Country Analysis Brief: Nigeria

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Overview

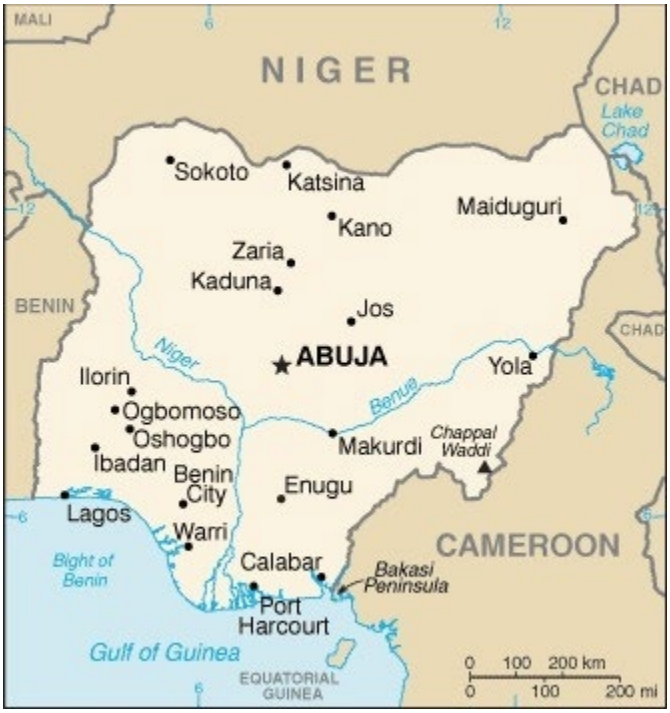
Table 1. Nigeria's energy overview, 2023

	Coal	Natural gas	Petroleum and other	Nuclear	Hydro	Renewables and other	Total
Primary energy consumption (quads)	0.0	0.7	1.0	0.0		0.0	1.8
Primary energy consumption (percentage)	2%	40%	57%	0%		1%	100%
Primary energy production (quads)	0.0	1.4	3.2	0.0		0.0	4.7
Primary energy production (percentage)	1%	30%	68%	0%		1%	100%
Electricity generation (terawatthours)	0.0	32.8	0.0	0.0	9.6	0.2	42.5
Electricity generation (percentage)	0%	77%	0%	0%	23%	<1%	100%

Data source: U.S. Energy Information Administration, International Energy Statistics database
Note: We aggregate hydroelectricity and renewables as *renewables and other* for primary energy production and consumption. For electricity generation, *hydro* includes hydroelectric pumped storage. Quads=quadrillion British thermal units

- Oil and natural gas production is a mainstay of Nigeria's economy: fossil fuel revenues are the country's primary source of foreign exchange and fluctuations in crude oil price affect its economy. According to the Energy Institute's estimates in its June 2025 *Statistical Review of World Energy*, Nigeria was ranked sixth globally among exporters of liquefied natural gas (LNG) in 2024.[1]
- Nigeria experiences sporadic supply disruptions. Since 2020, disruptions and reduced investment in upstream development have led to a significant decline in crude oil production. In the third quarter of 2022, Nigeria's crude oil production (excluding lease condensate) briefly dropped below one million barrels per day (b/d) because of extended disruptions stemming from crude oil theft and pipeline vandalism. Although crude oil output has modestly recovered since its low in 2022, supply disruptions remain a significant and persistent downside risk to Nigeria's production.[2]

Figure 1. Map of Nigeria, as of October 2025



Source: U.S. Central Intelligence Agency, *CIA World Factbook*—Nigeria

Petroleum and Other Liquids

- According to the latest estimates by OPEC's *2025 Annual Statistical Bulletin*, Nigeria held an estimated 37.5 billion barrels of proven crude oil reserves in 2024.[3]
- Nigeria produces crude oil that is mostly medium-to-light density and has a low sulfur (or *sweet*) content. Given these characteristics, Nigerian crude oil grades or blends are generally considered to be high quality and tend to command a premium over North Sea or Dated Brent. Most of this crude oil is exported to global markets. Two new Nigerian crude oil grades, Utapate and Obodo, were introduced to the market in November 2024 and April 2025, respectively; Utapate is a light, sweet crude oil grade, while Obodo is a medium, sweet crude oil grade (Table 2).[4]

Table 2. Selected crude oil grades produced in Nigeria

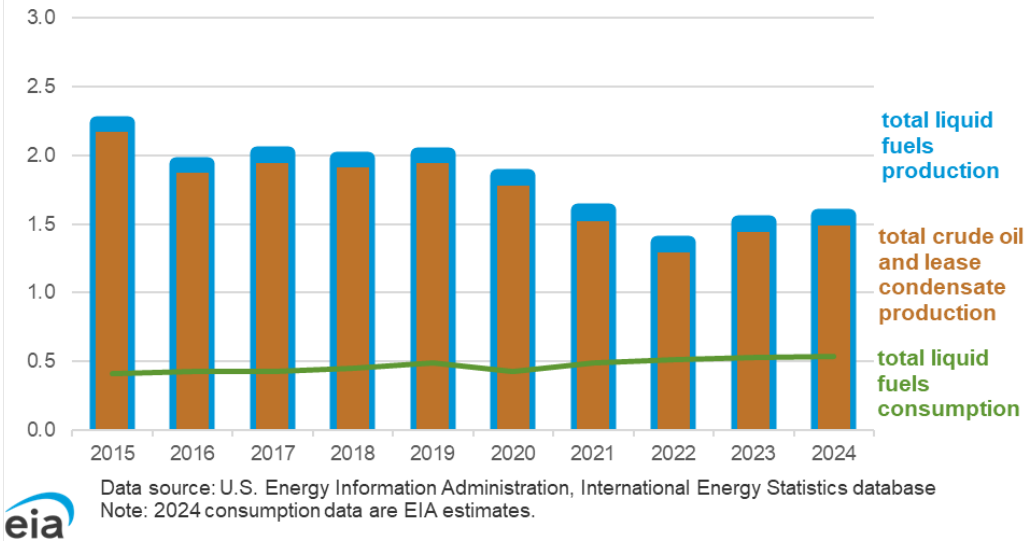
Crude oil grade	API gravity number (degrees)	Sulfur content (percentage)
Agbami	48	0.04%
Akpo	46	0.06%
Amenam	39	0.10%
Antan	28	0.03%
Bonga	29	0.25%
Bonny Light	35	0.15%
Brass River	40	0.20%
Ea	36	0.10%

