



Country Analysis Brief: Angola

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Overview

Table 1. Angola's energy overview, 2023

	Coal	Natural gas	Petroleum and other liquids	Nuclear	Hydro	Renewables and other	Total
Primary energy consumption (quads)	0.0	0.0	0.2	0.0		0.0	0.3
Primary energy consumption (percentage)	0%	14%	72%	0%		14%	100%
Primary energy production (quads)	0.0	0.2	2.5	0.0		0.0	2.7
Primary energy production (percentage)	0%	8%	90%	0%		2%	100%
Electricity generation (terawatthours)	0.0	1.7	2.6	0.0	13.3	0.4	17.9
Electricity generation (percentage)	0%	9%	14%	0%	74%	2%	100%

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

Note: EIA aggregates hydroelectricity and renewables as "renewables and other" for primary energy production and consumption. Quads=quadrillion British thermal units

- Angola was the second-largest total liquid fuels producer in sub-Saharan Africa, after Nigeria, in 2024 production. Angola's economy is largely based on hydrocarbon production, making it vulnerable to crude oil price swings. Angola primarily consumes hydroelectricity and fossil fuel-derived fuel sources to meet its domestic needs for power generation (Table 1).¹
- In December 2023, Angola announced that it would leave the Organization of the Petroleum Exporting Countries (OPEC) effective January 1, 2024, following OPEC's decision in November 2023 to reduce Angola's crude oil production quota from its June 2023 level of 1.3 million barrels per day (b/d) to 1.1 million b/d starting in January 2024. Angola had been a member of OPEC since 2007. Angola's exit from OPEC could provide the government more flexibility to revitalize hydrocarbon upstream development to address declining production stemming from maturing fields and a lack of upstream investment.²

Figure 1. Map of Angola



Data source: U.S. Central Intelligence Agency, [CIA World Factbook—Angola](#)

Petroleum and Other Liquids

- Angola held an estimated 2.6 billion barrels of proved crude oil reserves at the beginning of 2025, according to estimates by the *Oil & Gas Journal*.³
- Angola’s oil fields generally produce light to medium crude oil, which has a relatively low-sulfur content (low-sulfur crude oil grades are classified as *sweet*). The qualities and characteristics of Angola’s crude oil grades are popular with refiners in the Asia Pacific region (Table 2).⁴

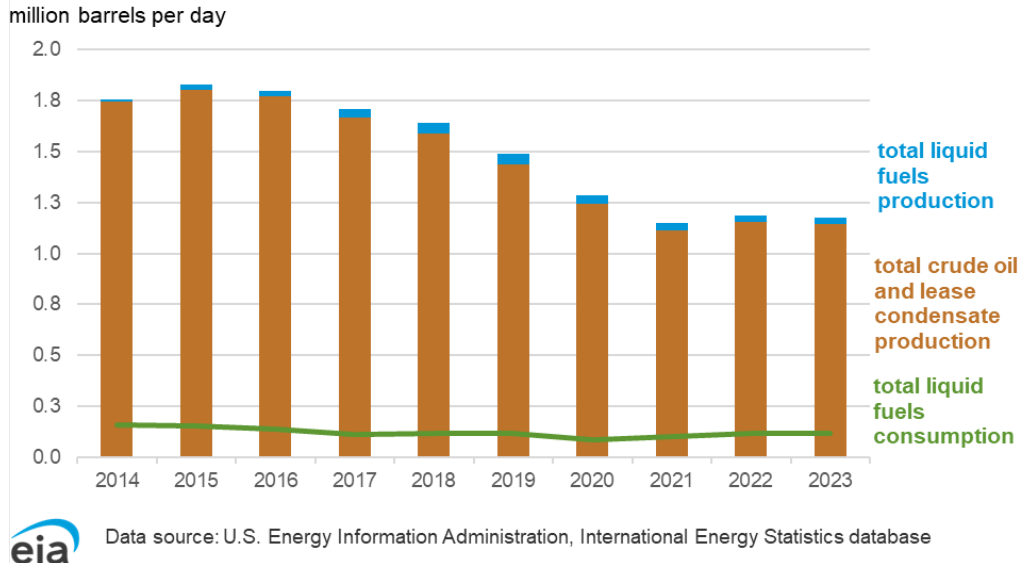
Table 2. Selected crude oil grades produced in Angola

Crude oil grade	API gravity number (degrees)	Sulfur content (percentage)	Notes
Cabinda	32.0	0.12	Medium, sweet crude oil grade
Dalia	23.7	0.49	Medium, sweet crude oil grade
Girassol	30.8	0.34	Medium, sweet crude oil grade; produced at Girassol and Jasmin fields
Hungo	28.5	0.71	Medium, semisweet crude oil grade; produced at Hungo and Chocalho (Block 15)
Kissanje	28.2	0.44	Medium crude oil grade; medium sulfur content
Kuito	19.0	0.68	Heavy crude oil grade, medium sulfur content; produced at Block 14
Nemba	38.7	0.19	Light, sweet crude oil grade; produced at Block 0
Palanca	37.2	0.18	Light, sweet crude oil grade; blend of five different oil fields
Xicomba	34.8	0.39	Light, sweet crude oil grade; produced at Block 15

