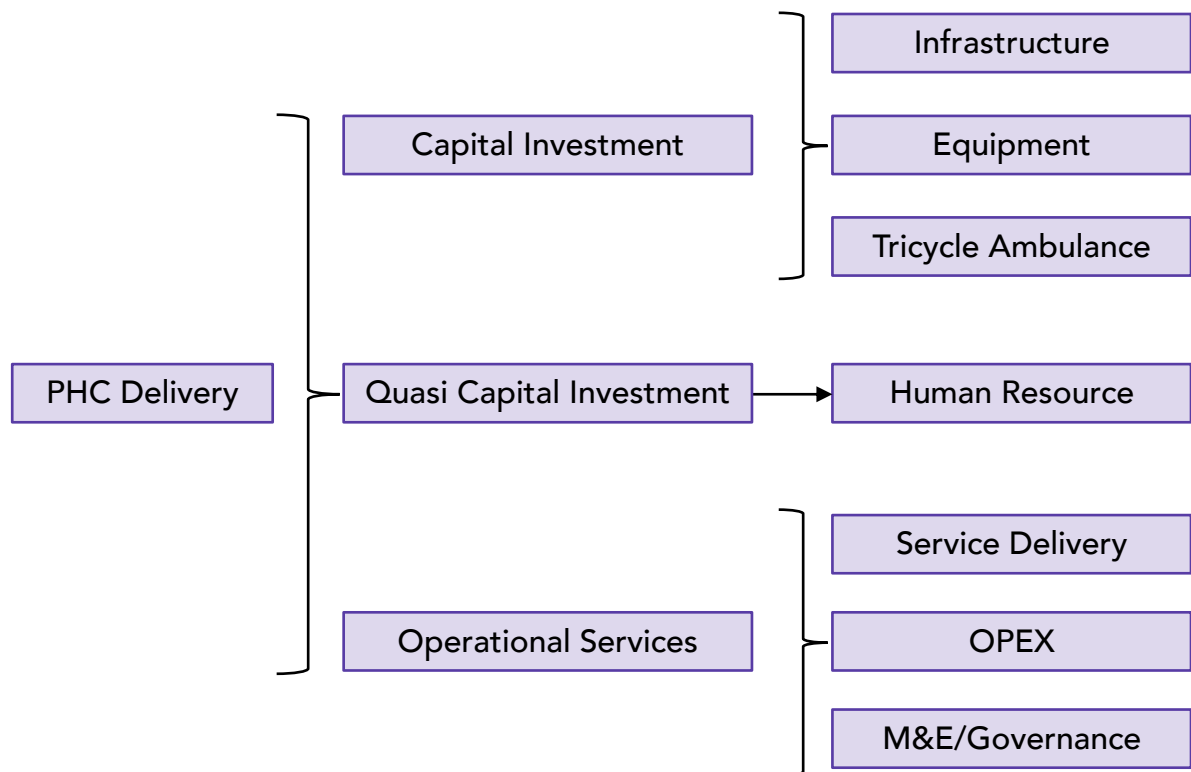
Members are working on a call to action to set an ambitious national sectoral target to electrify PHCs in the country.

70+ members including:



NPHCDA 1 PHC Per Ward Revitalisation Plan

National standards and investment plans for PHC revitalization have been defined to ensure achievement of at least One (1) optimally functioning PHC per Ward, including explicit provisions for solar power infrastructure and OPEX for maintenance



■ One Type 2 PHC, secure perimeter fence, solar alternate power, bore-hole.

