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Egypt

Oil & Gas Report

Includes 10-year forecasts to 2033



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Key View

Key View: In 2024, we see Egyptian gas production continuing to decline, albeit to a lower extent than in 2023. Declines will be slowed by the drilling of new wells at the Zohr field in 2024 and 2025. Despite these efforts, the country's gas production will remain significantly below the peak levels seen in 2022. Consequently, Egypt's LNG exports are projected to continue trailing behind the highs of recent years. We note strong downside risk arising from potential disruption to Egypt's LNG exports due to the Israel-Hamas conflict. An escalation could jeopardise the flow of Israeli pipelined gas to Egypt, which has become increasingly vital for Egypt's LNG export capability. In Q1 2024, Egyptian imports of gas from Israel were down by 7.0% compared to Q1 2023.

Headline Forecasts (Egypt 2022-2028)

Indicator	2022	2023e	2024f	2025f	2026f	2027f	2028f
Crude, NGPL & other liquids prod, 000b/d	667.5	664.7	653.8	648.6	643.6	638.6	633.6
Refined products production, 000b/d	563.0	528.9	513.0	523.3	533.8	544.5	555.3
Refined products consumption & ethanol, 000b/d	850.5	842.0	833.6	850.3	867.3	884.6	902.3
Dry natural gas production, bcm	67.0	59.3	56.8	55.1	53.5	51.9	50.3
Dry natural gas consumption, bcm	60.1	59.5	58.9	60.1	61.3	62.5	63.7
Brent, USD/bbl	99.04	82.18	85.00	82.00	81.00	81.00	81.00

e/f = BMI estimate/forecast. Source: EIA, JODI, national sources, BMI

Latest Updates And Key Forecasts

- In May 2024, Shell announced the discovery of two new natural gas fields, Mina Gharb and Khufu, in deep waters off the Mediterranean coast of Egypt, though no estimates on reserves were released in the disclosure. Separate from this discovery, Shell is currently working on phases 10 and 11 of the West Nile Delta Deepwater project, as part of their ongoing exploration campaign in the region.
- We forecast that Egypt's total oil production will see a slight decline of 1.6% y-o-y in 2024, to reach an average of 653,800b/d. Data available as of July 2024 indicate a fall in output of 2.4% in the January-April period.
- The inauguration of the North Safa field in Q4 2023 will provide some uplift to reduce the scale of decline in 2024; however, a combination of ageing fields and a lack of new discoveries weigh on growth.
- On July 1 2024, Apex International Energy reported an increase in its oil production from its eight concessions in Egypt's Western Desert for H1 2024. The company drilled 10 wells, with six producing, two awaiting completion, one used for water supply and one dry hole.
- We forecast continual declines in Egyptian gas production from 2024 onwards, with an expected decline of 4.2% y-o-y in 2024, to reach 56.8bcm. This follows a substantial production drop that was experienced in 2023 (9.0%). This drop was primarily due to water infiltration problems at the Zohr mega field.
- In the months of January-April 2024, gas production in Egypt was down by 13.8% (17.7bcm), compared to the same period in 2023 (20.5bcm).
- In an effort to mitigate the declining output at Zohr, plans have been set in motion to drill multiple new wells at the field over the course of 2024 and 2025. This will aid the partial rebound of gas production in Egypt in the near term. Eni plans to invest approximately USD160mn in H2 2024 to drill two new wells in the Zohr field. The Zohr field, the largest gas field in the Mediterranean, has averaged production of 2bn cubic feet a day of gas (equivalent to 20.7bcm a year), and 3,700b/d of condensate over the last six months, representing 35.0% of Egypt's gas production.
- Given this investment, we expect that 2024 as a whole will see lower declines than exhibited in Q1 2024.
- In 2024, Egypt's annual liquified natural gas (LNG) exports are set to remain significantly below the country's record high export volumes attained in 2022, driven by significant declines in the country's domestic gas production. Major downside risk to the

market's near-term LNG exports could arise from the possibility of a major escalation in the Israel-Hamas conflict, which would further hamper pipelined gas exports from Israel to Egypt. These exports played an increasingly significant role in sustaining Egypt's LNG exports over 2023.

- We forecast that Egypt will reach net exports of just 1.2bcm of liquefied natural gas (LNG) annually in 2024. This is a significant decline from the record-high 11.2bcm of LNG that the market exported in 2022. Egypt's LNG exports are set to be weighed down by a bleak near-term outlook for its domestic gas production, which is set to remain around 10% below production volumes attained in 2022, and the need for more gas imports to manage demand.
- Egypt plans to issue a tender for 15-20 cargoes of LNG to meet the high summer domestic demand in 2024 and maximise their supply of LNG exports to Europe, which has fluctuated as a result of the Israel-Hamas War. In Q1 2024, pipeline imports from Israel had declined from an average of 547mmcm a month in Q1 2023 to 509mmcm in Q1 2024.

SWOT

Oil & Gas SWOT

Strengths	Weaknesses
<ul style="list-style-type: none"> Significant natural gas resource base and potential, particularly offshore in the Nile Delta and Mediterranean Sea. Onshore oil production potential in the Western Desert. Robust international interest in upstream licensing rounds. Sovereignty over a key oil and gas transit channel, namely the Suez Canal. Possesses the largest refining capacity in Africa. Capacity increases and modernisation programmes are expected to continue over the short term. A domestic demand market of more than 90mn people, with a demographic that supports growth. Egypt's location next to Suez and increased gas cooperation with Israel ensure feedstock for Egypt's two LNG facilities. 	<ul style="list-style-type: none"> Refined fuels and natural gas prices continue to be set by the state and are generally below market prices, dissuading foreign investment. The Russia-Ukraine conflict is set to impact Egypt's external position, including tourist numbers and current account deficit. Security challenges in the Sinai Peninsula, Red Sea and in neighbouring Libya pose a threat to oil and gas infrastructure and shipping routes. Exploration drilling activity still remains low in comparison to a decade ago. Lowering upstream output and high energy demand leave minimal volumes of hydrocarbons for export.
Opportunities	Threats
<ul style="list-style-type: none"> Deepwater areas of the Mediterranean Sea remain under-explored and hold considerable potential. Further fuel subsidy reforms will make the Egyptian market more attractive to investment as sales prices increase. The Western Desert region remains under-explored and has shown significant hydrocarbons potential with stacked pay zones. The gas and fuels demand markets signal considerable investment opportunities. Growing European demand for Egypt's natural gas as a result of the Russia-Ukraine conflict. 	<ul style="list-style-type: none"> Policy slippage could dampen the investment environment. Further fuel subsidy reform could be delayed. Further currency devaluation would make US dollar repayments more difficult. A lack of US dollar currency could limit the ability to pay for refined fuel imports. Attacks on shipping by Houthi rebels in the Red Sea risk trade diverting further from the Suez, as well as risking oil and gas assets in the region.

Industry Forecast

Upstream Exploration

Key View: *There is significant upside to the country's exploration prospects in the near term, given the assignment of four exploration awards as part of the results for Egypt's last licencing round, which were announced in September 2023. 23 new blocks were on offer as part of the September 2023 licencing round. As has been the case previously, we expect interest in the latest licencing round to remain strong amid continued interest in the country from international oil companies.*

Latest Updates

- In May 2024, QatarEnergy and ExxonMobil signed an agreement to acquire the Masry and Cairo offshore exploration sites off Egypt's north coast, with QatarEnergy holding a 40% stake and ExxonMobil a 60% stake. The acquisition, which is still subject to Egyptian Government approval, covers approximately 11,400sq km in water depths of 2–3km. This deal expands QatarEnergy's presence in Egypt, bringing its total number of offshore exploration areas in the country to six.
- In May 2024, Shell announced the discovery of two new natural gas fields, Mina Gharb and Khufu, in deep waters off the Mediterranean coast of Egypt, though no estimates on reserves were released in the disclosure. Separate from this discovery, Shell is currently working on phases 10 and 11 of the West Nile Delta Deepwater project, as part of their ongoing exploration campaign in the region.
- On July 1 2024, Apex International Energy reported growth in their reserves following new discoveries in the Zarif and RAM fields. Apex's total 2P reserves increased by 14.0% to an estimated 29.1mm boe.
- In January 2024, United Oil & Gas provided an update on the ASD S-1X well in the Abu Sennan licence in Egypt, in which they hold a 22% interest, reporting the discovery of 9.5m of net pay after drilling commenced on November 11 2023 and concluded ahead of schedule on December 12 2023. The well has been completed and successfully tested in the primary Abu Roash C reservoir, with test flow rates meeting pre-drill expectations. United Oil & Gas, along with the operator Kuwait Energy Egypt, intends to submit a notice of commercial discovery and apply for a development lease, anticipating production to begin shortly after necessary approvals and facility installation.
- In February 2024, BP announced its intention to invest USD1.5bn in new gas exploration and production in Egypt and to form a joint venture with Abu Dhabi National Oil Company to create an international gas portfolio, signalling strong upstream investment activity by leading International Oil Companies (IOCs) in the country, and providing significant upside risk to Egypt's gas reserves growth.
- In February 2024, Shell expressed its intention at the Egypt Energy Conference (EGYPS 2024) to expand exploration activities in Egypt by planning to secure new concession areas.
- In November 2023, Shell made a significant gas and condensate discovery in the North East El Amriya concession in Egypt's Mediterranean Sea. The discovery well, named Bashrush, encountered 102m net pay of high-quality gas bearing sandstones. The success of the Bashrush well supports Shell's strategy to grow its gas business in Egypt. The company, along with its partners, plans to conduct further appraisal activities in order to assess options for the well's fast-track development.
- In preliminary results announced in September 2023 for Egypt's 2022 licencing round, a total of four new exploration areas have been announced. Two blocks situated in the Mediterranean Sea have been awarded solely to Eni, with a third block being awarded to a joint partnership between Eni, QatarEnergy and BP. The fourth block situated in the Nile Delta region was awarded to Russian company Zarubezhneft.
- In September 2023, Egypt's Minister of Petroleum and Mineal Resouces announced a new licencing round in which 23 new blocks are on offer. This includes 10 blocks situated in the country's Western Desert region, seven in the Gulf of Suez, four in the Red Sea region and two in the Eastern Desert region. The deadline for the licencing round has been set for February 25 2024.
- In August 2023, Cheiron Energy made a discovery of new oil reserves in the Geisum and Tawila West concession, situated in the Gulf of Suez. Initial test drilling at the GNN-11 exploration well indicates production rates in excess of 2,5000b/d from the well
- In July 2023, Egypt's Petroleum Minister Tarek El Molla outlined a USD1.8bn gas exploration programme that will consist of drilling

35 new exploration wells in the Mediterranean Sea and Nile Delta regions by July 2025. The exploration programme will be undertaken with the assistance of some of the largest IOC's operating in Egypt, such as Eni, Chevron and BP.

- In June 2023, Eni concluded exploration drilling at the Nesr-1 well, located in the Nile Delta region. Results proved to be unsatisfying, with preliminary results indicating low volumes of commercial gas.
- In March 2023, Eni's exploration drilling at the Thuraya well, situated in the North East El Arish block, came up dry. The company will now focus on exploration drilling at the Orion prospect situated in the North East Hap'y block, which was due to take place in H2 2023.
- Egypt's exploration drilling in the first half of 2023 has been sustained at similar levels to 2022, with an average of 33 active rig per month from January 2023-May 2023. This figure remains below previous highs reached a decade ago, when active rig counts averaged 53 per month in 2013.
- The deadline for tenders for Egypt's latest licencing round has been once again been extended, from June 1 2023-July 16 2023. A total of 12 blocks that are situated in the Nile Delta and Mediterranean Sea are on offer.
- In February 2023, Egypt's Petroleum Minister Tarek El Molla announced plans to offer three international tenders for the exploration and production of hydrocarbons in 2023, as part of the country's efforts to boost domestic production and exports.
- In December 2022, Chevron made a discovery of gas in the in the Nargis-1x block situated in the eastern Mediterranean off the coast of the Sinai Peninsula. Gas reserves discovered in the block are estimated to be as large as up to 99bcm. Following on the heels of Eni's huge discovery of gas in the Zohr gas field in 2015, this recent discovery is likely to keep exploration interest in Egypt strong in the near term.
- In January 2022, Eni and Chevron announced what they deem to be a 'significant' discovery of gas in the offshore Nargis concession, although exact quantities are yet to be announced. Eni possesses 45.0% working interest in the concession, Chevron 45.0% and Tharwa Petroleum Company 10.0%.
- An onshore discovery of gas has been made at the East Damanhour block situated in the Nile Delta, with tests confirming maximum production of 0.42mcm/d. The block is operated by Wintershall Dea (40.0%) Cheiron Energy (40.0%) and INA (20.0%)
- Exploration drilling activity, which commenced at the start of December 2022 at the ASW-1X well situated in Abu Sennan licence, was completed at the start of January 2023 by United Oil & Gas. it rendered unsuccessful results in which no notable hydrocarbon reserves were discovered.
- Egyptian Natural Gas Holding Company has granted two new exploration blocks situated offshore in the Mediterranean sea to BP. The first of which is the Northwest Abu Qir Offshore block spanning an area of 1,038sq km. The second is the Bellatrix-Seti East block spanning an area of roughly 3,440sq km.

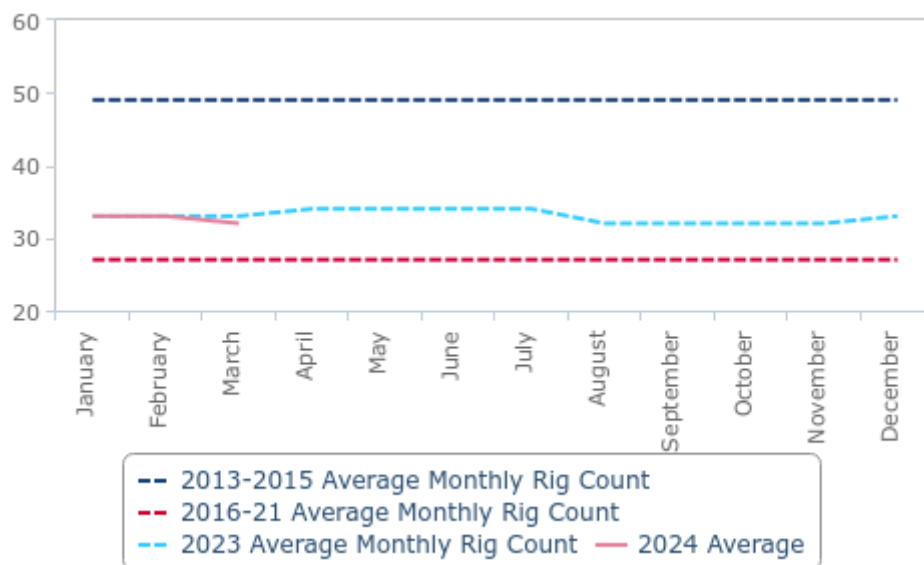
Structural Trends

Egypt's below-ground resource base and potential remains strong, as evidenced by the string of discoveries both offshore and in the Western Desert since 2019. The Western Desert offers limited but low-cost oil potential, while more attractive gas pricing has boosted offshore exploration in the Mediterranean Sea. Near-shore drilling has also yielded a number of discoveries since mid-2015, some of which are already producing. The low-risk and relatively low-cost development in the proven shallow water continues to make the area attractive to further investment. Investor interest is likely to be sustained given the recent significant gas discovery made by Chevron in December 2022 in the offshore Nargis-1x block located in the eastern Mediterranean.

We anticipate a steady decline in Egypt's proven oil reserves through our forecast period, declining from 3.1bn/bbl in 2022 to 1.5bn/bbl in 2033. Similarly, we see Egypt's proven natural gas reserves gradually declining through our forecast period from 1.9tcm in 2022 to 1.3tcm in 2033.

Resurgence In Egypt's Drilling Continues

Egypt - Number Of Active Drilling Rigs Per Month



Source: Baker Hughes, BMI

2023 Licencing Round Launched

The Egyptian General Petroleum Corporation and South Valley Egyptian Petroleum Holding Company launched the 2023 Egyptian International bid round in September. The round includes 23 open blocks located in the Western Desert, Eastern Desert, Gulf of Suez and Red Sea. The round closed on February 25 2024, with awards set to be announced later in 2024.

2022 Licencing Round

The 2022 licencing round had offered a total of 12 blocks, of which six were onshore and six offshore. The results announced for Egypt's 2022 licencing round were announced in September 2023, with a total of four new exploration areas confirmed. Two blocks situated in the Mediterranean Sea have been awarded solely to Eni, with a third block awarded to a joint partnership between Eni, QatarEnergy and BP. The fourth block, which is situated in the Nile Delta region, was awarded to Russian company Zarubezhneft. The deadline for tenders was initially set for April 2023, but was extended to July 16 2023.

2021 Licencing Round

The blocks that were successfully bid for cover a variety of locales and include four blocks in the Western Desert, two in the Eastern Mediterranean and two on the Gulf of Suez. The total licenced area is around 12,300sq km in size with a minimum exploration investment estimated at USD250mn to drill a minimum of 33 wells. The awards pose upside risk to our oil and gas production forecast for Egypt as the blocks awarded are of close proximity to areas already producing significant quantities of oil or gas, indicating the potential for similarly favourable geology. The Western Desert accounts for around one-third of Egypt's daily hydrocarbon production, primarily from the Abu El Gharadig Basin, which was discovered in 1969. In the Eastern Mediterranean, massive quantities of gas have been discovered, for example the Zohr gas field is estimated to hold around 850bcm of gas and is the largest natural gas discovery in the Mediterranean to date. The Gulf of Suez accounts for around 10% of Egypt's oil production.

Exploration wells have been on the downtrend since the early 2010s, but have recovered somewhat since the start of the pandemic, to around 30 per year. The results of the 2022 bidding round, which licensed 4 blocks led to an uptick to the rig count - a positive indicator for future oil and gas production. United Oil & Gas announced another discovery at the AJ-13 well on the Abu

Sennan field, encountering 17.5mn bbl of net oil pay. Lastly, Egypt's parliament approved an amendment to the El Fayum concession, held by Pharos Energy, to incentivise increased production rates. The amendment sees the cost-recovery petroleum percentage increase, which is the portion of revenue the contractor keeps, from 42.0% to 50.0%. In addition, the amendment lowers the development project breakeven while in full cost-recovery mode and extends the exploration licence by three and a half years. Combined, the generally positive news surrounding Egypt's exploration sector will likely drum up more interest in future licencing rounds and pose upside to our forecast.

Red Sea Licencing Round

Egypt held an Offshore Red Sea Bid Round in 2019. The round included 10 exploration blocks in the Red Sea, with some 30,000sq km of acreage on offer. Closure of the round was extended to September 2019. In late December 2019, Chevron and Shell were awarded licences as part of Egypt's Red Sea licencing round. Chevron was awarded Block 1 and Shell Block 2, while Block 4 was awarded jointly to Shell and Mubadala Petroleum, the three blocks cover a total exploration area of around 10,000sq km and carry combined minimum investment commitments of USD326.0mn.

EGAS 2018 Licencing Round

Results of the licencing round were announced on February 12 2019. Nine companies were awarded a total of 12 concessions, including five gas concessions and seven oil blocks. Shell was awarded the most, with operating interests in five concessions.

2021 Licencing Round Results

Location	Block	Firm Awarded
Western Desert	EGY-WD-7	Apex International, Eni
Western Desert	EGY-WD-8	Energean Egypt, INA Nafte
Western Desert	EGY-WD-9	Eni
Western Desert	EGY-WD-11	United Energy
Eastern Mediterranean	EGY-MED-E5	bp, Eni
Eastern Mediterranean	EGY-MED-E6	Eni
Gulf of Suez	EGY-GOS-13	Eni
Gulf of Suez	EGY-GOS-14	Enap Sipetrol

Source: Egypt Upstream Gateway, BMI

EGAS 2018 Licencing Round Results

Concession	Area	Companies	Signing Bonus, USDmn	Financial Commitment, USDmn	Drilling Commitment
North East El Amreyia	Mediterranean	ExxonMobil, BP, Eni, TotalEnergies, Shell & Petronas	10.0	100.0	2
North Sidi Gaber	Mediterranean	Shell & Petronas	10.0	60.0	1
North El Fanar	Mediterranean	Shell & Petronas	3.0	9.0	8
East Damanhur	Nile Delta	DEA	11.0	28.0	7
West Sherbin	Nile Delta	Eni & BP	5.0	18.0	2
West El Faiyum	Western Desert	Shell	27.0	24.7	6
SE Horus	Western Desert	Shell	23.0	24.5	5
South Abu	Western Desert	Shell	1.0	7.8	3

Concession	Area	Companies	Signing Bonus, USDmn	Financial Commitment, USDmn	Drilling Commitment
Sennan					
SE Siwa	Western Desert	Eni	1.2	17.0	4
North Beni Suef	Eastern Desert	Merlon Petroleum	3.2	36.0	8
West Amer	Eastern Desert	EGPC	5.0	1.0	10
NW El Amal	Gulf of Suez	Merlon Petroleum	11.0	34.5	3

Source: EnergyEgypt, BMI

Deepwater

Much of the deepwater Mediterranean has been left unexplored owing to higher development costs and the previously unfavourable gas price offered by the government. Better gas prices negotiated with the Egyptian government are seeing this change and higher commodity prices are boosted capital expenditure (capex) for 2022 and 2023.

In November 2016, BP announced that it had bought a 10.0% stake in the offshore Shorouk concession - which contains the Zohr gas field - from Eni, with scope to increase its share to 15.0% by the end of 2017. Eni previously owned 100% of the block, but have said that it is in negotiations with other players in order to cut their share to 50.0%. This is predominantly driven by a desire to monetise the project it has discovered, as well as reducing its upfront capex on the development. Rosneft have also bought into the Shorouk concession, signing a USD1.575bn deal for 30.0% of the offshore block at the end of 2016.

There are a number of gas prospects in the under-explored areas of the Nile Delta, while a number of known resources have lain undeveloped, awaiting a more certain investment environment. The presence of extensive infrastructure in the Nile Delta will support cost structures at smaller projects through optimising the use of existing facilities. In September 2018, Egyptian General Petroleum Corporation (EGPC) signed a deepwater oil and gas exploration deal with Shell and Petronas for eight wells in the country's West Nile Delta Deep Marine Concession.

Near-Shore

Near-shore exploration in and around existing assets has proved successful, both in number of discoveries and in the use of existing infrastructure to minimise costs. Shallow water depths as well as underutilised or easily adapted infrastructure is allowing for rapid discovery to production progress. The Nooros field was discovered in July 2015 in the Abu Madi West concession. Production from the field began in May 2016.

Onshore

The Western Desert has seen growing interest since political and regulatory stability has improved. There have been further discoveries of both oil and gas beyond existing production centres, with areas of the region indicating stacked pay potential. Apache Energy, Egypt's top driller, is focusing its efforts on the Faghur and Alamein Basins of the Western desert and is also drilling wells in the Shushan Basin.

Apache Energy owns a large area of concessions (around 14,000sq km) within the Western Desert, of which the company has extensive knowledge and has developed numerous successful operations. The drilling of new onshore low-cost wells will provide incremental gains to existing production and represent an attractive investment proposition for Apache, and potentially other operators, as it looks to increase its global production while maintaining fiscal discipline.

The lower costs related to onshore drilling and development could see an increased focus on exploration in the Western Desert as companies continue to employ fiscal discipline to capex. Shell also reported a gas discovery in the Alam El Shawish concession, albeit of 0.5tcf (14bcm).

Apex Energy's acquisition of blocks 8 and 9 within the Western Desert represents its first entry into Egypt. It was formed in 2016 through USD500mn worth of equity financing by Warburg Pincus. The company has obtained both the West Badr el Din (4,180sq km) and South East Meleiha (2,535sq km) blocks in the Western Desert with a commitment to invest USD45.9mn. The capital will also be used to acquire and process 3D seismic data. With its sole focus on Egypt's upstream and expertise of the region and operating environment (Apex's CEO and COO previously held top positions in Apache Energy), the entry of Apex provides notable upside risk to both oil and gas production in the Western Desert. Apex acquired block EGY-WD-7 in the 2021 Licencing Round, to be shared with Eni.

Following the licencing round, a myriad of international firms proffered USD23.7mn in signature bonuses for eight blocks out of 24 offered across the country, with four of those located in the Western Desert.