Data source: [Sonangol company website](#)

- Angola's total liquid fuels production steadily declined during the past decade. In 2023, total liquid fuels production was about 1.2 million b/d, down from 1.8 million b/d in 2014 (Figure 2). The downward trend in total liquid fuels production is the result of a lack of investment in upstream development. Rapid reservoir depletion and the lack of enhanced oil recovery investments to extend the lifetime of maturing fields have also contributed to steep decline rates at some fields.⁵

Figure 2. Total annual liquid fuels production and consumption in Angola, 2014–2023



- Drilling activity in Angola by major international oil companies slowed significantly in 2020 as a result of reduced capital spending, in part because of the economic slowdown from the COVID-19 pandemic. As a result, many of Angola’s new field developments were delayed, and only a few of the new developments came online, such as the Cuica, Zinia Phase 2, and Cabaca Norte projects. Although these fields increased total crude oil production, the recent additions did not offset the declines in mature fields. According to Energy Intelligence, many of the larger sanctioned projects such as the Agogo, Begonia, and Kaminho development projects are expected to come online in the latter half of this decade and provide a boost to production. Established international oil companies such as TotalEnergies and Azule Energy (a joint venture comprising bp and Eni) operate many of these new field developments or expansions.⁶
- The Angolan government is aiming to attract international investors by launching a series of bidding rounds to develop its hydrocarbon resources. Angola’s upstream regulator, the National Oil, Gas & Biofuels Agency (ANPG), is planning to launch its latest bidding round in the first quarter of 2025 to spur upstream exploration and development, particularly in its offshore basins. Ten exploration blocks in the Kwanza and Benguela basins located offshore central Angola are on offer. ANPG has put up additional onshore and offshore blocks as well as marginal fields (which are located in exploration blocks licensed to other producers but are permitted to be awarded individually to smaller companies for exploration) on offer outside of the 2025 bidding round, enabling the government to attract investor interest outside of the traditional bidding round periods. A strong showing of international investors and a competitive bidding round may help revive Angola’s upstream exploration and development and potentially lead to additional new discoveries.⁷

Refining

- Angola has only one operating refinery, which is in the Luanda province. In July 2022, Eni completed an expansion and modernization project at the refinery that increased its gasoline

production capacity by 450,000 metric tons per year (or approximately 9,000 b/d) as well as rehabilitated its power generation unit to reduce emissions pollution.⁸

- Angola has three other refineries that are under development. The first phase of a two-phase greenfield refinery development project in Cabinda province is reportedly scheduled to begin commercial operations in the first half of 2025; the second phase will increase total nameplate capacity to 60,000 b/d and add a high-conversion unit that will enable the facility to produce diesel, gasoline, fuel oil, and jet fuel. Construction of the second phase is scheduled to be completed by the end of 2026, although a final investment decision for the second phase has not been reached. Plans to construct two additional refineries, the SonaRef refinery in Benguela province and the Soyo refinery in Zaire province, are currently under development; however, the timeline for completion of the projects is not yet clear, as issues regarding financing for construction of the SonaRef refinery have been reported and the Soyo refinery has not yet started construction (Table 3).⁹

Table 3. Refineries in Angola

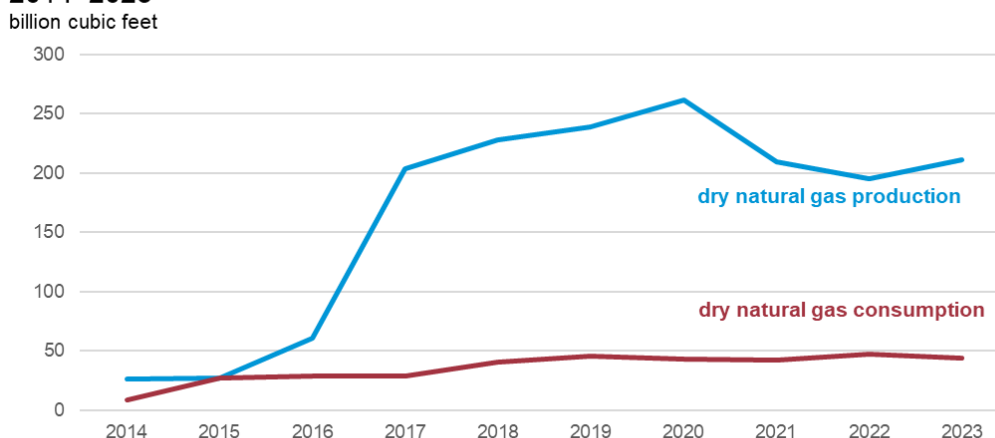
Refinery	Location	Status	Estimated start date	Nameplate capacity (barrels per day)
Luanda	Luanda	Operating	1958	72,000
SonaRef	Lobito	Under development	2025	200,000
Soyo	Soyo	Under development	2025	100,000
Malongo (phase 1)	Cabinda	Under development	2025	30,000
Malongo (phase 2)	Cabinda	Under development	2026	30,000
Total				432,000