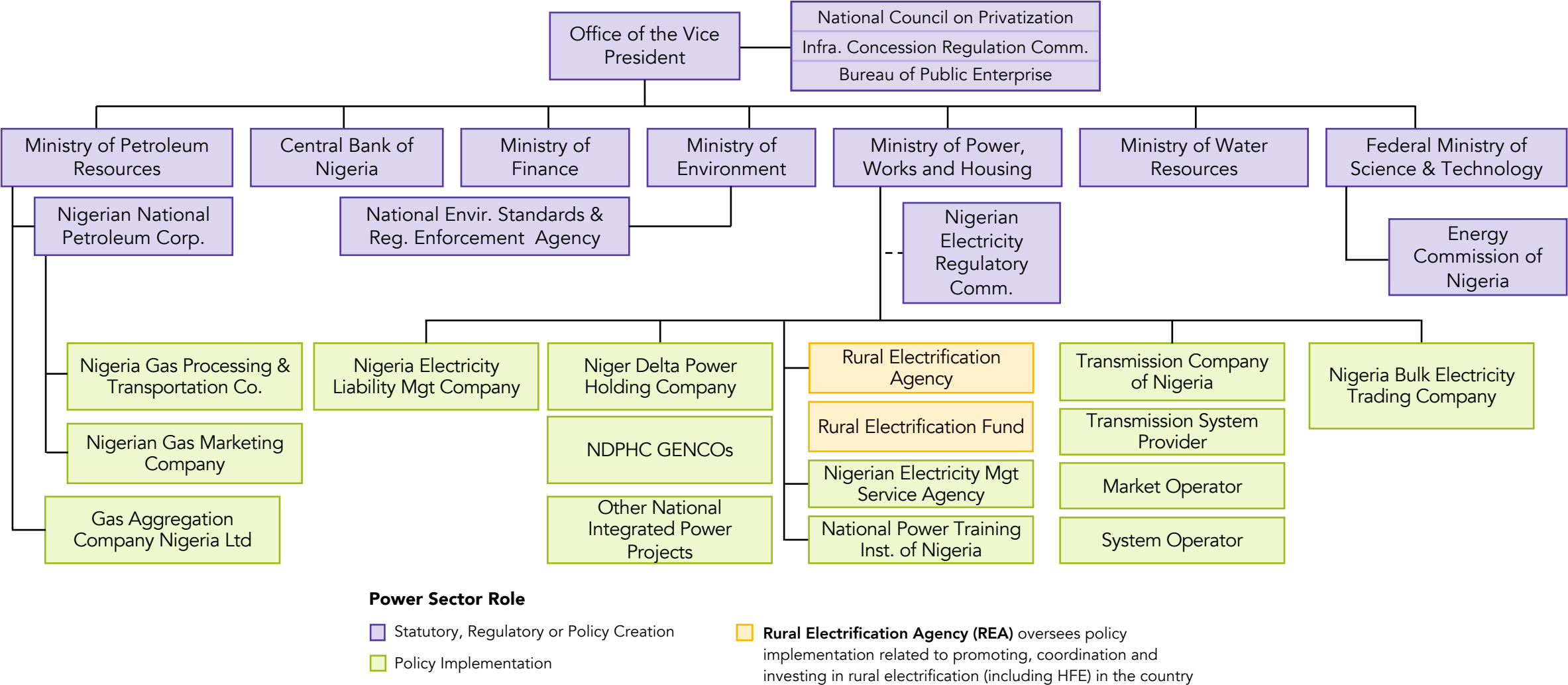
- General Equipment
- Lab Equipment
- Clinic Equipment
- Personnel Equipment
- General Items
- 1 Tricycle Ambulance per PHC per ward
- Maintenance and operation costs
- 2 Midwives per PHC, 6 other clinical staff
- Non-clinical staff
- LGA level Clinical Staff which support the PHC Facility
- WHS package