Egina	27	0.30%
Erha	35	0.20%
Escravos	32	0.20%
Forcados	32	0.20%
Ima	46	0.05%
Obodo	28	0.05%
Okono	42	0.06%
Okwuibome	24	0.10%
Qua Iboe	38	0.12%
Usan	31	0.25%
Utapate	44	0.07%
Yoho	41	0.60%

Data source: Argus Media, Reuters, and Oxford Institute for Energy Studies

- Nigeria produced about 1.5 million b/d of crude oil and lease condensate in 2024, about a 31% decline from its production average in 2015. Nigeria's crude oil and condensate production has declined during the last decade because of security-related incidents at its upstream facilities or midstream infrastructure that have led to disruptions and forced shut-ins, sometimes for a prolonged period. Nigeria's producing fields are mature, which has led to a decline in production, and its crude oil infrastructure is aging and poorly maintained. Despite these challenges, Nigeria's crude oil and condensate production has recovered from a 10-year low of 1.3 million b/d in 2022. This growth results from fewer disruptions and the commercial start of development projects such as the Akpo West, Ikike, and Utapate fields. These fields have provided a modest boost to production to help partially offset legacy production declines (Figure 2).[5]

Figure 2. Total annual liquid fuels production and consumption in Nigeria, 2015–2024



Refining

- Nigeria has four state-owned refineries that collectively have a nameplate capacity of 445,000 b/d, which is nearly enough to meet all domestic demand. However, the refineries have remained offline for long-term maintenance or rehabilitation since 2020, with some instances of intermittent operations at significantly reduced capacity. It is unclear when these refineries will fully be brought back online. The Nigerian government also planned to construct smaller modular refineries, but the lack of financing has caused delays. The status of those modular refineries is unclear.[6]
- The Dangote refinery, a single-train refinery with a 650,000-b/d nameplate capacity, began commercial operations in January 2024 after years of delay. The Dangote refinery in the Lekki Free Zone near Lagos is Africa's largest refinery as well as the world's largest single-train refinery. Although it has been in operation for over a year, the Dangote refinery is still ramping up production and has experienced unplanned maintenance, labor disputes, and other operational issues that have led to reduced refinery runs, despite some trade press reports to the contrary In October 2025, Dangote Industries Ltd., which owns and operates the refinery through a subsidiary, announced that it plans to expand the refinery's capacity to 1.4 million b/d; no other details pertaining to the schedule of the expansion were reported (Table 3).[7]

Table 3. Major refineries in Nigeria

Refinery	Status	Location	Notes	Nameplate capacity (barrels per day)
Kaduna refinery	Shut-in	Kaduna state	Crude oil sourced from Escravos and Forcados terminals	110,000
Port Harcourt refinery I and refinery II	Shut-in	Rivers state	Crude oil sourced from Escravos terminal	210,000
Warri refinery	Shut-in	Delta state	Crude oil sourced from Bonny terminal	125,000
Dangote refinery	Operating	Lagos state	Currently in ramp-up phase	650,000
Total				**1,095,000**

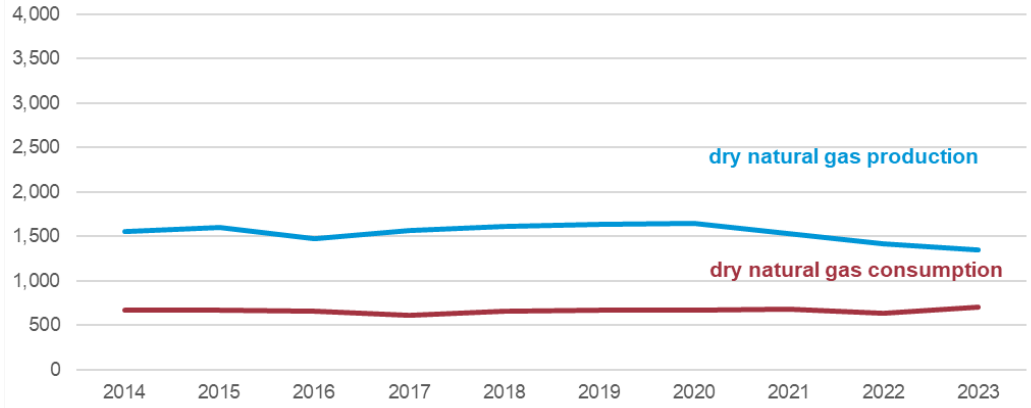
Data source: PwC Nigeria and NS Energy Business