Data source: International Trade Administration and Energy Capital & Power

Natural Gas

- Angola held an estimated 4.6 trillion cubic feet (Tcf) of proved natural gas reserves at the beginning of 2025, according to estimates by the *Oil & Gas Journal*.¹⁰
- Angola produces small quantities of marketed natural gas, most of which is from associated gas produced at its oil fields offshore. In addition, a substantial amount of its natural gas production is flared as a by-product of oil operations or is reinjected into oil fields to increase oil recovery. Thus, natural gas production in Angola is constrained by both the volume of crude oil production and the lack of adequate infrastructure to commercialize natural gas flared from its oil operations. Angola produced an average of about 166 billion cubic feet (Bcf) of dry natural gas and consumed an average of 36 Bcf between 2014 and 2023 (Figure 3).¹¹

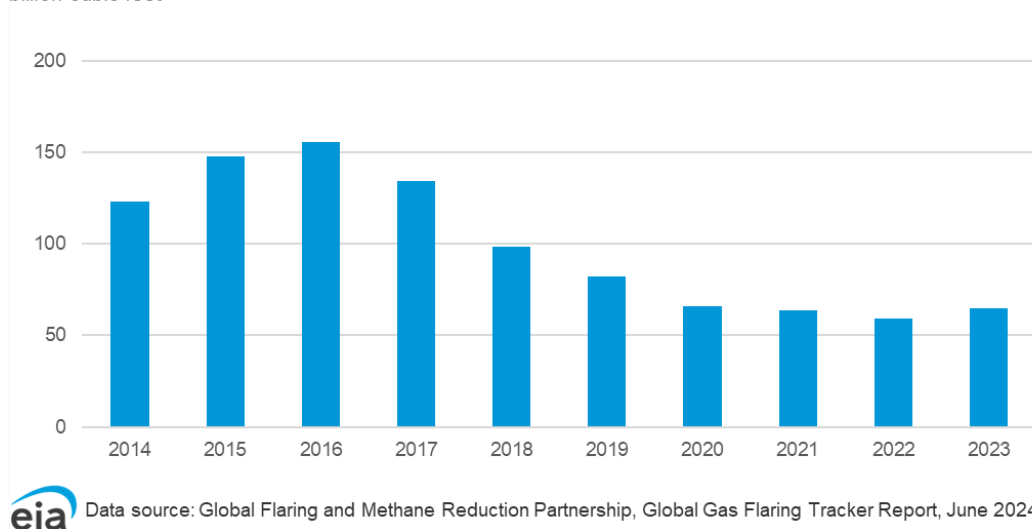
Figure 3. Total dry annual natural gas production and consumption in Angola, 2014–2023



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

- Angola is seeking to develop a number of offshore natural gas projects to boost its natural gas production, with two projects scheduled to begin operations in the near future. The Sanha Lean Gas Connection project, which achieved first gas production in December 2024, is a \$300 million subsea natural gas pipeline system that is designed to transport natural gas from the offshore Sanha field to the Angola liquefied natural gas (LNG) terminal in Soyo. Chevron is the developer of the project, through its Angolan subsidiary Cabinda Gulf Oil Company, and the project aims to supply 600 million standard cubic feet of natural gas per day to the LNG terminal once it is fully operational. The Northern Gas Complex, which reached a final investment decision in 2022, is Angola's first non-associated gas project. Eni is the operator of the project, and the project aims to develop two offshore platforms, an onshore natural gas-processing plant, and pipelines to transport natural gas from the Maboqueiro and Quiluma fields located in Block 1 offshore to the Angola LNG terminal. Eni has stated that the project is scheduled to begin production in 2026 and is expected to reach a peak production of about 141 Bcf per year.¹²
- According to the latest estimates by the World Bank Group's Global Flaring and Methane Reduction Partnership, Angola was the 15th-largest flaring country in terms of volume, flaring approximately 65 Bcf of natural gas in 2023. The top three flaring countries for that same year were Russia (1,003 Bcf), Iran (721 Bcf), and Iraq (624 Bcf). Although Angola still flares a significant amount of natural gas relative to its marketed production (about 31% of dry natural gas produced in 2023), Angola's natural gas flaring has declined after reaching a decade high of about 156 Bcf in 2016. The commercial restart of Angola's LNG export terminal in Soyo enabled the country to use natural gas that would normally be flared as feedstock for liquefaction and export (Figure 4).¹³

Figure 4. Total annual natural gas flared by Angola, 2014–2023
billion cubic feet



Coal

- Angola does not have any coal reserves, and it does not consume or produce any coal.