■ Daily maintenance based on current BHCPF DFF

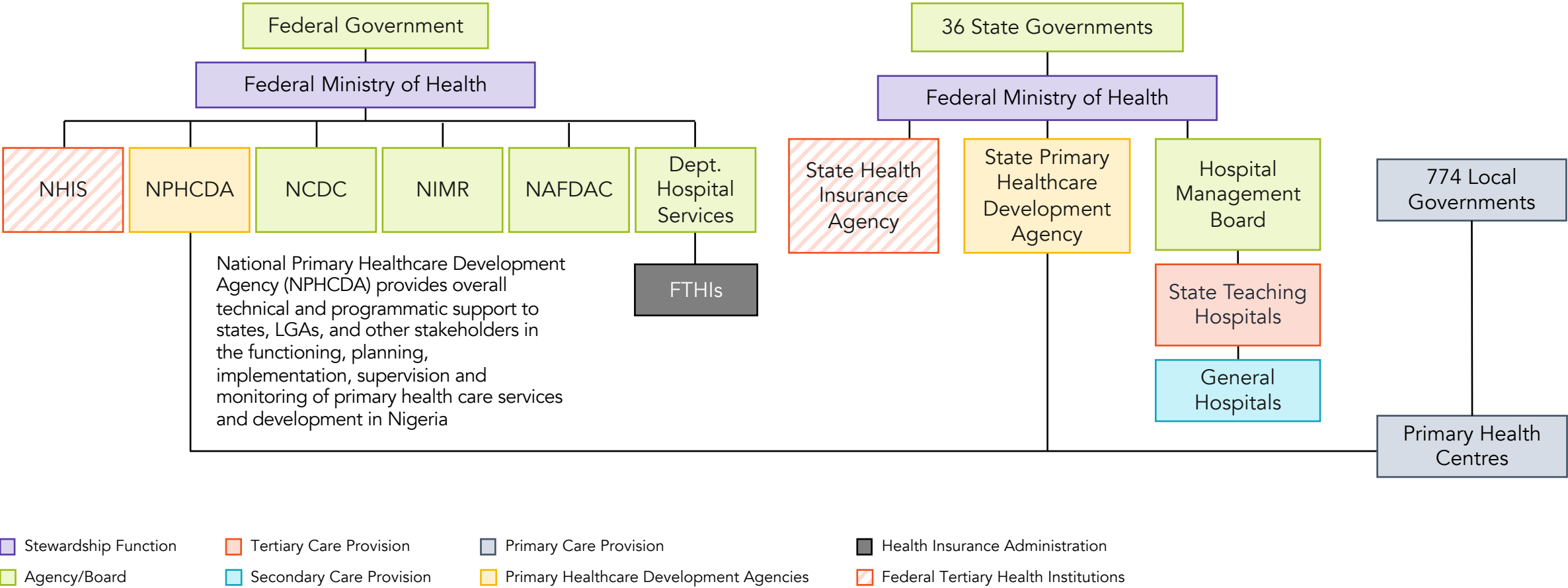
- Governance System, Engagement, M&E and Supervision (Institutional cost Discounted from PHC cost)

■ Potentially relevant for power-related CAPEX and OPEX.