Natural Gas

- According to the latest estimates in OPEC's *2025 Annual Statistical Bulletin*, Nigeria held an estimated 211.1 trillion cubic feet (Tcf) of proved natural gas reserves in 2024.[8]
- Dry natural gas production in Nigeria averaged about 1.5 Tcf between 2014 and 2023, and dry natural gas consumption averaged 658 billion cubic feet (Bcf) over the same period (Figure 3).[9]

Figure 3. Total dry annual natural gas production and consumption in Nigeria, 2014–2023

billion cubic feet

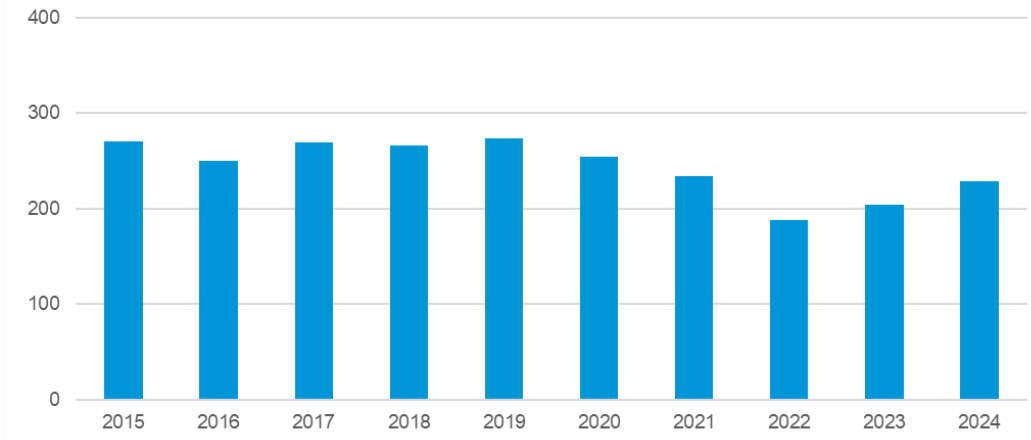


Data source: U.S. Energy Information Administration, International Energy Statistics database

- Nigeria has a gas-to-liquids (GTL) plant at Escravos with a nameplate capacity of 33,000 b/d that is operated by Chevron (75%) in partnership with NNPC (25%). The Escravos GTL plant began operations in 2014 and can convert about 475 million cubic feet per day (MMcf/d) of natural gas into diesel, liquefied petroleum gas, and naphtha products, primarily for export.[10]
- Significant amounts of natural gas production in Nigeria are either re-injected or flared. Some of Nigeria's oil fields lack the infrastructure to capture the natural gas produced with oil, known as associated gas. According to the latest estimates by the World Bank Group's Global Flaring and Methane Reduction Partnership, Nigeria flared approximately 229 Bcf of natural gas in 2024, an increase of about 12% from the previous year, making it the seventh-highest flaring country by volume for the year (Figure 4).[11]

Figure 4. Total annual natural gas flared by Nigeria, 2015–2024

billion cubic feet

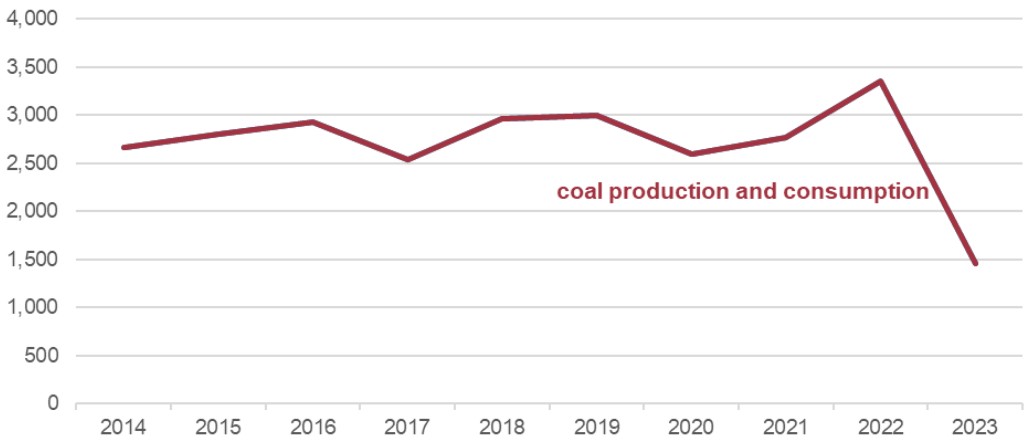


Data source: Global Flaring and Methane Reduction Partnership, *Global Gas Flaring Tracker* Report, July 2025

Coal

- Nigeria held about 246 million short tons in coal reserves in 2023. Between 2014 and 2023, the country averaged about 2.7 million short tons of coal production, all of which was bituminous coal. Nigeria uses all its production to satisfy its domestic needs (Figure 5).[12]

Figure 5. Total coal production and consumption in Nigeria, 2014–2023
thousand short tons



