

Spatial Data Management Plan for NIGERIA



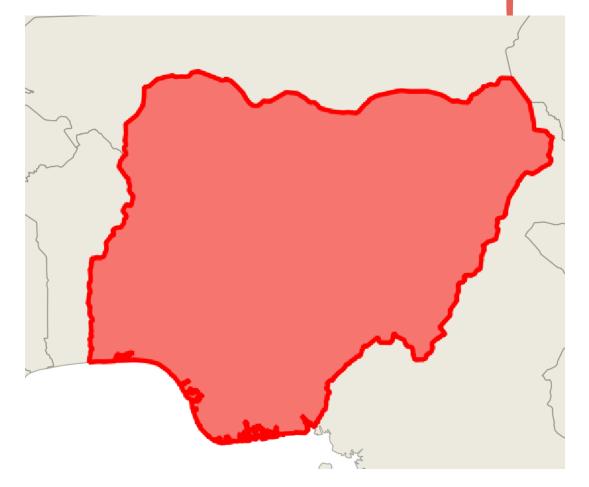
Faridah Umar <u>fmaidamma@yahoo.com</u>

Hauwa Manzo <u>hauwamanzo@yahoo.com</u>

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Nigeria Profile



<u>Area</u>

• Total	923,769 km ²
Population	
• 2023 estimate	230,842,743
<u>GDP (PPP)</u>	2023 estimate
• Total	\$1.360 trillion
• Per capita	\$6,122

Nigeria Energy Resources

TYPICAL DATA REQUIRED FOR THE ENERGY AND POWEI SECTOR DEVELOPMENT IN NIGERIA

dropower Potential	Uranium	Crude oil	Natural Gas
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SHP: 3,500 MW ge Hydro:11,500 MW	Total reserves: Not Yet Quantified	Total reserves: 36.22 billion barrels	Total reserves: 187 Trillion SCF
Coal	Wind	Biomass	Solar
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Total reserves: 2.175 billion tonnes	(2-4) m/s at 10m height (main land)	Excess of 1.2m Tonnes/day	3.5-7.0 kWh/m²/c

Resource	Potential	Level of Utilization
Large Hydropower	11,250 MW	1900 MW exploited
Small Hydropower	3,500 MW	64.2 MW exploited
Solar	4.0 kWh/m2/day - 6.5 kWh/m2/day	15 MW dispersed solar PV installations. (estimated)
Wind	2-4m/s @ 10m height mainland	Electronic Wind Information System (WIS) available; 10 MW wind farm in Katsina in progress.
Biomass (non-fossil organic matter)	-Municipal waste -Fuel wood	 18.5 million tonnes produced in 2005 and now estimated at 0.5kg/capita/day 43.4 million tones/yr fuelwood consumption
	Animal Waste	245 million assorted animals in 2001
	-Agric Residue -Energy crops	91.4 million tonnes /yr produced 28.2 million hectares of arable land; 8.5% cultivated

Source: REMP (2005) and FMEnv

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Data Management plan for Nigeria

- Enable online access to a wide range of spatial information and services
- Enable integration of geographically distributed spatial information
- Enable collaboration by multilateral information exchange and synchronization
- Allow autonomous organizations to develop interdependent relationships in a distributed environment
- Facilitate the definition and sharing of spatial semantics