Health Facility Electrification Governance and Coordination: REA



Health Facility Electrification Governance and Coordination : NPHCDA

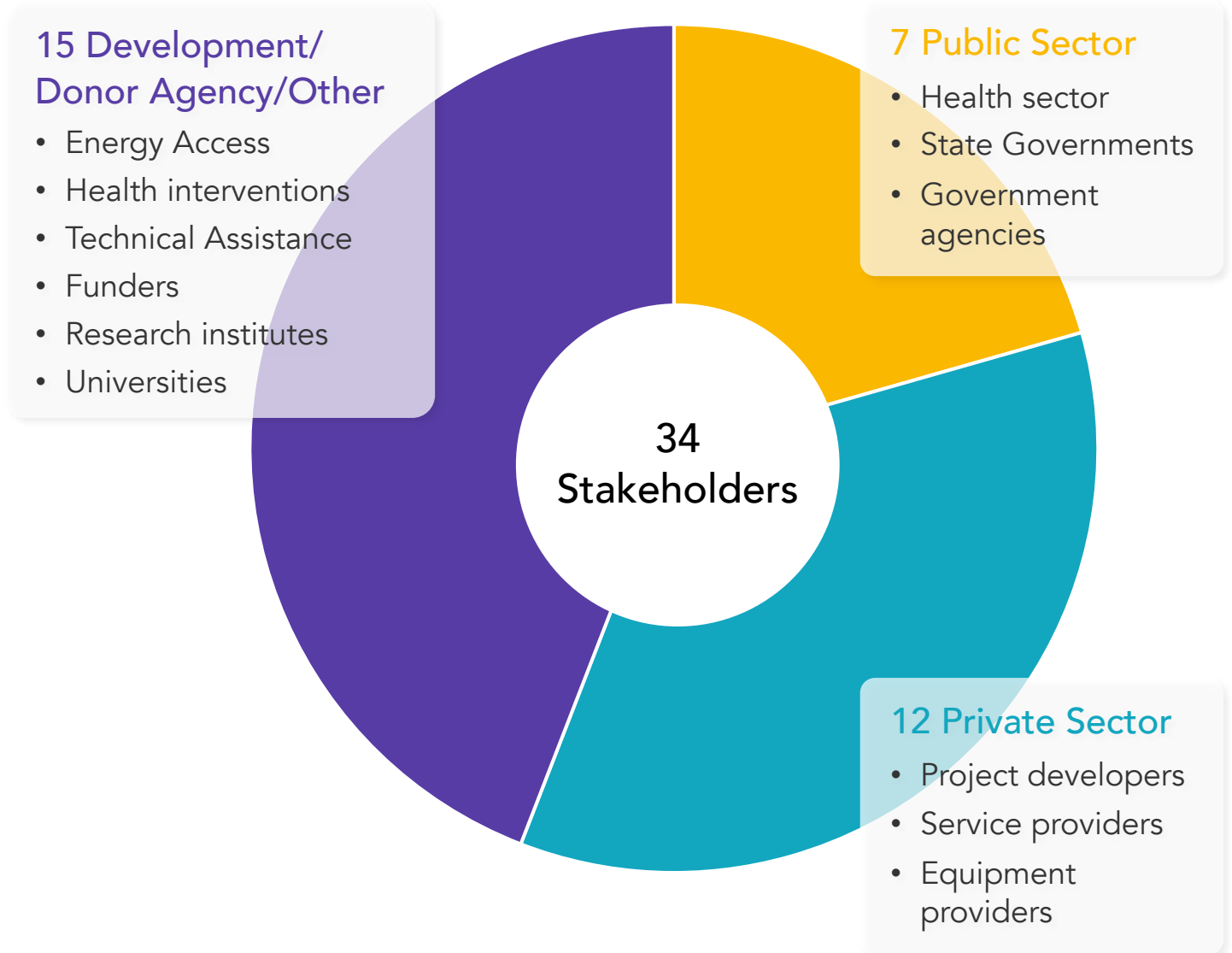


Stakeholder Mapping

Stakeholder consultations

34 public and private sector stakeholders were consulted and interviewed as part of the Roadmap development

1. Public sector: National Primary Health Care Development Agency (NPHCDA), BPHCF, Rural Electrification Agency (REA), Kaduna State Government – Kaduna State Power Supply Company, LASG, FMP, EKITISG
2. Private sector: Arnergy Ltd, PAS Solar, VESTA, Schneider, Just StandOut Ltd, Blue Camel, Okra/SAO, EM-ONE, GVE, Greenmax, Havenhill, Nextier Power
3. Development partners: African Development Bank, USAID-Nigeria Power Sector Program, USAID-Integrated Healthcare Program, Delegation of the European Union to the Federal Republic of Nigeria and ECOWAS, AECOM, Africa Clean Energy –Technical Assistance Facility, Nigeria Economic Summit Group, Heinrich Boll Foundation, Good Governance Team, World Resources Institute, All On, Clinton Health Access Initiative, Renewable Energy Association of Nigeria, USTDA, GIZ, WHO, GAVI, Global fund



Stakeholders Overview

34 public and private sector stakeholders were consulted and interviewed as part of the Roadmap development



NPHCDA
National Primary Health Care Development Agency



RURAL ELECTRIFICATION AGENCY



EMONE
ENERGY SOLUTIONS



Nextier
Advisory . Investment . Services



AllON
Energy innovations.
Powerful collaborations.

POWER AFRICA
A U.S. GOVERNMENT-LED PARTNERSHIP

HEINRICH BÖLL STIFTUNG



VESTA
HEALTHCARE



COVID-19 Interventions Mapping

■ Completed
 ■ Ongoing
 ■ Planned

Sponsors of Interventions	Brief Description of Projects	Status	Funding Type	Delivery Model
Kaduna State Government	Isolation centers in Kaduna	Completed	State funded	Public (State govt)
GVE All On	10kWp Isolation Center in Rivers	Completed	Donor funded	Donor/Private Sector
Arnergy All On	9 locations, 81kWp Lagos, Kaduna, Oyo, Abeokuta, Kano, Ekiti, isolation and testing centers, Hospitals, Emergency response centers	Completed	Donation, Discounted sale/Grant supported, Discounted sale/Part Arnergy funded	Donor/Private Sector Private sector Energy-As-A-Service
Rural Electrification Agency Blue Camel	53kWp NCDC isolation centers, University of Abuja Teaching Hospital	Completed	Public sector/REA	Private/Public Sector
Rural Electrification Agency World Bank Africa Development Bank	100 Covid-19 sites, including in federal medical centers, teaching hospitals. 50kWp each solar hybrid systems, 45kV inverters, 150kWh battery storage, 80KVA generators. Spread across 6 geo-political zones (North-West and North Central 2 lots, others 1 lot)	Ongoing	World Bank –Africa Development Bank funded Nigeria Electrification Project (NEP)	EPC model, Private /Public/Donor funded
USAID Integrated Health Program	64 sites out of REA database, across 5 states	Planned	TBD	TBD