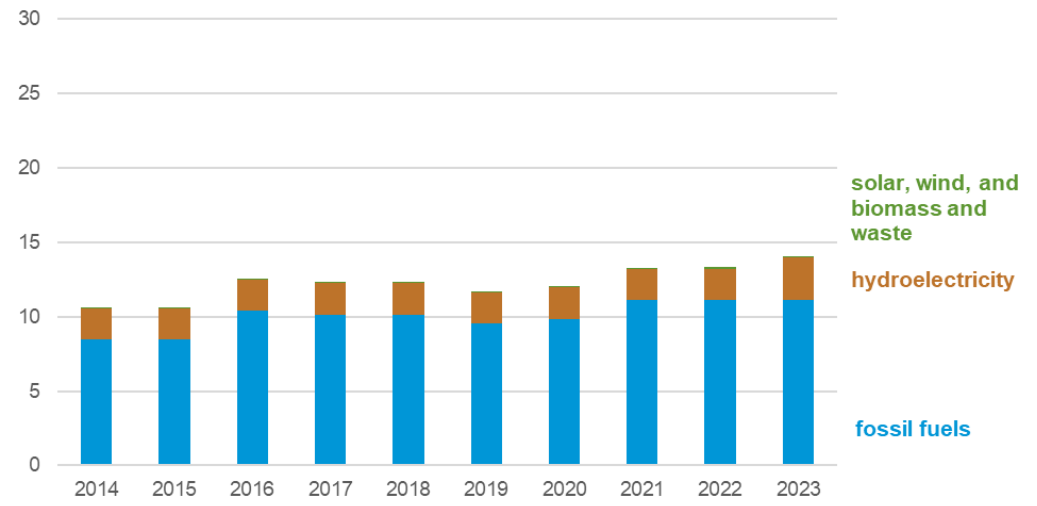
Data source: U.S. Energy Information Administration, International Energy Statistics database
Note: Chart excludes metallurgical coke.

Electricity

- Nigeria mostly relies on fossil fuels, primarily natural gas, for power generation, but the country also employs some hydropower to meet its electricity needs. In 2023, Nigeria had a total electricity capacity of 14.1 gigawatts (GW), up from 10.6 GW in 2014. Nigeria generated about 42.5 gigawatthours (GWh) in 2023 (Figure 6 and Figure 7).[13]

Figure 6. Nigeria's electricity generation capacity by fuel type, 2014–2023

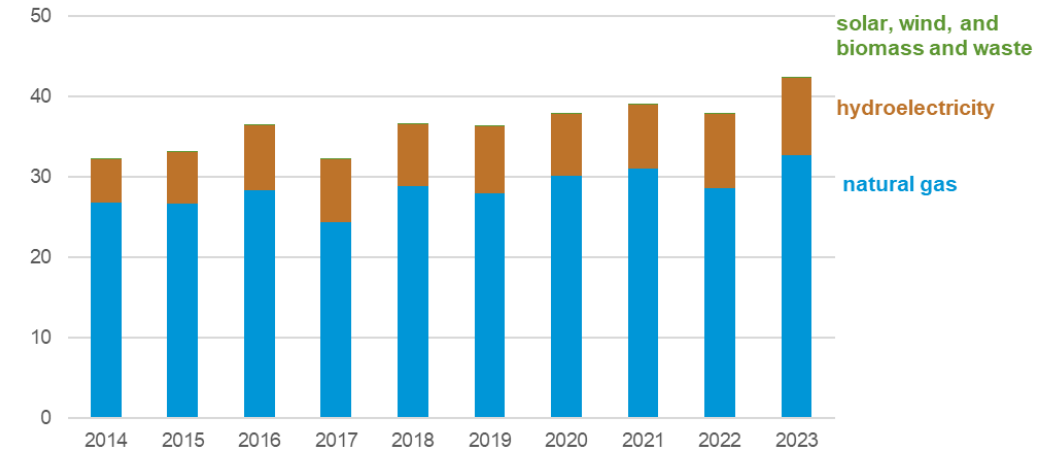
gigawatts



Data source: U.S. Energy Information Administration, International Energy Statistics database

Figure 7. Nigeria's net electricity generation by fuel type, 2014–2023

gigawatthours



Data source: U.S. Energy Information Administration, International Energy Statistics database

- Nigeria's electric power sector faces many challenges, such as poor and underdeveloped power infrastructure and high transmission and distribution losses. According to estimates by the World Bank, about 61% of Nigerian households had access to electricity in 2023, up from 54% in 2014. Even those with access to electricity experience frequent blackouts. As a result, residents and businesses rely on costly oil-fired portable power generators or off-grid traditional biomass and waste to meet their energy needs.[14]
- In 2022, the Nigerian government released its Energy Transition Plan, which outlines a strategy to reduce carbon emissions across five key sectors (power, transport, oil and natural gas, cooking, and industry) to become carbon neutral by 2060. The Energy Transition Plan requires an estimated $410 billion above normal projected spending levels to achieve this target. The government is seeking to raise funds to help implement this plan.[15]

