Country Analysis Brief: Egypt

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Overview

Table 1. Egypt's energy overview, 2022

	Crude oil and other petroleum liquids	Natural gas	Coal	Nuclear	Hydro	Renewables and other	Total
Primary energy consumption (quad Btu)	1.7	2.2	0.1	0.0		0.1	4.0
Primary energy consumption (percentage)	41%	55%	2%	0%		2%	100%
Primary energy production (quad Btu)	1.4	2.4	0.0	0.0		0.1	3.9
Primary energy production (percentage)	36%	62%	0%	0%		2%	100%
Electricity generation (TWh)	16.1	174.9	0.0	0.0	13.5	11.3	215.8
Electricity generation (percentage)	7%	81%	0%	0%	6%	5%	100%

Data source: US EIA International Energy Statistics database
Note: EIA's International Energy Statistics database aggregates hydroelectricity and renewables as "renewables and other" for primary energy production and consumption. Some numbers may not add up due to rounding.

- Egypt is a significant and geographically important hydrocarbon producer. According to our latest estimates, Egypt was the second-largest non-OPEC (Organization of Petroleum Exporting Countries) producer in Africa of total liquid fuels in 2023, behind Angola. It was also the second-largest natural gas producer in Africa in 2022, second only to Algeria. Egypt received a substantial boost to its natural gas production in the mid-2010s when major offshore fields, such as the Zohr field, were developed. Prospects for continued growth in natural gas production have dimmed, however, because technical issues have prevented the Zohr field from reaching peak production and recent exploration efforts have not led to any significant new discoveries.[1]
- Egypt operates the Suez Canal and the Suez-Mediterranean (SUMED) Pipeline; both of which are crucial midstream infrastructure for international energy markets. The Suez Canal is a transit route for oil and liquefied natural gas (LNG) shipments traveling northbound from the Persian Gulf to Europe and to North America. Shipments traveling southbound from North Africa and from countries along the Mediterranean Sea to Asia also move through the Suez Canal. Fees collected from these two transit points are a significant source of revenue for the Egyptian government.[2]
- Egypt has sought to position itself as the regional export hub for LNG. Egypt is the only country in the Eastern Mediterranean region with operational LNG export capacity. In addition, it is also the only country in the region that has the potential to import natural gas from other countries in the region and export both domestically produced and imported natural gas as LNG to international markets. However, a host of factors poses serious challenges to Egypt's ambitions. The Israel-Gaza conflict led to a month-long shutdown of the Tamar field in October 2023, reducing Israeli natural gas imports to Egypt and raising the possibility of future disruptions should the conflict spread or escalate. Houthi attacks on maritime vessels have also disrupted maritime traffic, including LNG trade flows, which has resulted in lower revenue derived from transit fees for the Egyptian government. Moreover, rising natural gas consumption in Egypt

coupled with declining domestic natural gas production has put pressure on the country's domestic natural gas balance, requiring it to turn to imports to meet domestic demand. Without an effective and durable solution to these challenges, Egypt's vision of becoming a regional LNG export hub is likely to remain only a prospective one for the foreseeable future.[3]

Figure 1. Map of Egypt

Source: U.S. Central Intelligence Agency, *CIA World Factbook*–Egypt

Exploration

- The Egyptian government has sought to attract upstream development to address the growing gap between domestic supply and demand, particularly for natural gas, where consumption surpassed domestic production in 2023, according to the Energy Institute's 2024 *Statistical Review of World Energy*.[4] In the first quarter of 2023 (1Q23), the Egyptian government launched the country's first international bid round for brownfield development, which aims at increasing production at existing fields, for blocks located in the Gulf of Suez and the Eastern Desert. As of March 2024, the Egyptian government is evaluating the bids for the eight blocks on offer. On September 25, 2023, the Egyptian government also launched an additional bidding round, putting up 23 blocks on offer; the blocks on offer are located both onshore and offshore in areas such as the Western Desert, the Gulf of Suez, and the Red Sea regions. The Egyptian government reportedly began evaluating bids in 1Q24 and is expected to announce successful bids later in the year.[5]

Petroleum and Other Liquids

- Egypt has three main crude oil grades: Suez, Belayim, and Western Desert. The Suez and Belayim crude oil grades come from offshore fields in the Gulf of Suez and are considered medium, sour crude oil grades. The Suez and Belayim crude oil grades are refined and consumed domestically. The Western Desert crude oil grade comes from newer onshore fields located in the Western Desert and is considered as a light, sweet crude oil grade (Table 2).[6]

