

Progress in Nigeria's Nuclear Energy Programme

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Presentation Outline

- ◆ **Key facts of Nigeria**
- ◆ **Electricity Demand**
- ◆ **Energy Sources**
- ◆ **Why Nuclear**
- ◆ **Elements of National Position**
- ◆ **Implementation Timeline**
- ◆ **Key Progress made**
- ◆ **INIR Mission outcomes**
- ◆ **Potential Sites**
- ◆ **Planning for Feasibility Study**
- ◆ **Grid decentralization**
- ◆ **Amendment of the Electricity Act 2023**
- ◆ **Joining INPRO**
- ◆ **Why INPRO**



NIGERIA - KEY FACTS

- ◆ **Population: Over 230m people @ 2.3% growth rate**
- ◆ **Area: 923,769sqkms**
- ◆ **Capital City: Abuja**
- ◆ **Currency: Naira**
- ◆ **Official Language: English**
- ◆ **Approx. 80% of Nigerians use alternate sources of electricity**



ELECTRICITY DEMAND



Current Electricity
Demand:

**28,360 –
31,240 MWe**

Installed Capacity:

≈ 14,000 MW
Available:
about 4000 MWe

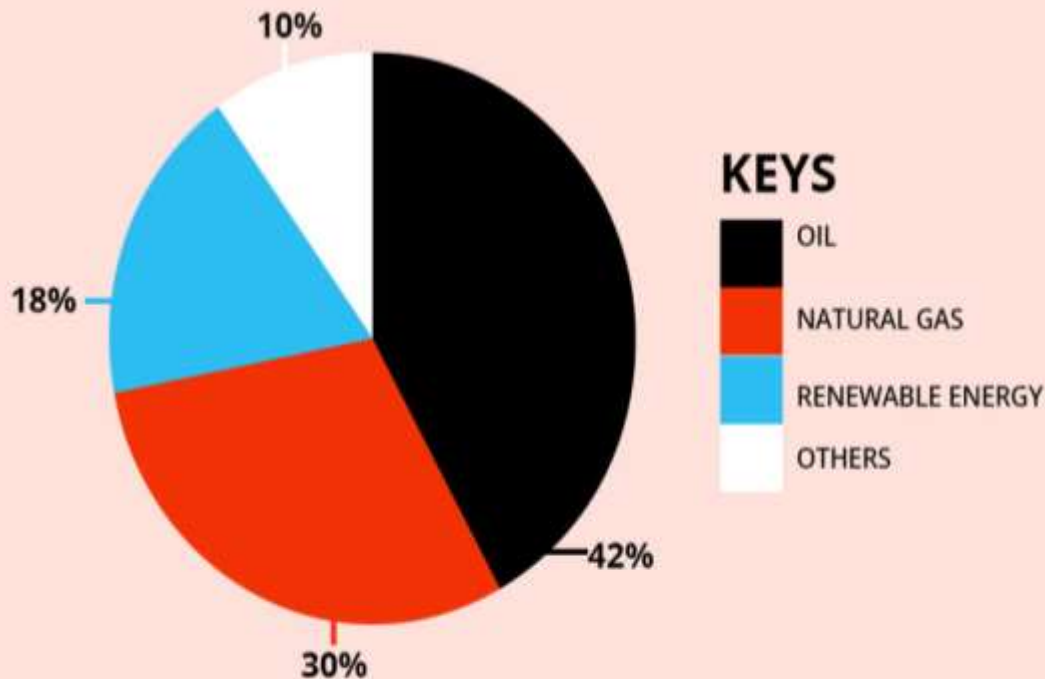


What it means: Serious electricity deficit

ENERGY SOURCES IN NIGERIA



DISTRIBUTION OF PRIMARY ENERGY CONSUMPTION IN NIGERIA



Nigeria's energy sources are predominantly natural gas, oil, and hydropower.

Note: **Nigeria is the largest oil producer in Africa**

BRINGING NUCLEAR AS PART OF THE SOLUTION



- to diversify Energy Portfolio
- to achieve long term energy security
- to address growing electricity shortfall
- to open several windows of opportunity for employment in different other areas