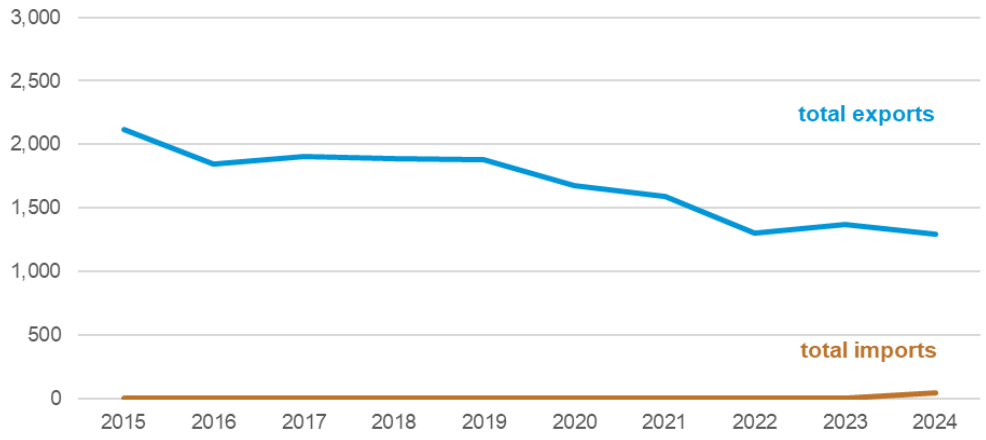
- According to the International Hydropower Association, Nigeria has natural resources that provide significant hydropower potential, particularly in its central and northern regions, but hydropower in the country is underdeveloped. The Nigerian government is seeking to build hydropower plants and increase the country's hydropower capacity to address domestic electricity needs.[16] In June 2023, the 700-megawatt (MW) Zungeru hydropower plant, Nigeria's second-largest plant, began operations.[17] The largest hydropower plant—the 760-MW Kainji plant—is currently undergoing a rehabilitation and expansion scheduled to be completed by 2027, which will increase capacity to 980 MW.[18]
- Although solar power comprises a small share of Nigeria's total generation capacity, it has grown substantially in the last decade, increasing from about 16 MW to 112 MW from 2014 to 2023. This increase is partially due to government support that aims to increase access to electricity for off-grid populations in remote and rural areas as well as to replace expensive diesel generators. The Nigerian government's Rural Electrification Agency, with funding support from the World Bank and the African Development Bank, launched the Solar Power Naija initiative, a government program that aims to connect 5 million new households to solar power and expand energy access to 25 million individuals in unserved or underserved communities through the provision of solar home systems and the development of solar mini-grids.[19]

Energy Trade

- According to the latest estimates by EIA and Global Trade Tracker, Nigeria exported an average of 1.7 million b/d of crude oil and condensate between 2015 and 2024. Exports declined by about 39% or 819,000 b/d, over the 10-year period because of Nigeria's declining production.
- In 2024, Nigeria exported about 1.3 million b/d of crude oil and condensate. Europe received most of those exports by volume (622,000 b/d) for the year, led by France and Spain, which imported 128,000 b/d and 153,000 b/d, respectively. Asia Pacific countries collectively imported about 276,000 b/d of Nigeria's crude oil and condensate. India (123,000 b/d) and Indonesia (95,000 b/d) were the highest and second-highest regional importers, respectively.
- Nigeria does not typically import crude oil or condensate because its domestic production is more than sufficient for the refining capacity; however, according to Global Trade Tracker estimates, this pattern changed in 2024, when Nigeria imported about 43,000 b/d, nearly all of which came from the United States (Figure 8 and Figure 9).[20]

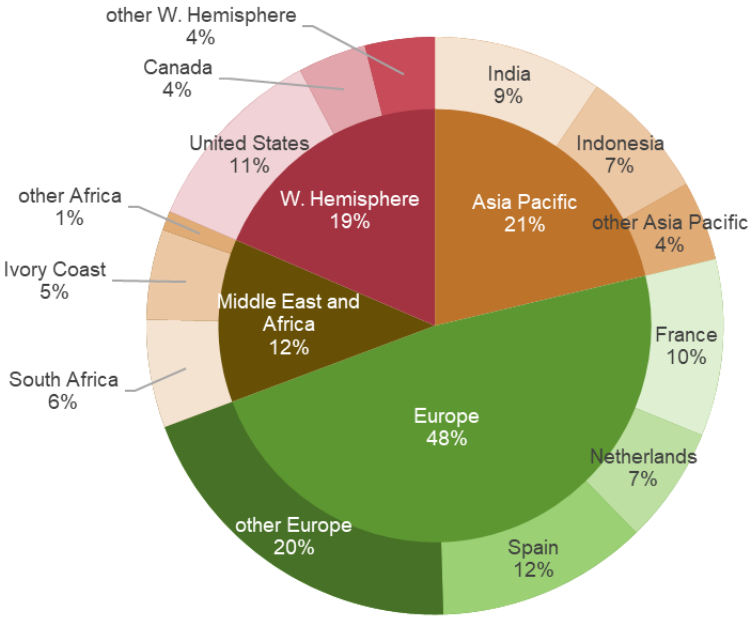
Figure 8. Nigeria's total annual exports of crude oil and condensate, 2015–2024

thousand barrels per day



Data source: U.S. Energy Information Administration, International Energy Statistics database, Global Trade Tracker
Note: EIA estimates are from 2015 to 2018; subsequent annual estimates are from Global Trade Tracker.