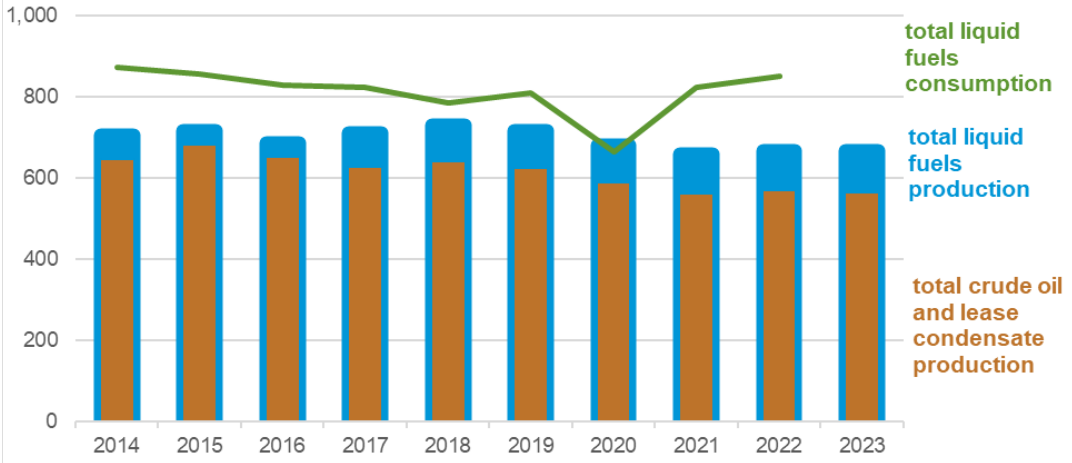
Table 2. Selected crude oil grades produced in Egypt

Crude oil grade	API gravity number (degrees)	Sulfur content (percentage)
Belayim	27.5	2.20%
Suez	30.4	1.65%
Western Desert	41.1	0.34%

Data source: McKinsey & Company's Energy Insights, Egypt Oil & Gas

- Egypt produced an average of about 694,000 barrels per day (b/d) of total liquid fuels from 2014 through 2023. Most of this production was crude oil and lease condensate, which was about 615,000 b/d of the total. Egypt's liquid fuels production has benefited from higher natural gas liquids and lease condensate production from the large offshore natural gas fields that came online in the mid-2010s. However, the total volume of liquid fuels production has been declining because of lower crude oil production stemming from a lack of significant crude oil discoveries in recent years (Figure 2).[7]

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



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

- According to the Egyptian General Petroleum Corporation (EGPC), the country's national oil company, Egypt has eight refineries with a total nameplate capacity of approximately 763,000 b/d. Nearly all downstream refining companies that own or operate Egypt's refineries are

subsidiaries of the EGPC. Egypt's refineries produce a variety of petroleum products, which are then used for domestic consumption as well as for export (Table 3).[8]

Table 3. Refineries in Egypt

Refinery name	Operator	Location	Nameplate capacity (thousand barrels per day)
El-Nasr	Nasr Petroleum Company	Suez	131
Mostorod	Cairo Oil Refining Company	Cairo	161
El-Mex	Alexandria Petroleum Company	Alexandria	100
MIDOR	Middle East Oil Refinery	Alexandria	100
Amreya	Amreya Petroleum Refining Company	Ameriya	80
Suez	Suez Oil Processing Company	Suez	60
Assiut	Assiut Oil Refining Company	Assiut	90
Tanta	Cairo Oil Refining Company	Tanta	40
Total			**763**

Data source: Fitch Solutions Country Risk & Industry Research, Egypt General Petroleum Corporation, *Egypt Oil & Gas,* company websites