Long-term upside could present from shale exploration in the Western Desert. However, owing to the infancy of exploration, this is unlikely to be seriously invested in over conventional gas. Apache and Shell agreed a new price for gas from their Apollonia tight gas field, up to USD4.6/mn BTU from USD2.9/mn BTU. Two wells of a 30-well pilot programme have been drilled on the Apollonia field.

Wellhead Gas Prices

Project Type	USD/mn BTU
Conventional	2.65
Reported negotiated contracts	3.00-5.88
Shale	5.45

Source: Reuters, BMI

Further pricing upside could come from the Egyptian government's move to allow some companies to negotiate prices with private firms as it attempts to liberalise the gas market. This will be more attractive for smaller companies close to industrial demand centres and could boost exploration for independents. It marks a significant step towards the gradual deregulation of the Egyptian gas market.

The initiation of energy subsidy reform in July 2014 and the creation of a clear path towards liberalising the energy sector have also given oil and gas companies more confidence in the future potential of the Egyptian market. However, evidence of policy slippage with gas price reductions and delays in further fuel subsidy reform could drive more investment caution.

Upstream Projects

Key Upstream Oil And Gas Projects In Egypt

Name	Field Name	Companies	Date Completed	Status
West El Burullus Concession	West El Burullus Concession	Engie (100%)	na	Appraisal
Disouq Concession	North West Khilala, North Sidi Ghazy-1, North West Sidi Ghazy-1, South Sidi Ghazy-1, Sidi Salem South East-1, Sidi Salem South East-2, Disouq	RWE Group (100%)	2013	Production
Southwest Gebel El-Zeit (SWGEZ)	Southwest Gebel El-Zeit (SWGEZ)	IPR Energy Resources (44.625%)	2009	Production
Ras El Barr Concession	Ha'py, Seth, Akhen, Taurt	BP (50%), Eni (50%)	2000	Production
South Disouq Concession	South Disouq Concession	Sea Dragon Energy (55%), IPR Energy Resources (45%)	na	Discovery
Temsah Block	DEKA (Denise - Karawan)	Eni (50%), BP (50%)	2014	Production
West Esh el Mellaha-2 (WEEM-2) Concession	South Malak	Aminex (80%), Triumph Energy Group (20%)	na	Discovery
North Port Fouad Block (Block 7)	North Port Fouad Block (Block 7)	Edison International (100%)	na	Exploration
North Damietta Concession	Atoll	BP (100%)	2018	Production
North El Burg Concession	Satis	Eni (50%), BP (50%)	na	Discovery
North Damietta Concession	Salamat	BP (100%)	na	Appraisal
Abu Gharadig, Faghur Basin	Abu Gharadig, Meghar, Southwest Abu Gharadig	Apache Corporation	1975	Production
Khalda Concession, Shushan Basin	Khalda Concession	Apache Corporation (100%)	1985	Production
Qarun Concession	Qarun Concession	Apache (75%)	1995	Production
North Ras Qattara Concession, Alamein Basin	North Ras Qattara Concession	IPR Energy Resources (30%), Apache Corporation (70%)	na	Appraisal
Yidma-Alamein Concession	Alamein, Yidma, Zain	Apache	1968	Production
North Tarek Concession, Matruh Basin	North Tarek Concession	Apache Corporation (100%)	na	Appraisal
Siwa Concession, Faghur Basin	Siwa Concession	Tharwa Petroleum (50%), Apache Corporation (50%)	na	Appraisal
West Kalabsha Concession, Faghur Basin	West Kalabsha Concession	Apache Corporation (100%)	na	Appraisal
Ras Kanayes Concession	Ras Kanayes Concession	Kuwait Foreign Petroleum Exploration Company (36.36%), Apache Corporation (63.64%)	2002	Production
Block 1	North El Salhiya	Dana Gas (100%)	na	Exploration
North El Mahala (Block 2)	North El Mahala (Block 2)	TotalEnergies (100%)	na	Exploration
El Matariya (Block 3)	El Matariya (Block 3)	BP (50%), Dana Gas (50%)	na	Exploration
Block 8 (Karawan)	Block 8 (Karawan)	Eni (50%), BP (50%)	na	Exploration

Name	Field Name	Companies	Date Completed	Status
Block 9 (North Leil)	Block 9 (North Leil)	Eni (100%)	na	Exploration
East Ras Budran Concession	East Ras Budran Concession	Dove Energy (20%), RWE Dea (80%)	na	Exploration
East Ras Fanar Concession	East Ras Fanar Concession	RWE Dea (100%)	na	Exploration
Northwest El Amal Concession	Northwest El Amal Concession	Edison International (50%), RWE Dea (50%)	na	Exploration
Kom Ombo Concession	Al Baraka, West Al Baraka	Government of Egypt	na	Suspended
El Manzala Concession	El Wastani, El Wastani East and South El Manzala	Dana Gas (100%)	2002	Production
West El Manzala Concession	West El Manzala Concession	Dana Gas (100%)	na	Production
West El Qantara Concession	Sama, Salma Delta, Salma Delta North and Tulip	Dana Gas (100%)	2010	Production
Block 6	North El Arish	Dana Gas (100%)	na	Exploration
North Bardawil	North Bardawil	Kuwait Foreign Petroleum Exploration Company (40%), Eni (60%)	2009	Production
Geisum and Tawila West Concessions	North Geisum, South Geisum, Northeast Geisum, Tawila West	Kuwait Foreign Petroleum Exploration Company (40%), PICO Group (60%)	1985	Production
Area A Concession	Yusr, Shukheir, Shukheir NW, Ayun, Kareem	Kuwait Energy (70%), Petrogas (30%)	na	Production
East Ras Qattara Concession	East Ras Qattara Concession	Sipetrol (50.5%), Kuwait Energy (49.5%)	na	Production
Abu Sennan Concession	Abu Sennan Concession	Kuwait Energy (50%), Dover (28%), Rockhopper Exploration (22%)	2012	Production
Burg El Arab	Burg El Arab	Kuwait Energy (100%)	1997	Production
Mesaha Block	Mesaha Block	Government of Egypt	na	Suspended
Block 3	South Quesir	Government of Egypt	na	Suspended
South Sinai (Block 5)	South Sinai (Block 5)	Government of Egypt	na	Suspended
South-West Meleiha Block	South-West Meleiha Block	Eni (100%)	na	Discovery
West Delta Deep Marine Concession (WDDM)	Scarab, Saffron	Shell (50%), Petronas (50%)	2003	Production
West Delta Deep Marine Concession (WDDM)	Sequoia	Shell (50%), Petronas (50%)	2009	Production
West Kom Ombo Block	West Kom Ombo Block	Energean Oil & Gas (60%)	na	Exploration
El Burg Offshore (EBO) Concession	Harmatten Deep, Notus	Shell (60%), BP (40%)	na	Appraisal
El Manzala Offshore (EMO) Concession	El Manzala Offshore (EMO) Concession	Shell (50%), Dana Petroleum (50%)	na	Exploration
North Gamasa Offshore Concession (Block 1)	North Gamasa Offshore (NGO) Concession	Shell (60%), BP (40%)	na	Exploration
East El Burullus Offshore Concession	East El Burullus Offshore Concession	Government of Egypt	na	Suspended

Name	Field Name	Companies	Date Completed	Status
Berenice, Faghur Basin	Berenice	Egyptian General Petroleum Corporation, Apache Corporation	na	Appraisal
Ptah, Faghur Basin	Ptah	Egyptian General Petroleum Corporation, Apache Corporation	na	Appraisal
Meleiha Concession	Noras	Eni S.p.A (76%), Lukoil (24%)	2015	Production
West Esh El-Mallaha (WEEM)	Rabeh, Rabeh East, Tanan, and Tawoos	Egyptian General Petroleum Corporation (50%), Lukoil (50%)	1998	Production
Ras Qattara Concession	Zarif, El Faras	Eni (75%), INA (25%)	1994	Production
West Abu Gharadig Concession	Raml, Raml SW	Dana Petroleum (30%), INA (25%), Eni (45%)	1996	Production
West Razzak	West Razzak (Aghar)	Eni (100%)	1994	Production
Abu Madi West Licence	Nooros	Eni (75%), BP (25%)	2015	Expansion
South East Ras El Ush concession (Block 2)	West Ashrafi	Pacific Oil & Gas Ltd (50%), Hibiscus (50%)	na	Appraisal
Shorouk Concession (Block 9)	Zohr	BP (10%), Rosneft (30%), Eni (60%)	2017	Production
Edfu	Edfu	Gulf of Suez Petroleum Company (Gupco) (100%)	2002	Production
Hilal	Hilal	Gulf of Suez Petroleum Company (Gupco) (100%)	na	Production
Belayim	Belayim	Eni (100%)	1956	Production
Abu Rudeis Licence	Abu Rudeis Licence	Eni (100%)	na	Production
Baltim Concession	Baltim Concession	Eni (50%), BP (50%)	1997	Production
North Port Said Concession	Port Fouad, Wakar and Darfeel	Eni (100%)	1996	Production
Block 4, North Ras El Esh	Block 4	BP (50%), Eni (50%)	na	Exploration
Block 7, North El Hammad	Block 7	BP (37.5%), Eni (37.5%), TotalEnergies (25%)	na	Exploration
Block 12, Northeast Hapy	Block 12	Edison International(100%)	na	Exploration
Block 14, North El Tabya	Block 14	BP (100%)	na	Exploration
Ashrafi	Ashrafi	Eni (50%), Engie (50%)	1992	Production
West Delta Deep Marine Concession (WDDM)	Simian, Sienna and Sapphire	Shell (50%), Petronas (50%)	2005	Production
Block North Thekah	Block North Thekah	Edison International (100%)	na	Exploration
Block South Idku	Block South Idku	Edison International (100%)	na	Exploration
Apollonia	Apollonia	Apache Corporation, Shell	na	Appraisal
North Alam El-Shawish Concession	PTI-2	Shell (100%)	na	Discovery
Block 4 (North East Ramadan)	Block 4 (North East Ramadan)	BP (100%)	na	Exploration
Block 6 (North West Razzak)	Block 6 (North West Razzak)	Apache Corporation (100%)	na	Exploration

Name	Field Name	Companies	Date Completed	Status
Block 7 (South Alam El Shawish)	Block 7 (South Alam El Shawish)	Apache Corporation (100%)	na	Exploration
Block 8 (West Badr el Din), Abu Gharadig Basin	Block 8 (West Badr el Din)	Apex Energy (100%)	na	Exploration
Block 9 (South East Meleiha), Abu Gharadig Basin	Block 9 (South East Meleiha)	Apex Energy (100%)	na	Exploration
Block 11 (North Umbaraka)	Block 11 (North Umbaraka)	Shell (100%)	na	Exploration
North West Razak Concession	North West Razak Concession	Apache Corporation (100%)	na	Agreement signed
South Alam El Shawish Concession	South Alam El Shawish Concession	Apache Corporation (100%)	na	Agreement signed
Fayoum Concession	Fayoum Concession	Merlon International (100%)	na	Agreement signed
West Gharib Concession	Meseda	TransGlobe Energy (50%), NPC Petroleum Services Ltd (50%)	na	Production
North Sinai Shorouk Concession	Noor	Tharwa Petroleum (15%), Eni (85%)	na	Exploration
East Obayed Concession	Faramid South Prospect	Eni (100%)	na	Discovery
Rosetta Concession	Rosetta Concession	Shell (80%), Edison International (20%)	2001	Production
July	July	Gulf of Suez Petroleum Company (Gupco) (100%)	1975	Production
West Nile Delta (West Mediterranean Deep Water Concession, North Alexandria Concession)	Taurus, Libra, Giza, Fayoum and Raven	RWE Dea (17.25%), BP (82.75%)	2017	Production
West Delta Deep Marine Concession (WDDM)	Scarab, Saffron, Simian, Sienna, Sapphire, Serpent, Saurus, Sequoia, SimSat-P2, Sapsat-1, Sapsat-2 and Swan	Shell (50%), Petronas (50%)	2003	Production

na = not available/applicable. Source: BMI

Upstream Oil Production

Key View: Egypt's oil output is anticipated to see declines in 2024 owing to weak output in 2024. The inauguration of the North Safa field in Q4 2023 provides some uplift to reduce the scale of decline, but crude, NGL and other liquids production are expected to fall overall by 1.6% to reach 653,800b/d. Our long-term outlook is similarly bearish, given a lack of major oil exploration finds. The country's energy sector is also increasingly concentrating on enhancing its natural gas capabilities, which will negatively impact oil production.

Latest Updates

- We forecast that Egypt's total oil production will see a slight decline of 1.6% y-o-y in 2024, to reach an average of 653,800b/d. Data available as of July 2024 indicate a fall in output of 2.4% in the January-April period.
- The inauguration of the North Safa field in Q4 2023 will provide some uplift to reduce the scale of decline in 2024; however, a combination of ageing fields and a lack of new discoveries weigh on growth.
- On July 1 2024, Apex International Energy reported an increase in its oil production from its eight concessions in Egypt's Western Desert for H1 2024. The company drilled 10 wells, with six producing, two awaiting completion, one used for water supply and one dry hole. Achievements include the Fajr-40 well producing 500b/d. Apex's total working interest production has averaged between 11,500-12,000boe/d.
- TAG Oil has announced promising initial production results from its BED4-T100 horizontal well in the Badr Oil Field, located in Egypt's Western Desert. The T100 well achieved an output rate of 800b/d. This success follows a multi-stage hydraulic fracture stimulation targeting the Abu-Roash 'F' (ARF) tight carbonate reservoir.
- In February 2024, Egypt's Ministry of Petroleum and Mineral Resources announced the commencement of production at the North Safa oil field's first well in the Gulf of Suez, with an initial output of 2,500b/d, as part of the country's strategy to expedite well development and enhance energy security. The first phase of the aims to increase the field's production to 6,000b/d with a long-term goal of reaching 12,000b/d after drilling seven additional wells. The Gulf of Suez Petroleum Company, a joint venture between the Egyptian General Petroleum Corporation and Dragon Oil of the UAE, is managing the field's development.
- Dragon Oil also signed in February 2024 a commercial marketing agreement with the Egyptian General Petroleum Corporation to jointly export additional crude from the North Safa and Al-Wasl fields in the Gulf of Suez, as announced at EGYPS 2024.
- Dragon Oil intends to invest USD500.0mn in Egypt in 2024 to drill new wells and sustain a production level of 61,000b/d, after having already boosted output at the North Safa field in the Gulf of Suez to 6,000b/d. The company plans to increase its production by 33% to 8,000b/d in 2025.
- TAG Oil is anticipating strong oil production from the Badr Oil Field (BED-1) in Egypt, following the successful completion of drilling for the BED4-T100 horizontal well in the Abu Roash 'F' limestone formation in Q1 2024. The well has encountered an over-pressured reservoir with high porosity and permeability, and evidence of free oil flow and high gas readings suggests potential for high production rates. Safety measures have led to a reduced lateral length of 308m and the company is now preparing for hydraulic fracture stimulation expected to commence in mid-April to maximise production.
- Cheiron Energy has made a discovery of new oil reserves in the Geisum and Tawila West concession, situated in the Gulf of Suez. Initial test drilling at the GNN-11 exploration well indicates production rates in excess of 2,500b/d from the well.
- In March 2023, Cheiron Energy has announced the start of oil production at its GNN oilfield. The field, which was discovered in 2019, is estimated to possess in excess of 300mn barrels of oil. Initial production rates from the first GNN-6 well are estimated to be around 4,200b/d. With the addition of production from four additional wells, output is expected to increase to 25,000b/d.
- United Oil & Gas has begun oil production six weeks earlier than scheduled at the ASH-8 well situated in the Abu Sennan licence onshore Egypt. Initial output from the well is estimated to be around 2,980b/d of oil.
- In full-year results announced for 2022, Apache Corporation recorded 70,398b/d of oil production in Egypt for 2022, a 6.4% y-o-y decline from the 75,205b/d the company produced in Egypt in 2021. For 2023, Apache has outlined ambitions of increasing oil production in Egypt to 165,000b/d.
- In full-year results for 2022, Eni recorded oil production in Egypt of 77,000b/d, a 6.0% y-o-y decline on the 82,000b/d of oil the

company produced in Egypt in 2021.

- BP has been awarded two new oil exploration blocks by Egyptian Natural Gas Holding situated offshore in the Mediterranean sea. The first block, named Northwest Abu Qir Offshore Area, encompasses an area equivalent to roughly 1,038sq km. The second block named Bellatrix-Seti East encompasses an area covering roughly 3440sq km.
- In the long term, we remain bearish on Egypt's oil production given the lack of investment in mature fields and the greater focus on the country's upstream gas sector. By the end of our forecast period in 2033, we see Egypt's crude oil, NGPL and other liquids production declining to just over 609,000b/d.

Structural Trends

After muted growth of 1.0% y-o-y in 2022, 2023 saw even weaker growth of 0.4% y-o-y. In stark contrast to its gas potential, there has been a notable absence of oil discoveries in Egypt in recent years. This has led to a much greater focus, both among investors and Egypt's political class, on developing the country's gas potential. As a result, we do not foresee any significant increases over our forecast period in Egypt's crude output.

Going forward, we do not see Egyptian crude output recovering to 2019 levels at any point in our long-term forecast to 2033. We see total oil production declining from 663,000b/d in 2023 to just over 609,000b/d by 2033, although we note upside risk given the launch of the latest 2022 licencing round, which is likely to attract strong interest and the ongoing favourable price environment. In this regard, we are forecasting that the high price environment will continue in the medium term, with Brent crude averaging USD82/bbl from 2024-2028.

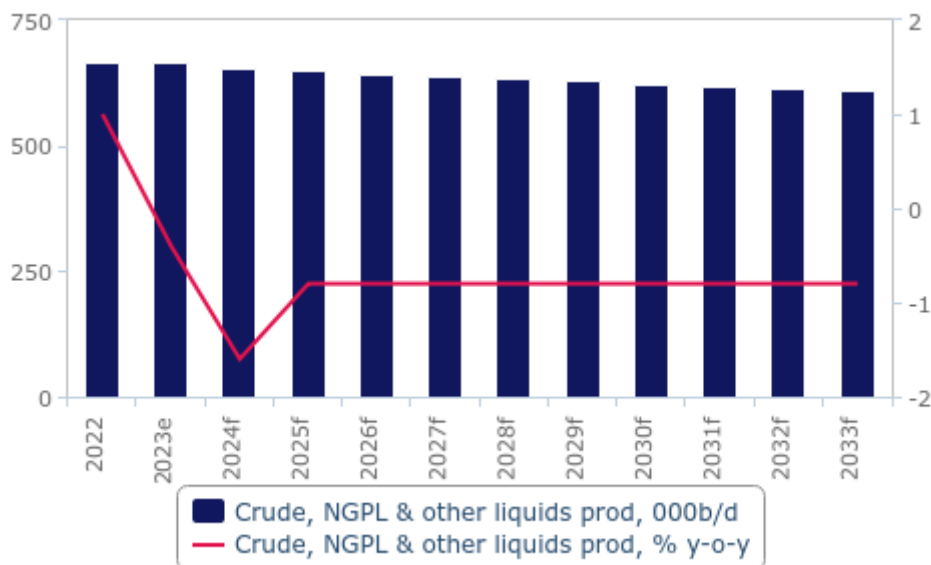
Egypt will struggle to increase crude oil output with limited major new oil prospects. The majority of Egypt's below-ground hydrocarbon potential has proven to be gas and a significant proportion of new liquids production is likely to come from condensate output from major new gas projects, of which several large discoveries reached first production back in 2017. Given that the majority of Egypt's domestic needs require increasing natural gas production, we expect a greater focus on gas developments. Rising volumes of imported crude appear inevitable, particularly as Egypt improves its downstream sector.

We see potential for modest oil growth in the Western Desert, where production in the onshore areas is relatively low-cost and has remained somewhat attractive due to its strong cash generating ability. However, relative to current production levels, new onshore projects are likely to only have a marginal impact, particularly as the onshore plays are often gaseous in nature.

On October 31 2021, the Egyptian parliament approved a series of amendments to the counterterrorism law No. 94 of 2015, the securing and protection of public and vital facilities law No. 136 of 2014 and the penal code. The legal amendments allow the president to impose curfews, evacuate areas and issue prison sentences to people who defy curfew or evacuation orders, among other powers. They also give the military the power to refer civilians accused of trespassing on or damaging major infrastructure facilities such as gas lines, oil fields, railways and roads to military court and restrict research on the military, such as studies, statistics, opinion polls or gathering data. The legislation poses some downside risk to relations with the US and foreign investor sentiment.

Oil Production Set To Decline Gradually

Egypt - Oil Production Forecast (2022-2033)



e/f = BMI estimate/forecast. Source: JODI, EIA, BMI

Oil Production (Egypt 2022-2027)

Indicator	2022	2023e	2024f	2025f	2026f	2027f
Crude, NGPL & other liquids prod, 000b/d	667.5	664.7	653.8	648.6	643.6	638.6
Crude, NGPL & other liquids prod, % y-o-y	1.0	-0.4	-1.6	-0.8	-0.8	-0.8

e/f = BMI estimate/forecast. Source: EIA, BMI, JODI

Oil Production (Egypt 2028-2033)

Indicator	2028f	2029f	2030f	2031f	2032f	2033f
Crude, NGPL & other liquids prod, 000b/d	633.6	628.7	623.8	619.1	614.3	609.6
Crude, NGPL & other liquids prod, % y-o-y	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8

f = BMI forecast. Source: EIA, BMI

Upstream Gas Production

Key View: Following on from a decline in Egyptian gas production in 2023 as a result of significant water infiltration issue at the Zohr field, we forecast continual declines in Egyptian gas production from 2024 onwards. Upside risk remains from additional drilling at the Zohr field planned for H2 2024, though this is likely to slow declines rather than reverse them. Over the long term, our bearish outlook on Egypt's gas production is supported by a lack of recent discoveries, which are required to overcome declining output at the country's maturing fields.

Latest Updates

- We forecast continual declines in Egyptian gas production from 2024 onwards, with an expected decline of 4.2% y-o-y in 2024, to reach 56.8bcm. This follows a substantial production drop that was experienced in 2023 (9.0%). This drop was primarily due to water infiltration problems at the Zohr mega field.
- In the months of January-April 2024, gas production in Egypt was down by 13.8% (17.7bcm), compared to the same period in 2023 (20.5bcm).
- In an effort to mitigate the declining output at Zohr, plans have been set in motion to drill multiple new wells at the field over the course of 2024 and 2025. This will aid the partial rebound of gas production in Egypt in the near term. Eni plans to invest approximately USD160mn in H2 2024 to drill two new wells in the Zohr field. The Zohr field, the largest gas field in the Mediterranean, has averaged production of 2bn cubic feet a day of gas (equivalent to 20.7bcm a year), and 3,700b/d of condensate over the last six months, representing 35.0% of Egypt's gas production.
- Given this investment, we expect that 2024 as a whole will see lower declines than exhibited in Q1 2024.
- In February 2024, a USD1.5bn gas joint venture (JV) between BP and Abu Dhabi National Oil Company in Egypt was announced, targeting gas developments in Egypt. The JV will initially involve BP's interests in six Egyptian concessions, as Egypt aims to become a significant regional liquified natural gas (LNG) exporter.
- Burullus Gas Company has awarded a contract to Longitude Engineering for detailed design and engineering services for the Phase-X subsea development of the West Delta Deep Marine (WDDM) concession at the Burullus gas field, located about 90km offshore Egypt in the Mediterranean Sea. The Phase-X project aims to bring three additional subsea wells into production, adding to the 70 wells already active to support domestic gas supply and the Egyptian LNG plant.
- In April 2024, Shell Egypt and its partners agreed to initiate phase 11 of the WDDM concession's development, involving the drilling of three development wells with the Scaraboe 9 rig. This follows the commencement of the phase ten project in 2023, with drilling starting in March 2024, and represents a continuation of Shell's efforts to enhance gas supplies to Egypt's energy system. The WDDM concession, which forms part of the extensive Burullus gas field, lies 90km offshore in the northwest Nile Delta and includes 17 gas fields at depths of 300m to 1,200m, while Shell also reported a new gas discovery at the North East El-Amriya block in November 2023.
- In March 2024, Chevron announced it is preparing to start drilling at the Narges 2 field in Egypt's Mediterranean territory by Q4 2024 in the Narges field, which holds an estimated 2.5tcf of natural gas and is set to begin production in the first half of 2025. Initial daily outputs are expected to be around 17mcm, potentially increasing to 28.3mcm within two years. Chevron has committed approximately USD3bn to the development of the field, indicating a strong investment in Egypt's energy sector and the project's potential.
- In late October 2023, Wintershall Dea, along with partners Cheiron Energy, INA and the Egyptian Gas Holding Company (EGAS), commenced gas production at the ED2-X well at the East Damanhur block, situated in the onshore Nile Delta region. Discovered in January 2023, the well's proximity to existing infrastructure at Disouq facilitated a swift tie-back, leading to a production start of around 10mcf/d.
- We estimate that Egypt's gas production in 2023 declined by 11.5% y-o-y, with continued water infiltration issues at the country's mega Zohr field continuing to weigh heavily on the country's total gas output. JODI data indicate that the country's total gas production in Q2 2023 declined to the lowest level since Q120.
- According to media reports, gas output at Egypt's mega Zohr field in the year-to-date has fallen by approximately one-third

below nameplate capacity due to ongoing water infiltration issues. Field operator Eni has reportedly embarked on a well drilling campaign within the field so as to stem declining output. As of June 2023, no updates have been provided regarding whether the issues at the field have been overcome.