Figure 9. Nigeria's crude oil and condensate exports by destination, 2024

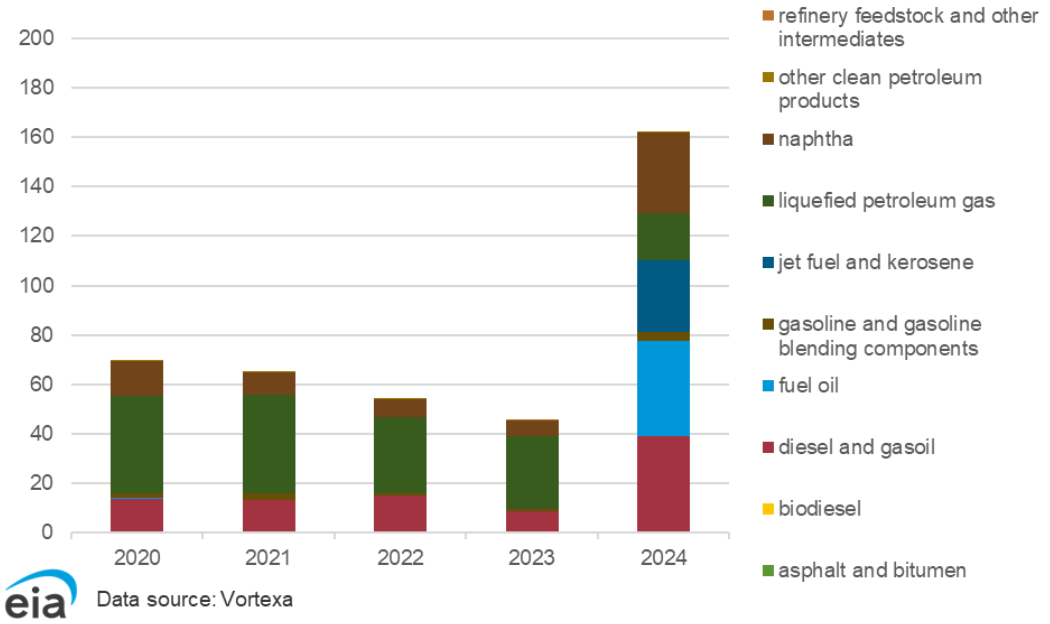


Data source: Global Trade Tracker
Note: Percentages may not add up due to rounding.

- Between 2020 and 2024, Nigeria exported an average of about 79,000 b/d of petroleum products. Because Nigeria's main state-owned refineries have been offline for long-term rehabilitation, Nigeria's petroleum product exports come from privately owned refineries, which have historically exported only a small amount of petroleum products, mainly liquefied petroleum gas and diesel or gasoil, due to their small capacities and lack of complex refining capabilities.

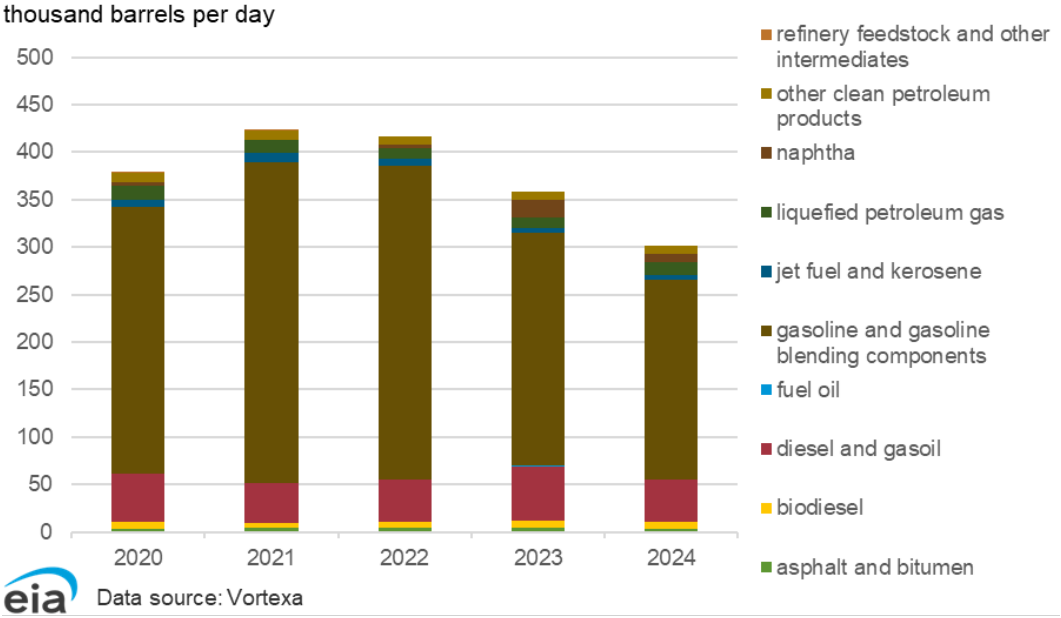
- However, with the start of the Dangote refinery, petroleum product exports nearly quadrupled to 146,000 b/d in 2024, from 46,000 b/d in the previous year, and they covered a wider range of products, such as naphtha, jet fuel and kerosene, and fuel oil, than in previous years (Figure 10).[21]

Figure 10. Nigeria's total annual petroleum product exports, 2020–2024
thousand barrels per day



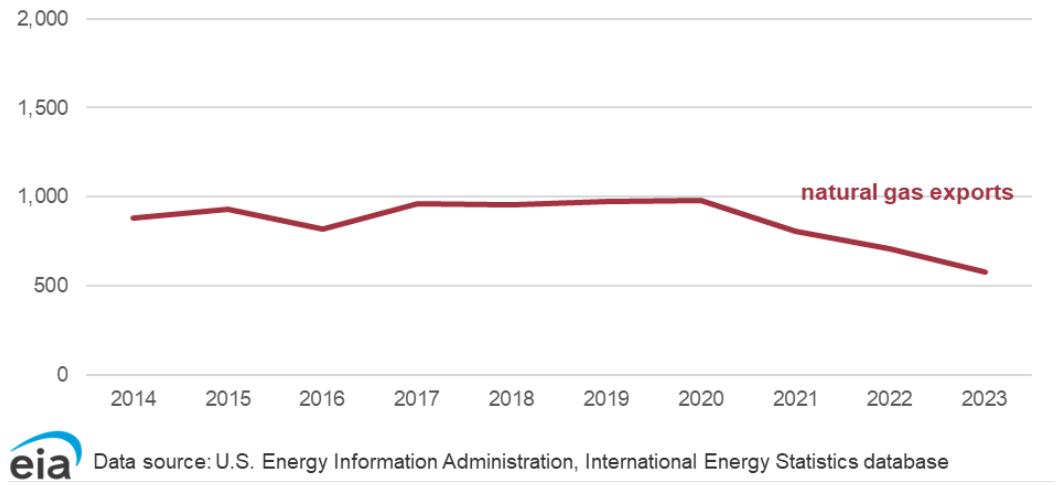
- Nigeria imports relatively higher volumes of petroleum products; volumes averaged about 376,000 b/d between 2020 and 2024. Almost 87% of this volume was gasoline and its blending components or diesel/gasoil products, which are used in the electric power and transportation sectors. Petroleum product imports into Nigeria have been gradually declining since 2021, a trend that is likely to continue as the Dangote refinery ramps up operations and provides more products for the domestic market, which will help offset product import demand (Figure 11).[22]