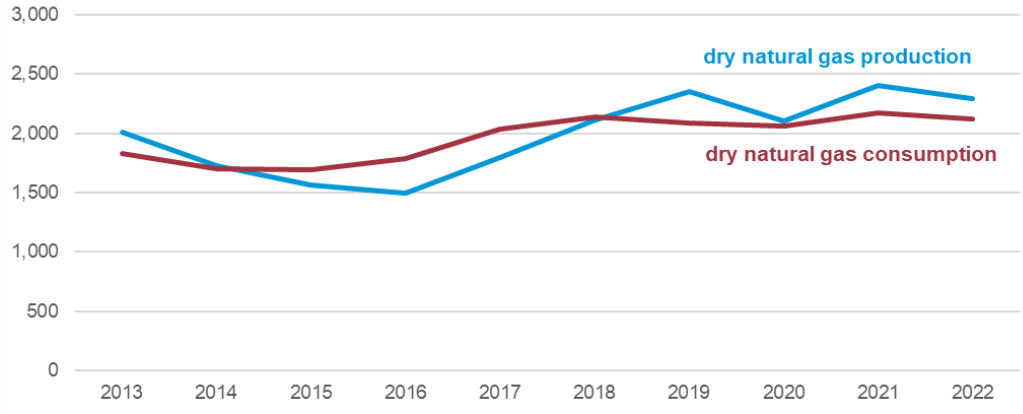
- Egypt is seeking to modernize and upgrade some of its refineries. The Middle East Oil Refinery (MIDOR) is undergoing an expansion project to increase its refining capacity by 60,000 b/d; the expansion project will enable the refinery to produce more middle distillates. The Assiut refinery also has an expansion and upgrade project that aims to construct a new naphtha complex and a hydrocracking complex. These enhancements will increase the refinery's nameplate capacity by 60,000 b/d and enable the refinery to produce high octane and other grades of gasoline and diesel once in commercial operation.[9]

Natural Gas

- Dry natural gas production in Egypt averaged about 2 trillion cubic feet (Tcf) from 2013 through 2022. Egypt's natural gas production rose significantly as a result of large offshore natural gas discoveries in the mid-2010s that were fast-tracked for development. Dry natural gas consumption in Egypt also averaged about 2 Tcf and has gradually increased over the same time period (Figure 3). In Egypt, natural gas is consumed in the power sector, the industrial sector, and the residential sector—where it is used for heating and cooking. Natural gas consumption has been increasing, in part, from a growing domestic population and the use of fossil fuel subsidies.[10]

Figure 3. Total dry annual natural gas production and consumption in Egypt, 2013–2022

billion cubic feet



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

- The fast-track development of a number of offshore natural gas fields, particularly Egypt's Zohr field—which is considered one of the Eastern Mediterranean's largest natural gas fields—provided a significant boost to the country's natural gas production in the latter half of the 2010s. However, natural gas production growth has stalled in the 2020s as a result of a lack of new fields under development, production declines at maturing fields, and persistent technical issues that have limited natural gas output at the Zohr field. The Egyptian government is seeking to develop new natural gas projects to revitalize production growth. However, until new natural gas projects are approved and brought online, the country's growing natural gas consumption will require natural gas imports to meet domestic demand, particularly during the summer when high temperatures increase electricity demand (Table 4).[11]

Table 4. Selected natural gas discoveries in Egypt

Project name	Location	Ownership	Status	Final investment decision year	Estimated start year
Nooros	Offshore; Nile Delta Basin	Eni (75%), BP (25%)	Producing	2015	2015
Nooros East	Offshore; Nile Delta Basin	Eni (75%), BP (25%)	Producing	2016	2016
Zohr	Offshore; Nile Delta Basin	Eni (50%), Rosneft (30%), BP (10%), Mubadala Energy (10%)	Producing	2016	2017
Atoll	Offshore; Nile Delta Basin	BP (100%)	Producing	2016	2018
Baltim SW	Offshore; Nile Delta Basin	BP (50%), Eni (50%)	Producing	2018	2019
Bashrush	Offshore; Nile Delta Basin	Eni (38%), BP (38%), TotalEnergies (25%)	Appraisal	2024	2026
Satis	Offshore; Nile Delta Basin	BP (50%), Eni (50%)	Appraisal	2025	2027
Nargis	Offshore; North Sinai Offshore Basin	Chevron (45%), Eni (45%), Tharwa Petroleum Company (10%)	Appraisal	2025	2028