Health Facility Electrification Interventions Mapping

■ Completed
 ■ Ongoing
 ■ Planned

Sponsors of Interventions	Brief Description of Projects	Status	Funding Type	Delivery Model
Kaduna State Govt./FCDO/EU SNP Phase 1,2,3	24 PHCs FCDO	Completed	UKAID/DFID funded	Donor/Public (State for O&M)
	13 HF	Completed	100% EU funded	Private/Donor/Public (State)
Lagos State/FCDO SNP Phase 1,2	11 PHCs	Completed	UKAID/DFID funded	Donor/Public (State for O&M)
Adamawa State/EU SNP Phase 3	8 HF	Completed	100% EU funded	EPC Private/Donor/Public (State)
Borno State/FCDO/EU SNP Phase 1, 2, 3	8 General and 1 Teaching hospitals 5 PHCs, 2 General and 1 Teaching hospitals	Completed	100% EU funded	EPC Private/Donor/Public (State)
Kano State/EU SNP Phase 3	12 HF	Completed	100% EU funded	EPC Private/Donor/Public (State)
REA ESP	200 PHCs	Completed	Federal Government Supplementary Budget for HFE	Public Sector
GVE	21 PHCs connected across mini-grid sites	Completed	Commercial funds	Private Sector
Havenhill	21 PHCs Oyo State	Completed	85% Power Africa Grant, 15% Equity	EAAS model, Public/Private/Public (State)
Volsus Energy	1 PHC Karu, Abuja	Completed	Private Sector	Donation
Kaduna State Government	225 PHCs according to 1PHC per ward	Ongoing	To be decided	To be decided
	200+ Kaduna for health solar initiative	Ongoing	India Exim Bank loan	State government
EM-ONE / USTDA	150 site assessments across 5 states, sustainable business models	Ongoing	USTDA	Multiple models under consideration