- In March 2023, Energean confirmed that first gas had been attained from its North El Amriya and North Idku offshore gas projects in Egypt. Gas production began at the NEA 6 well, with three additional wells anticipated to begin production in 2023. The project possesses an estimated 39mn boe of 2P reserves, of which 88.0% is gas. The project is expected to reach peak gas production of 1.1bcm/y by 2024. Egypt's natural gas production for the month of January 2023 came in at 5.47bcm, which is 2.0% below the 2022 monthly average production of 5.63bcm.
- In full year results for 2022, Eni's gas production in Egypt declined by 4.2% y-o-y, falling to 40mcm/d of production from 41.8mcm/d in 2021.
- We continue to remain bearish on Egypt's long-term gas production, largely as a result of a lack of investment in the country's maturing fields. Egypt's Minister of Petroleum Tark El-Molla told industry leaders that the country's major gas fields are experiencing a depletion rate in the region of 10%-15%.
- We note upside risk to this long-term forecast due to recent discoveries, which have proven the ongoing potential to find significant new gas reserves in Egypt. Most notable is Chevron's discovery of up to 99bcm of natural gas offshore in the eastern Mediterranean in December 2022.
- The latest 2022 licencing round in which a mix of 12 offshore and onshore blocks were offered in December 2022 poses upside risk to our long-term forecasts. As has been the case recently, interest is like to remain strong, especially in light of Chevron's recent discovery which highlighted the potential rewards that are still available to investors in Egypt.
- In August 2022, Eni CEO Claudio Descalzi affirmed in a meeting with Egyptian President Fattah El-Sisi the company's mission to boost natural gas and LNG production.
- Capricorn Energy - a new player on the Egyptian upstream market - has announced a robust increase in capital expenditure (capex) spending and production guidance from its assets in Egypt. The company entered the Egyptian oil and gas market in 2021, as it acquired Shell's assets in the Western Desert, onshore Egypt. The 2021 capex on Egyptian assets lingered at USD15.4mn and production averaged at 36,400boe/d. In 2022, the company planned to spend USD35mn on exploration and USD90mn-USD110mn on the development and production of its assets in Egypt. The production is expected to increase to 40,000boe/d in 2022.
- Eni and EGAS have agreed to maximise gas production in Egypt to allow for more LNG imports to Europe. The two companies have signed a framework agreement to promote Egypt's LNG gas exports to Europe, specifically Italy, to aid in energy diversification. Both companies will work together to identify opportunities to maximise short-term gas production and Eni will optimise its exploration campaigns across Egypt. The deal, combined with an earlier one signed on the reopening of the Damietta LNG facility, will provide for overall volumes of 3bcm of LNG to Italy in 2022.
- Improved contractual terms of a number of clauses, including cost recovery and exploration/development terms in upstream contracts of Egypt's key upstream producer APA Corporation (a holding company of Apache) and Sinopec JV, are set to support higher investment, intensified drilling and elevated production in the near term, according to statements from two companies. In late December 2021, APA Corporation announced that the new production sharing contracts had been ratified by the Egyptian government. As near-term impacts of the new contracts, APA/Sinopec planned to double average drilling rig count over 2022 compared with 2021 and increase upstream output by 13%-15%. Also in late 2021, upstream producer Pharos announced the signing of an amendment to the El Fayum Concession Agreement, which further improved the cost recovery clause.

Structural Trends

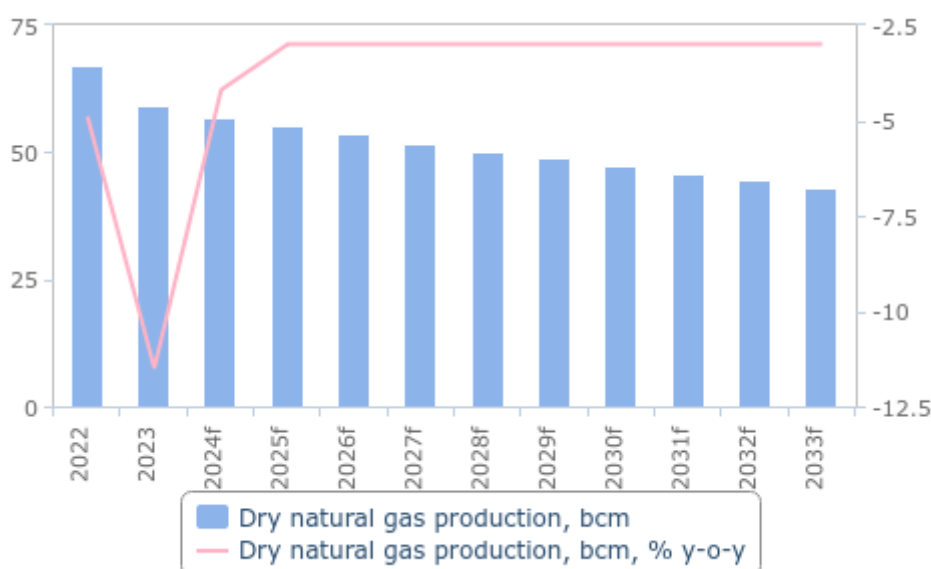
We forecast continual declines in Egyptian gas production from 2024 onwards, with an expected decline of 4.2% y-o-y in 2024, to reach 56.8bcm. This follows a substantial production drop that was experienced in 2023 (11.5%). This drop was primarily due to water infiltration problems at the Zohr mega field. In the months of January-April 2024, gas production in Egypt was down by 13.8% (17.7bcm), compared to the same period in 2023 (20.5bcm). According to media reports, gas output at Egypt's mega Zohr field in the year to date has fallen by around one-third below nameplate capacity due to ongoing water infiltration issues. Field operator Eni has reportedly embarked on a well-drilling campaign within the field so as to stem declining output. In H2 2024, Eni plans to

invest approximately USD160mn to drill two new wells.

Over the long term, we forecast a gradual decline in output, with an average 3.0% y-o-y decline from 2025-2033. We maintain this bearish position due to the lack of significant investments that are required to improve output in Egypt's maturing fields, in which the major fields are estimated to be depleting at a rate of 10%-15%. While exploration drilling levels remain low by historical standards, there are upside risks to the forecast arising from the 2022 licencing round, for which we expect interest to remain strong. Chevron's discovery of up to 99bcm of gas in December 2022 has proven the rich rewards that are still available to investors in the country. Moreover, such discoveries will be crucial in order for Egypt to counteract the aforementioned maturing key fields in the country.

Output Heads For Decline Despite Limited Rejuvenation Efforts

Egypt - Gas Production Forecast (2022-2033)



f = BMI forecast. Source: National sources, BMI

Further Upside From Zohr

Eni's discovery and successful five-well appraisal programme of the Zohr field adds considerable upside to the long-term potential gas output. The 840bcm gas reserve estimate for the field is thought to be somewhat conservative.

The Zohr development has first priority of all gas projects in Egypt and will be fast tracked after a final investment decision on Phase I was made in February 2016. A number of wells will be tied back to existing infrastructure in the shallower water of the Nile Delta, though existing facilities would only allow for limited production.

Eni has sold 50.0% of the Zohr gas field for a total of around USD2.9bn. A 30.0% share was acquired by Rosneft, with BP purchasing 10% and most recently, Mubadala Petroleum also acquiring 10.0%. As stipulated by Eni, all companies have the option of increasing their share by an additional 5.0%.

Given the size of the field, new facilities will need to be built for the field in order to benefit from the full production potential. A larger scale phase two (which could raise production above the 27bcm level) is plausible within our forecast period.

Successful 2021 Licencing Round Poses Upside Risk

The successful 2021 licencing round, coupled with sustained interest from majors in Egyptian assets in 2022, constitute a growing upside risk to our gas production forecast. Egypt's 2021 licencing round announced successful results in early January 2022 - an encouraging result given the relatively challenging exploration environment since 2020. Seven international firms proffered USD23.7mn in signature bonuses for eight blocks out of 24 offered across the country, both offshore and onshore. Eni was awarded five exploration licences by the Egyptian Ministry of Petroleum for successful participation in the 2021 Licencing Round. Eni is set to be operator of four of the licences.

In June 2022, BP was awarded exploration rights to the King Mariout offshore concession, located 20km west of the BP-operated Raven field in the western Mediterranean. Chevron has announced its plans to drill the first exploration well in the Narges Block north of the Sinai Peninsula in September 2022.

Unconventional Gas

In H1 2016, Apache and Shell completed two horizontal wells in the Apollonian tight gas formation in the Western Desert. The three-well pilot programme on the Apollonian field in the Western Desert will cost around USD30mn-USD40mn and could support a 30-well development over the next two to three years. The project was supported through the negotiation of new gas prices. The companies will receive USD4.6/mn BTU for gas from the formation, up from USD2.6/mn BTU. We do not believe that shale output will have a significant impact over the next five years, but the results will give a greater indication of Egypt's unconventional potential and will direct plans for a larger-scale development.

Shell, Apache and new independent Apex Energy have all successfully bid on new licence blocks in the Western Desert, where they will commit a total of USD154mn to exploration. While any new discoveries and production brought online within the desert are likely to be small, particularly in comparison with offshore projects, the area could provide incremental increases in gas production in the future.

Smaller Upside Onshore

SDX Energy commenced drilling at its South Disouq high impact exploratory prospect in Q2 2017. The company has since confirmed the size of a new gas discovery, in line with its expectations, with an independent consultant assigning just over 47bn cubic feet of contingent resources. The gas play is thought to be part of the wider Abu-Madi Baltim trend in the Nile Delta region. The company will now look to develop an early production system for the discovery. Onshore operating costs remain very competitive and we expect ongoing interest in smaller gas plays through our forecast period.

Gas Production (Egypt 2022-2027)

Indicator	2022	2023	2024f	2025f	2026f	2027f
Dry natural gas production, bcm	67.0	59.3	56.8	55.1	53.5	51.9
Dry natural gas production, bcm, % y-o-y	-4.9	-11.5	-4.2	-3.0	-3.0	-3.0
Dry natural gas production, % of domestic consumption	111.5	99.7	96.5	91.8	87.3	83.0

f = BMI forecast. Source: EIA, BMI

Gas Production (Egypt 2028-2033)

Indicator	2028f	2029f	2030f	2031f	2032f	2033f
Dry natural gas production, bcm	50.3	48.8	47.3	45.9	44.5	43.2
Dry natural gas production, bcm, % y-o-y	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Dry natural gas production, % of domestic consumption	78.9	75.1	71.4	67.9	64.6	61.4

f = BMI forecast. Source: EIA, BMI

Refining

Key View: We forecast Egypt's refining output to continue to decline in 2024 before returning to growth in 2025, reflecting the completion of modernisation works at the Assiut refinery by Q4 2023. The modernisation programme is anticipated to drive annual increases in output of 2.0% over our forecast period.

Latest Updates

- We forecast that Egypt's annual refining output in 2024 will fall by 3.0% y-o-y, despite the imminent completion of expansion work at the MIDOR refinery, which will add a new 60,000 b/d crude distillation unit, thereby increasing the refinery's total capacity to 160,000 b/d. In July 2023, Egypt's Petroleum Minister inaugurated the Phase III expansion of the project and announced that trial operations were due to begin 'imminently'.
- Declining crude production in 2024 (-2.0%) will weigh on refinery throughput. This is evident from JODI data from Q1 2024, which shows that total refined fuel production was down by 7.0% in 2024 compared to 2023.
- TechnipEnergies, the company that is responsible for the modernisation and expansion works at the MIDOR refinery, announced that construction work would be finished in the latter half of 2023. The beginning of production at the refinery's first utility unit was set for Q3 2023. No further concrete updates have been given as of Q3 2024. The expansion work will increase the refinery's capacity from 100,000b/d to 160,000b/d. It will also include a new 44,000b/d diesel hydrotreater and 60,000b/d vacuum distillation unit.
- In January 2023, Egypt's Petroleum Minister Tarek El Molla provided an update regarding the modernisation programme for the Assiut refinery by stating that it would be completed by the end of 2024.
- Sub-optimal utilisation rates in Egypt's refining industry, averaging roughly 70% over the last five years, are a significant barrier to higher refining output.
- For the remainder of our forecast period between 2024 and 2033, we see Egypt's production of refined petroleum products increasing steadily at a year-on-year average rate of 2.0%, reaching just over 613,100b/d by 2033.
- We expect that diesel and jet fuel production growth will outperform the wider fuels basket over the medium term, boosted by the MIDOR refinery.
- The timely and successful completion of refinery upgrade programmes in Egypt will be crucial to alleviating the fiscal burden of fuel imports on the government's budget deficit. Similarly, ongoing fuel subsidy reform will be needed in order to ensure further investment in the downstream.

Structural Trends

We forecast Egypt's refined fuel production to decline by 3.0% y-o-y in 2024 to reach 513,000b/d. Despite the completion of modernisation and expansion works at the MIDOR refinery in 2024, which will see the refinery's capacity increase from 100,000b/d to 160,000b/d, output is still expected to fall owing to lower throughput from falling crude production.

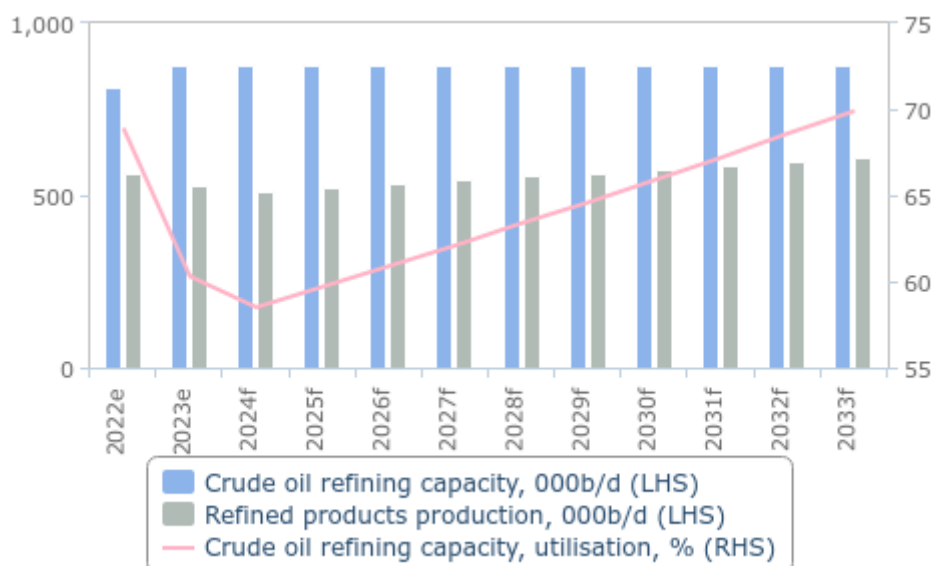
The modernisation at the MIDOR refinery entails a new 44,000b/d diesel hydrotreater and 60,000b/d vacuum distillation unit, with the refinery due to exclusively produce Euro 5 standard fuel. Once expansion work is complete, this will see Egypt's total refining capacity increase to 877,000b/d. We forecast it to stay at this level for the remainder of the forecast period.

In September 2020, Egyptian President Al-Sisi inaugurated the Mostorod refinery. Mostorod was brought online in November 2019, having initially been slated to come online in 2017. The refinery adds 85,000b/d to Egypt's total refining capacity.

The timely and successful completion of refinery upgrade programmes in Egypt will be crucial to alleviating the fiscal burden of fuel imports on the government's budget deficit. Similarly, ongoing fuel subsidy reform will be needed to ensure further investment in the downstream.

Refining Output Set For Minor Growth In 2024

Egypt - Refining Capacity Forecast (2022-2033)



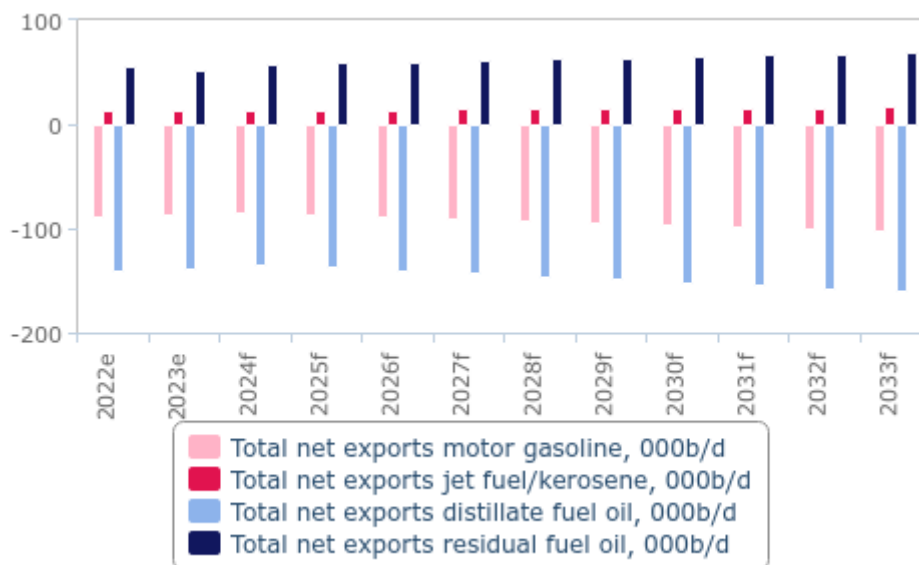
e/f = BMI estimate/forecast. Source: National sources, BMI

Current Developments

MIDOR Refinery Upgrade: We believe that the modernisation and expansion works at the MIDOR refinery were completed at the end of 2023. However, no status update was available at the time of writing. This will see the refinery's capacity increase from 100,000b/d to 160,000b/d. The modernisation work also entails a new 44,000b/d diesel hydrotreater and 60,000b/d vacuum distillation unit, with the refinery due to exclusively produce Euro 5 standard fuel. The MIDOR expansion is estimated to have cost USD2.4bn, 40.0% of which was state funded, with the remainder of the finance coming from banks. Output at the refinery was heavily affected throughout 2022 due to the necessary temporary closures of several production units to enable expansion work to take place. We have factored in this expansion into our 2024 forecast.

Rising Import Trend To Reverse In Some Fuels

Egypt - Refined Fuel Net Export By Type (2022-2033)



e/f = BMI estimate/forecast. Source: EIA, BMI

Assiut Modernisation

In January 2023, Egypt's Petroleum Minister Tarek El Molla provided an update regarding the modernisation programme for the Assiut refinery, stating that it will now be completed by the end of 2024. The modernisation work is estimated to cost in the region of USD2.5bn. As with the other projects, the Assiut refinery modernisation programme will centre on maximising production of diesel fuel through processing residuals. This will support growing demand in the more rural southern region of the country.

Despite the investment in existing downstream assets, we see few opportunities for new-build refineries, such as the proposed 500,000b/d oil complex in Suez, because of competition from new mega refineries in the Middle East and Asia. However, additional modernisation programmes may be introduced at Egypt's other refineries. For example, a new naphtha processing unit is being targeted for the Al-Mex refinery to double yields of high octane gasoline.

Over the long term, fuel subsidy reform will be key to attracting foreign investment to the sector. Policy slippage with subsidy reform poses a major threat, given the government's decision to delay subsidy removal. High inflation has been the main factor behind the delay, alongside significant social tension generated by revised fuel prices, and we expect investment in the refining sector will continue to be government-led over our 10-year forecast period to 2033.

Refining Capacity And Refined Products Production (Egypt 2022-2027)

Indicator	2022e	2023e	2024f	2025f	2026f	2027f
Crude oil refining capacity, 000b/d	816.5	876.5	876.5	876.5	876.5	876.5
Crude oil refining capacity, % y-o-y	0.0	7.3	0.0	0.0	0.0	0.0
Crude oil refining capacity, utilisation, %	68.9	60.3	58.5	59.7	60.9	62.1
Refined products production, 000b/d	563.0	528.9	513.0	523.3	533.8	544.5
Refined products production, % y-o-y	-4.1	-6.1	-3.0	2.0	2.0	2.0
Refined products production & ethanol, 000b/d	563.0	528.9	513.0	523.3	533.8	544.5
Refined products production & ethanol, % y-o-y	-4.1	-6.1	-3.0	2.0	2.0	2.0

e/f = BMI estimate/forecast. Source: EIA, BMI

Refining Capacity And Refined Products Production (Egypt 2028-2033)

Indicator	2028f	2029f	2030f	2031f	2032f	2033f
Crude oil refining capacity, 000b/d	876.5	876.5	876.5	876.5	876.5	876.5
Crude oil refining capacity, % y-o-y	0.0	0.0	0.0	0.0	0.0	0.0
Crude oil refining capacity, utilisation, %	63.4	64.6	65.9	67.2	68.6	69.9
Refined products production, 000b/d	555.3	566.4	577.8	589.3	601.1	613.1
Refined products production, % y-o-y	2.0	2.0	2.0	2.0	2.0	2.0
Refined products production & ethanol, 000b/d	555.3	566.4	577.8	589.3	601.1	613.1
Refined products production & ethanol, % y-o-y	2.0	2.0	2.0	2.0	2.0	2.0

f = BMI forecast. Source: EIA, BMI

Refined Fuels Consumption

Key View: *Egypt's demand for refined fuel will continue to contract to a minor extent in the near term, with consumption weighed down by recent fuel price hikes. Over the long term, the outlook for fuel demand in the country is much more bullish. Bright demographic prospects and a positive outlook for vehicle sales are likely to support fuel consumption in the market over our forecast period.*

Latest Updates

- We forecast that Egypt's total fuel demand will continue declining to a minor extent in the near term (at a rate of around 1% y-o-y). Recent hikes in both diesel and gasoline prices are set to continue weighing on fuel demand, as was the case in 2023. Furthermore, continued inflationary pressures, which our Country Risk team forecasts will remain elevated at 29.0% in 2024, will also continue dragging on demand.
- High frequency data indicate divergent consumption trends for the three most highly consumed fuels in Egypt in 2023. Diesel demand in the country slightly declined by 1.4% y-o-y from January 2023-October 2023. Gasoline demand saw an uptick of 2.5% y-o-y growth across the same period. Demand for liquified petroleum gas (LPG), the third most highly consumed fuel in the country, remained broadly flat.
- In May 2023, diesel prices in Egypt were hiked from EGP7.25 to EGP8.25 by Egypt's fuel-pricing committee as part of the government's attempts to align prices with global standards. As is the case with the recent hike in gasoline prices, we expect that the hike in diesel prices will weigh on Egypt's diesel demand in the near term.
- In March 2023, Egypt's fuel-pricing committee increased the price of gasoline by around 10%, but left the price of diesel unchanged. This forms part of the Egyptian government's implementation of the recently agreed IMF programme, which necessitated the removal of fuel subsidies to bring prices more in line with global standards. As a result, the price of 80-octane petrol has increased to EGP8.75, 92-Octane petrol to EGP10.25 and 95-octane petrol to EGP11.50.
- From 2025-2033, we forecast that refined fuel consumption in Egypt will average 2.0% y-o-y growth, increasing to around 996,200b/d of consumption by 2033. Growth in fuel demand will be supported by a very bullish outlook for Egypt's future vehicle sales. Our Autos team expects annual vehicle sales to increase from about 175,000 vehicles in 2023 to 290,000 vehicles by 2033.