Electricity

- The government of Angola has prioritized the development of the electricity sector to meet the growing energy needs of the population. Angola has set goals of reaching 9.9 gigawatts (GW) of installed generation capacity and increasing electricity coverage to 60% of the total population by 2025. Much of the planned increase in capacity is to come from natural gas and utility-scale hydropower, although the government has incorporated targets for developing 800 megawatts (MW) of renewable energy (500 MW in biomass and 100 MW each in wind, solar, and small-scale hydropower) into the goal.¹⁴
- Angola has three independent transmission systems that provide electricity to different parts of the country: the Northern, Central, and Southern systems. The government hopes to link the three independent grids as part of a national grid system and then to eventually link its grid with neighboring Democratic Republic of Congo and Namibia, both of which are members of the Southern African Power Pool (SAPP). Angola is a non-operating member of SAPP, a group that promotes cooperation among member countries to create a common electricity market that aims to provide reliable and affordable electricity to the citizens of member countries.¹⁵
- In 2023, Angola had an electricity generation capacity of 7.6 GW and generated 17.9 gigawatthours (GWh) of electricity, primarily from hydroelectric or fossil fuel sources (Figure 5 and Figure 6).¹⁶

Figure 5. Angola's electricity capacity by fuel type, 2014–2023
gigawatts

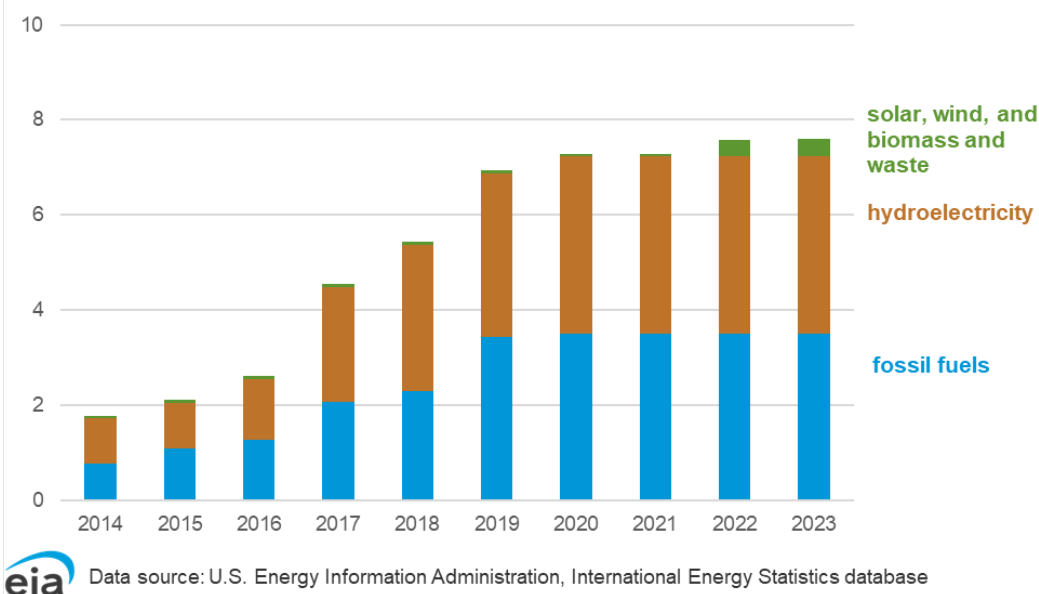
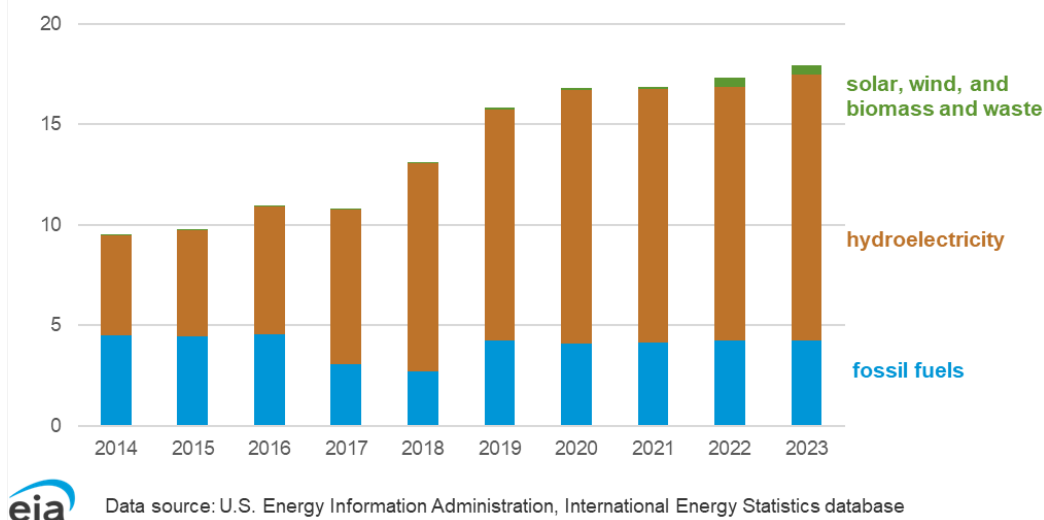