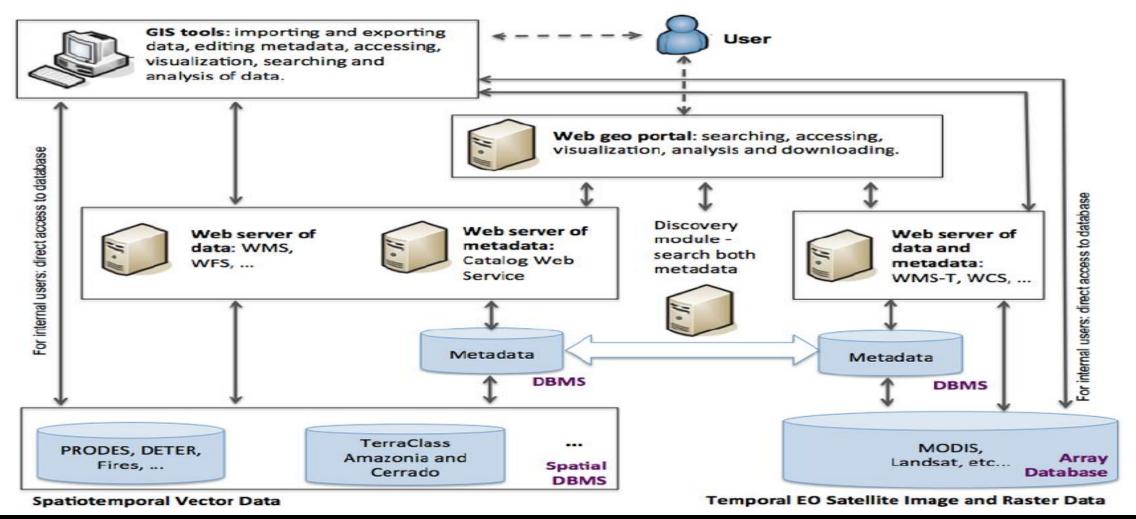
The Plan

Stakeholders

Actors

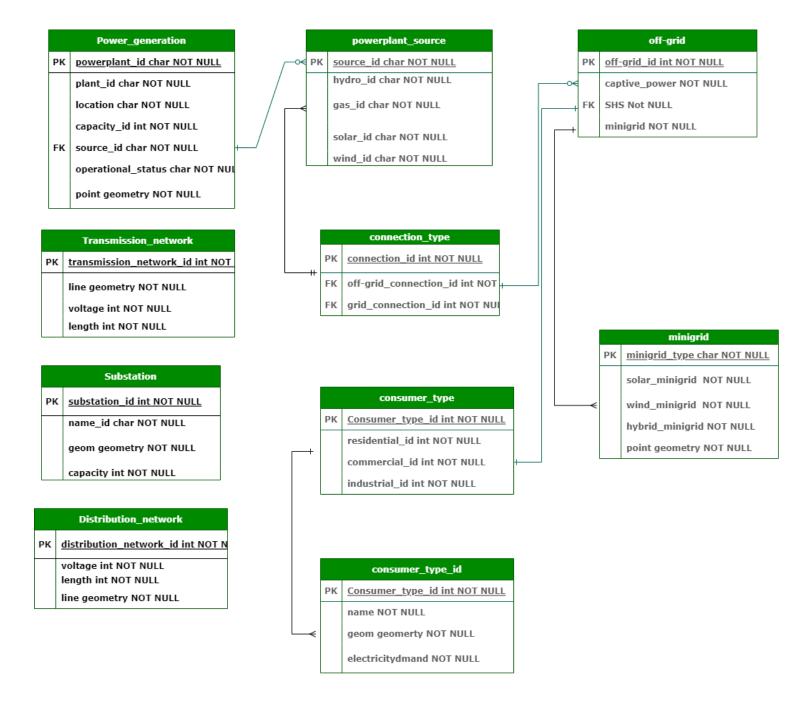
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System Architecture



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Database Design



UI/UX

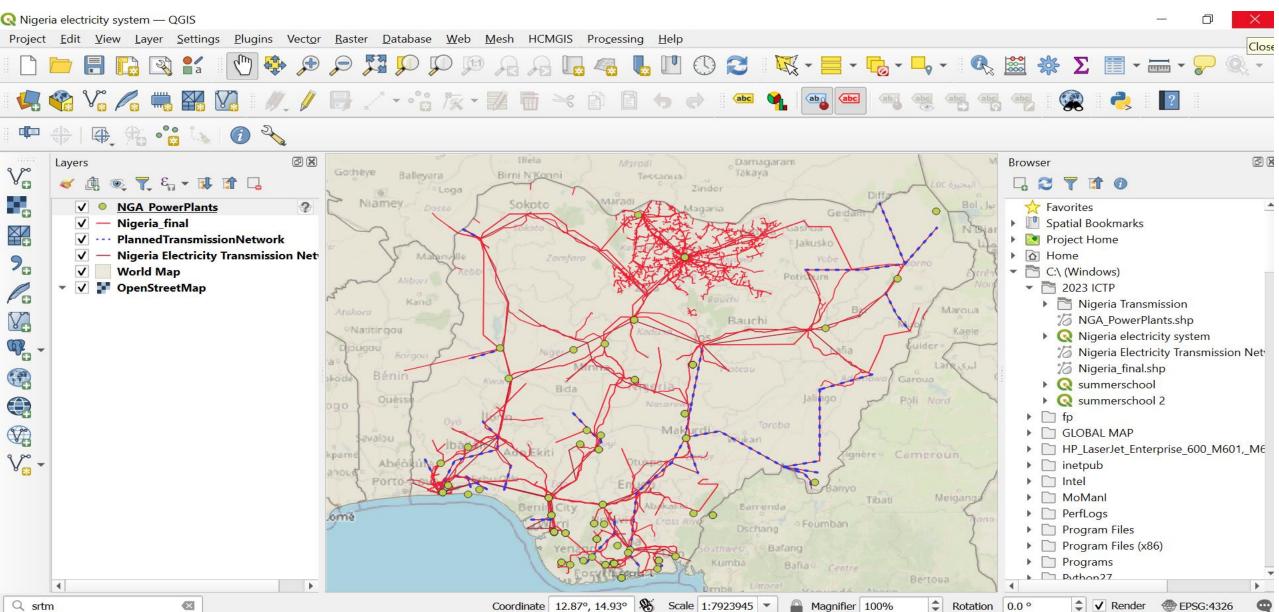
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Result



Conclusion

 Having a central SDI in Nigeria will go a long way in harmonising all the spatial data we have in different organizations for energy planning

Future Work

Collaboration with subnational governments in establishing their own SDI for energy planning

Reference

- https://databank.energy.gov.ng
- <u>https://tcn.gov.ng</u>
- <u>https://energydata.info/dataset/72eab52a-da83-4b75-8993-bc9defcc5e4e/resource/78efd2c1-0155-4f39-87ca-70d7c4763f59/download/powerplants.geojson</u>
- <u>https://energydata.info/dataset/1a812945-1130-4acc-910a-f36fac56b6af/resource/3b61d4b8-a5a9-4149-8958-a7d41304f9b1/download/nga-popngapppv2c2015unadj.</u>