Structural Trends

We estimate that Egypt's refined fuel consumption increased by 30.5% y-o-y in 2022 to 850,500b/d, as the country's domestic demand rebounded strongly from declines caused by the Covid-related lockdowns and stagnation in economic activity. For 2023, we see a 1.0% y-o-y decline in consumption, which will result in the country's refined fuel demand falling to 833,600b/d. We have made this revision on the back of an almost 10% increase in domestic gasoline prices that was announced in March 2023, which was soon followed by a significant hike in diesel prices in May 2023. We expect these price increases to keep domestic gasoline and diesel demand subdued in the near term.

In March 2023, Egypt's fuel-pricing committee increased the price of gasoline by around 10%. This formed part of the Egyptian government's implementation of the recently agreed IMF programme, which necessitated the removal of fuel subsidies to bring prices more in line with global standards. As a result, the price of 80-octane petrol has increased to EGP8.8, 92-Octane petrol to EGP10.3 and 95-octane petrol to EGP11.5. In 2022, gasoline consumption accounted for just under one-quarter of Egypt's total refined fuel consumption. We believe the 10.0% increase in gasoline prices in March 2023, amid rampant inflation, which our Country Risk analysts expect to average 35.4% in 2023, will lead to a notable degree of gasoline demand destruction in 2024.

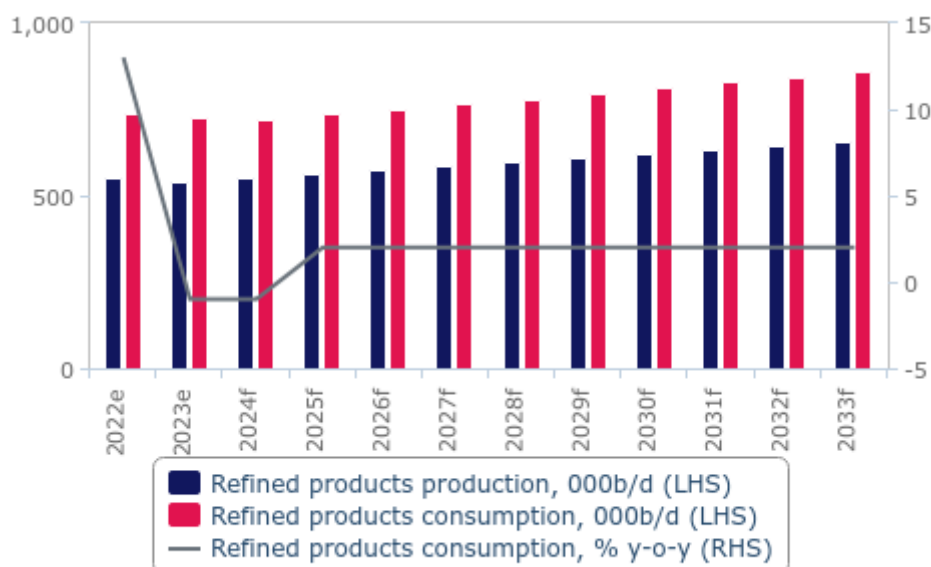
Fuel subsidies have been a major bone of contention between the IMF and preceding governments. The El-Sisi government moved quickly in this respect in order to secure IMF support by increasing the price of gasoline and diesel in July 2014. Fuel prices remain subsidised and are well below international market levels despite the recent increase in diesel prices in July 2022 and gasoline prices in Q1 2023. As of March 2023, the domestic price of diesel in Egypt were estimated to still be around 50% lower than global prices. Gasoline was estimated to be about 40% lower. In 2022, the Egyptian government announced that fuel subsidies were costing the government roughly EGP55bn per year.

Over the long term, price reforms will incrementally move prices closer to international levels, thereby subduing demand growth. Despite increasing fuel prices, the long-term view of Egypt's fuel consumption remains positive, with an expanding vehicle fleet and gradually improving fiscal position supporting positive year-on-year growth.

We expect that the strongest growth will be diesel and gasoline consumption and to a lesser extent LPG, which will be increasingly sought after as transport fuels. Fuel prices in Egypt remain well below average international prices. Modernisation and expansion programmes at several of the country's refineries will further boost the output of higher quality fuels, which may lead to a pickup in domestic consumption levels.

Hikes In Domestic Fuel Prices To Continue Weighing On Demand

Egypt - Refined Products Production & Consumption Forecast (2022-2033)



e/f = BMI estimate/forecast. Source: National sources, BMI

Refined Products Consumption (Egypt 2022-2027)

Indicator	2022	2023e	2024f	2025f	2026f	2027f
Refined products consumption, 000b/d	850.5	842.0	833.6	850.3	867.3	884.6
Refined products consumption, % y-o-y	30.5	-1.0	-1.0	2.0	2.0	2.0

e/f = BMI estimate/forecast. Source: EIA, BMI

Refined Products Consumption (Egypt 2028-2033)

Indicator	2028f	2029f	2030f	2031f	2032f	2033f
Refined products consumption, 000b/d	902.3	920.4	938.8	957.5	976.7	996.2
Refined products consumption, % y-o-y	2.0	2.0	2.0	2.0	2.0	2.0

f = BMI forecast. Source: EIA, BMI

Gas Consumption

Key View: Egypt's gas demand will continue to marginally decline in the near term as inflationary pressures in the country continues to weigh on gas demand. We note downside risk to our forecast in the event that the Egyptian government decides to prolong its gas-rationing strategy into H2 2024 for the power sector to free up more gas for the export market.

Latest Updates

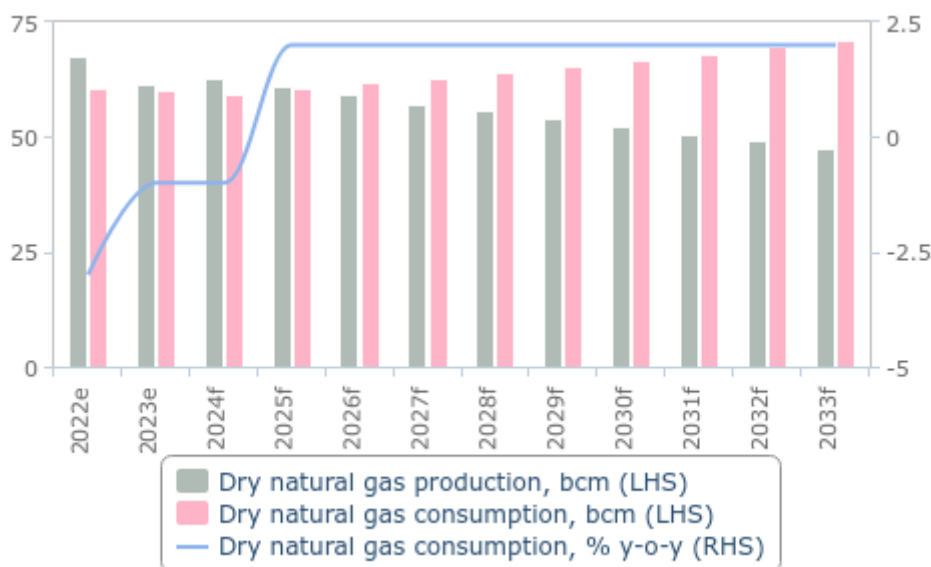
- We expect Egypt's gas consumption to decline by 1.0% y-o-y in 2024, with demand being weighed on by continued inflationary pressures, which our Country Risk team expects to remain elevated at 27.7% in 2024. The possibility of an extension to the government's strategy of rationing electricity in the power sector poses downside risk to our forecast. The Egyptian government announced in November 2023 that it would extend the national power cuts into 2024, with no end date. Without a drastic boost in gas imports, this is likely to continue into H2 2024 to support domestic gas supplies and free up gas for export as LNG.
- Our Country Risk team now expects the rationing strategy to continue, given its success. We note downside risks to gas consumption in 2024 in the event that gas rationing efforts in electricity generation continue for a longer period than anticipated.
- Egypt is in negotiations with Norway's Höegh LNG for the rental of a regasification unit. It is set to arrive by the upcoming summer for an 18-month charter to help meet gas demand, according to an official from the Ministry of Petroleum and Mineral Resources. Earlier discussions were held about renting a unit from BW Energy for Ain Sokhna Port. Meanwhile, Israel is planning to increase its natural gas exports to Egypt by 300mc/f. In response to domestic needs, Egypt will suspend LNG exports to supply local power plants and has arranged to import at least one LNG shipment per month until July or August 2024, including a confirmed purchase for delivery in May 2023.
- During the summer of 2023, the Egyptian government introduced intermittent power cuts. Rising gas demand, driven by heatwave temperatures, strained the country's gas-dependent power grid. This was against a backdrop of heavy declines in domestic gas production. JODI data indicate that Egypt's monthly gas demand hit a record in July 2023 of 6.0bcm, while the country's gas production declined by almost 10% y-o-y in the first seven months of 2023.
- In August 2022, Egypt's Prime Minister Mostafa Madbouly announced plans to make up to 15% of savings in the amount of natural gas used in the nation's electricity generation to free up more gas for increased gas exports. This strategy was designed to address the continued foreign currency shortage.

Structural Trends

After an estimated decline of 1.0% y-o-y in 2023, we forecast that Egypt's natural gas consumption will decline by a further 1.0% y-o-y in 2024 to 59.4bcm of annual gas consumption. In Q4 2022, Egypt's Prime Minister Mostafa Madbouly outlined plans to ration gas usage in electricity generation by up to 15%. The government is rationing gas consumption in electricity generation to attain greater gas exports to address the continued foreign currency shortage crisis. No end date for this partial rationing has been announced. However, our Country Risk analysts expect it to continue until at least the end of 2023, given the success of the strategy thus far. Given that electricity generation accounted for roughly 60% of gas consumption in Egypt in recent years, we believe that rationing in this sector will weigh on overall gas consumption in 2024. We note further downside risks for gas consumption in 2024 in the event that this rationing strategy is pursued for longer than anticipated. Over the long term, we see Egypt's natural gas consumption returning to steady growth averaging 2.0% y-o-y growth from 2024 through to 2033.

Gas Consumption To Continue Declining In 2024

Egypt - Gas Production & Consumption Forecast (2022-2033)



e/f = BMI estimate/forecast. Source: EIA, BMI

Prospects for the removal of subsidies on household gas will impact gas consumption and incentivise more energy-efficient behaviour. This will create some downside risk to our forecast. We expect some level of natural gas subsidy reform through to around 2028. From July 2014, the price of natural gas supplied through the grid doubled. However, the grid in Egypt is not yet extensive and the highest increase will see residential and commercial users pay just USD1.8/mn BTU for the first 25.0cu m.

New Natural Gas Subsidies For Grid Connected Users

Residential And Commercial Users	Old Cost (EGP/c m)	New Cost (EGP/cu m)
Under 30cu m/month	1.00	1.75
30-60cu m/month	1.75	2.50
60-300cu m/month	2.25	3.00

Source: Egypt Ministry of Oil, BMI

Gas Consumption (Egypt 2022-2027)

Indicator	2022e	2023e	2024f	2025f	2026f	2027f
Dry natural gas consumption, bcm	60.6	60.0	59.4	60.6	61.8	63.0
Dry natural gas consumption, % y-o-y	-3.0	-1.0	-1.0	2.0	2.0	2.0

e/f = BMI estimate/forecast. Source: National sources, BMI

Gas Consumption (Egypt 2028-2033)

Indicator	2028f	2029f	2030f	2031f	2032f	2033f
Dry natural gas consumption, bcm	64.3	65.6	66.9	68.2	69.6	71.0
Dry natural gas consumption, % y-o-y	2.0	2.0	2.0	2.0	2.0	2.0

f = BMI forecast. Source: National sources, BMI

Oil Trade

Key View: Egypt's exports of crude oil are set to marginally rise in 2024 following lower refining output, though a reliance on imported fuels will keep Egypt's overall oil trade balance negative. Fuel imports are expected to increase from 313,100b/d in 2023 to 320,500b/d in 2024. This trend will continue into 2033, where fuel imports will reach 383,100b/d.

Latest Updates

- Egypt's exports of crude oil are set to marginally rise in 2024 from 135,740b/d in 2023 to 140,720b/d following lower refining output, though a reliance on imported fuels will keep Egypt's overall oil trade balance negative.
- We have maintain our our Brent crude price forecast for 2024 at USD85.0/bbl, while also revising, as deepening supply cuts from the OPEC+ exporting markets are set to continue supporting prices in the near term.
- In February 2024, Dragon Oil signed a commercial marketing agreement with the Egyptian General Petroleum Corporation to jointly export additional crude from the North Safa and Al-Wasl fields in the Gulf of Suez, as announced at EGYPS 2024.
- In March 2023, the Egyptian General Petroleum Corporation renewed a contract with the Iraqi government to enable the import of 2.0mn bbl of crude oil in June 2023 and a further 2.0mn bbl in August 2023.
- We expect that Egypt will become a net importer of crude oil by 2033, as growth in domestic refined fuel output is set to exceed growth in domestic oil production.

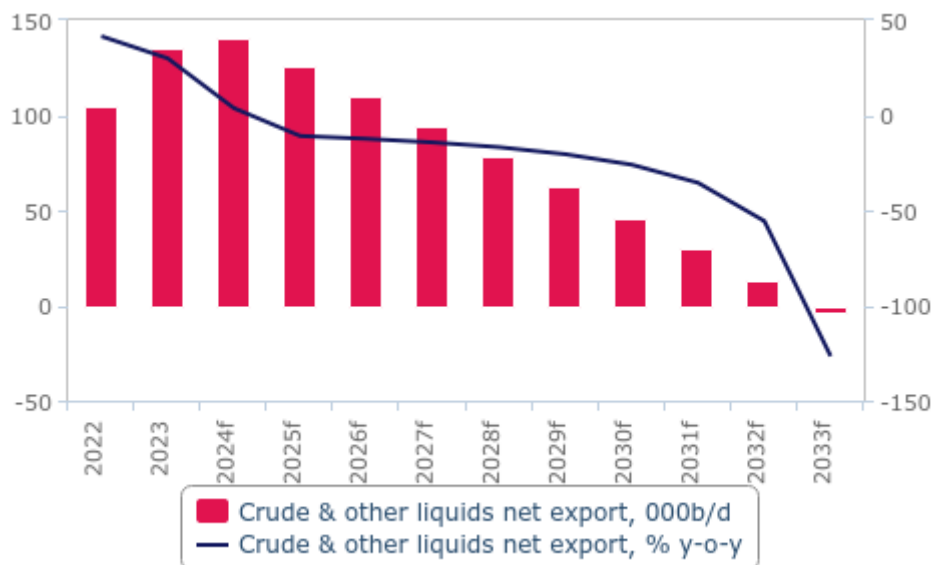
Crude Oil Trade Forecast

Structural Trends

We project Egypt's exports of crude oil declining from 2024 through to 2033, falling from around 135,740/d of exports in 2023 to becoming a net importer of 3,500b/d by 2033. Rising demand has outpaced production gains, leading to our expectation that Egypt will become a net importer by 2033.

Egypt Set To Become A Net Importer

Egypt - Crude Oil Net Exports Forecast (2022-2033)



Note: Negative implies imports; f = BMI forecast. Source: EIA, BMI

The largest export market for Egyptian crude is India and Greece, each accounting for about 28% of Egypt's crude oil exports in 2022. The third largest export destination for Egyptian crude is Italy, which accounted for 21.0% of exports in 2022.

Egypt imports the majority of its crude oil from the Gulf states, with Saudi Arabia being by far the largest supplier followed by Kuwait. Together, both markets accounted for more than 80% of Egypt's crude oil imports in 2021. Iraq and Morocco play a smaller role, together accounting for roughly 15% of Egypt's crude oil imports in 2021.

Saudi Arabia Dominates Egypt's Crude Oil Imports

Country	% share of Egypt's 2021 crude oil imports
Saudi Arabia	59.2
Kuwait	23.1
Iraq	8.4
Morocco	3.5
Other	5.8

Source: Trade Map, BMI

Crude Oil Net Exports (Egypt 2022-2027)

Indicator	2022	2023	2024f	2025f	2026f	2027f
Crude & other liquids net export, 000b/d	104.5	135.7	140.7	125.3	109.8	94.1
Crude & other liquids net export, % y-o-y	41.5	29.9	3.7	-10.9	-12.4	-14.3

f = BMI forecast. Source: EIA, BMI

Crude Oil Net Exports (Egypt 2028-2033)

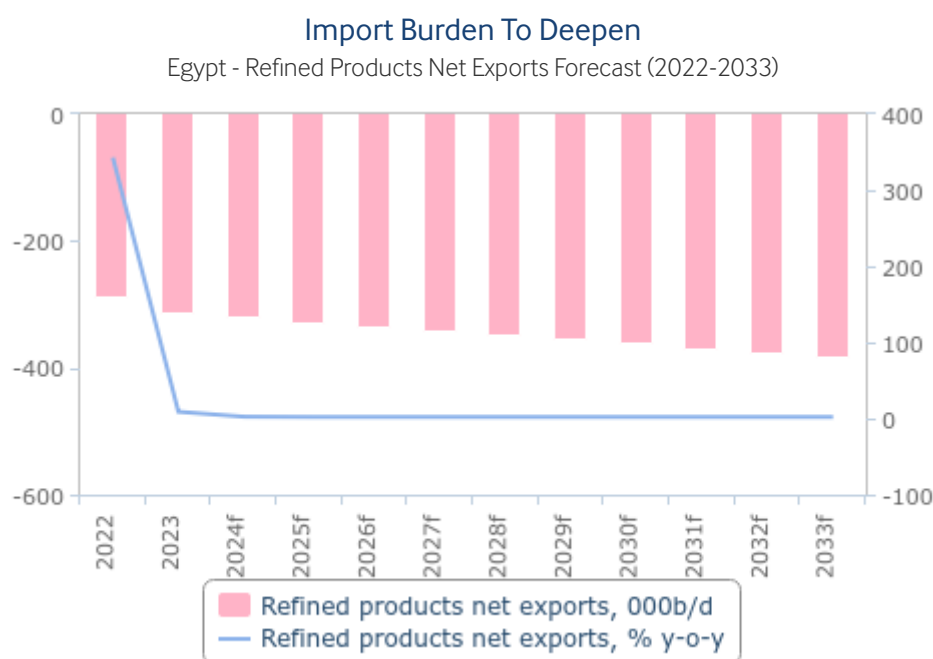
Indicator	2028f	2029f	2030f	2031f	2032f	2033f
Crude & other liquids net export, 000b/d	78.3	62.2	46.1	29.7	13.2	-3.5
Crude & other liquids net export, % y-o-y	-16.8	-20.5	-26.0	-35.5	-55.6	-126.6

f = BMI forecast. Source: EIA, BMI

Refined Fuels Trade Forecast

Structural Trends

Owing to the low complexity of Egypt's refining sector, the country has to import large volumes of refined products, particularly gasoline and diesel. High-end products, such as diesel, gasoline and jet fuel, are undersupplied domestically, while heavy-ends are in surplus. Upgrades at the Midor, Assuit and Mostorod refineries will improve domestic production of fuels - particularly diesel - over the forecast period. However, we expect refined fuels consumption in Egypt to outgrow domestic refined fuels production. Therefore, we predict that Egypt's net imports of refined fuels will gradually increase to roughly 383,100b/d by 2033.



Note: Negative implies imports; f = BMI forecast. Source: EIA, BMI

A reduction in fuel subsidies will curb import growth compared with previous years, even though demand grew robustly over the previous two years. Given policy slippage in future fuel subsidy reform, we forecast this level of consumption to continue at a healthy rate and imports to increase. Total fuel imports will be partially offset when improvements in the refining sector start to show, increasing domestic diesel and gasoline output. Despite these efforts, Egypt will remain a substantial net importer of refined products unless substantial further investment is committed to the downstream.

Refined Fuels Net Exports (Egypt 2022-2027)

Indicator	2022	2023	2024f	2025f	2026f	2027f
Refined products net exports, 000b/d	-287.5	-313.1	-320.5	-327.0	-333.5	-340.2
Refined products net exports, % y-o-y	342.9	8.9	2.4	2.0	2.0	2.0
Refined products net exports, USDbn	-12.7	-11.0	-11.5	-11.0	-10.6	-10.5

f = BMI forecast. Source: EIA, BMI

Refined Fuels Net Exports (Egypt 2028-2033)

Indicator	2028f	2029f	2030f	2031f	2032f	2033f
Refined products net exports, 000b/d	-347.0	-353.9	-361.0	-368.2	-375.6	-383.1
Refined products net exports, % y-o-y	2.0	2.0	2.0	2.0	2.0	2.0
Refined products net exports, USDbn	-10.9	-11.1	-11.4	-11.6	-11.8	-12.1

f = BMI forecast. Source: EIA, BMI

Gas Trade

Key View: In 2024, Egypt's annual liquefied natural gas (LNG) exports are set to remain significantly below the country's record high export volumes attained in 2022, driven by significant declines in the country's domestic gas production. Major downside risk to the market's near-term LNG exports could arise from the possibility of a major escalation in the Israel-Hamas conflict, which would further hamper pipelined gas exports from Israel to Egypt. These exports played an increasingly significant role in sustaining Egypt's LNG exports over 2023.

Latest Updates

- We forecast that Egypt will reach net exports of just 1.2bcm of liquefied natural gas (LNG) annually in 2024. This is a significant decline from the record-high 11.2bcm of LNG that the market exported in 2022. Egypt's LNG exports are set to be weighed down by a bleak near-term outlook for its domestic gas production, which is set to remain around 10% below production volumes attained in 2022, and the need for more gas imports to manage demand.
- Egypt plans to issue a tender for 15-20 cargoes of LNG to meet the high summer domestic demand in 2024 and maximise their supply of LNG exports to Europe, which has fluctuated as a result of the Israel-Hamas War. In Q1 2024, pipeline imports from Israel had declined from an average of 547mmcm a month in Q1 2023 to 509mmcm in Q1 2024.
- Egypt has been purchasing LNG to address an escalating energy crisis, with demands increasing globally and domestic production declining due to natural field depletion. The nation has not exported LNG since mid-March 2024 and plans to halt exports over the summer to prioritise domestic energy needs.
- Egypt is negotiating with Höegh LNG for a regasification unit rental, which is set arrive by summer. It is also discussing a five-year rental from BW Energy, signaling efforts to bolster gas imports amid suspended LNG exports and reduced Israeli natural gas imports during the summer months. The Egyptian Natural Gas Holding Company (EGAS) aims to import at least one LNG shipment monthly until late summer, with a purchase already set for May delivery.
- Following on from the significant disruptions and curtailments of the Israeli pipelined gas exports to Egypt during the course of October-November 2023 as a result of the outbreak of the Israel-Hamas CONFLICT, Bloomberg media has reported that pipeline flows returned to pre-war standards by December 2023, where they stood at 890mcm. Imports from Israel resumed once production at Israel's Tamar gas field resumed. The restoration of flow provides a major boost to Egypt's efforts to restart LNG exports (provided its domestic demand can first be met).
- The outbreak of the Israel-Hamas conflict in October 2023 dragged on Egypt's LNG exports, given the increasingly significant role of pipelined gas exports from Israel to Egypt in sustaining Egypt's LNG exports. As a result of the conflict, the Israeli government has decided to cease production at the country's major Tamar gas field, which has consequently resulted in a 20.0% decline in gas exports to Egypt over the October-November 2023 period, according to Bloomberg media reports.
- Although not the base scenario of our Country Risk analysts, the possibility of an escalation into a major regional conflict involving actors such as Hezbollah and Iran poses major downside risk to Egypt's LNG exports in the near term, as this would threaten a complete halt in Israeli pipelined gas exports to Egypt. In the event that this eventuality were to occur, Egypt's exports of LNG will remain severely depressed relative to the country's volumes of LNG exports prior to the war.
- Egypt and Jordan signed an energy cooperation agreement in June 2023, which has granted Egypt access to Jordan's Aqaba floating storage and regasification (FSRU) (5bcm/y). This agreement comes as Egypt's sole remaining LNG import facility (BW Singapore FSRU) departed in November 2023 following the expiry of its lease.
- Rising pipelined gas imports from Israel are helping to offset some of the strong declines seen in Egypt's domestic gas production in the year-to-date. Pipelined imports from Israel averaged 0.75bcm/month during January-April 2023, which is equivalent to almost a 50% y-o-y increase relative to the same period in 2022.
- In May 2023, the project partners behind Cyprus's Aphrodite gas field presented plans to the Cypriot government to link production from the field to production and processing facilities in Egypt via a subsea pipeline connection. The field is estimated to possess around 124bcm of gas, with first production being anticipated in 2027 at the earliest. This development poses upside risk to our long-term forecast for Egypt's LNG exports, as it raises the possibility of Egypt re-exporting imports from Cyprus as

LNG, as it has been doing with pipelined imports from Israel to full effect in the year to date in 2023.