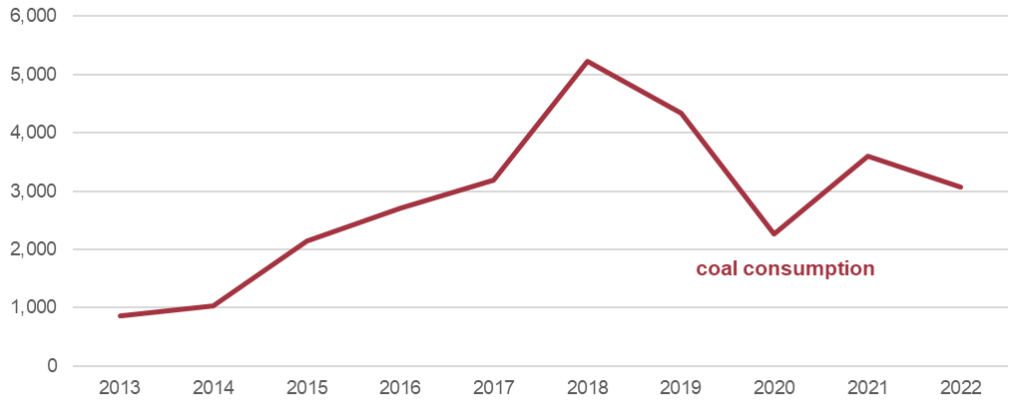
Data source: Rystad Energy

- According to the most recent data by the World Bank's Global Flaring and Methane Reduction Partnership (GFMR), Egypt flared about 66 billion cubic feet (Bcf) (or 1.87 billion cubic meters) of natural gas in 2023, making Egypt the 14th-largest natural gas-flaring country in terms of annual natural gas-flaring volume for that year.[12]

Coal

- Egypt consumed an average of approximately 2.8 million short tons of coal per year from 2013 through 2022. Egypt does not produce any coal and, therefore, imports the coal it consumes. Egypt's coal consumption occurs mainly in the industrial sector, specifically in construction (Figure 4).[13]

Figure 4. Total coal consumption in Egypt, 2013–2022
thousand short tons

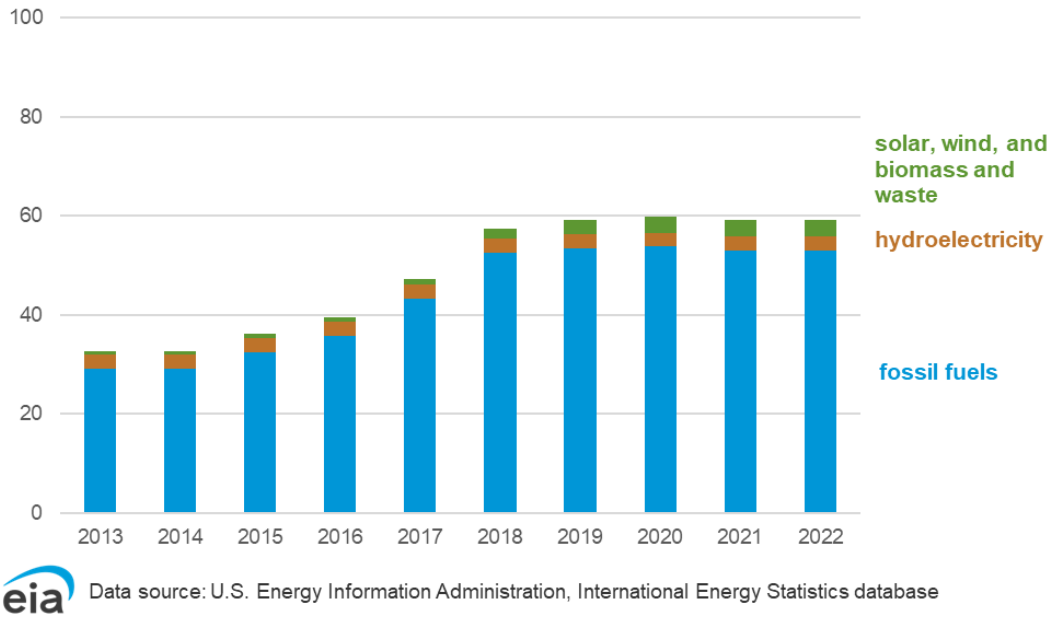


eia Data source: U.S. Energy Information Administration, International Energy Statistics database