Figure 11. Nigeria's total annual petroleum product imports, 2020–2024



- Nigeria does not import any natural gas, and it exports natural gas that is not consumed domestically, mostly as LNG. Nigeria exported an average of about 859 Bcf of natural gas from 2014 to 2023 (Figure 12).[23]

Figure 12. Nigeria's total annual natural gas exports, 2014–2023



- Nigeria has only one LNG terminal currently in operation, and it is located at Bonny Island, which is also a major crude oil export hub. The Nigeria LNG (NLNG) terminal at Bonny Island began operations in 1999 and has six liquefaction trains operating, which have a total capacity of about 1.4 Tcf per year. Construction of a seventh train began in 2021; the operators aim to begin commercial operations by June 2026 (Table 4).[24]

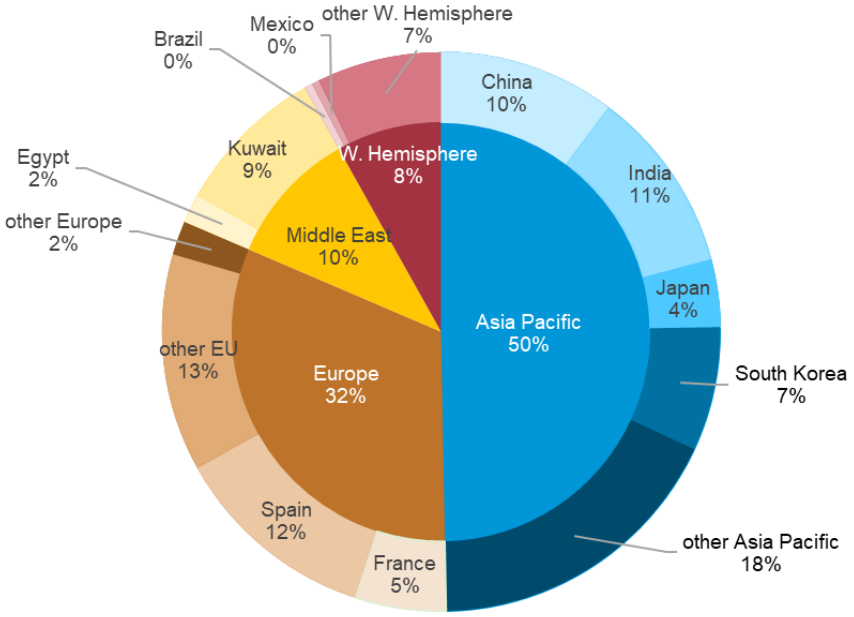
Table 4. Nigeria's LNG terminals

Project Name	Status	Ownership	Start date	Number of storage tanks	Nominal liquefaction capacity (billion cubic feet per year)	Storage capacity (million cubic feet)
Nigeria LNG (NLNG) terminal		NNPC: 49% Shell: 26% TotalEnergies: 15% Eni: 10%				
NLNG T1	Operating		1999	4	317	12
NLNG T2	Operating		2000		317	
NLNG T3	Operating		2002		158	
NLNG T4–T5	Operating		2006		394	
NLNG T6	Operating		2008		197	
NLNG T7	Under construction		2026		202	
Total					**1,585**	**12**

Data source: International Group of Liquefied Natural Gas Importers, *GIIGNL 2025 Annual Report*, NLNG website, and Daewoo company websites

- Both infrastructure and demand constraints are challenges to exporting significant natural gas volumes by pipeline to neighboring countries. According to the Energy Institute's *2025 Statistical Review of World Energy,* Nigeria exported about 650 Bcf of natural gas in 2024, most of which went to Europe or the Asia Pacific. France and Spain were the top importing European countries, receiving 34 Bcf and 77 Bcf of LNG from Nigeria, respectively. In Asia, China and India were the top importing countries in the region, receiving 67 Bcf and 69 Bcf of LNG from Nigeria, respectively (Figure 13).[25]

Figure 13. Nigeria's liquefied natural gas exports by destination, 2024



Data source: Energy Institute's *2025 Statistical Review of World Energy*
Note: Percentages are subject to rounding.