- In May 2023, Israel's cabinet approved the construction of a second 65km gas pipeline that will increase Israel's pipeline export capacity to Egypt by 6bcm/y. The project will cost an estimated USD425mn,. To date, there has been no indication as to when construction of the pipeline will be complete.
- In June 2022, a tripartite agreement was reached between Egypt, Israel and the EU in which the two Middle Eastern countries agreed to work towards boosting natural gas exports to the EU. As part of the agreement, Israel stated its intent to increase its pipelined gas exports to Egypt, which Egypt would then liquefy and export as LNG to the EU. According to Egypt's Petroleum Minister Tarek El Molla, 80.0% of Egypt's total LNG exports were shipped to Europe in 2022, which is equivalent to around 9bcm.
- Eni and EGAS have agreed to maximise gas production in Egypt to allow for more LNG imports to Europe. The two companies have signed a framework agreement to promote Egypt's LNG gas exports to Europe, specifically Italy, to aid in energy diversification. Both companies will work together to identify opportunities to maximise short-term gas production and Eni will optimise its exploration campaigns across Egypt. The deal, combined with an earlier one signed on the reopening of the Damietta LNG facility, provided volumes of 3bcm of LNG to Italy in 2022.

Structural Trends

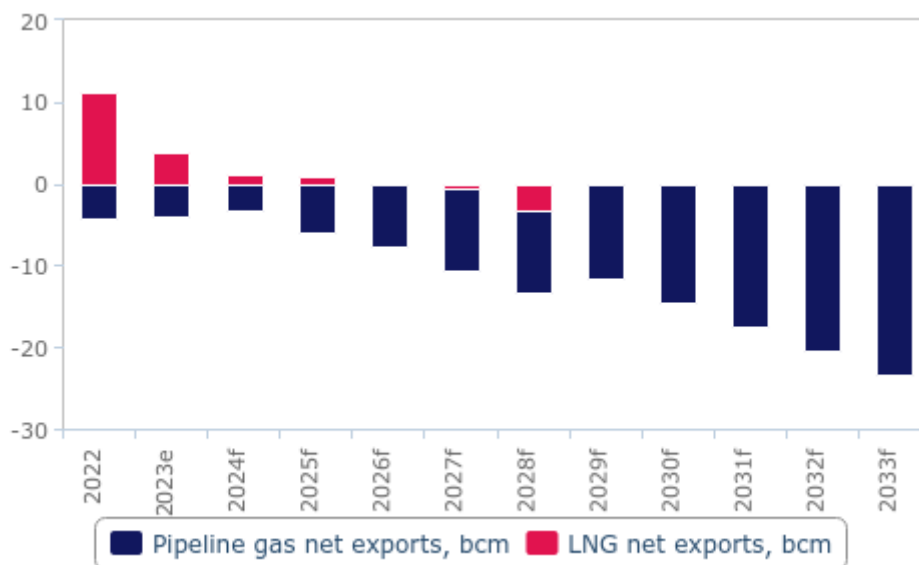
Egypt once again became a net exporter of natural gas in 2019. Since then, the country's LNG exports increased to a record high 11.2bcm of exports in 2022. We expect this to be a peak in the country's LNG exports over our forecast period, as we see annual exports declining significantly to 4.9bcm in 2024. Continued strong declines in domestic gas production are set to weigh on the country's LNG exports in the near term. We note downside risk to this forecast arising from the possibility of a major escalation of the Israel-Hamas conflict into a regional conflict (although not the base scenario of our Country Risk team), which in turn would risk a further curtailment of Israeli pipelined gas exports to Egypt. Across 2022-H1 2023, rising pipelined gas exports from Israel to Egypt played an increasingly significant role in sustaining Egypt's LNG export volumes, which have helped to partially offset declining gas production in Egypt.

Over the long term, we expect Egypt's LNG exports to continue declining, as we maintain a bearish outlook on the country's domestic gas production due to high depletion rates at the country's largest fields and ongoing technical issues at the country's mega Zohr field. The country's domestic gas demand is also set to continue growing, supported by a strong demographic outlook. This will limit the availability of gas for export. We expect Egypt to become a net importer of gas by 2026.

We note upside risk to this outlook. Firstly, plans are being developed to export gas via pipeline from Cyprus's 124bcm Aphrodite gas field to Egypt, although first gas is not expected until 2027 at the earliest. As has been the case with pipelined imports from Israel into Egypt, this holds the potential for Egypt to re-export some of this gas as LNG. However, quantities would be contingent upon the extent of growth in Egypt's domestic gas demand. Secondly, the near-term exploration schedule in Egypt is strong, with the government recently committing to a USD1.8bn exploration programme in July 2023. The results for the country's latest licensing round have been announced. Given the spate of discoveries made in the Eastern Mediterranean in 2022, this holds the potential for another significant discovery of gas in Egypt, which is an essential pre-requisite if the country is to overcome future declines in its output.

Bearish Outlook For Egypt LNG

Egypt - Gas Net Exports (2022-2033)



e/f = BMI estimate/forecast. Source: JODI, BMI

In June 2022, a tripartite agreement was reached between Egypt, Israel and the EU in which the two Middle Eastern countries agreed to work towards boosting natural gas exports to the EU. As part of the agreement, Israel stated its intent to increase its pipelined gas exports to Egypt, which Egypt would then liquefy and export as LNG to the EU. According to Egypt's Petroleum Minister Tarek El Molla, 80.0% of Egypt's total LNG exports were shipped to Europe in 2022. This equivalent to around 9bcm.

Gas Net Exports (Egypt 2022-2027)

Indicator	2022	2023e	2024f	2025f	2026f	2027f
Dry natural gas net exports, bcm	6.9	-0.2	-2.1	-4.9	-7.8	-10.6
Dry natural gas net exports, % y-o-y	-13.3	-102.4	1,163.7	140.0	57.8	36.3
Dry natural gas net exports, USDbn	3.5	-0.1	-0.9	-2.0	-3.1	-4.2
Pipeline gas net exports, bcm	-4.3	-4.0	-3.3	-5.9	-7.8	-9.9
Pipeline gas net exports, % y-o-y	126.3	-7.0	-17.5	78.8	32.2	26.9
Pipeline gas net exports, % of total	-62.2	2,454.0	160.2	119.4	100.0	93.2
LNG net exports, bcm	11.2	3.8	1.2	1.0	0.0	-0.7
LNG net exports, % y-o-y	13.6	-65.8	-67.7	-22.8	-99.8	-35,030.9
LNG net exports, % of total gas exports	162.2	-2,354.0	-60.2	-19.4	0.0	6.8

e/f = BMI estimate/forecast. Source: JODI, EIA, BMI

Gas Net Exports (Egypt 2028-2033)

Indicator	2028f	2029f	2030f	2031f	2032f	2033f
Dry natural gas net exports, bcm	-13.4	-16.2	-19.0	-21.7	-24.5	-27.2
Dry natural gas net exports, % y-o-y	26.4	20.7	17.0	14.5	12.6	11.1
Dry natural gas net exports, USDbn	-5.3	-6.5	-7.6	-8.6	-9.7	-10.8
Pipeline gas net exports, bcm	-10.0	-11.7	-14.6	-17.5	-20.4	-23.3
Pipeline gas net exports, % y-o-y	1.0	16.7	25.1	19.9	16.5	14.2
Pipeline gas net exports, % of total	74.4	72.0	76.9	80.5	83.4	85.7
LNG net exports, bcm	-3.4	0.0	0.0	0.0	0.0	0.0
LNG net exports, % y-o-y	371.9	-100.0				
LNG net exports, % of total gas exports	25.6	0.0	0.0	0.0	0.0	0.0

f = BMI forecast. Source: EIA, BMI

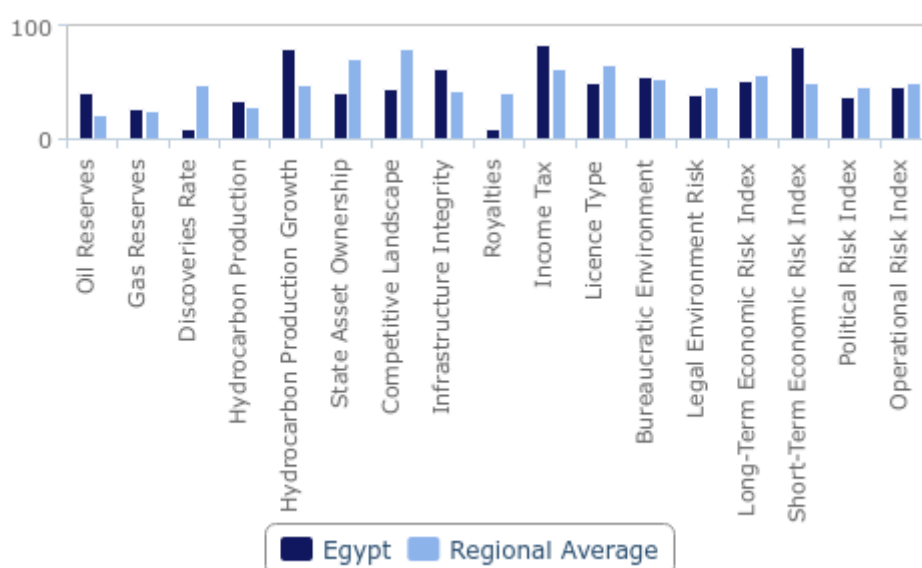
Industry Risk/Reward Index

Egypt Upstream Oil & Gas Risk/Reward Index

Please Note: BMI is enhancing its risk analysis with a new scoring system following its acquisition of GeoQuant, a market-leading provider of political risk data. From March 27 2024, risk scores are inverted: zero now represents the lowest risk and 100 represents the highest risk. This allows for clearer, industry-standard assessments. For further details, please refer to our updated methodology document.

Key View: This quarter, Egypt is in sixth place in the Upstream Risk/Reward Index rankings for the Middle East and North Africa region. Egypt's score is weighed down by declines in the market's score for Hydrocarbon Production and Long-Term Economic Risk. This is alongside significant recent declines in the market's gas production and increasing domestic macro headwinds over the long term.

Mediocre Country Risk Performance Limits Overall RRI Score
Egypt - Upstream RRI By Component



Note: Scores out of 100; lower score = more attractive market. Source: BMI

Global And Regional Ranks

- Regional Rank (out of 12): 6th
- Global Rank (out of 72): 27th

Key Features And Latest Updates

- This quarter, Egypt has fallen by one place in our regional Upstream Risk/Reward Index ranking (RRI) for the Middle East and North Africa region (sixth), and declined by two places in our global rank from 25th to 27th.
- Egypt's mid-range scoring has been driven by declines in the country's scores for Hydrocarbon Production and Hydrocarbon Production growth, on the back of particularly strong declines in oil and gas production in Q1 2024.
- Egypt's score for Long-Term Economic Risk declined in the last quarter as a result of increasing macro headwinds.

- There is room for progress with regard to the competitive landscape and state ownership segments of our RRI, given that there is still a high degree of nationalisation involved in the country's oil and gas industry.

Above-Average Country Rewards

Egypt - Upstream RRI



Note: Scores out of 100; lower score = more attractive market. Source: BMI

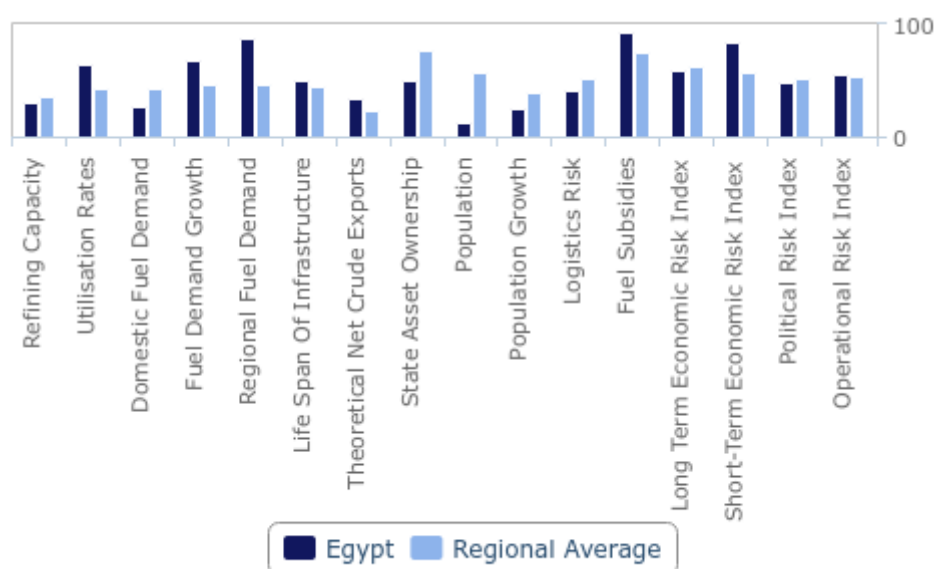
Egypt Downstream Oil & Gas Risk/Reward Index

Please Note: BMI is enhancing its risk analysis with a new scoring system following its acquisition of GeoQuant, a market-leading provider of political risk data. From March 27 2024, risk scores are inverted: zero now represents the lowest risk and 100 represents the highest risk. This allows for clearer, industry-standard assessments. For further details, please refer to our updated methodology document.

Key View: This quarter, Egypt has remained in eighth place regionally and 39th globally in our Downstream Risk/Reward Index rankings. Egypt's score has worsened over the previous quarters, driven by a worsening in the country's score for Utilisation Rates, Domestic Fuel Demand and Fuel Demand Growth.

Egypt Not Reaching Its Potential

Egypt - Downstream RRI By Component



Note: Scores out of 100; lower score = more attractive market. Source: BMI Downstream Risk/Reward Index

Global And Regional Ranks

- Regional Rank (out of 13): 8th
- Global Rank (out of 92): 39th

Key Features And Latest Updates

- For this quarter, Egypt has remained at eighth place regionally, as well as 39th place globally in our Downstream Risk/Reward Index (RRI).
- Slight improvements to refining capacity has improved Egypt's outlook, though it is still weighed down by the country's score for Utilisation Rates, Fuel Subsidies, both Domestic and Regional Fuel Demand, and Fuel Demand Growth, keeping Egypt in the middle of the pack for the Middle East and North Africa region.
- Egypt continues to strongly outperform the region with regard to Country Rewards, with its score supported by a large population that is expected to grow significantly over our forecast period and beyond.

Egypt Underperforms All Indicators

Egypt - Downstream RRI



Note: Scores out of 100; lower score = more attractive market. Source: BMI Downstream Risk/Reward Index

Market Overview

Energy Market

A new licencing round launched in December 2022 attracted strong interest, while ongoing reforms to refined fuel subsidies, improvements in wellhead gas prices and progress in liberalising the gas sector are boosting investor sentiment and increasing interest in Egypt's energy market.

Regulation

Egyptian upstream licences are issued through three state-controlled companies:

- Ganoub El Wadi Holding Petroleum (Ganope), which manages oil exploration in the south.
- Egyptian General Petroleum, which deals with all oil exploration elsewhere in the country.
- Egyptian Natural Gas (EGAS), which receives gas bids.

In addition, the Egyptian Mineral Resources Authority is responsible for geological mapping of the country and assesses the mineral wealth of the country. The Egyptian Petrochemical aims to develop the Egyptian petrochemical industry.

Political Regime

Egypt has suffered a tumultuous period since the ousting of long-serving president Hosni Mubarak in early 2011. Since this point the government has been in the hands of the military, Mohammed Morsi's Muslim Brotherhood party, the military for a second time, and is now in the hands of former army chief Abdul Fattah El-Sisi. El-Sisi won the 2018 presidential election and appears to have popular support, helping to maintain the social stability required to rebuild Egypt's economy.

Over the years of instability, little changed in terms of policy, meaning that generous fuel subsidies remained in place. This saw demand for oil and gas growing strongly and the political implications of raising subsidies have a greater social impact. At the same time, social instability and political uncertainty saw investment in the upstream oil and gas industry drop off, putting downward pressure on production.

To mitigate the growing cost of imports and subsidies, in 2014, the interim military government introduced several new incentives to keep oil and gas companies from exiting the country.

First, the government decided to reimburse some of the significant levels of debt it has with oil and gas companies. Then Oil Minister Sherif Ismail committed to paying back the roughly USD3.2bn of remaining debt to companies by the end of 2016. In this regard, progress has been made, but the target has not been fully met. In June 2020, Egypt's Petroleum Minister Tark El-Molla stated that the debt owed to oil and gas companies had been reduced to just USD850mn, which is a significant reduction.

Second, the government has opened up the opportunity to discuss gas pricing structures in new developments. Currently, gas producers receive a maximum of around USD2.65/mn BTU. In many cases, particularly offshore, this barely covers the cost of development and offers little incentive to companies to take on the risk developing new projects. The new approach allows producers greater leeway with regard to the cost of development, taking into account aspects such as reservoir depth and distance from shore. BP has reportedly negotiated prices of between USD3-USD4.1/mn BTU for its West Nile Delta project.

Third, the changes in contracts allow gas produced from new concessions to be sold in deals made directly with commercial producers. This enables companies to avoid selling gas directly to the government. This marks a small step towards market liberalisation and could help to support more investment from independents. Owing to these developments, we expect a more stable operating environment to unfold over the coming years and an improvement in oil and gas investments.

Our Political Risk team expects that the Egyptian government will struggle to resolve its foreign policy challenges. Cairo faces a number of unresolved external threats, including the dispute over the Grand Ethiopian Renaissance Dam, a degree of instability in Libya, maritime disputes in the Eastern Mediterranean, and potentially greater Iranian support for hostile Islamist groups in Egypt and its neighbourhood. While the government has sought to build alliances internationally to advance its interests, we expect Egypt's challenges abroad will remain largely unresolved and will continue to drive political risk and dampen investment.

Economic Conditions

Egypt's economy is currently facing considerable difficulties, as it continues to suffer from elevated commodity prices and outflows of foreign capital that have been caused by the Russia-Ukraine conflict. As a result, the country has resorted to seeking a loan from the IMF once again, having reached a USD3.0bn loan deal with the institution in October 2022. As part of the agreement, Egypt's government agreed to allow the Egyptian pound to float freely in a flexible exchange rate regime, which has led to a precipitous decline in its value. In November 2022, the Egyptian pound fell by almost 70% against the US dollar. This decline is highly problematic for a country such as is Egypt, which has had a significant import dependency for certain commodities. The shortage of foreign currency is having a direct effect on Egypt's energy policy, both domestic and foreign. In August 2022, Egyptian authorities announced plans to ration up to 15% of the country's gas consumption in the power generation sector. This plan was motivated by the desire to preserve domestically produced gas so as to increase gas exports abroad, in the hope that this will generate additional foreign currency earnings. No end date for this rationing strategy has been announced, although we note that our Country Risk analysts predict that it could last until the end of 2024.

Fiscal Regime

Incentives are offered on exploration, which allow for costs to be capitalised and deducted from income tax. Depending on the concession agreement and the approval of the EGPC, exploration expenses can be reduced during the lifetime of a concession agreement.

Egyptian Tax Regime

Income tax	22.5%
Tax on income proportion exceeding EGP10mn	25%
Oil E&P tax	40.55%
EGPC & Suez Canal Authority	40%

Source: Ernst & Young, BMI

Licencing Rounds

2022 Licencing Round

At the end of December 2022, Egypt officially launched its latest licencing round with a total of 12 blocks on offer, of which six are onshore and six offshore. The blocks are situated in the Mediterranean sea and Nile Delta region. The deadline for tenders was the end of April 2023, with results announced soon after. As was the case in the previous 2021 licencing round, interest was strong, especially given the discovery in December 2022 by Chevron of gas reserves estimated to be as large as 99bcm in the Nargis block, eastern Mediterranean.

In September 2023, four blocks were announced: Eni secured two blocks (N. Port Fouad and South Nour); Eni and QatarEnergies were jointly awarded East Port Said; and Russian-based Zarubezhment received the fourth block (Nile Delta).

2021 Licencing Round

Egypt's 2021 licencing round announced successful results in early January 2021, which is encouraging given the relatively challenging exploration environment of the previous two years. Seven international firms proffered USD23.7mn in signature bonuses for eight blocks out of 24 offered across the country, both offshore and onshore. Eni was awarded five exploration licences by the Egyptian Ministry of Petroleum for successful participation in the 2021 Licencing Round. Eni was set to be the operator of four of the licences. The blocks that were successfully bid for cover a variety of locales and include four blocks in the Western Desert, two in the Eastern Mediterranean and two on the Gulf of Suez. The total licenced area is around 12,300sq km in size with a minimum exploration investment estimated at USD250mn to drill a minimum of 33 wells. The awards pose upside risk to our oil and gas production forecast for Egypt, as the blocks awarded are of close proximity to areas already producing significant quantities of oil or gas. This indicates the potential for similarly favourable geology.

The Western Desert accounts for around one-third of Egypt's daily hydrocarbon production, primarily from the Abu El Gharadig Basin, which was discovered in 1969. In the Eastern Mediterranean, massive quantities of gas have been discovered. For example, the Zohr gas field is estimated to hold around 850bcm of gas and is the largest natural gas discovery in the Mediterranean to date. Meanwhile, the Gulf of Suez accounts for around 10% of Egypt's oil production. Exploration wells have been on the downtrend since the early 2010s but have recovered somewhat to around 30 per year. The results of the 2022 bidding round, which licenced 4 new blocks, as well as new licenses expected to be issued in 2024, will lead to an uptick to the rig count - a positive indicator for future oil and gas production.

In late December 2019, Chevron and Shell were awarded licences as part of Egypt's Red Sea licencing round. Chevron was awarded Block 1 and Shell Block 2, while Block 4 was awarded jointly to Shell and Mubadala Petroleum. The three blocks cover a total exploration area of around 10,000 sq km and carry combined minimum investment commitments of USD326mn.

2021 Licencing Round Results

Location	Block	Firm Awarded
Western Desert	EGY-WD-7	Apex International, Eni
Western Desert	EGY-WD-8	Energiean Egypt, INA Nafte
Western Desert	EGY-WD-9	Eni
Western Desert	EGY-WD-11	United Energy
Eastern Mediterranean	EGY-MED-E5	bp, Eni
Eastern Mediterranean	EGY-MED-E6	Eni
Gulf of Suez	EGY-GOS-13	Eni
Gulf of Suez	EGY-GOS-14	Enap Sipetrol

Source: Egypt Upstream Gateway, BMI

EGAS 2018 Licencing Round Results

Concession	Area	Companies	Signing Bonus, USDmn	Financial Commitment, USDmn	Drilling Commitment
North East El Amreyia	Mediterranean	ExxonMobil, BP, Eni, Total, Shell & Petronas	10.0	100.0	2
North Sidi Gaber	Mediterranean	Shell & Petronas	10.0	60.0	1
North El Fanar	Mediterranean	Shell & Petronas	3.0	9.0	8
East Damanhur	Nile Delta	DEA	11.0	28.0	7
West Sherbin	Nile Delta	Eni & BP	5.0	18.0	2
West El Faiyum	Western Desert	Shell	27.0	24.7	6
SE Horus	Western Desert	Shell	23.0	24.5	5
South Abu Sennan	Western Desert	Shell	1.0	7.8	3
SE Siwa	Western Desert	Eni	1.2	17.0	4
North Beni Suef	Eastern Desert	Merlon Petroleum	3.2	36.0	8
West Amer	Eastern Desert	EGPC	5.0	1.0	10
NW El Amal	Gulf of Suez	Merlon Petroleum	11.0	34.5	3

Source: EnergyEgypt, BMI

Oil & Gas Infrastructure

Oil Refineries

Egypt possesses the largest crude oil refining capacity in Africa, which has recently risen from 816,000b/d to 876/000b/d with the completion of expansion work at the MIDOR refinery in Q3 2023. This is in addition to the modernisation of the Assiut refinery, which will increase the facility's refining capacity from 4.5mpta to 5.0mpta. Completion was set for 2024 amid poor progress in modernisation works.

At present, Egypt has eight refineries with a total capacity of 876,000b/d, according to company data. This makes it the largest refining centre on the African continent. The country's two major refining centres are Alexandria and Suez, which account for 39.5% and 25.6% of the country's total crude distillation capacity respectively.