Figure 6. Angola's net electricity generation by fuel type, 2014–2023
gigawatthours



- The latest estimates from the World Bank indicate that 49% of Angolans had access to electricity in 2022, which is an increase of about 11% from 2012. The disparity between urban and rural areas and their respective access to electricity is significant, with electricity access for urban areas estimated to be 76% in 2022 whereas the latest estimate for rural areas was at 7% in 2018. Much of the growth in power generation has come from hydropower projects that came online in the late 2010s, but providing reliable access to end users remains a significant challenge because the transmission and distribution network in the country has not been upgraded or expanded. The distribution network also suffers from significant power loss because of illegal connections and poor enforcement of revenue collection from un-metered

end users. The government of Angola aims to increase the country's total installed capacity to 9.9 GW and its electrification rate to 60% by 2025.¹⁷

- Angola is seeking to channel more of its domestic natural gas production for power generation. The Soyo combined-cycle natural gas turbine (CCGT) plant added 750 MW of total installed capacity in 2017 after plant construction and the connecting pipeline from Angola LNG were completed. As of November 2024, an expansion project is under development to add another 500 MW of generation by 2025, but the project is likely to be delayed because it has not yet reached a final investment decision.¹⁸
- Angola derives nearly half of its total installed capacity from hydropower, which is generated by a number of large-scale hydropower projects. The Laúca hydropower project and the Cambambe expansion project, which added four new turbines at an additional 700 MW of installed capacity to the Cambambe hydropower project and provided a substantial boost to hydropower capacity in the 2010s. Angola is seeking to bring online additional hydropower projects to boost electricity capacity. The Caculo Cabaça hydropower plant is currently under construction and, according to *Power Technology*, is expected to be commissioned sometime in 2026. In June 2024, Angola and Namibia reached an agreement to begin construction of the Baynes hydroelectric power plant in September 2024. The Baynes plant is a cross-border hydropower project with a planned capacity of 881 MW that will be situated on the Lower Kunene River near the Angola-Namibia border. The project aims to provide electricity to both countries; however, it is unclear when the project will be completed because it has not yet begun construction as of November 2024 (Table 4).¹⁹

Table 4. Selected hydropower projects in Angola

Refinery	Location	Status	Estimated start date	Nameplate capacity (megawatts)
Baynes hydropower project	Kunene River	Planning	Unknown	881
Caculo Cabaça hydropower project	Kwanza River Basin	Under construction	2026	2,170
Cambambe hydropower project	Kwanza River Basin	Operational	1962	972
Laúca hydropower project	Kwanza River Basin	Operational	2017	2,071
Total				6,094

Data source: International Trade Administration, *Power Technology*, and Energy Capital & Power

Energy Trade

- Angola is a significant exporter of crude oil and does not import any crude oil, given its low domestic demand relative to its production. Angola exported an average of 1.4 million b/d of crude oil between 2014 and 2023. Crude oil exports declined about 550,000 b/d over the 10-year period as a result of Angola's declining crude oil production. In 2023, Angola exported about 1.1 million b/d of crude oil and condensate, with the Asia Pacific region taking most of Angola's imports by volume for the year. Over half of total exports went to China, at 603,000 b/d; India was the second-largest importing country in the region, receiving about 79,000 b/d. Europe imported nearly a quarter of Angola's total crude oil and condensate, with Spain (84,000

b/d) and the Netherlands (76,000 b/d) being the largest and second-largest regional importers, respectively. (Figure 7 and Figure 8).²⁰