Electricity

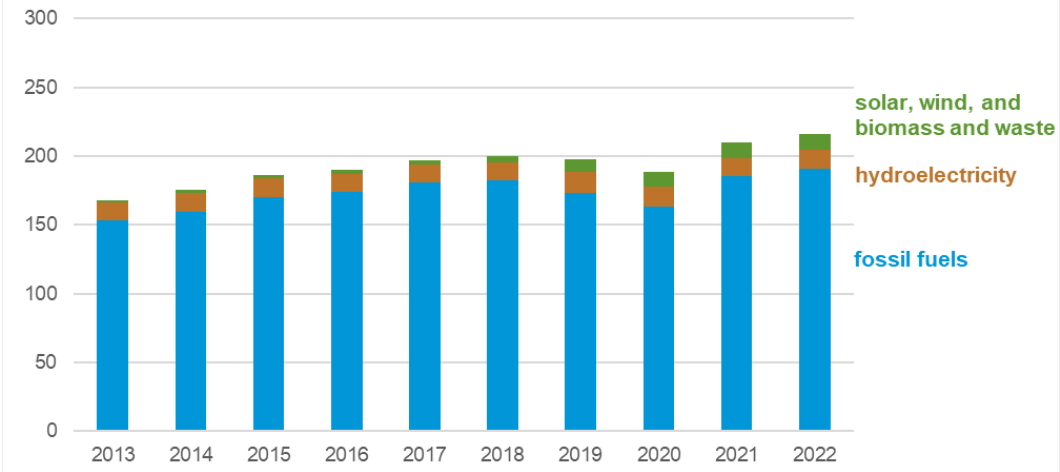
- Total electricity capacity in Egypt nearly doubled from 2013 through 2022, growing by about 27 gigawatts (GW) in the 10-year timeframe; much of this growth in total capacity is attributed to fossil fuel-derived sources of electricity. Growth in electricity capacity derived from non-hydroelectric renewable sources, such as solar and wind, was also substantial; non-hydroelectric renewable electricity capacity reached 3.4 GW in 2022, nearly quintuple the capacity in 2013. Egypt does not have any electricity capacity derived from nuclear sources (Figure 5 and Figure 6).[14]

Figure 5. Egypt's electricity capacity by fuel type, 2013–2022
gigawatts



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

Figure 6. Egypt's net electricity generation by fuel type, 2013–2022
gigawatthours



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

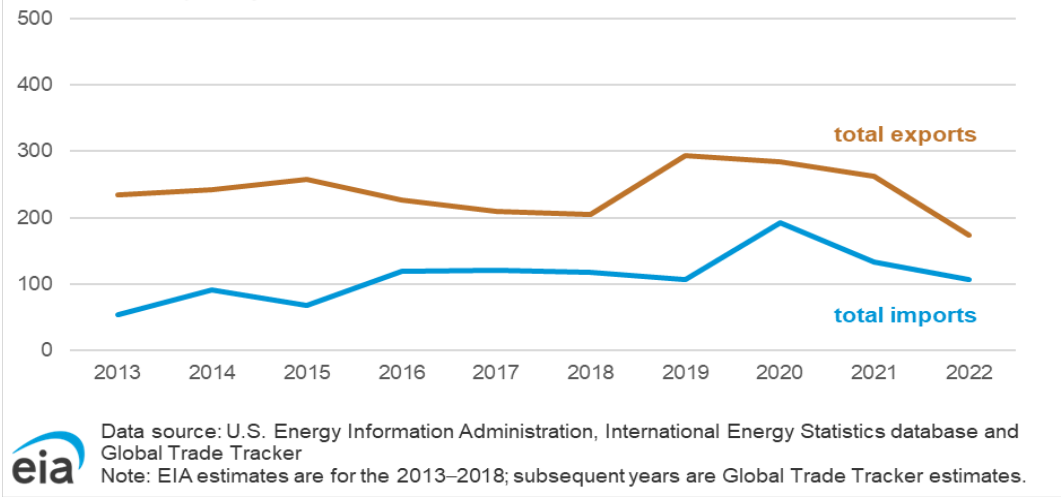
- Fossil fuel-derived electricity capacity grew significantly in from 2013 through 2022, primarily because of additions to the Beni Suef, Burullus, and New Capital power plants (collectively referred to as the Egypt Megaproject) that were commissioned in 2017 and 2018. The three power plants are natural gas-fired combined-cycle turbine plants that each have a capacity of 4.8 GW, altogether adding 14.4 GW of thermal electricity capacity to Egypt's power grid. The Egypt Megaproject was developed by a consortium—Siemens, Orascom Construction, and El Sewedy Electric—and the project is wholly owned by the Egyptian Electricity Holding Company.[15]