Refineries In Egypt

Refinery	Location	Capacity (b/d)	Owner (Subsidiary)	Completed
Mostorod	Cairo	145,000	EGPC (Cairo Oil Refining Company)	1969
Al-Nasr	Suez	142,000	EGPC (Nasr Petroleum)	1913
Al-Mex	Alexandria	140,000	EGPC (Alexandria Petroleum)	1957
Midor	Alexandria	100,450	Middle East Oil Refining	2000
Asyut	Assiut	90,405	EGPC (Asyut Oil Refining)	1972
Ameriya	Alexandria	75,000	EGPC	1972
Al-Suez	Suez	65,250	EGPC (Suez Oil Processing)	1921
Tanta Refinery	Tanta	38,000	EGPC (Cairo Oil Refining Company)	1969
Proposed capacity expansion	na	na	na	na
Mostorod - Expansion	Cairo	84,000	Qalaa Holdings, Cairo Oil Refining Company	2020
Midor - Expansion	Alexandria	50,000	Middle East Oil Refining	2022
Al-Mex - upgrade	Alexandria	12,000	na	Unknown
Assiut - upgrade	Assiut	9,300	na	2024 (expected)
Suez	Suez	500,000	Egypt-Saudi-Kuwaiti JV	Delayed since 2009
Ain Sokhna	Red Sea	130,000	na	Unknown

na = not available/applicable. Source: BMI

Service Stations

Egypt's fuels retail sector is dominated by state-owned Misr Petroleum, with a network of 873 retail outlets of the 1,750 or so in the country. Leading foreign players include ExxonMobil and smaller operators include Chevron and TotalEnergies.

Oil Storage Facilities

Egypt's major storage facilities are located at the Ain Sokhna and Sidi Kerir terminals, at opposite ends of the Sumed pipeline. Sidi Kerir, located in Alexandria, has the country's largest storage capacity. The facility consists of 27 floating roof storage tanks with a total capacity of about 20mn bbl. The Ain Sukhna onshore terminal, located near the Red Sea, consists of 15 double-deck floating roof storage tanks, each with a capacity of 103,000cu m, giving the facility a total capacity of 1.5mcm, or about 10mn bbl.

Oil Terminals/Ports

With its strategic location and two coastlines, Egypt operates a number of ports on both the Red Sea in the south and Mediterranean in the north. The port of Alexandria is the country's largest on the Mediterranean coast and has two berths dedicated to the loading and offloading of crude. The Sidi Kerir terminal is the other major terminal on the Mediterranean. On the Red Sea, Ain Sukhna is the main terminal, with the Petroleum Dock Port, located near Suez, being the other important facility in the area. Refined products from the three Alexandria refineries can be exported via Mediterranean terminals such as Dekheila Port.

In August 2022, Egypt's Ministry of Petroleum began efforts to expand the El Hamra oil terminal situated on the Mediterranean coast, 120 km away from Alexandria. At present, the terminal operated by Western Desert Operating Petroleum is able to store 2.6mn barrels of oil. However, the ministry is planning to double this capacity to 5.3mn barrels of oil.

Oil Pipelines

Egypt has strategic importance because of its operation of the Suez Canal and Sumed (Suez-Mediterranean) Pipeline, two routes for exporting oil from the Persian Gulf.

The Sumed pipeline is an alternative to the Suez Canal for transporting oil from the Persian Gulf region to the Mediterranean. The 322km pipeline runs from Ain Sokhna on the Gulf of Suez to Sidi Kerir on the Mediterranean. Sumed's original capacity was 1.6mn b/d, but with completion of additional pumping stations, capacity has increased to 2.5mn b/d. The pipeline is owned by the Arab Petroleum Pipeline (APP), a joint venture between Egypt (50.0%), Saudi Arabia (15.0%), Kuwait (15.0%), the UAE (15.0%) and Qatar (5.0%). APP has also been increasing storage capacity at the Ain Sukhna and Sidi Kerir terminals.

Egypt's major export grades are Suez Blend and Belayim Blend, most of which are sold straight into long term contracts. Minor exports grades include Ras Gharib and West Desert.

LNG Terminals

Egypt currently has two liquified natural gas (LNG) export facilities operating three trains. The first is in Damietta on the eastern side of the Nile Delta and is operated by the Spain-based electric utility Union Fenosa. The 5mn mt per year facility had been idled since 2012 and recent talks have focused on finding a new agreement to allow for the facility to restart. The second is a project located at Idku in the Western Delta, with Shell and Malaysia-based Petronas as the project's major investors.

LNG Export Terminals In Egypt

Terminal	Trains	Capacity (mntpa)	Completed/Scheduled	Ownership
Damietta Train 1	1	5	2005	Union Fenosa (40%), Eni (50%), Egas (10%), EGPC (10%)
Egyptian LNG Train 1	1	3.6	2005	BG (35.5%), Petronas (35.5%), Egas (12%), GDF Suez (5%), EGPC (12%)
Egyptian LNG Train 2	1	3.6	2005	BG (38%), Petronas (38%), Egas (12%), EGPC (12%)
Total capacity	3	12.2	na	
Proposed Additional Capacity				
Egyptian LNG Train 3	1	3.6	na	BG, Petronas, EGPC, Egas, RWE (stakes tbd)
Damietta LNG Train 2	1	5	na	BP, Eni, EGPC, Egas (stakes tbd)

na = not available/applicable. Source: BMI

In April 2015, the Hoegh Gallant floating storage and regasification (FSRU) was installed at the port of Ain Sokhna, enabling LNG imports to begin. This was followed by the larger BW Singapore FSRU, which was installed in October 2015. The plan for a third FSRU to import LNG to Egypt has been suspended by the government following a re-evaluation of domestic natural gas projects. We see little scope for the rekindling of the tender in the future, due to existing capacity being more than suitable to handle the required LNG import volumes.

LNG Import Terminals

Terminal	Trains	Capacity (bcm)	Completed/Scheduled	Ownership
Hoegh Gallant	1	5.05	April 2015	EGAS leased from Hoegh LNG
BW Singapore	1	7.65	October 2015	EGAS leased from BW
FSRU 3 (under tender)	1	7.5	Suspended	na

na = not available/applicable. Source: BMI

Gas Pipelines

East Mediterranean Gas Pipeline

The East Mediterranean Gas (EMG) pipeline connects Egypt with Israel. Egypt used to export around 2.1bcm of natural gas to Israel via pipeline from El Arish to Ashkelon. In 2012, it had to halt deliveries to prioritise production for domestic gas use and Israel was forced to purchase expensive liquid alternatives, costing the country dearly.

In September 2018, US-based producer Noble Energy and its Israeli partner Delek Drilling - together with Sphinx EG - bought a 39.0% stake in the idled pipeline for USD518mn as part of plans to use the pipeline in reverse for Israeli gas to flow to Egypt.

Noble expects to flow at least 350 MMcf/d through the EMG pipeline once the offshore Israel Leviathan field starts. The pipeline has a design capacity of 7bcm/yr, the deliveries will be part of a deal signed in February 2018 to supply Dolphinus Holdings with 64bcm of Israeli gas over a 10-year period.

In June 2022, Israel and Egypt reached a memorandum of understanding for increased Israeli gas exports to Egyptian LNG terminals situated on the Mediterranean coast, where gas will be liquefied before being exported via tankers to Europe. As a result of the agreement, it is now expected that Egypt will increase its LNG exports to Europe from 5bcm to 7bcm in 2022.

Israel-Egypt Pipeline

Israel and Egypt are reportedly in discussions to construct a second pipeline, this one onshore across the Sinai Peninsula, eyeing up potential avenues to monetise its nascent natural gas production. The proposed USD200mn pipeline could be in operation in as little as two years and would be the second connection between Egypt and Israel, on top of the subsea pipeline currently in operation. Israel and Egypt held talks following a request from Egypt for more natural gas supplies. Egypt is already a large natural gas producer; however, export potential from its two LNG facilities has been limited by its strong domestic demand.

Arab Gas Pipeline

The town of El-Arish is also the starting point of the Arab Gas Pipeline, which runs from El-Arish to Taba in southern Sinai Peninsula, and then around Israel into Jordan, Syria and Lebanon.

Volumes of Egyptian gas sent through the pipeline have been inconsistent since 2012 and stopped completely over 2013/2014. Two Jordanian companies have subsequently signed a deal to import gas from Israel's Tamar field.

Tamar-Damietta Pipeline

The Tamar Partners and Union Fenosa Gas, which owns an 80.0% stake in the Damietta LNG terminal, are negotiating the construction of a 400km subsea pipeline between the Tamar field and the LNG facility. The deal would involve around 4.5-6bcm of gas being imported over a 15-year period and would be linked to an expansion of the Tamar field. It would enable a reliable gas supply to the export facility to re-launch LNG exports.

Competitive Landscape

Competitive Landscape Summary

- In Q2 2024, SDX Energy has announced the sale of its West Gharib interests in Egypt through a binding sale and purchase agreement (SPA). The assets being sold include a 50% share in the Exploration and Production Sharing Agreement for Sub-Area (A) West Gharib Blocks G and H, and a 50% interest in the Joint Operating Agreement for the West Gharib Blocks. The sale to New Horizons LLC and NPC Petroleum Services is expected to bring in approximately USD6.6mn, subject to adjustments. SDX is focusing on exiting Egypt to concentrate on its Moroccan assets and energy transition strategy, according to the company announcement.
- In February 2024, BP and the Abu Dhabi National Oil Company (ADNOC) announced their intention to form a gas joint venture (JV) in Egypt, planned for the second half of 2024, with BP holding a 51% stake and ADNOC 49%. The partnership follows stalled negotiations on a proposed deal for BP and ADNOC to acquire a 50% stake in Israeli gas producer NewMed, which was announced in March 2023. Talks are ongoing amid regional tensions. The new JV will include BP's interests in three development concessions and various exploration agreements in Egypt. ADNOC is set to make a cash contribution, against the backdrop of Egypt's economic challenges and ongoing talks with the IMF for a USD3bn loan expansion.
- Kuwait Foreign Petroleum Exploration Company (KUFPEC) announced that it has entered into a new partnership with Shell in Egypt. Under the agreement, KUFPEC will acquire a 26.47% interest in the North East Mediterranean Deepwater concession in the Egyptian Mediterranean Sea. The concession area spans roughly 3,097sq km and is located in the prolific Herodotus basin. This partnership marks KUFPEC's first venture into the Egyptian offshore sector.
- In preliminary results announced in September 2023 for Egypt's 2022 licencing round, a total of four new exploration areas were announced. Two blocks situated in the Mediterranean Sea have been awarded solely to Eni, with a third block being awarded to a joint partnership between Eni, QatarEnergy and BP. The fourth block situated in the Nile Delta region was awarded to Russia-based company Zarubezhneft.
- In September 2023, Egypt's Minister of Petroleum and Mineral Resources announced a new licencing round in which 23 new blocks are on offer. This includes 10 blocks situated in the country's Western Desert region, seven in the Gulf of Suez, four in the Red Sea region and two in the Eastern Desert region. The deadline for the licencing round was set at February 25 2024.
- Recent months have seen major oil and gas companies operating in Egypt make significant commitments to future investments in Egypt over the medium term. These include Eni's plans to invest USD7.7bn in the country over the next four years, BP's plan to invest USD3.5bn in the country over the next three years and Apache Corporation's plan to invest USD1.4bn in the country in 2024.
- In June 2023, Eni reached a deal to acquire Neptune Energy for USD4.9bn. This will see the Italy-based company acquire all of Neptune Energy's assets, except those located in Germany and Norway which have been acquired by Var Energi. As a result of the acquisition, Eni will increase its portfolio in Egypt by acquiring Neptune Energy's 100% interest in the North West El Amal offshore concession. This will provide Eni with Neptune Energy's 25.0% interest in the Alam El Shawish West concession, which possesses around 44mn boe 2P reserves of oil and gas.
- In June 2023, SDX Energy confirmed that it had received several offers in relation to the sale of its assets in Egypt. These include a 67.0% operated interest in the Ibn Yunus North gas field and a 36.9% operated interest in the South Disouq gas field.
- Apex International has acquired stakes in six Egyptian oil fields situated in the Western Desert from Eni. The acquisition will see the company's oil output increase from 7,000b/d to 11,500b/d, thereby making it the eight largest producer of oil in Egypt.
- At the end of December 2022, Egypt officially launched its latest licencing round with a total of 12 blocks on offer, of which six are onshore and 6 offshore. The blocks on offer are situated in the Mediterranean sea and Nile Delta region. The deadline for tenders is the end of April 2023, with results likely to be announced soon after.
- BP has been awarded two new exploration blocks by Egyptian Natural Gas Holding situated offshore in the Mediterranean Sea. The first block named Northwest Abu Qir Offshore Area encompasses an area equivalent to roughly 1038sq km. The second block named, Bellatrix-Seti East, encompasses an area covering roughly 3440sq km.

Companies Operating In Egypt's Petroleum Sector

International	Egyptian
Shell	EGPC
BP	GPC
TotalEnergies	GANPOE
IOEC (Eni)	HBSI
Apache	Gharib
Dana	Al-Waha
DEA	Hamra Oil
Equinor	
OMV	
Kuwait Energy	
Edison	
Hellenic	
CESPA	
Engie	
Gugurat STAT	
IPR	
INA	
Merlon	
Vegas	
Apex International Energy	
Rosneft	
Sinopec	
Capricorn	

Source: EGPC, BMI

Egypt possesses extensive hydrocarbon reserves, estimated to possess roughly 3.3bn bbl of proven oil reserves and around 77trn cu ft of proven gas reserves.

Four companies dominate the production landscape in both the oil and gas sectors. Apache Energy and Eni were the leading operators of oil production in 2020; BP and Shell were the other major producers. Rosneft entered the Egyptian upstream following the purchase of a 30.0% stake in the Shorouk concession - the licence containing the Zohr gas field. In total, there are at present at least 50 international oil companies that have operations in Egypt.

The situation is similar in the gas sector. However, since Shell's acquisition of BG Group, the company has become a significant gas producer in Egypt. Eni, BP and Apache Energy also remain important producers. The West Nile Delta and Zohr projects have launched BP and Eni's shares in gas production to the top, and this is expected to continue to grow, with further increases in output from the Zohr field.

Egypt intends to further improve on its current standing as the nation with the largest refining capacity in Africa, having recently made plans to invest roughly USD38bn to further develop its petrochemical sector.

Fuel subsidies erode the potential to profit and the Egyptian downstream is dominated by state company EGPC. Fuel subsidies are slowly coming down, raising the potential for some interest in the sector longer term. However, poor competition has resulted in underinvestment and a substantial financial burden on the government.

EGPC Dominates Downstream

Location	Name	Capacity, b/d	Status	Main Owner	Ownership Details
Alexandria	Midor	100,000	Active	EGPC [Operator] (75%)	The refinery is owned by MIDOR, an Egyptian shareholding company in which EGPC has a 78% interest, Enppi has a 10% interest, Petrojet has a 10% interest and Suez Canal Bank has a 2% interest
Alexandria	Ameriya	78,000	Active	EGPC [Operator] (100%)	EGPC via subsidiary Ameriya Oil Refining
Alexandria	El Mex	115,000	Active	EGPC	EGPC via subsidiary Alexandria Petroleum Company
Suez	El-Suez	68,000	Active	EGPC	EGPC via subsidiary Suez Oil Processing
Suez	El-Nasr	146,300	Active	EGPC	EGPC via Al Nasr Petroleum Company
Al Gharbiyah	Tanta	40,180	Active	EGPC [Operator] (100%)	EGPC via subsidiary Cairo Petroleum Refining
Cairo	Mostorod	145,000	Active	Cairo Petroleum Refining [Operator] (100%)	Cairo Petroleum Refining (100%)
Assiut	Assiut	47,000	Active	EGPC	Assiut Oil Refining is a subsidiary of EGPC

Source: BMI

Company Profile

Apache Corporation

Latest Updates

- In August 2023, Apache announced plans to invest USD1.4bn in Egypt's oil and gas sector across 2023.
- In Q1 2023, Apache announced that its oil production in Egypt had declined from 88,715 b/d in Q4 2022 to 87,795 b/d in Q1 2023, equivalent to a 1.0% q-o-q decline. The company's gas production in Egypt also declined from 373,911 mcf/d in Q4 2022 to 356,350 mcf/d in Q1 2023, equivalent to a 5% q-o-q decline.
- In full-year results announced for 2022, Apache Corporation recorded 70,398 b/d of oil production in Egypt for 2022, a 6.4% y-o-y decline from the 75,205 b/d that the company produced in Egypt in 2021.
- In 2023, Apache outlined ambitions of increasing oil production in Egypt to 165,000 b/d.
- The company's natural gas production in Egypt grew significantly in 2022, increasing by 35.0% on 2021 production volumes
- In the nine months from Jan-Sep 2022, Apache's oil production in Egypt averaged roughly 83,857 b/d. This is roughly a 15% increase compared with the 71,052 b/d that were produced over the same period in 2021.
- In the nine month from Jan-Sep 2022, Apache's natural gas production in Egypt averaged roughly 350,400 mcf per day. This is roughly one third more than the 259,108 mcf per day that was produced over the same timeframe in 2021.
- Apache's operations in Egypt were responsible for 30.0% of the firm's oil and gas production and 22.0% of proven reserves, with the rest located in the US and the UK. The firm generated USD6.5bn of revenue in 2021, with net profit of USD0.973bn.
- The company has hit, ahead of schedule, their target of reducing flaring in Egypt's upstream by more than 40%.
- For the nine months ended to September 2021, Apache produced 71,052 b/d, compared with 77,410 for the same period in 2020. Similarly Gas production declined from 273,676 mcf/d to 259,108 mcf/d.
- While Apache signalled its wishes to expand energy production in Egypt and the government responded positively, there were no successful bids from Apache for licences in the 2021 licencing round.
- In May 2021, Apache reached an agreement with Egypt's Ministry of Petroleum and Mineral Resources and the Egyptian General Petroleum Corp over a new production-sharing contract. The contract was set to consolidate the majority of Apache's concessions in the Western Desert of Egypt into a new, single concession. The Apache entity, which was set to become the sole contractor for the concession, is majority owned by Apache (67.0%) and Sinopec (33.0%).

Strengths	Weaknesses
<ul style="list-style-type: none"> • Strong onshore positions in the Western Desert. • Extensive drilling experience and strong success rate. • Relationships with Sinopec and Shell. • Large share of domestic oil production. • Fixed government gas prices. • Strong domestic oil and gas demand. 	<ul style="list-style-type: none"> • Limited offshore or large field exposure. • Limited capital expenditure to boost investment programme.
Opportunities	Threats
<ul style="list-style-type: none"> • Attractive unconventional asset positions. • Oil potential in the Western Desert. • Stacked pay opportunities in the Western Desert. • Ongoing seismic surveying. 	<ul style="list-style-type: none"> • Higher cost of unconventional gas production. • Political and economic instability. • Competition from large volume gas production projects.

Company Overview

Apache has over 20 years of exploration, development and operations experience in Egypt and is one of the largest acreage holders in Egypt's Western Desert. As of 2020, the company has completed seismic surveys covering more than 3mn acres and held 5.2mn gross acres in 24 separate concessions. Around 68% of the company's gross acreage in Egypt is undeveloped, providing Apache with considerable exploration and development opportunities for the future. The operations in Egypt, including a one-third noncontrolling interest, contributed 28.0% of 2020 production and 20.0% of year-end estimated proved reserves.

Strategy

Apache Energy's assets in Egypt have been a critical piece of the company's portfolio. Comparatively attractive margins help sustain operations in a weak price environment. In 2021, Apache signed a deal with Egypt for USD3.5bn of investments over the next decade. Apache would spend USD235.0mn in Egypt in 2022 and anticipates producing around 47% of all oil in the country by 2025.

Apache Energy is one of the most active drillers in Egypt, largely due to its more extensive onshore position in the country. Since entering Egypt in 2004, the company has drilled more than 350 wells with a near 60% success rate.

Apache Energy - Major Assets

Block	Area
North El Maghara	Sinai
East Bani Suef	Suez
El Diyur	Central
East Bahareya	Central
West Kanayis	Western Desert
North Tarik	Western Desert
Matruh	Western Desert
Khalda	Western Desert
Salum	Western Desert
Siwa	Western Desert
West Ghazalat	Western Desert
West Kalabsha	Western Desert
Shushan	Western Desert
Um Baraka	Western Desert
Ras Kanayis	Western Desert
Ras El Hekma	Western Desert

Source: EGPC, BMI

Apache Energy's E&P Investment In Egypt

In 2021, Apache Corporation signed an agreement with Egypt's Ministry of Petroleum in which it committed to investing USD3.5bn in exploration, production and research in Egypt. This followed the more than USD1bn, which the company invested in Egypt in 2018.

BP

Latest Updates

- BP and Abu Dhabi National Oil Company (ADNOC) are set to form a gas joint venture (JV) in Egypt, planned for the second half of 2024. BP is set to hold a 51% stake and ADNOC 49%. The partnership follows stalled negotiations on a proposed deal for BP and ADNOC to acquire a 50% stake in Israeli gas producer NewMed, which was announced in March 2023. Talks are ongoing amid regional tensions. The new JV will include BP's interests in three development concessions and various exploration agreements in Egypt. ADNOC is set to make a cash contribution, against the backdrop of Egypt's economic challenges and ongoing talks with the IMF for a USD3bn loan expansion.
- Following this JV, BP is set to invest USD1.5 billion in gas projects and drilling in Egypt over the next three to four years.
- In September 2023, BP announced that it will be expanding its activity in Egypt by investing USD3.5bn over the next three years in the country's oil, gas and renewable energy sectors.
- In preliminary results announced for Egypt's 2022 licencing round, launched in December 2022, BP has been jointly awarded an exploration block in the Nile Delta region in partnership with Eni and QatarEnergy.
- BP has been awarded two new exploration blocks by Egyptian Natural Gas Holding situated offshore in the Mediterranean sea. The first block named Northwest Abu Qir Offshore Area encompasses an area equivalent to roughly 1,038sq km. The second block, named Bellatrix-Seti East, encompasses an area covering roughly 3,440sq km.
- BP and the Egyptian government have signed a memorandum of understanding in which the company will assess the feasibility of developing a green hydrogen production and export hub in Egypt.
- In Q3 2022, BP announced bumper profits of USD8.2bn. This figure was more than double the USD3.3bn the company earned in Q3 2021.
- BP has been awarded the North King Mariut offshore block following the bid it made at the most recent 2021 licencing round. The block encompasses an area equivalent to roughly 2600sq km.
- In early 2022, BP was jointly awarded block EGY-MED-E5 with Eni for successful participation in the 2021 licencing round. The block is located in the East Mediterranean and several wells are planned in the block.

Strengths	Weaknesses
<ul style="list-style-type: none"> • Major oil and gas asset holder in shallow and mid-water offshore. • Major gas assets - West Nile Delta, Atoll, Zohr. • Attractive fixed gas prices for new production in US dollars. • Strong domestic gas demand market. 	<ul style="list-style-type: none"> • Inconsistent government reimbursements. • Limited onshore presence.
Opportunities	Threats
<ul style="list-style-type: none"> • Near-field tie-backs to existing infrastructure. • Further currency weakness could lower costs. • Potential to expand position in new licencing rounds. 	<ul style="list-style-type: none"> • Policy slippage delaying debt repayment. • Political and economic instability. • Strong competition for new supply.

Company Overview

BP has been a major player in Egypt's upstream for more than 55 years and currently produces around 10% of the country's oil and condensate. Through its joint venture with the Egyptian Natural Gas Holding Company and the International Egyptian Oil Company, the company produces almost 60% of Egypt's gas output. BP operates the massive West Nile Delta (WND) project, subsequent phases of which are globally important for the company. Likewise the company's stake in the Zohr field as well as stakes in a number of exploration blocks are important projects.

Strategy

BP has been a major player in Egypt's upstream for more than 50 years and currently produces around 11% of the country's oil and 9.5% of the country's gas. BP's main strength in Egypt is the substantial assets that it holds in the Nile Delta, which are not yet in production.

BP operates the WND development which includes five gas fields. The WND is currently producing close to 1bcf/d from the combined WND fields. The approximately USD9.0bn development aims to supply Egypt's growing energy needs. BP has an 82.75% stake in the WND development, with Wintershall Dea holding the remaining 17.25% interest.