Figure 7. Angola's total annual exports of crude oil and condensate, 2014–2023

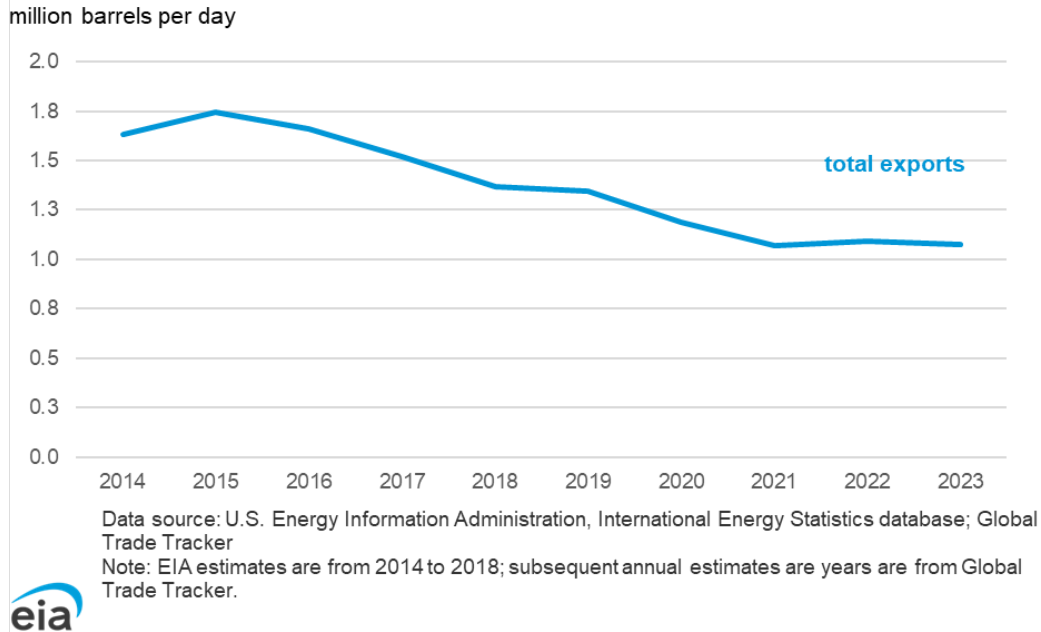
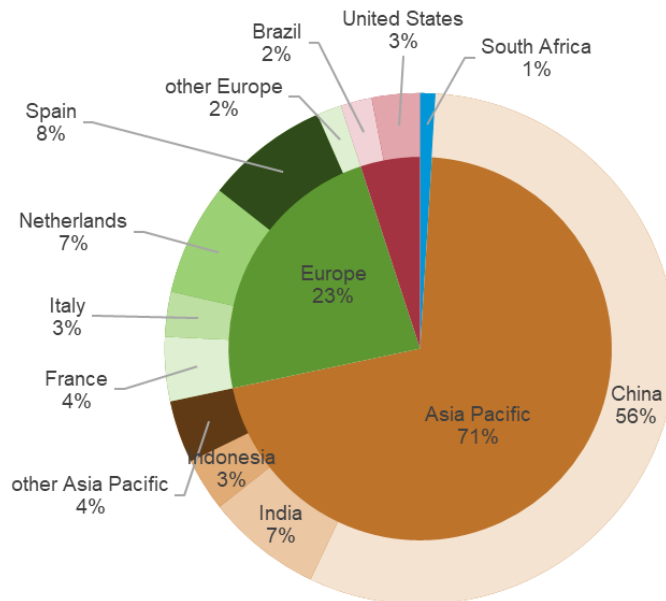


Figure 8. Angola's crude oil and condensate exports by destination, 2023



Data source: Global Trade Tracker

- Angola imports and exports petroleum products through its maritime ports. According to seaborne trade flow estimates by Vortexa, Angola exported an average of 57,000 b/d of petroleum products between 2020 and 2023; about 77% of this volume was liquefied petroleum

gas (generally used for heating and cooking) and naphtha (generally used for blending and in petrochemicals). Angola also imported petroleum products averaging about 59,000 b/d during the same time. Most of Angola’s petroleum product imports (93%) were diesel and gasoil, or gasoline and gasoline blending components, reflecting a growing demand for transportation fuels in the country (Figure 9 and Figure 10).²¹