- The Egyptian government is seeking to develop renewable energy sources to diversify its power generation mix. Through its 2035 Integrated Sustainable Energy Strategy, the Egyptian government has set a target for 42% of its total capacity to be derived from renewable energy sources by 2035, up from 20% in 2022. As a result, Egypt has been developing more solar and wind power capacity to reach this target. In July 2023, ACWA Power signed a memorandum of understanding (MOU) with the New and Renewable Energy Authority (NREA), the regulatory body under the Egyptian Ministry of Electricity and Renewable Energy, to allocate land for a 10 GW wind power project near the city of Sohag; the project is expected to provide about 50 terawatthours (TWh) per year once it is completed. In December 2023, the China Electric Power Equipment and Technology Company and the Egyptian government signed an MOU to conduct preliminary studies to develop a 10 GW solar power project that could provide approximately 29.8 TWh per year. Although still in preliminary stages of development, both projects could provide a substantial boost in renewable energy capacity, helping the government achieve its 2035 renewable energy target.[16]
- Egypt's first nuclear power plant is under construction; the fourth and final reactor began construction in January 2024. The proposed nuclear power plant, which is located on the Mediterranean coast in El Dabaa, is planned to be four 1.2 MW reactors, providing 4.8 GW of electricity capacity when complete. The Russian State Atomic Energy Corporation (ROSATOM) is developing the power plant, and the Nuclear Power Plant Authority (NPPA) of Egypt will become the owner and operator. The power plant's first reactor is scheduled to be commissioned in 2026, and all four reactors should be operating at full capacity by 2030.[17]

Energy Trade

- Egypt plays a significant role in global crude oil and natural gas trade because of the Suez Canal and the Suez-Mediterranean (SUMED) Pipeline—two major routes and transit chokepoints for crude oil and LNG shipments. If both the Suez Canal and the SUMED Pipeline were to close, tankers would have to divert around the southern tip of Africa, adding approximately 15 days of transit to the United States or Europe, which would lead to increased shipping costs.[18]
- Egypt has crude oil storage facilities in the Ayn Suknah and Sidi Kerir terminals, which are located at opposite ends of the SUMED Pipeline. The Sidi Kerir terminal, which is located on the Mediterranean, has 27 storage tanks with a total capacity of 20 million barrels. The Ayn Suknah terminal, which is located on the Red Sea, has 15 floating storage tanks with a total capacity of 10 million barrels.[19]
- Egypt exported an average of about 239,000 b/d of crude oil and condensate from 2013 through 2022, according to estimates by Global Trade Tracker and EIA. Egypt imported an average of about 111,000 b/d of crude oil and condensate during the same time period (Figure 7).[20]

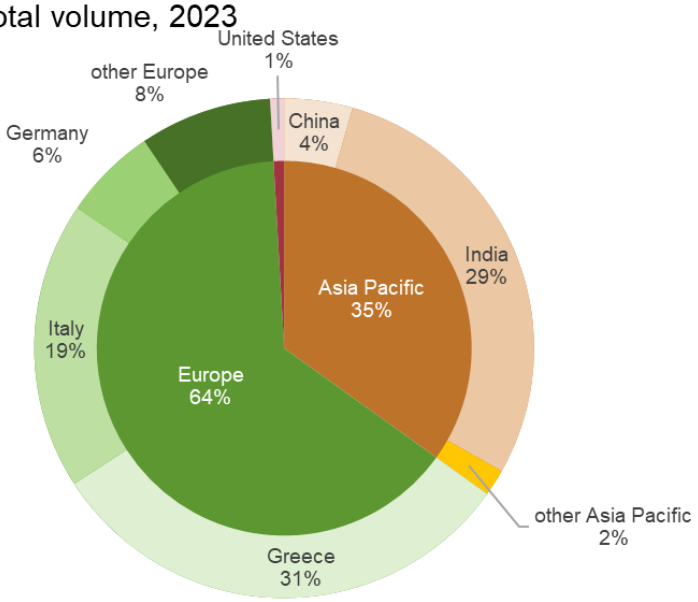
Figure 7. Egypt's total annual exports and imports of crude oil and condensate, 2013–2022



Data source: U.S. Energy Information Administration, International Energy Statistics database and Global Trade Tracker
Note: EIA estimates are for the 2013–2018; subsequent years are Global Trade Tracker estimates.