Health Facilities Interventions Mapping

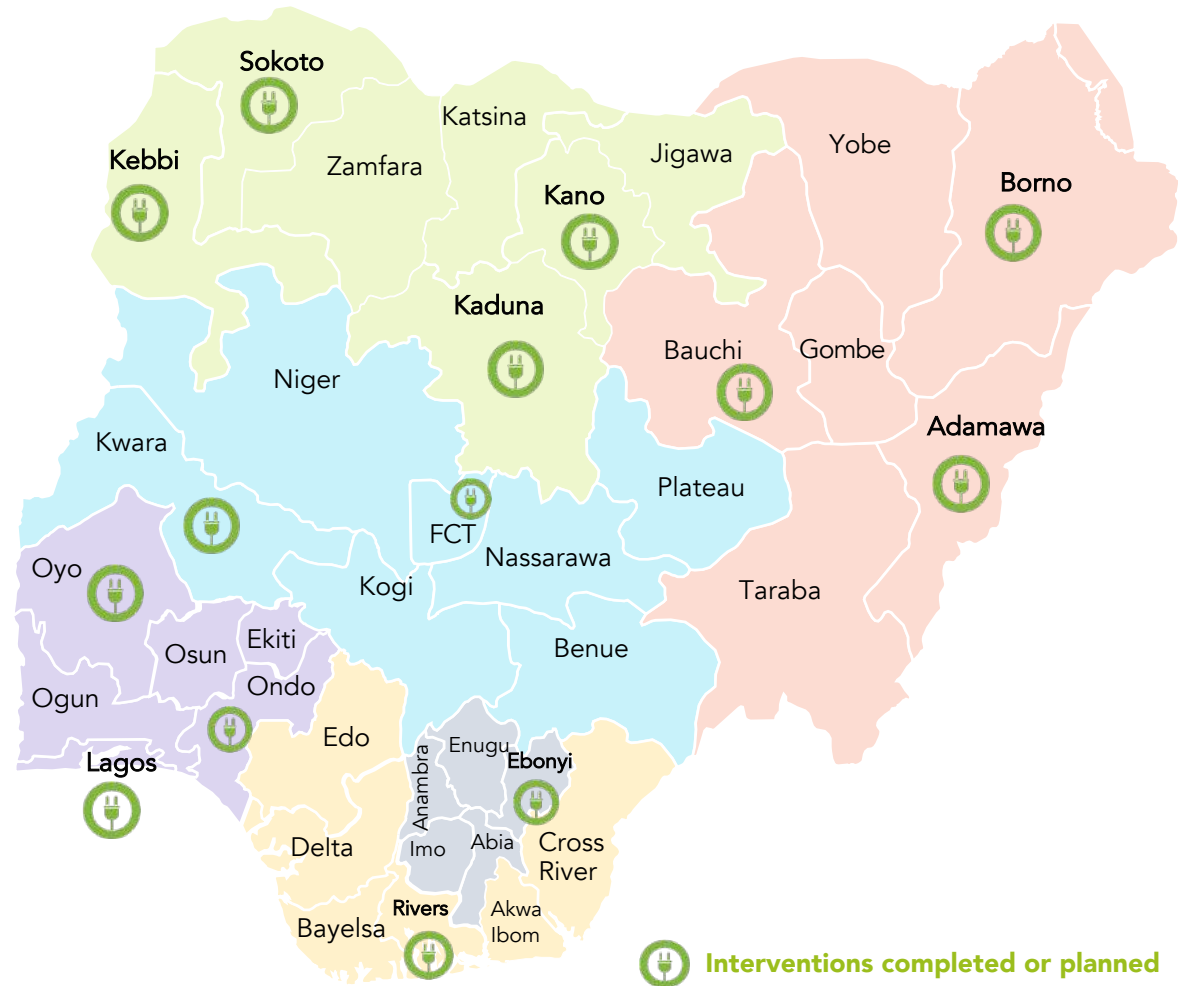
■ Completed
 ■ Ongoing
 ■ Planned

Sponsors of Interventions	Brief Description of Projects	Status	Funding Type	Delivery Model
USAID Integrated Health Program, NPSP	Target 1,200 across 5 states List of 1016 audited facilities, of which 69 FCT, Ebonyi 167, Sokoto 231, Kebbi 226, Bauchi 323	Planned	To be decided	To be decided
Okra/SAO	584 PHCs in Ondo and Kwara States	Planned	To be decided	To be decided
Havenhill	1,200 across 5 states	Planned	To be decided	To be decided
Volsus Energy	5,000	Planned	To be decided	To be decided
We Care Solar	1,000 solar suitcases to PHCs	Planned	To be decided	To be decided
REA/WB/AfDB	400 PHCs across 30 states	Planned	NEP-WB-AfDB funded	Public/Private/Donor
Federal Government	1 PHC per ward – 10,000 across nation	Planned	To be decided	To be decided

	Total COVID-19 Electrification Interventions	Total Health Facilities Interventions
Total Completed	11 facilities by 3 interventions	328 facilities by 6 interventions
Total Ongoing	100 facilities by 1 intervention	575 facilities by 2 interventions
Total Planned		18,984 facilities by 7 interventions

Concentration of Interventions by Geo-Political Zone

■ Completed
 ■ Ongoing
 ■ Planned



North-East

- Borno, Adamawa, Bauchi have completed or planned interventions
- Yobe, Gombe, Taraba have at least 5 completed interventions each from REA ESP

North-Central

- Kwara, FCT have planned or completed interventions
- Plateau, Niger, Kogi, Nassarawa, Benue have at least 5 completed interventions each from REA ESP

North-West

- Sokoto, Kebbi, Kano, Kaduna have completed or ongoing interventions
- Katsina, Jigawa have 5 completed interventions each from REA ESP
- Zamfara has no identified intervention

South-West

- Lagos, Ondo, Oyo have completed or planned interventions
- Ogun, Osun, Ekiti have 5 completed interventions each from REA ESP

South-East

- Ebonyi has planned interventions
- Anambra, Enugu, Imo, Abia have 5 completed interventions each from REA ESP

South-South

- Rivers has a completed intervention
- Edo, Delta, Bayelsa, Akwa-Ibom, Cross River have at least 5 completed interventions each from REA ESP



Observed HFE selection criteria

Stakeholders and focus areas

Public sector

Enabling environment, policy and regulatory frameworks

Private sector developers

Understanding of supply and demand market solutions, capacity to deliver

Data providers

GIS locations, electrification status, health database management, impact data

Development partners

Coordination of ongoing and planned intervention, adoption/validation of roadmap, technical support, grant funding

Investors

Sustainability and business models, access to capital considerations, concessional financing

Criteria used by different stakeholders to select health facilities for electrification interventions