The Atoll field development is another large scale project. In 2018, PhPC brought the field into production. Atoll is now producing 300mmscf/d and is feeding the country's national gas grid. Production from North Damietta concession was also supplemented by the late 2020 production start-up of Qattameya discovery. Lastly, BP's purchase of a 10.0% stake in the Zohr gas field has allowed gas production to plateau at 2.7bcf/d from 2019 onwards.

BP Egypt Concessions

Ras El Bar
North Damietta
North el Burg
Burullus
North Alexandria
West Med. Deepwater
West Sherbin
NE El Amreyia

Source: EGPC, BMI

Key Financial Data (USDbn)

BP	2014	2015	2016	2017	2018	2019	2020	2021	2022
Revenue, Adj.	353.60	222.90	183.10	244.60	298.8	278.4	105.90	157.74	223.04
EBITDA Adj.	26.6	23.3	17.4	27.5	33.0	33.8	9.1	36.2	59.4
Capex	22.90	18.70	17.00	17.80	16.7	15.4	12.3	10.9	13.4

Source: BP, Bloomberg, BMI

Eni

Latest Updates

- In H2 2024, Eni plans to invest approximately USD160mn to drill two new wells in the Zohr field. The company is also evaluating research and development operations in the Shorouk concession area. The Zohr field, the largest gas field in the Mediterranean, has averaged production of 2bn cubic feet a day of gas (equivalent to 20.7bcm a year), and 3,700b/d of condensate over the last six months, representing 35% of Egypt's gas production.
- Following an almost complete halt in Egypt's liquified natural gas (LNG) exports over the summer months of 2023, an official from Eni indicated that LNG exports from Egypt had resumed from November 2023. This came on the back of a seasonal reduction in domestic gas demand and increased pipelined gas imports from Israel since the outbreak of the Israel-Hamas conflict.
- Eni, alongside Energean, is set to announce the results of exploration drilling the Orion well in North Egypt some time in H2 2024. The Orion-1X well was brought online on October 10 2023 in the Eni-operated North East Ha'py Offshore block, which is situated between Egypt's mega Zohr field and the Nile Delta region.
- The preliminary release of results for Egypt's 2022 licencing round, which was launched in December 2022, indicates that Eni has been awarded three new exploration blocks, two of which are situated in the Mediterranean Sea and the third in the Nile Delta region.
- Following on from a meeting between Eni CEO Claudio Descalzi and Egypt's president Abdel Fattah al-Sisi in September 2023, Egypt's presidential spokesman announced that Eni has committed to investing USD7.7bn in Egypt's oil and gas sector through to 2027.
- In June 2023, Eni reached a deal to acquire Neptune Energy for a fee of USD4.9bn. This will see the Italian company acquire all of Neptune Energy's assets, except those located in Germany and Norway which have been acquired by Var Energi. As a result of the acquisition, Eni will increase its portfolio in Egypt by acquiring Neptune Energy's 100% interest in the North West El Amal offshore concession. In addition to Neptune Energy's 25% interest in the Alam El Shawish West concession, which possesses approximately 44mn boe 2P reserves of oil and gas.
- In June 2023, Eni concluded exploration drilling at the Nesr-1 well, located in the Nile Delta region. Results proved to be unsatisfying, with preliminary results indicating low volumes of commercial gas.
- In March 2023, Eni's exploration drilling at the Thuraya well, situated in the North East El Arish block, came up dry.
- According to media reports, ongoing water infiltration issues at Eni's mega Zohr field as of April 2023 has seen gas output from the field decline to approximately one-third below nameplate capacity. The company is currently drilling more wells in the field in order counteract declining output.
- In Q1 2023, Eni announced that the company's gas production in Egypt declined from 1,466mmcf/d in Q1 2022 to 1,378mmcf/d in Q1 2023, equivalent to a 6.0% decline. The company's oil production in Egypt also declined from 79kb/d in Q1 2022 to 69kb/d in Q1 2023, equivalent to a 13% decline.
- In full year results for 2022, Eni recorded oil production in Egypt of 77,000b/d, a 6% y-o-y decline on the 82,000b/d of oil the company produced in Egypt in 2021.
- The company's gas production in Egypt declined by 4.2% y-o-y in 2022, falling to 40mcm/d of production in 2022 from 41.8mcm/d in 2021.
- In January 2022, Eni and Chevron announced what they deem to be a 'significant' discovery of gas in the offshore Nargis concession, although exact quantities are yet to be announced. Eni possesses 45% working interest in the concession, Chevron owns 45% and Tharwa Petroleum Company owns 10%.
- In November 2022, Eni began exploration drilling at the Thuraya concession situated offshore Egypt, which is believed to possess huge gas potential with reserves of up to 311bcm of natural gas.

Strengths	Weaknesses
<ul style="list-style-type: none"> Strong position for oil and gas production. Well-established relationship with the government - priority given to Zohr project. Fixed gas price tariffs in US dollars. Substantial gas reserves. Extensive lease and concession positions both on and offshore. 	<ul style="list-style-type: none"> Limited major growth assets beyond Zohr . Ongoing arbitration regarding the Damietta LNG export terminal.
Opportunities	Threats
<ul style="list-style-type: none"> Exploration in new deepwater blocks. Extensive position in lower cost onshore and shallow water exploration acreage. Further currency weakness could lower domestic costs. 	<ul style="list-style-type: none"> Policy slippage and slow repayment of debt. Weakening long-term economic growth limiting sales potential.

Company Overview

Through its subsidiary International Egyptian Oil, Eni has a substantial position in the Egyptian upstream. Egypt is crucial to Eni's long-term production growth strategy, with numerous projects including the 850bcm Zohr field.

Success In 2021 Licencing Round

Location	Block	Firm Awarded
Western Desert	EGY-WD-7	Apex International, Eni
Western Desert	EGY-WD-9	Eni
Eastern Mediterranean	EGY-MED-E5	bp, Eni
Eastern Mediterranean	EGY-MED-E6	Eni
Gulf of Suez	EGY-GOS-13	Eni

Source: Egypt Upstream Gateway, BMI

International Egyptian Oil Company Concessions And Leases - Production Share

Location	IEOC Production 100%
North Leil	IEOC Prod. 50% (op.), BP 50%
Karawan	IEOCc Prod. 60%, BP 10%, Rosneft 30%
Zohr	IEOC Prod. 60%, BP 10%, Rosneft 30%
Shorouk	IEOC 50% , BP 50% (op.)
North El Burg	IEOC Prod. 50% , BP 50% (op.)
Ras El Barr	IEOC Prod. 50% (op.), BP 50%
Temsah	IEOC Exp. 50% (op.), THARWA 50%
Thekah	IEOC Exp. 60% (op.), KUFPEC 40%
North Bardawil	EOC Prod. 100%
Port Fouad	

North Leil	IEOC Production 100%
North Ras El Esh*	IEOC Prod. 50%, BP 50% (op.)
Abu Rudeis	IEOC Prod. 100%
Sidri	IEOC Prod. 100%
Feiran	IEOC Prod. 100%
Se Abu Zenima	IEOC Prod. 100%
Belayim	IEOC Prod. 100%
Ras Gharra	IEOC Prod. 100%
Ahsrafi	IEOC Prod. 50% , GDF 50%
South Ghara	IEOC Prod. 25% , BP 75% (op.)
East Delta	IEOC Prod. 75%, RWE 25%
East Delta South	IEOC Prod. 54.5%, RWE 45.5%
Abu Madi	IEOC Prod. 100%
Nile Delta	IEOC Prod. 75%, BP 25%
North El Hammad*	IEOC Prod. 50%, BP 37.5% TotalEnergies 25%
Baltim	IEOC Exp. 50% (op.), BP 50%
West Baltim	IEOC 100%
Tennin (Sub Area) -T1	IEOC Exp. 50% (op.), BP 50%
East Obayed	leoc SpA 100%
Merged Meleiha	IEOC Prod. 76% (op.), Lukoil 24%
East Kanayis 1, 2 & 3	IEOC 100%
West Razzak	IEOC 100%
West Abu Gharadig	EOC Prod. 45%, INA 25%, DANA 30%
South West Meleiha	IEOC 100%
Ras Qattara	IEOC Prod. 75%, INA 25%

*Not yet signed. Source: Eni, BMI

Eni - Financial Data (USDbn)

ENI	2014	2015	2016	2017	2018	2019	2020	2021	2022
Revenue, adj	123.79	75.20	61.72	70.98	75.8	69.9	44.0	76.6	130.9
Net income, adj	2.03	-1.01	0.07	3.43	4.8	3.2	-1.5	7.0	14.9
Capex	14.50	11.50	9.30	8.60	8.8	8.0	4.4	4.9	8.2

Source: Bloomberg, Eni, BMI

Regional Overview

Middle East And North Africa Oil & Gas Overview

Key View: The MENA region will be a key driver of global supply growth over the coming decade as producers ramp up investment to monetise the region's vast resource base. Oil will dominate supply across the forecast period, but gas will gain ground as governments increasingly target the development of their domestic resources. Gas demand will grow strongly in line with supply, while oil demand is also set for healthy growth, supported by positive demographic and macro fundamentals.

To highlight the key themes that inform our Middle East and North Africa (MENA) oil and gas forecasts, we have compared markets on the basis of the following key indicators:

- Oil production
- Oil consumption
- Refining capacity
- Gas production
- Gas consumption

Our MENA coverage includes Algeria, Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Syria, Tunisia, the UAE and Yemen.

Oil Production: Gulf Cooperation Council (GCC) Set For Revival

Near-term output is being heavily constrained by the terms of the OPEC+ production cut deal. The group currently has two cuts in place: the 2mn b/d cut, which was enacted in November 2022, with 1.14mn b/d pro-rated to participating MENA members; and a 1.16mn b/d cut, which was enacted in May 2023, including 1.07mn b/d cuts for MENA, spread across Saudi Arabia (500,000b/d), Iraq, (211,000b/d), the UAE (144,000b/d), Kuwait (128,000b/d), Algeria (48,000b/d) and Oman (40,000b/d). At its June 2023 meeting, the group may several further, major announcements, including the extension of the OPEC+ cooperation agreement from December 2023 to December 2024, a 1.4mn b/d reduction of the group's output quotas, effective from January 2025, and a unilateral 1mn b/d cut by Saudi Arabia, which was brought into place in July 2023 and has been subsequently rolled over into December 2023.

Oil Production: Near-Term Constraint, Long-Term Growth

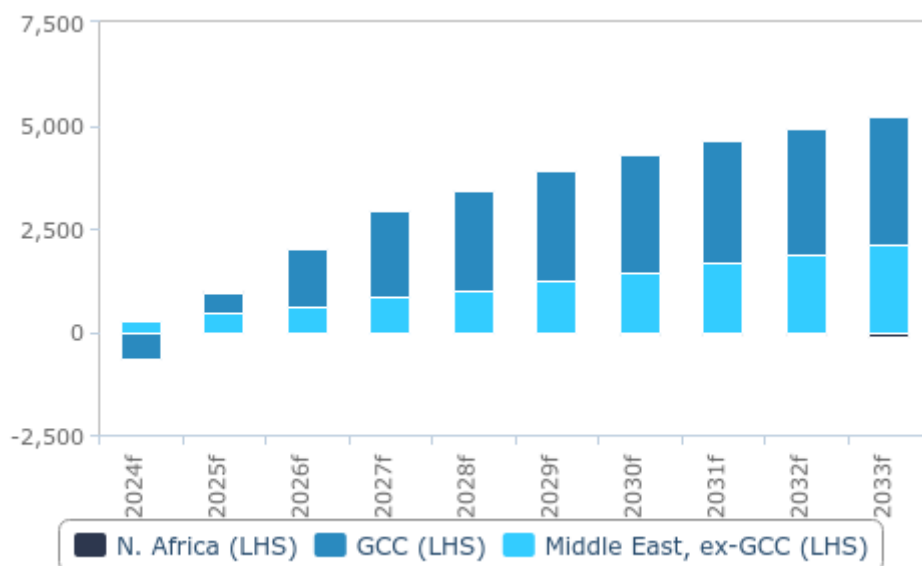
Oil production levels in the MENA region remain heavily subdued under the terms of the OPEC+ production cut agreement, with regional crude, condensate and natural gas liquids output set to contract by 1.1% y-o-y in 2024. After its latest meeting, the OPEC+ group made several key announcements. Including the rollover of the existing cuts in their current form for a period of three months, an extension of the OPEC+ production cut deal from December 2024 to December 2025, and an additional 300,000b/d quota for the UAE in 2025. They also published a production schedule out to December 2025 for key members. In some ways, this is consistent with their long-run strategy of close market management and the prioritisation of prices over production. In others, it points to a subtle shift in strategy aimed at a more sustainable return of cut barrels to market. In our view, this strategic shift is not only necessary but also arguably overdue. However, the group faces an uphill struggle in removing the near decade-long 'OPEC put' that market participants have now come to take for granted.

Meanwhile, the long-term outlook remains firmly bullish. Despite a volatile oil price environment, capital spending is continuing to grow and we expect MENA capex to rise by 9.3% in 2024 and a further 5.6% in 2025. The combination of rising investment and the unwinding of the OPEC+ production cut deal will drive robust production growth over 2024-2033, with output rising by 5.13mn b/d (15.4%). The GCC will be the main engine of growth, adding 3.12mn b/d (14.5%) over the 10-year forecast period. The Middle East

(excluding GCC markets) will increase its output by 2.12mn b/d (25.1%), while North Africa will buck the regional trend, with production forecast to decline by 104,000b/d (-3.0%), with gains in Libya offset by stagnant-to-declining output in Egypt and deep production losses in Algeria.

MENA Production Gearing Up For Long-Term Gains

MENA - Cumulative Growth Crude, Condensate & NGL Production, '000b/d & % chg. y-o-y



f = forecast. Source: BMI

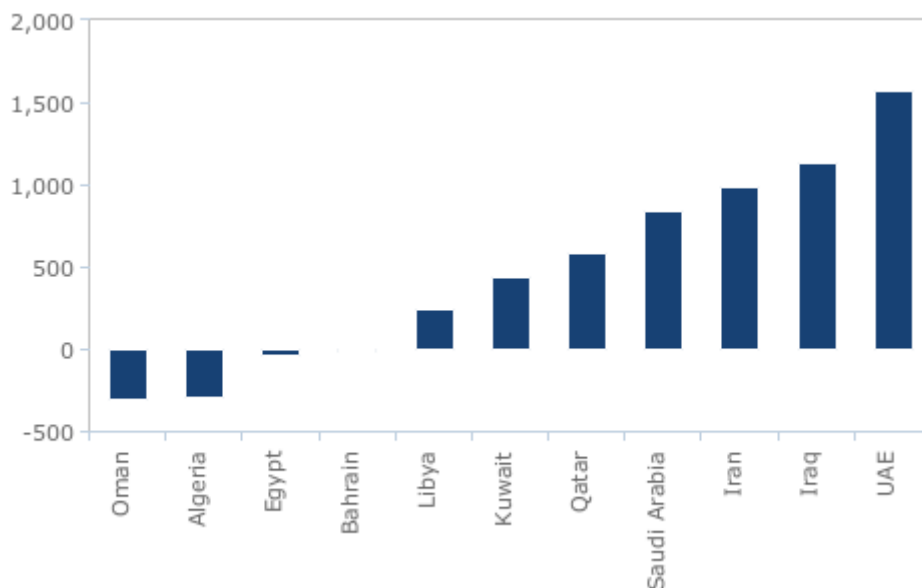
With Russia likely to face long-term constraints on its oil output, there is opportunity for Saudi Arabia and other key Middle Eastern producers to grow their share of the global marketplace, and the region will be the largest contributor to production growth globally outside the US. That said, this must be weighed against structural declines in oil demand stemming from the global energy transition. This consideration was likely one factor informing Saudi Arabia's decision earlier this year to abandon plans to raise its output capacity from 12mn b/d to 13mn b/d by 2027. Nevertheless, the kingdom is currently producing around 3mn b/d below capacity and, although it will likely keep a significant share of this in reserve as swing production capacity, we forecast healthy growth of 840,000 b/d over the 10 years to 2033.

Following Saudi Arabia's announcement, we now forecast the largest supply gains for the UAE, which will raise its output by 1.57mn b/d. At around 3mn b/d UAE is already producing more than 1mn b/d below its capacity and is investing to further expand this capacity to 5mn b/d by 2027. As with other major GCC players, the UAE holds substantial long-run advantages over most other producers globally due to its vast discovered resource base, advantaged position on the global cost curb and comparatively low upstream emissions intensity. In the UAE, this is being further supported by renewed exploration efforts, ongoing market reform and a growing role for foreign and private players.

Kuwait is also set for substantial growth, adding 439,000b/d over the next 10 years. The Kuwaiti government has moderated its ambitious targets for production, pushing back its 4mn b/d target from 2020 to 2040 and setting an interim target of 3.5mn b/d, pulling their outlook more closely in line with our own. Growth will be supplied by the Greater Burgan field, the restart of the Partitioned Zone shared with Saudi Arabia and the return of barrels cut under the OPEC+ production cut agreement.

GCC Leading Growth

MENA - Selected Markets Net Change In Crude, Condensate & NGL Production, '000b/d, 2024f-2033f



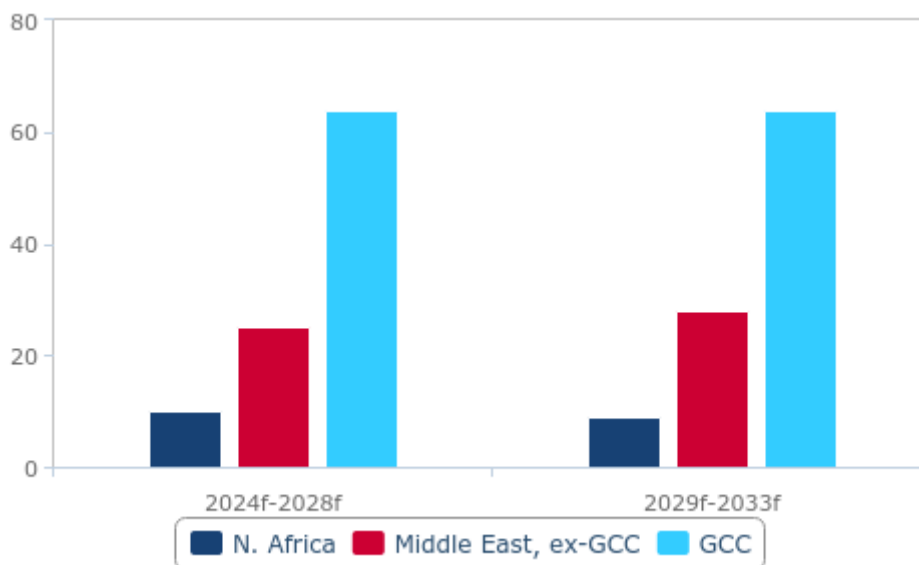
f = forecast. Source: BMI

Middle Eastern production outside the GCC is dominated by Iran and Iraq, both of which face major headwinds. Iraq has vast potential below ground, but is being held back by unattractive fiscal and licensing terms, fiscal constraints on the government and the long-standing dispute between Baghdad and the Kurdistan Regional Government (KRG). Political, operational and logistical risks are also perennially high and can have a significant impact on investment and production. For example, exports from Kurdistan via Turkiye have been suspended since 2023, when an arbitration court ordered Ankara to pay Baghdad a USD1.5bn settlement, in recompense for exporting oil with the approval of the KRG but not the central government. The growth we forecast for Iraq is substantial, sitting at 1.13mn b/d. However, with output forecast to reach 5.54mn b/d by 2033, it falls far short of the country's targeted 7mn b/d capacity in 2027. Iraq has adequate reserves to support this growth, but the constraints discussed above, coupled with various other headwinds above ground - not least the lack of sufficient export infrastructure - render the target extremely ambitious.

Meanwhile, Iran is under continued pressure from US secondary sanctions in place on its oil sector. Despite sanctions, Tehran has managed to meaningfully increase its production and exports, with output rising by 569,000b/d over 2023, significantly in excess of both our own and consensus expectations. Several factors have contributed to the gains, but key amongst them was a partial thawing of relations between the US and Iran and the softer approach to sanctions enforcement taken by US President Joe Biden. The Israel-Hamas war that broke out in October 2023 raised risks to the outlook, threatening a broader regionalisation of the fighting putting Iranian exports and production in jeopardy, either due to conflict-related infrastructural outages, disruptions to trade via the Strait of Hormuz or tighter sanctions enforcement. However, production has in fact marginally increased, rising by 82,000b/d in the six months for June. This is consistent with our Country Risk team's long-held view that the fighting would remain relatively well-contained. We forecast strong gains of 990,000b/d over the coming decade, although this largely reflects a return to pre-sanctions production level with limited scope for growth above this level. Further growth would likely demand greater inbound investment that we currently anticipate.

North Africa Continues To Lag

MENA - Net Change In Crude, Condensate & NGL Production, '000b/d



f = forecast. Source: BMI

The outlook on North Africa is mixed. The only market we forecast to see growth is Libya, with anticipated gains of 248,000b/d up to 2033. Libyan output stands at 1.20mn b/d, broadly in line with current peak capacity levels but far below the pre-conflict highs of above 1.7mn b/d. Over the last 15 years, production has been perhaps the most volatile of any market globally, reflecting persistent security risks. Supply has been relatively stable since late 2022, but the political environment remains highly fragmented. The country is split between two rival governments - the Tripoli-based Government of National Unity and the Eastern-based Government of National Stability - and a plethora of armed factions operating at the local level. Delayed elections have yet to be held and, according to our Country Risk team, deeply entrenched divisions and vested interests will likely prolong the current political impasse and hinder progress towards political reunification. As long as the impasse holds, the risks to oil production will remain acute. Despite these challenges, the Libyan National Oil Corporation (NOC) aims to increase production from around 1mn b/d currently, to 1.4mn b/d by end-2024 and 2.0mn b/d over the next three-to-five years. However, substantial capital investments will be required to repair infrastructure and restore output, which the NOC will struggle to fund entirely by itself. Foreign and private players are unlikely to commit sufficient investments to make up the difference and, in our view, its targets are likely to be missed.

In contrast, our outlook on Algeria is heavily bearish, with production forecast to decline by 298,000b/d over the next 10 years. The sector remains heavily reliant on state-owned Sonatrach, which has struggled to contain decline rates on its major maturing assets. The hydrocarbons reforms enacted over the past five years have moderately improved the prospects for foreign investment in the longer term, but this is unlikely to be sufficient to reverse the declines in full. Above-ground risks remain elevated and the projects pipeline is thin. Absent major new discoveries and/or a material improvement in the investment climate, the scope for growth is limited. Egypt is also facing declines, with supply set to contract by 40,000b/d over the decade, with a lack of crude discoveries to offset natural depletion. The prospective resource base is largely gaseous and gas-based projects are increasingly the focus of investment, although condensates and NGLs offer some upside to oil output.

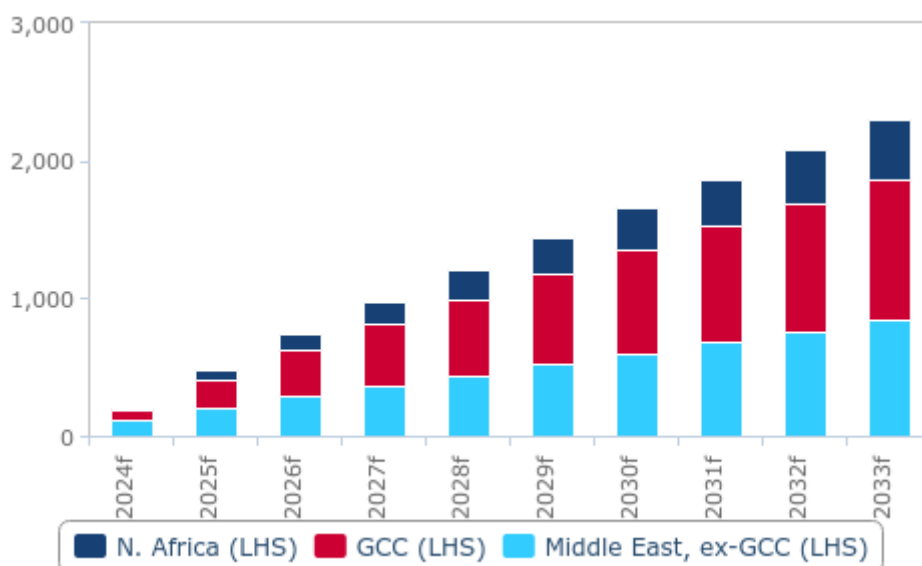
Refined Fuels Consumption: Strong Macro, Demographic Fundamentals Signal Healthy Growth

The outlook for fuel demand in MENA is strongly bullish, with the region set to account for the second-largest increase in global oil consumption over the coming decade, behind only emerging markets in Asia. Forecast demand growth is strong in the near term, sitting at 2.2% y-o-y in 2024 and 2.8% ub 2025. Although the post-pandemic boost has faded, the underlying fundamentals are strong. Prices have posted a strong recovery over recent years, with the global benchmark Brent crude averaging USD82/bbl in 2023 and set to average US\$85/bbl in 2024, up from USD42/bbl in 2020. Given the makeup up of MENA economies, the heavy

reliance on oil for fiscal revenues in major economies and the spillover to the non-oil sector, this all points to healthy consumption in the near term.