- In 2023, Egypt exported about 166,000 b/d of crude oil and condensate, and about two-thirds of total exports went to Europe. Greece and Italy were the top two importing countries by volume; Greece and Italy imported about 51,000 b/d of Egypt's crude oil and 31,000 b/d of Egypt's condensate. The remainder of Egypt's crude oil and condensate exports went to the Asia Pacific region, primarily India, which took about 48,000 b/d of imports and was the second-highest importing country for that year (Figure 8).[21]

Figure 8. Egypt's crude oil and condensate exports by destination, percentage of total volume, 2023



Data source: Global Trade Tracker

- Egypt has two major regional natural gas pipelines, the Arish-Ashkelon pipeline and the Arab Gas Pipeline (AGP), that enable the country to transport natural gas to other countries in the region. The AGP is a trans-regional natural gas pipeline through which Egypt can export natural gas to Syria, Lebanon, and Jordan. However, with Egypt's increasing natural gas consumption, the pipeline remains underutilized because meeting domestic demand is prioritized over commercial export. The Arish-Ashkelon pipeline, also known as the Eastern Mediterranean Gas (EMG) pipeline, is a subsea branch of the AGP that was built in 2008 to deliver natural gas to Israel from Egypt; however, as a result of Egypt's domestic natural gas shortages and Israel's development of its large offshore natural gas fields, pipeline flows have reversed. Israel delivers natural gas from its offshore fields to Egypt (Table X5).[22]

Table 5. Major regional natural gas pipelines in Egypt

Pipeline name	Status	Length (miles)	Capacity (billion cubic feet per year)	Operators	Notes
Arish-Ashkelon Pipeline	Operating	56	147–247	East Mediterranean Gas Company, Merhav, Snam S.P.A., EMI-EGI LP, Egyptian General Petroleum Corporation	subsea pipeline that carries gas from Israel's offshore fields to Egypt
Arab Gas pipeline (AGP)	Operating	750	364	EGAS, ENPPI, PETROGET, GASCO, SPC	onshore pipeline that carries gas from Egypt to Jordan, Syria, Lebanon

Data source: *Global Energy Monitor,* company websites

- Egypt began exporting LNG in 2005 when two LNG export facilities, SEGAS LNG and Egyptian LNG, were brought online. LNG exports increased thereafter but began declining in the 2010s domestic natural gas production declined and domestic natural gas consumption increased. Natural gas that would have otherwise been available for export was diverted to fulfill domestic demand instead (Table 6).[23]

Table 6. Egypt's liquefaction plants

Project Name	Location	Status	Ownership	Start date	Nameplate capacity (billion cubic feet per year)
Egyptian LNG T1	Idku (Alexandria)	Operating	Egyptian LNG (Shell 35.5%, Petronas 35.5%, EGPC 12%, EGAS 12%, TotalEnergies 5%)	2005	173
Egyptian LNG T2	Idku (Alexandria)	Operating	Egyptian LNG (Shell 38%, Petronas 38%, EGPC 12%, EGAS 12%)	2005	173

Spanish Egyptian Gas Company (SEGAS) LNG	Damietta	Operating	SEGAS (ENI 50%, EGAS 40%, EGPC 10%)	2005	240
Total					**586**

Data source: International Group of Liquefied Natural Gas Importers, GIIGNL 2023 Annual Report
Note: LNG = liquefied natural gas

- As of May 2024, Egypt had two regasification terminals located at the Port of Ayn Suknah and one at the Port of Sumed, but none of the terminals have an operating floating storage regasification unit (FSRU). Egypt chartered two different FSRUs, the *Höegh Gallant* and *BW Singapore*, and both of these units were initially moored at the Ayn Suknah import terminals in 2015. The *BW Singapore* later relocated to the Port of Sumed in 2017. The *Höegh Gallant* and *BW Singapore* FSRUs left the regasification terminals in 2018 and 2023, respectively, after their charters had ended in 2018 and 2023. In May 2024, Egypt signed a charter to receive a new FSRU, the *Höegh Galleon*, which arrived in June 2024 and is planned to be in operation at least until February 2026. The *Höegh Galleon* will help Egypt import more natural gas to meet increased domestic demand, which typically occurs during the hot summer months (Table 7).[24]

