Leveraging PPP Models for Reliable Power Infrastructure in Nigeria's Health Facilities

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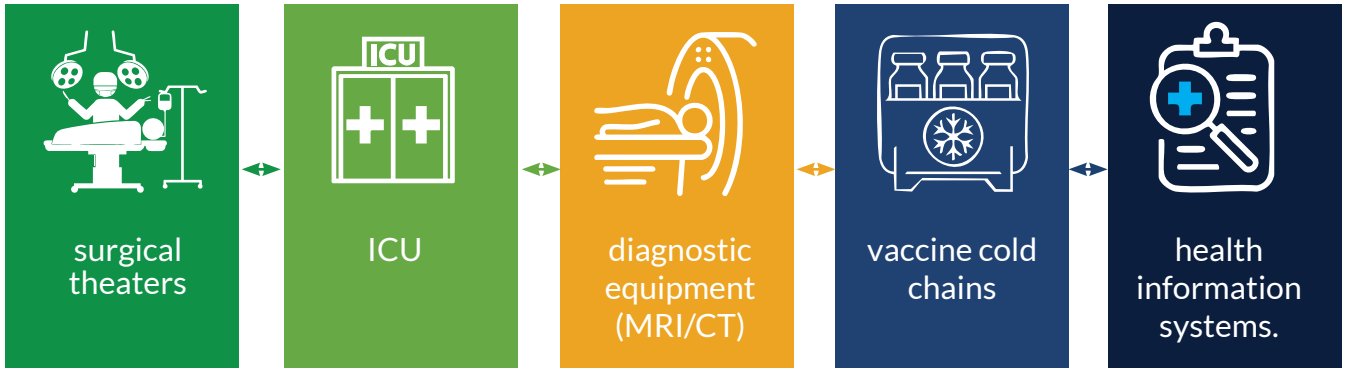
1. Background

Reliable electricity is indispensable for healthcare delivery.

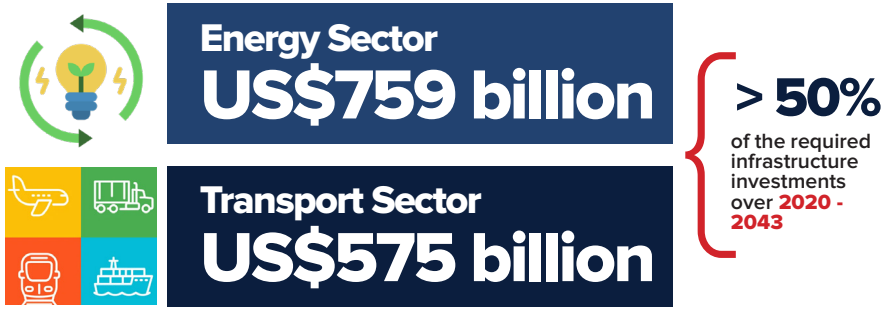
We need energy to power:

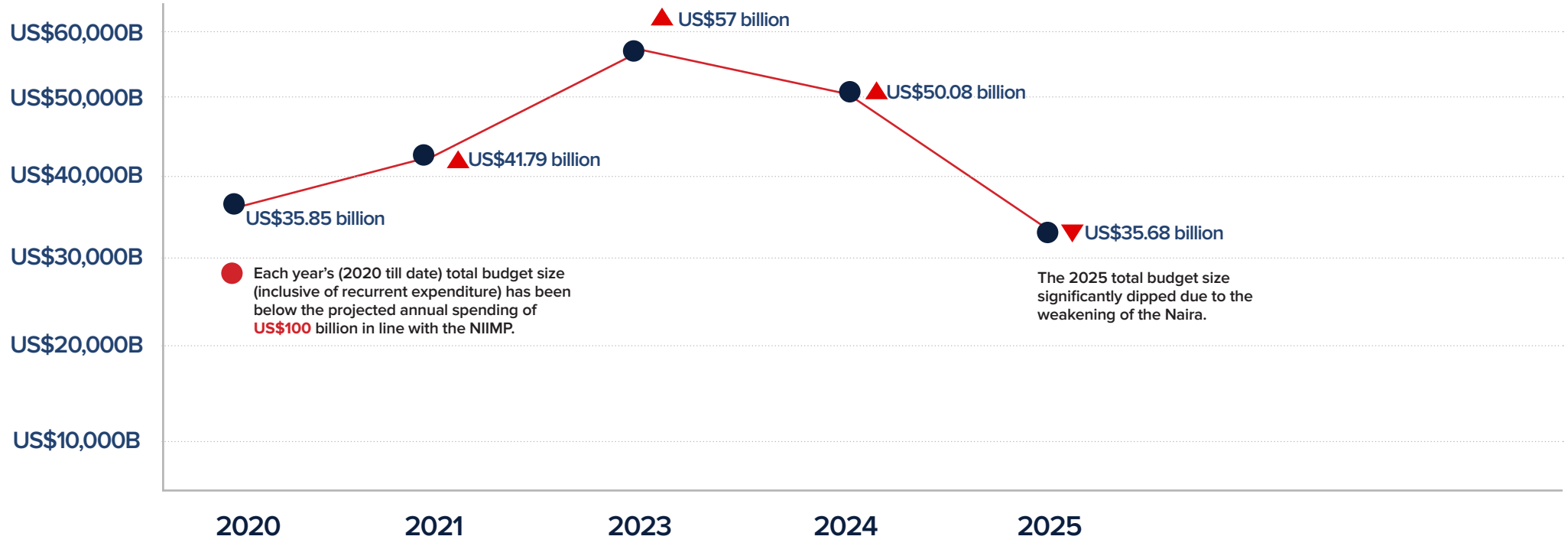


Yet most Nigerian health facilities depend on unreliable grid supply and expensive diesel generators, which compromise care quality and drain budgets.