Figure 9. Angola's total annual petroleum product seaborne exports, 2020–2023

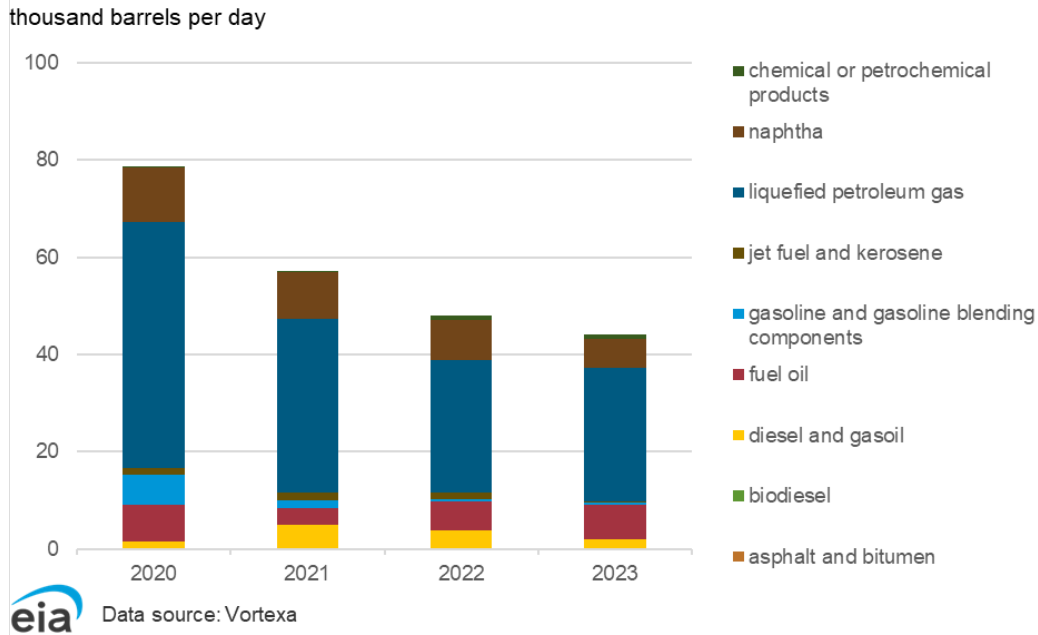
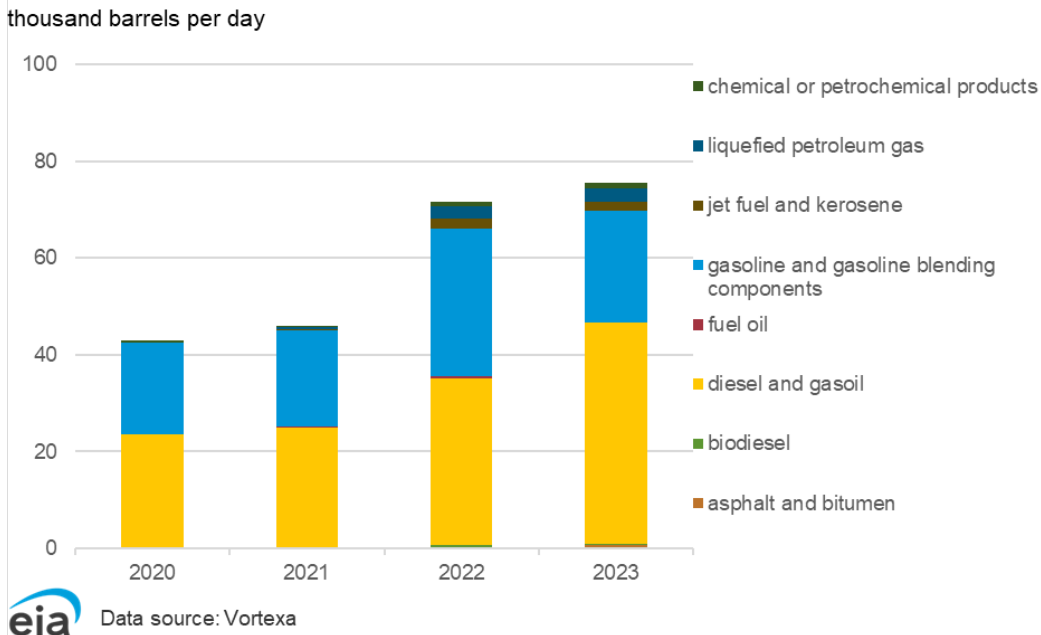


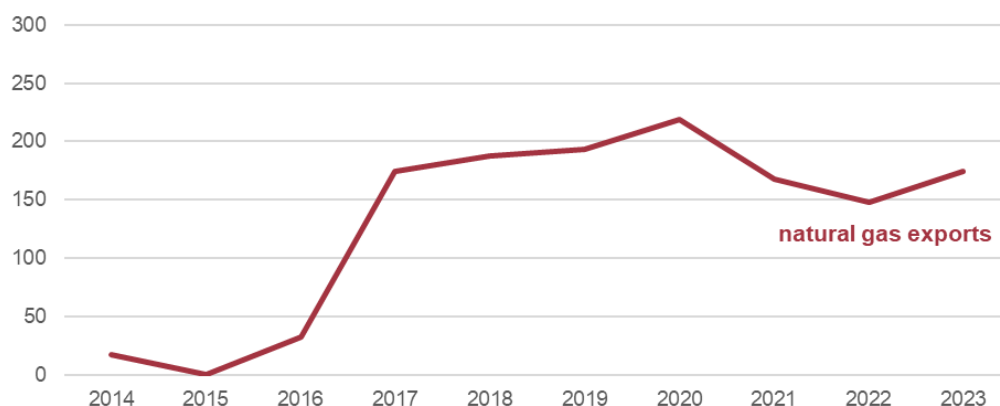
Figure 10. Angola's total annual petroleum product seaborne imports, 2020–2023



- Angola exports the natural gas it produces in the form of LNG. Angola does not import any natural gas. We estimate that Angola exported about 131 Bcf of natural gas on average between 2014 and 2023, with LNG exports growing significantly after Angola's sole LNG facility began its commercial restart in 2016 (Figure 11).²²