PHC system readiness: Public sector, development partners

- Functionality / operational status of facilities
- Scope of PHC services delivered in the facilities (including vaccines storage capacity, MCH and neonatal, family planning)
- Health worker density (complement of nurses, midwives, physicians etc)

Electrification status: Data providers, Private sector, Investors, Development partners

- Grid status
- Sources of power
- Access, security and ease of deployment

Donor partner / sponsor considerations: Development partners, Investors

- Donor partner focus States; donor facilities

Optimizing impact and sustainability on population and health burden: Public sector, Development partners, Investors

- Disease burden (e.g. maternal and child health mortality/health outcomes)
- Size and density of the community around PHC, clustering of integrated health facilities and proximity to households
- Governance arrangement and political will (to support sustainability)
- State readiness, budgetary considerations and willingness to pay

Policy alignment: Public sector

- 1 PHC per ward facilities
- Geopolitical spread (including rural versus urban settlements)
- Equity considerations (access/coverage of basic primary healthcare services etc.)

PHC functional status considers five domains around infrastructural status, human resource for health (HRH), provision of a system that ensures the availability of medical equipment, drugs and consumables, the service package as well as availability of a ward mechanism that will ensure community ownership and accountability.

Stakeholders and intervention mapping: findings and recommendations

Situation

- The mapping and landscaping exercise indicated that in the last 6 years a total number of 9 interventions were implemented that electrified 339 health facilities
- In the next 5 years, the review indicates that there are 11 ongoing and planned interventions seeking to deploy power solutions to 675 and 18,984 health facilities respectively
- HFE interventions are still heavily donor dependent with most interventions initiated and implemented by donor partners
- National Primary Healthcare Development Agency has outlined a revitalization plan targeting 10,000 PHCs for solar power interventions under its 1 PHC per ward plan

Findings and gaps

Public sector

- Public sector involvement in HFE is growing especially on the energy access side, with some states (e.g. Kaduna and Lagos) championing sub-national HFE interventions
- Health sector stakeholders have expressed a desire for RE electrification of public PHCs, with reference made to 1 PHC per ward facilities as an important starting point
- On the public side, NPHCDA and REA have important roles to play in the stewardship and coordination required to provide sustainable energy solutions in primary health care centres across the country

Private sector

- Private sector involvement still minimal, with some interventions in the planning stage – reflective of the regulatory, market and financial risks in the sector

Selection criteria

- In selecting HFE intervention sites, the criteria used by different stakeholders varied, ranging from PHC readiness, electrification status to donor priorities

Gaps

- Limited dialogue and alignment between energy and health sector actors in the planning and coordination of health sector electrification policies, programs and interventions
- Lack of multi-sectoral data visibility, sharing and evidence-based planning for HFE interventions
- Majority of the funding and delivery models used in past are donor led EPC models, that have since been confronted sustainability related challenges

Recommendations

- Convergence between energy access interventions and health sector electrification policies and plans.
- Cross-sector coordination - leveraging on emerging coalitions such as the Coalition for Sustainable Electrification of PHCs - needed for better evidence-based implementation, resource utilization, funding/financing flows and alignment towards achieving national targets and SDGs 3, 6, 7 and 13.
- Improved information sharing between the coalition and key stakeholders will foster dialogue and adoption of best practices.
- Secure buy-in from Federal, State and local governments and ministries to create a policy and partnership framework conducive for project planning, synergies, sustainability and impact.



About SEforALL

Sustainable Energy for All (SEforALL) is an international organization that works in partnership with the United Nations and leaders in government, the private sector, financial institutions, civil society and philanthropies to drive faster action towards the achievement of Sustainable Development Goal 7 (SDG7) – access to affordable, reliable, sustainable and modern energy for all by 2030 – in line with the Paris Agreement on climate.

We work to ensure a clean energy transition that leaves no one behind and brings new opportunities for everyone to fulfil their potential.

About Power Africa

Power Africa is a U.S. government-led initiative that addresses one of the most pressing challenges to sustainable economic growth and development in Sub-Saharan Africa: access to electrical power. Power Africa provides coordinated support from the U.S. public and private sectors to add cleaner, more efficient electricity generation capacity, which benefits residents and businesses across the continent.

In support of Power Africa, USTDA provides critical early-stage planning to spur new power generation, and transmission and distribution infrastructure. These activities support a range of energy development and deployment from power generation to grid modernization, which increase efficiency and improve access.



Contact us to learn more

✉ PoweringHealthcare@seforall.org