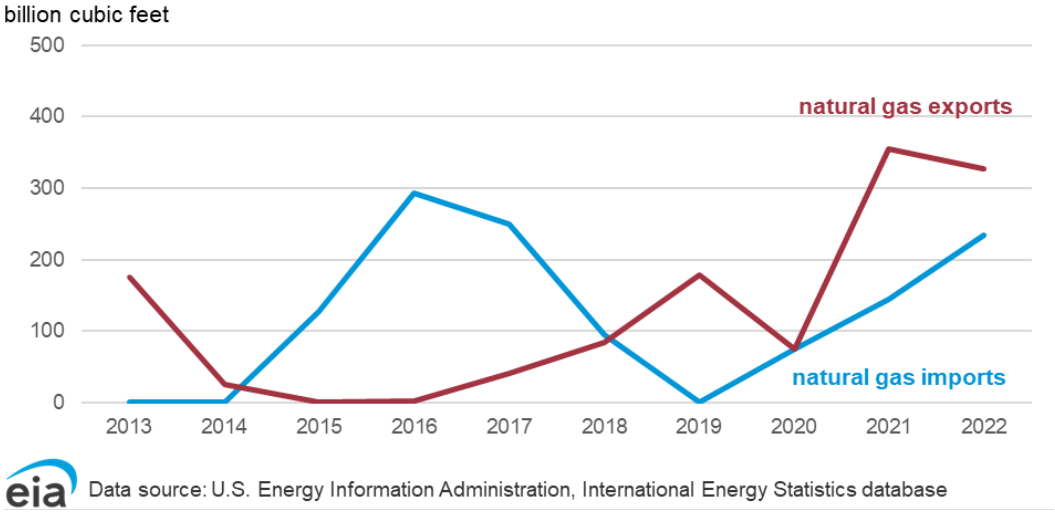
Table 7. Egypt's floating storage and regasification units

Project Name	Location	Status	Start date	Nameplate capacity (billion cubic feet per year)
Höegh Gallant FSRU	Ayn Suknah	No longer in operation in Egypt	2015	202
BW Singapore FSRU	Ayn Suknah, Sumed	No longer in operation in Egypt	2015 in Ayn Suknah, 2017 in Sumed	274
Höegh Galleon FSRU	Ayn Suknah	Operating	2024	274

Data source: International Group of Liquefied Natural Gas Importers, GIIGNL 2023 Annual Report, Energy Intelligence, company websites
Note: FSRU = floating storage and regasification unit

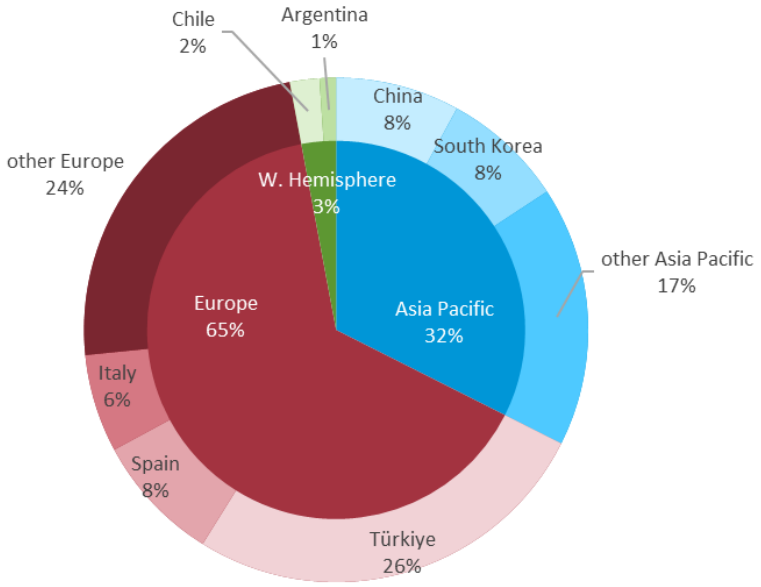
- Egypt exported an annual average of about 126 Bcf per year and imported an annual average of about 122 Bcf per year from 2013 through 2022. The natural gas imports and exports over the 10-year period have fluctuated as a result of growing demand for natural gas to meet domestic needs and the start of commercial operations of its large offshore natural gas fields, such as the Zohr field (Figure 9).[25]

Figure 9. Egypt's total annual natural gas imports and exports, 2013–2022



- According to estimates in the Energy Institute's 2024 *Statistical Review of World Energy,* Egypt exported about 173 Bcf of LNG in 2023; most of the LNG went to destinations in Europe. Türkiye and Spain were the top importing countries by volume, with 46 Bcf and 14 Bcf of LNG originating from Egypt, respectively. The Asia Pacific region was also a significant importer of Egypt's LNG that year. South Korea and China were the top importing countries by volume in that region, taking 13 Bcf and 14 Bcf, respectively, in 2023. The Central and South American regions imported a relatively small volume of LNG from Egypt (5 Bcf), and the Middle East region did not import any LNG from Egypt in 2023. Egypt imported only a marginal amount of LNG in 2023 (less than one billion cubic foot from Indonesia) but has imported LNG in the past to meet domestic demand (Figure 10).[26]

Figure 10. Egypt's LNG exports by destination, percentage of total volume, 2023



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

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