ELEMENT OF NATIONAL DECISION FOR NUCLEAR



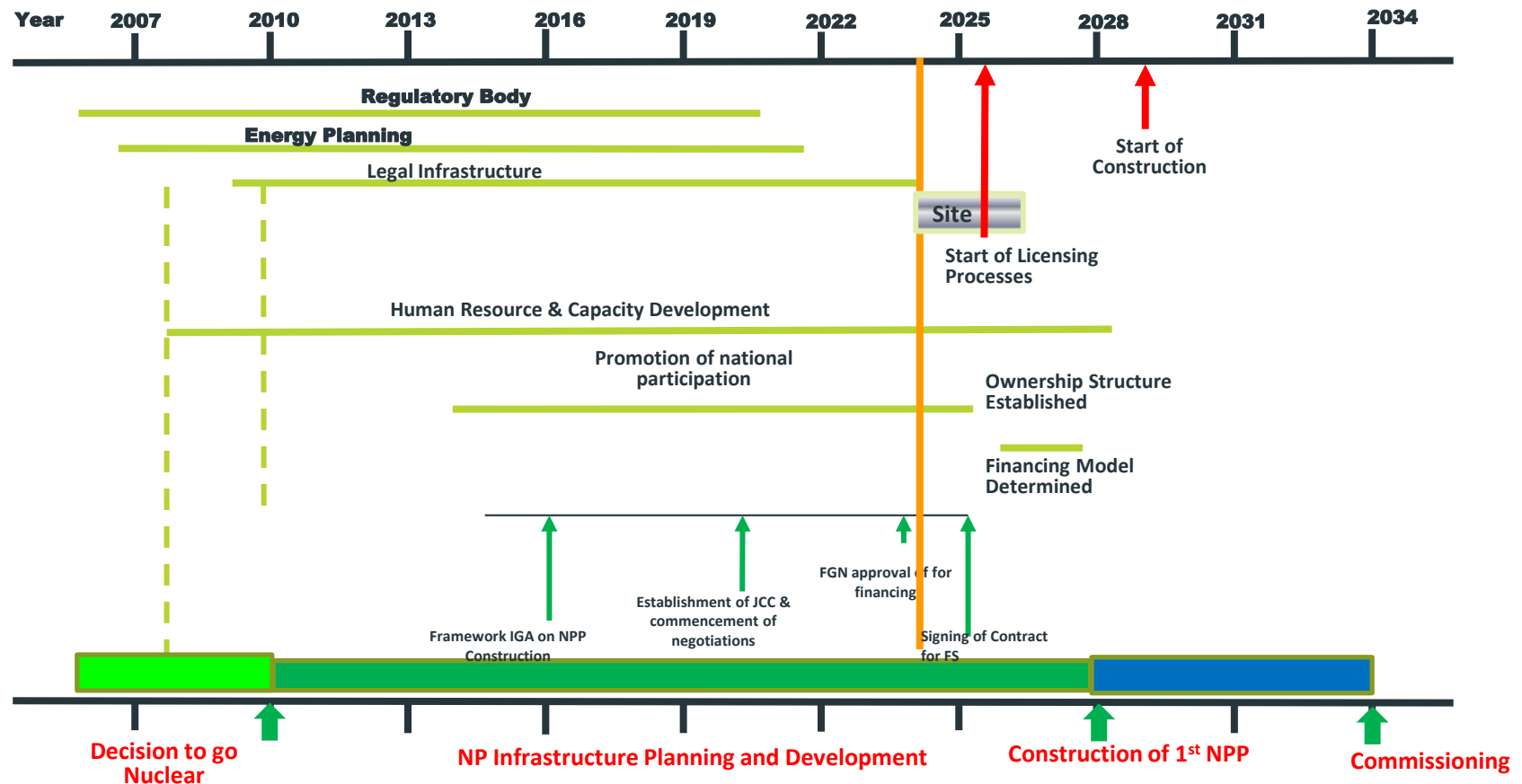
- ◆ **Membership of the International Atomic Energy Agency, IAEA - 1964**
- ◆ **Establishment of Nuclear Energy Training Centres (Centre for Energy Research and Training and the Centre for Energy Research and Development) 1976**
- ◆ **Establishment of the Nigerian Nuclear Regulatory Authority,**
- ◆ **Establishment of the Energy Commission of Nigeria**
- ◆ **Establishment of the Nuclear Technology Centre (NTC)**
- ◆ **Establishment of the Nigeria Atomic Energy Commission, 2006**



NUCLEAR NP IMPLEMENTATION TIMELINE



NIGERIA NP PROGRAMME IMPLEMENTATION TIMELINE (REVISED 2022)





KEY PROGRESS MADE

- ◆ **Approval of the National Nuclear RoadMap in 2007 by the Federal Executive Council (FEC)**
- ◆ **Two potential sites selected for the first nuclear power plants in Nigeria - at Itu (Akwa Ibom State) and Geregugu (Kogi State)**
- ◆ **Conduct of IAEA Integrated Nuclear Infrastructure Review (INIR) Mission in 2015**
- ◆ **IAEA Integrated Work Plan implementation commenced**
- ◆ **Preparatory activities towards Feasibility Study initiated**
- ◆ **Review of 1976 Atomic Energy Law: (Process ongoing at the National Assembly)**

KEY PROGRESS MADE (CONT.)