- The Nigerian government is seeking to expand its pipeline capacity domestically and across borders to increase both destinations and volumes of its natural gas exports. The Ajaokuta-Kaduna-Kano (AKK) pipeline is currently under construction and, once built, could transport natural gas from Ajaokuta and Abuja in central Nigeria to Kano state in northern Nigeria and provide natural gas feedstock for thermal power stations along its route. Although some progress in construction of the pipeline has been reported, a scheduled date for completion remains unclear.[26]
- The AKK pipeline is also part of the larger Trans-Nigeria Gas Pipeline (TNGP) project, which also includes a proposed pipeline that aims to connect the Qua Iboe Terminal on the coast of southern Nigeria to Ajaokuta, and the TNGP project itself is also part of a proposed larger, regional natural gas pipeline project called the Trans-Sahara Gas Pipeline (TSGP) project. The TSGP aims to transport natural gas from Nigeria to Algeria via Niger, which would provide an additional route for Nigeria to transport natural gas to Europe via Algeria's own international pipeline network.
- A second proposed regional pipeline called the Nigeria-Morocco Gas Pipeline (NMGP) project seeks to connect 13 West African countries via a subsea pipeline that would run from the West African Gas Pipeline (a regional pipeline running from Lagos, Nigeria, to Takoradi, Ghana) to Morocco, connecting with multiple countries along the coastline. The NMGP project is still in preliminary stages of development and has not reached a final investment decision (Table 5).[27]

Table 5. Selected major natural gas pipelines in Nigeria

Pipeline name	Status	Ownership	Route	Start date	Length of pipeline (miles)	Pipeline capacity (billion cubic feet per year)

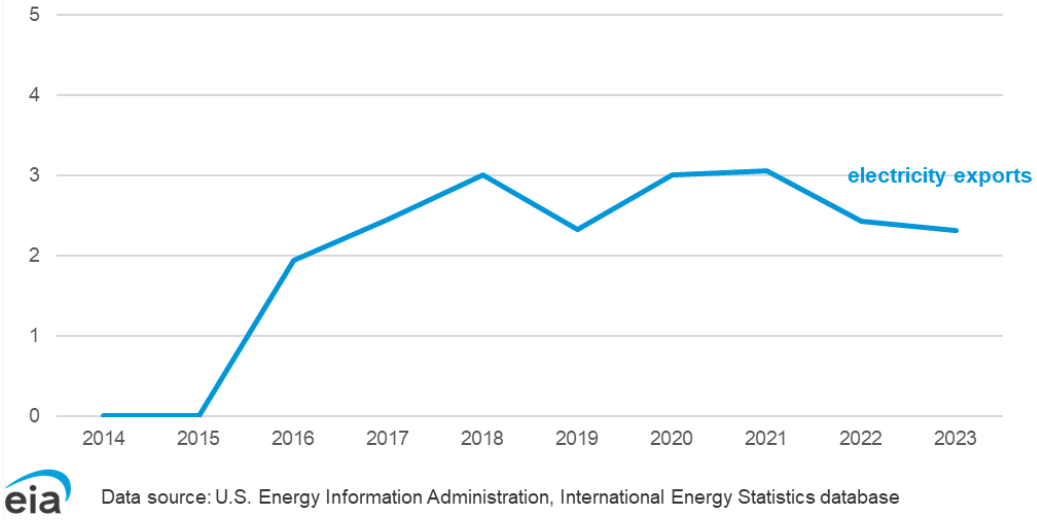
West African Gas Pipeline (WAGP)	Operating	Chevron, NNPC, Shell, Takoradi Power Company Ltd., Societe Togolaise de Gaz, Societe BenGaz S.A.	From Lagos, Nigeria, to Togo, Ghana, and Benin. Also links to Escravos-Lagos pipeline in Nigeria	2011	424	177
Escravos-Lagos Pipeline System II (ELPS 2) expansion project	Operating	NNPC	Doubles capacity of existing Escravos-Lagos pipeline (402 Bcf per year) and follows same route from Escravos (Delta state) to Lekki (Lagos state)	2021	214	402
Ajaokuta-Kaduna-Kano (AKK) pipeline	Under construction	NNPC	Connects Ajaokuta to Abuja terminal gas station (TGS), Kaduna TGS, and Kano TGS. Pipeline is phase one of three for the Trans-Nigeria Gas Pipeline development	Unknown	384	1,278
Obiafu-Obrikom-Oben (OB3) Gas Pipeline	Under construction	NNPC	Starts in Edo state and ends in Rivers state	Unknown	88	730
Nigeria-Morocco Gas Pipeline (NMGP)	Proposed	NNPC, Moroccan Office National des Hydrocarbures et des Mines (ONHYM)	Planned subsea pipeline extension of WAGP, connecting, in multiple stages, from WAGP end-point in Takoradi, Ghana, and providing additional connections to Ivory Coast, Liberia, Sierra Leone, Guinea, Guinea-Bissau, Gambia, Senegal, Mauritania, and Morocco; possible extension to Spain also considered	Unknown	3,538	1,059
Trans-Nigeria Gas Pipeline (TNGP) project	Proposed	NNPC	Planned route to start in Qua Iboe Terminal and run through the Obigbo-Umuahia-Enugu-Ajaokuta pipeline network and AKK pipeline and connect to Algeria via Niger	Unknown	429	Unknown

Trans-Sahara Gas Pipeline (TSGP) project	Proposed	Sonatrach, NNPC, Niger Ministry of Petroleum, Energy, and Renewable Energies	Proposed route is to connect the TNGP to Hassi R'Mel pipeline network in Algeria via Niger	Unknown	648	1,059

Data source: Global Energy Monitor and BMI Country Risk & Industry Research
Note: The TNGP project's specified length excludes the AKK pipeline segment; when combined, the total length is 1,300 kilometers (km) (813 miles). The TSGP project's specified length is the Nigerian pipeline segment only; when including the Algerian and Nigerien segments, the total length is 2,618 miles (4,128 km).

- Nigeria exported a small amount of electricity between 2014 and 2023, averaging about 2.6 GWh over the stated period to neighboring countries such as Benin, Togo, and Niger (Figure 14).[28]

Figure 14. Nigeria's electricity exports, 2014–2023
gigawatthours



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