> However, the national budgetary provisions to fund these infrastructure deficits have been very low.

The largest investment needs are in the





To bridge this gap, public funding alone cannot sustainably close the infrastructure gap. Public-Private Partnership (PPP) models offer an opportunity to mobilize private capital, technology, and efficiency while safeguarding public health outcomes.

2. Objectives of PPP Power Solutions in Health Facilities in Nigeria

- Guarantee high availability of power for critical health loads.
- Improve power quality (voltage, frequency, harmonics) to protect sensitive medical equipment.
- Reduce reliance on diesel, cut operating costs, and lower emissions.
- Ensure scalable, sustainable, and transparent financing mechanisms.
- Strengthen institutional efficiency through professional O&M and performance monitoring.

3. PPP Delivery Models

a. Energy-as-a-Service (EaaS) / DBFOM Concession

- Private party designs, finances, builds, operates, and maintains hybrid power plants (e.g., solar + battery + genset).
- Hospital pays availability-linked tariff (capacity + energy charges).

b. Captive IPP with Wheeling

- Private Independent Power Producer (IPP) builds off-site generation (solar, gas, hybrid) and wheels power through DisCos/TCN to one or multiple hospitals.
- Requires bilateral PPAs and tripartite agreements.

c. ESCO/Performance Contracting

- Energy Service Company (ESCO) finances efficiency retrofits and power-quality improvements.
- Repayment is tied to guaranteed savings and service levels.

d. Management Contract with Embedded Generation

- Private operator manages existing hospital energy systems, progressively upgrades infrastructure, and ensures service-level agreements (SLAs).

4. Notable PPP Energy Project in Nigeria's Health Sector

Lagos University Teaching Hospital (LUTH) — 5.8 MW Independent Power Plant

- In December 2017, NSIA (Nigeria Sovereign Investment Authority), along with CET Power, delivered a 5.8 MW independent power plant to LUTH.
- The site is powered primarily by natural gas and ensures 24-hour electricity, crucial for radiotherapy, critical care, and other sensitive operations.
- While not structured as a PPP concession, it embodies a private-financed, health-focused energy facility.

5. Approval Thresholds for PPP Projects

To further accelerate Nigeria's infrastructure development and ensure the sustainable delivery of infrastructure and services through PPP arrangements, the President, Commander-in-Chief of the Armed Forces, approved thresholds for PPP projects in June this year. This approval will undoubtedly aid the delivery of social projects like health, education, and housing.

S/N	MDA	Project Cost	Remarks
1	Ministries, Departments, and Agencies (MDAs)	Above N20,000,000,000.00	The Federal Executive Council (FEC)
2	Ministries	N20,000,000,000.00 and below	The Project Approval Board (PAB) of the Ministry
3	Parastatals/Agencies	Above N10,000,000,000.00 but below N20,000,000,000.00	The Project Approval Board (PAB) of the Supervisory Ministry
4	Parastatals/Agencies	N10,000,000,000.00 below	The Project Approval Board (PAB) of the Parastatal/Agency
5	MDAs	Any project that requires more than one agency to implement	The Federal Executive Council (FEC)

6. Cross-country experience

a. Energy-as-a-Service (EaaS) / DBFOM Concession

Country/Region	Facility / System	Model Type
Malawi, Zambia, Madagascar	Rural health clinics	EaaS (monthly service)
Nigeria	Federal hospitals (pilot program)	EaaS via GreenStreet Africa
Haiti	Large hospitals (e.g., Justinien UH)	Donor-backed solar + battery
USA (Alabama)	East Alabama Medical Center	Energy asset concession

b. Captive IPP with Wheeling

Country/Region	Facility / Model	Description
Zambia	Zengamina micro-hydro	Independent supply to hospital and community—akin to captive generation
Uganda	Kisiizi Hospital hydropower	IPP owned by hospital, serving hospital load and local surplus distribution

c. ESCO/Performance Contracting

Country/Region	Facility / Model	Description
Croatia	Karlovac General Hospital	€10.6M EPC - 54% energy reduction; annual savings > €650K
Czech Republic	Bulovka Teaching Hospital	USD 2.7M upgrade; USD 700K annual savings; 4-year payback
UK (NHS)	Various NHS Trusts	~40% energy reduction; £700K savings; others with £1.14M/year + CO_2 cut
Malaysia	Public Hospitals	EPCs with regional ESCOs; performance-based, audit-backed contracts
Germany / Switzerland / Japan / India / Mexico	Public buildings incl. hospitals	Expanding EPC use in healthcare alongside public-sector benchmarks

d. Management Contract with Embedded Generation

Country/Region	Facility / Model	Embedded Generation?	Highlights
Lesotho	QMMH-IN Management Concession	No	Broad facility and service management, no power focus
Turkey / Australia	PFI / BOOT Hospital Models	Possibly	Full operations, but energy generation not explicit
Malaysia	Hospital FM Contracts w/ Energy Management	No	Energy efficiency integrated, generation not included
Nigeria	Radiotherapy PPPs (NSIA)	No	Equipment-focused PPPs with operational performance

7. Conclusion

Leveraging PPP models for reliable power in Nigeria's health sector can transform service delivery, safeguard patient outcomes, and optimize costs.

By aligning incentives around availability, quality, and efficiency, PPPs can provide sustainable power infrastructure for hospitals, reduce the national health system's reliance on diesel, and create a replicable framework for resilient health services across the country.

INFRASTRUCTURE CONCESSION REGULATORY COMMISSION

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