Figure 11. Angola's total annual natural gas exports, 2014–2023

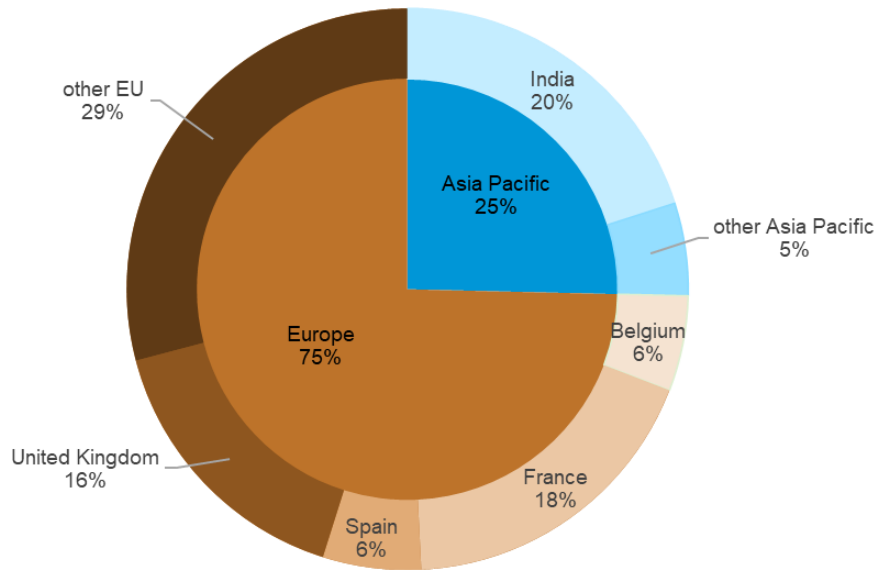
billion cubic feet



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

- Angola has one LNG export terminal in Soyo, which is in the northern part of the country and next to the Congo River. The LNG facility has a liquefaction capacity of 5.2 million metric tons per year, or about 250 Bcf per year, and Angola LNG Limited is the operator of the facility. Angola LNG Limited is a consortium composed of Chevron, TotalEnergies, Azule Energy (a joint venture between Eni and bp), and Sonangol. The LNG facility produced its first cargo of LNG in 2013, but it subsequently shut down as a result of technical failures and did not restart operations until 2016. The LNG facility uses associated gas produced at Angola's offshore fields as feedstock but may also draw supplies from non-associated gas projects such as the Quiluma and Maboqueiro development once it is brought online.²³
- Angola exported about 175 Bcf of LNG in 2023, according to the Energy Institute's estimates in its 2024 *Statistical Review of World Energy*. It exported about 130 Bcf of LNG (or about 75% of total annual export volumes) to the Europe. The Asia Pacific region received the remainder of Angola's LNG exports (about 44 Bcf, or 25% of total annual export volumes), with India by far the largest single-country importer in the region, at about 35 Bcf for the year. Following Russia's invasion of Ukraine, Angola's LNG export flows shifted significantly toward Europe starting in 2022, when European countries sought substitutes for Russia's natural gas. Prior to 2022, most of Angola's LNG exports went to the Asia Pacific region, primarily China or India (Figure 12 and Figure 13).²⁴

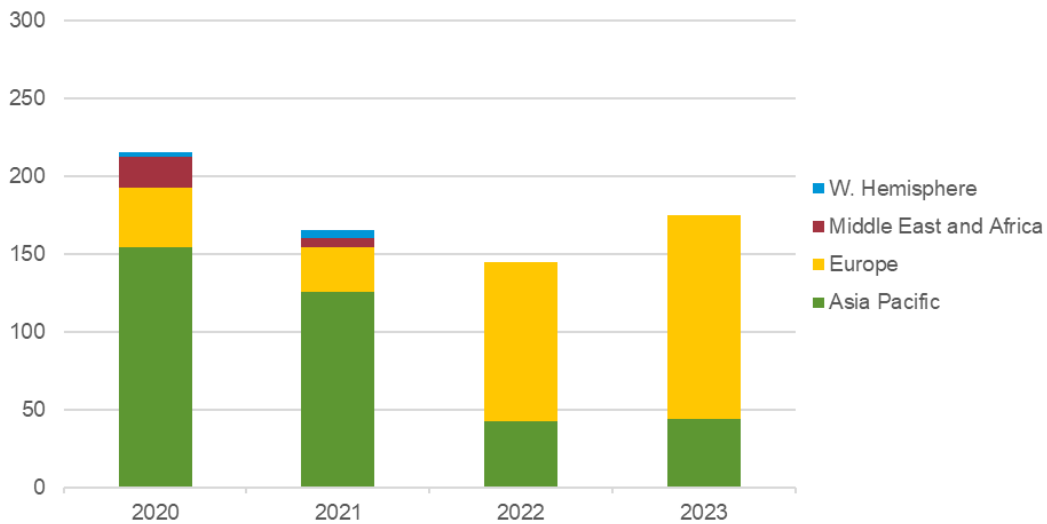
Figure 12. Angola's liquefied natural gas exports by destination, 2023



Data source: Energy Institute's 2024 *Statistical Review of World Energy*

Figure 13. Angola's total annual liquefied natural gas exports by destination region, 2020–2023

billion cubic feet



Data source: bp's 2021 and 2022 *Statistical Review of World Energy*; Energy Institute's 2023 and 2024 *Statistical Review of World Energy*

- Angola currently does not import or export any coal or electricity. Angola plans to connect to the regional SAPP once joint construction of the Baynes hydroelectric power plant is completed.²⁵

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