- ◆ **2nd INIR Mission already requested for 2026**
- ◆ **High Level Meeting with Nigerian Officials to promote high level government commitment and Integrated Work Plan Review Meeting in Vienna planned for 26 to 28 Nov. 2025**
- ◆ **Review of 2004 Nuclear and Radiological Safety Law: (Process ongoing at the National Assembly)**
- ◆ **Signed a number of MoUs and Project Development Agreements with some vendors - ROSATOM, CNNC etc.**
- ◆ **Nigeria is participating in the FIRST Programme of the United States**

INIR MISSION OUTCOME



Nigeria conducted the Integrated Nuclear Infrastructure Review Mission (INIR) in 2015

At the end of the INIR Mission, 43 recommendations and 10 suggestions were presented to Nigeria.

Key recommendations include: [?] [?] [?] [?]

- i. **Nigeria should enact a comprehensive nuclear law.**
- ii. **The regulatory framework should be strengthened.**
- iii. **Fine-tune process and expectations and establish national specifications for the NPP prior to the conclusion of key agreements.**
- iv. **Plans to finalize the structure of relevant organizations and their human resources should be developed**



Visit of the INIR Mission Team to the Vice President of Nigeria during the INIR Mission

POTENTIAL SITES



Geregu in Kogi State
Itu in Akwa Ibom



PLANNING FOR FEASIBILITY STUDY



Preliminary activities is already ongoing in preparation for the full feasibility study for the two potential sites



CAPACITY DEVELOPMENT PROGRAMME



A persistent challenge is building sufficient nuclear-skilled workforce that will eventually be involved in the National Nuclear programme. Nigeria is working with several partners in that regard - the IAEA, CTBTO, NEA, AFCONE, AFRA etc.

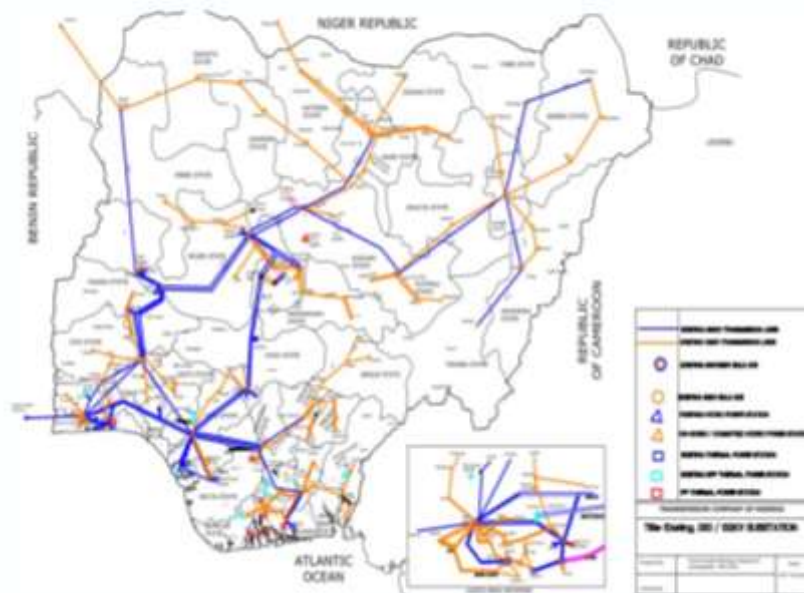


DECENTRALIZATION OF THE NATIONAL GRID



Nigeria is decentralizing its electricity grid through recent constitutional amendments and a new [Electricity Act 2023](#). The goal is to **quick solution to energy access challenges** especially in rural areas, and attract private sector investment by creating more localized, efficient, and sustainable energy framework. This will also provide a flexible window for the deployment of **Small and microreactors to the grid.**

Figure 3: The National Grid



Source: NSONG

AMENDMENT OF THE ELECTRICITY ACT OF 2023



There is currently an ongoing plan to amend Section 34 of the Electricity Act 2023 to provide for the effective development and regulation of nuclear energy programmes in Nigeria.

[HB. 2138]

C 1153

A BILL

FOR

AN ACT TO AMEND THE ELECTRICITY ACT 2023, TO PROVIDE FOR
EFFECTIVE DEVELOPMENT AND REGULATION OF NUCLEAR ENERGY
PROGRAMMES IN NIGERIA; AND FOR RELATED MATTERS

Sponsored by Hon. Victor Obuzor

[] Commencement

ENACTED by the National Assembly of the Federal Republic of
Nigeria-

1. The Electricity Act 2023 (in this Bill referred to as "the Principal
Amendment of
the Electricity

JOINING INPRO



Nigeria formally joined INPRO as a full member earlier this month after being an observer for a period of time



WHY INPRO



We believe that joining INPRO will provide us with the **framework and tools to assess the sustainability of our nuclear energy systems, focusing on safe, secure, economically viable, and environmentally responsible development and foster international cooperation that will encourage innovation in nuclear technology to meet Nigeria's future energy need**

Thank you