Regional Consumption Steadily Climbing

MENA - Cumulative Growth Refined Fuels Consumption, '000b/d, & % Chg. y-o-y

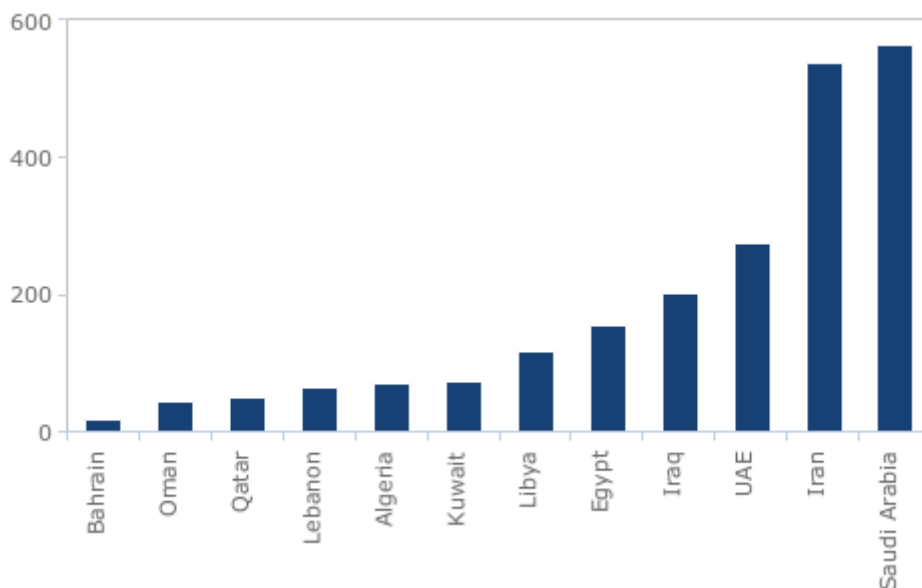


f = forecast. Source: BMI

Price liberalisation remains a key risk to the outlook for demand in the region. MENA markets - in particular Iran and Saudi Arabia - account for a large share of global fossil fuel subsidies and pressure to swap brown subsidies for green will build with time. However, fuel price hikes are a sensitive issue politically and have in the past been a trigger for violent social unrest, as was the case in Iran in 2019 and Lebanon in 2021. As a result, they continue to grow. A recent report the IMF estimated that fossil fuels in the Middle East had more than doubled between 2020 and 2022, although this likely reflects increases in the oil price, rather than the expansion of underlying subsidy packages. Nevertheless, with no signs of further policy reform in sight, we expect fuels prices in the region to remain significantly below the global market average for the foreseeable future. This will support broad-based growth across MENA, although Saudi Arabia and Iran will continue to dominate in volume terms, reflecting the sheer size of their domestic fuels markets.

Demand Growing Across The Region

MENA - Net Change In Refined Fuels Consumption, '000b/d (2024f-2033f)



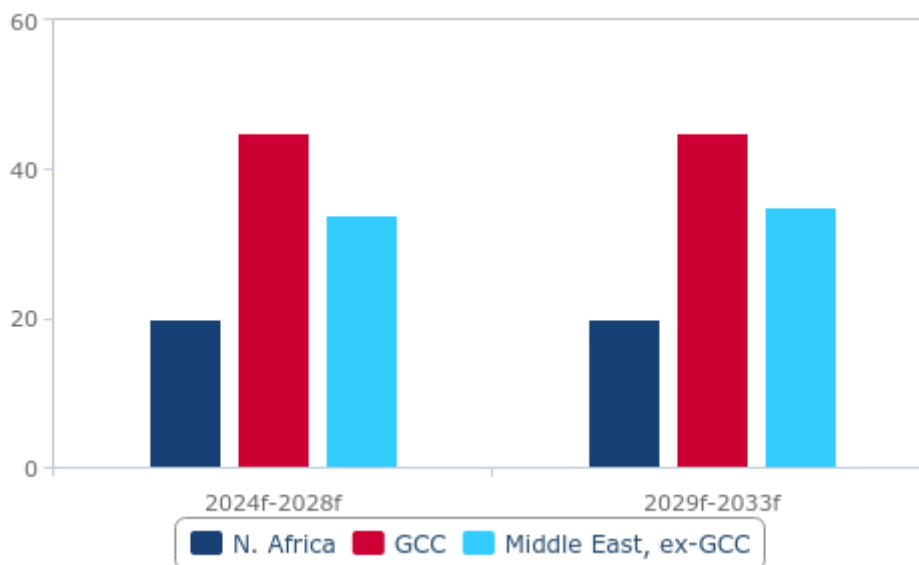
f = BMI forecast. Source: OPEC, national sources, US Energy Information Administration, BMI

The long-run fundamentals of the region are bullish, not least due to its young and increasingly mobile demographic. The overall economic growth outlook is also healthy and points to robust and rising demand in the road freight, aviation, marine and industrial sectors. In addition, refining, petrochemicals and other energy-intensive industries are set for strong growth (in line with ongoing economic diversification efforts) and will offer new sources of liquids demand. We expect MENA refined products consumption to increase by 2.30mn b/d (24.0%) over the next 10 years, nearing 12mn b/d by 2033.

MENA's oil demand growth is also relatively less exposed than most other regions to the ongoing low-carbon energy transition. Climate-related policies are relatively underdeveloped in most markets and economic activity will likely remain heavily carbon- and emissions-intensive over the coming decade. Our data show average annual fuels demand growth of 2.1% in the GCC, 2.3% in the Middle East (excluding GCC markets), and 2.0% in North Africa over 2024-2033. This compares favourably with the developed market growth rate (-0.7%) and is broadly on par with the emerging market growth rate (2.2%) over the same period.

GCC In The Driver's Seat

MENA - Net Change In Refined Fuels Consumption, '000b/d (2024f-2033f)



f = BMI forecast. Source: OPEC, national sources, US Energy Information Administration, BMI

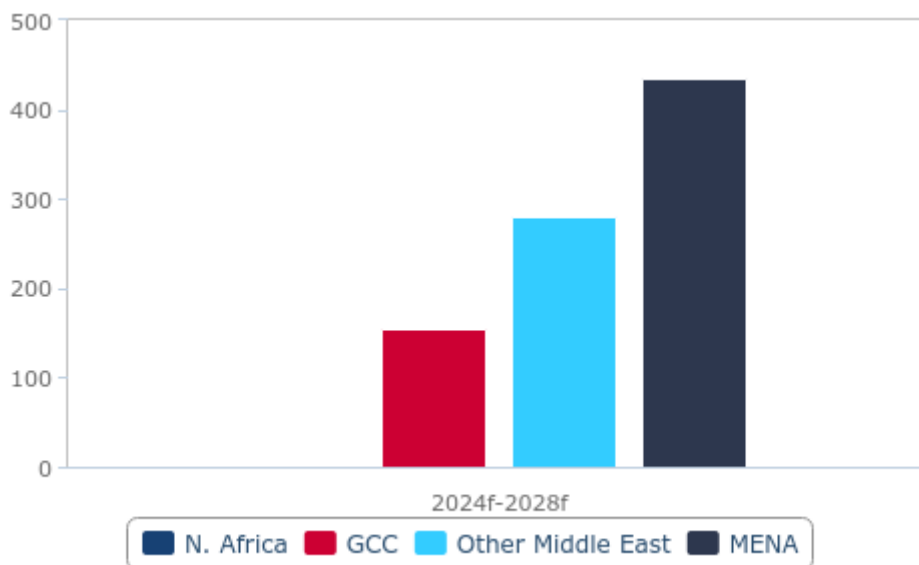
Refining Capacity: Fuels Production Set For Growth

The global refining sector enjoyed a major boost in the wake of Russia's invasion of Ukraine, reflecting acute distortions in various product markets, particularly middle distillates. At its peak in June 2022, Bloomberg's benchmark Arabian Gulf 3-2-1 crack for Dubai crude climbed above USD45/bbl, more than five times the five-year seasonal average for that month. However, markets have been normalising since then and refining margins have been narrowing amid lower demand and rising inventories, which could weigh on throughput.

Over our long-term forecast, Middle Eastern refiners, many of which benefit from access to low-cost domestic feedstock and strong government support, are well-positioned to compete for global market share. This, combined with their high complexity and markets of scale, will position them well to squeeze out other, legacy producers. As with the upstream sector, the GCC will drive growth, reflecting the generally stronger financial position of its national oil companies, strategic efforts to diversify along the value chain and the abundance of domestic oil resources.

Capacity Continuing To Grow

MENA - Net Change In Refining Capacity, '000b/d



f = forecast. Source: BMI

MENA's refining capacity is forecast for muted growth across the next five years, increasing to 13.80mn b/d in 2028, a rise of 435,000b/d (3.0%). Capacity additions in the second half of our forecast period are likely to be softer, reflecting a shift in capex from greenfield to brownfield refining projects, although tight global markets and favourable refining margins in the interim could incentivise further capacity additions targeting export markets, particularly those in Asia.

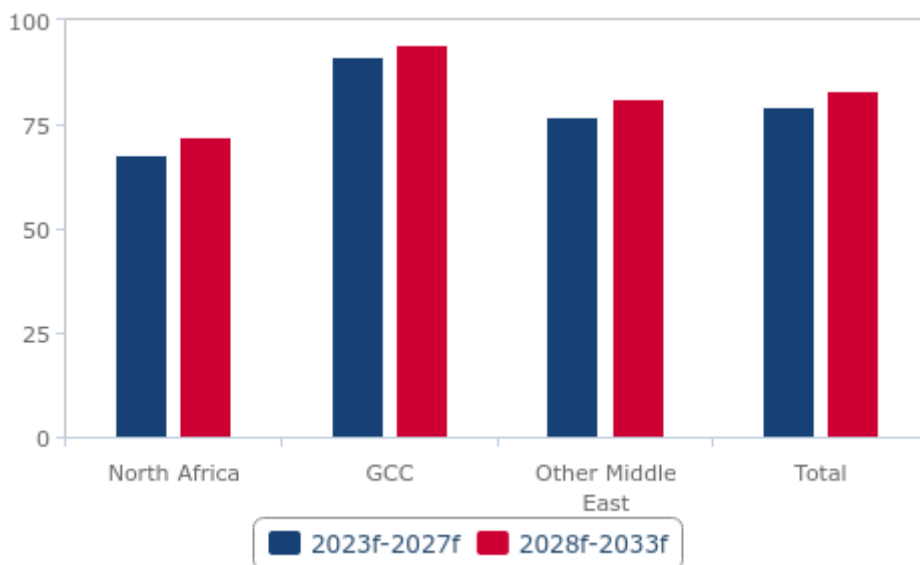
New investment is spread across a number of developments. Recent key contributors to growth include:

- Kuwait's 615,000b/d Al-Zour refinery, which began commercial operations in November 2022 and should ramp up to full utilisation over 2023-2024.
- Iraq's 140,000b/d Karbala refinery, which began operations in April 2023
- The 90,000b/d capacity expansion of the Sitra refinery in Bahrain, which was aiming for completion in 2022, but the start-up for which we have since delayed to 2024.
- The Duqm refinery in Oman, a greenfield facility which will add 230,000b/d of capacity and is set to enter commercial operations by the end of the year.

As this wave of capacity rolls onstream, the focus of investment is shifting away from capacity growth and towards brownfield projects, largely clean fuels projects, residual upgrading, capacity debottlenecking and modernisation works. These investments are needed to equip legacy facilities to compete in the global marketplace, amid tightening fuel standards and shifting product slates.

Brownfield investments being made to improve legacy infrastructure will also support continued fuels production growth over the backend of the forecast period, even absent any further capacity expansions. This is reflected in our forecast in the form of rising capacity utilisation rates. Operational performances vary widely by market, with utilisation ranging from less than 40% in Libya to over 100% in Qatar. Overall though, rates will rise across the MENA region over the coming decade: in the GCC, utilisation will grow from an average of 105% over 2024-2028, to 110% over 2029-2033 in the GCC, from 64% to 66% in the rest of the Middle East and 71% to 77% in North Africa.

Brownfield Investments Paying Dividends MENA - Average Refinery Utilisation Rates, % (2023-2033)



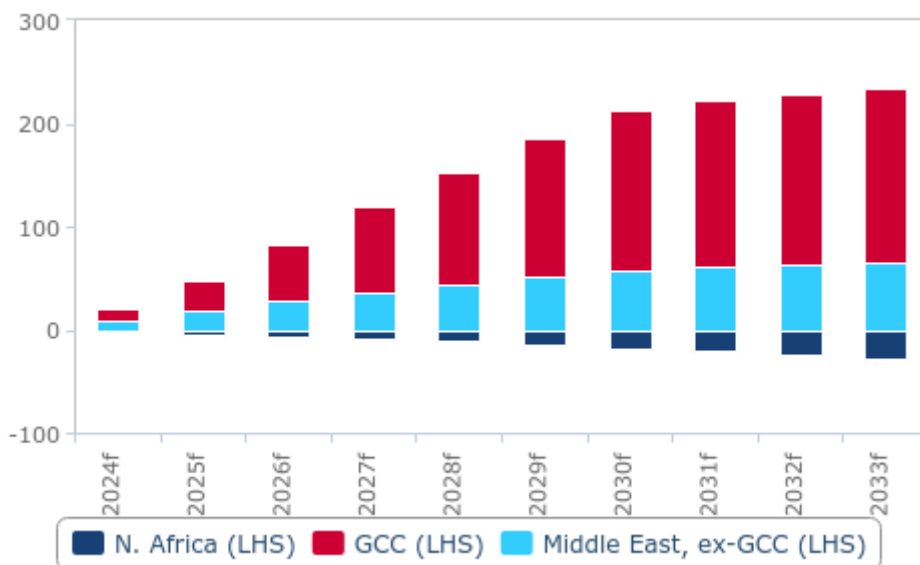
f = forecast. Source: BMI

Gas Production: Temporary Roadblocks, But Outlook Remains Bright

As with oil, the region boasts a large discovered resource base of both conventional and non-conventional gas. The resource base is significantly underdeveloped, with MENA holding a high reserves-to-production ratio in global terms. The scope for further output growth is substantial, although the tight, shale and sour gas resources, which represent a significant share of the project pipeline, pose some challenges for development. Several projects have also faced delays over the past few years stemming from Covid-19 and the related cutbacks in spending. However, tendering activity accelerated over 2022-2023 and regional capex is on track for another healthy increase in 2024. Our long-term outlook remains firmly bullish and we expect MENA gas production to rise by 207bcm (22.8%) over 2024-2033 to reach 1,140bcm.

Natural Gas A Strategic Focus

MENA - Cumulative Growth In Natural Gas Production, bcm, & % chg. y-o-y (2024f-2033f)

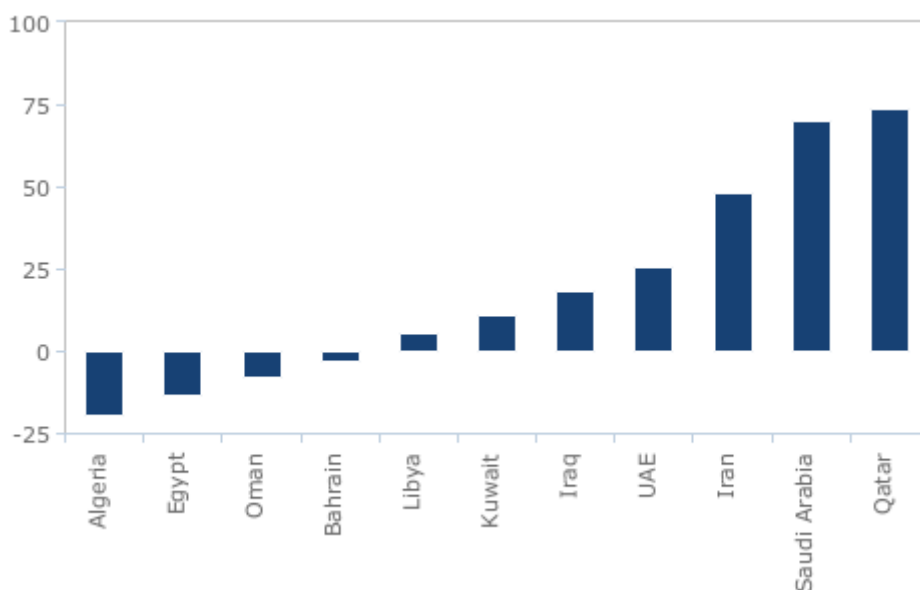


f = forecast. Source: BMI

Several core markets will rely heavily on gas to meet rising energy in the power and industrial sectors and, to a lesser degree, to support oil-to-gas switching in the overall energy mix. Gas production growth is of strategic importance in many markets, in particular those fostering the development of gas-based industries as part of their economic diversification efforts and/or those facing a growing reliance on imported energy. We believe that companies in the region will continue to ramp up investments in the development of MENA's large and largely underdeveloped gas resource base. A large share of current production is associated in oilfields and volumes are under pressure from rising demand for re-injection. The main driver of output growth will be greenfield, non-associated gas developments.

Qatar, Saudi Arabia To Lead Regional Growth

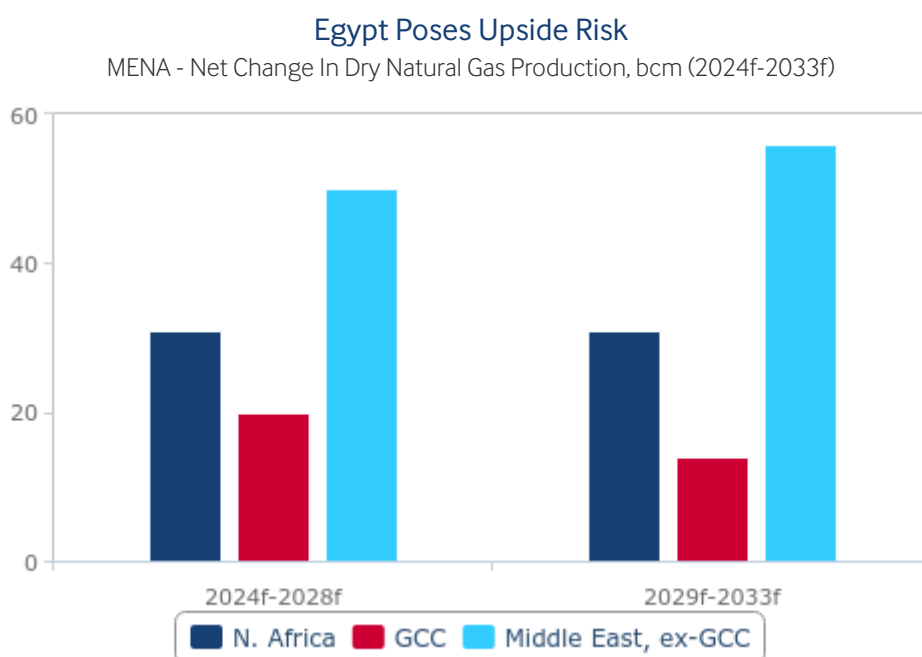
MENA - Selected Markets Net Change In Dry Natural Gas Production, bcm



f = BMI forecast. Source: BMI

Production gains will be led by the GCC. A number of projects are scheduled for production over the coming years, including the North Pars expansion (Qatar), Hawiyah and Haradh, and Tanajib (Saudi Arabia), the North West Area project (the UAE) and JPF-4 and JPF-5 (Kuwait). Given the size of the resource base, there is room for additional production growth within the region. However, low state-set gas prices, a lack of foreign participation and infrastructural limitations have dragged on developments in many markets. Considerable upside stems from plans to monetise the region's large unconventional resource base. The most advanced plans are in Saudi Arabia, where the kingdom has committed USD110bn to the development of the Jafurah basin, targeting 20bcm of production by 2030. Saudi Aramco is reportedly also seeking outside investment in the project and has awarded several major contracts in the meantime. In November 2020, the Abu Dhabi National Oil Company, in partnership with TotalEnergies, also produced the first unconventional gas in the UAE and is targeting 10.0bcm of output by 2030.

Middle Eastern production outside the GCC will continue to be led by Iran. With the bulk of the South Pars development now on stream, the pace of growth will slow, but several other large projects are in line for development. The country boasts a large discovered resource base, but limited foreign participation in the sector and considerable financial constraints on the National Iranian Oil Company will cap production growth, even assuming sanctions are ultimately lifted. Iraq is also set for strong growth, but from a low base. The government is looking to tap flared gas resources and have plans to monetise both associated and non-associated resources.

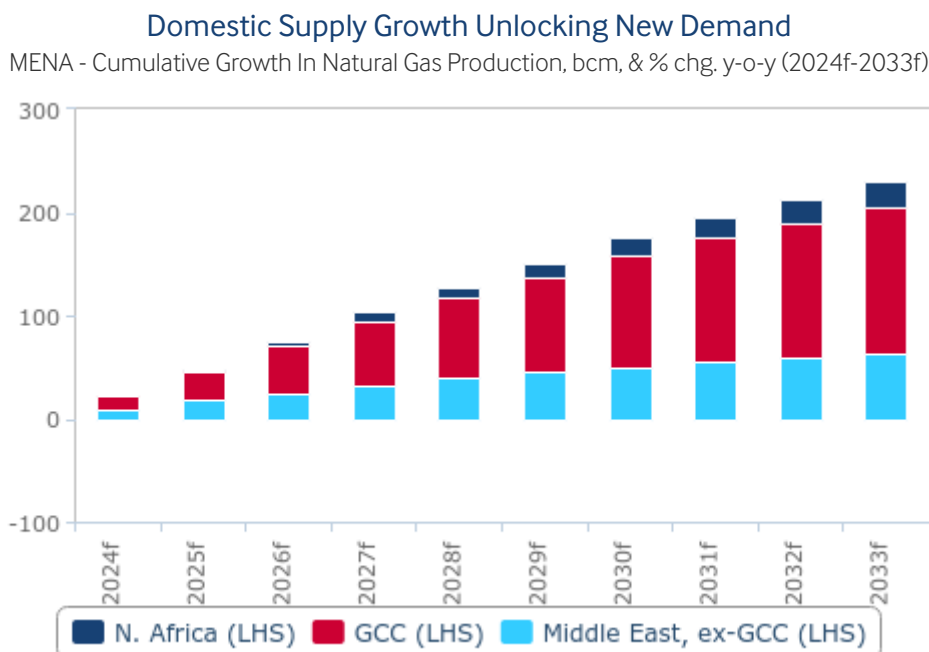


f = BMI forecast. Source: OPEC, national sources, US Energy Information Administration, BMI

As with oil, North Africa lags behind the larger MENA region. In Libya, natural gas production has suffered from the same weak security environment and chronic underinvestment that plagues oil. Eni is currently progressing several projects in the country, notably the major A&E development offshore, which will help to boost growth over the medium term. Investment in Algeria has disappointed and heavy decline rates on the major Hassi R'Mel gas field are dragging headline growth into negative territory, with limited greenfield additions to counterbalance the large mature asset base. Egypt is also expected to see declines over the 10-year forecast period. However, this is based only on those projects that are post-FID and a prospective offshore resource base offers substantial upside risk once the global market recovers. In October, the country unveiled the results of its latest licensing round, with international majors Eni, bp and QatarEnergy taking up acreage to explore offshore in the East Mediterranean.

Gas Consumption: Industrial And Power Demand Set For Continued Growth

Natural gas demand continues to grow robustly and set for a further 2.4% gain in 2023. According to our data, MENA gas demand will rise from 733bcm in 2023 to 962bcm in 2033 (+31.4%), with growth averaging 2.7% a year across the forecast period. This compares favourably to developed (0.7%) and emerging market (2.2%) averages.

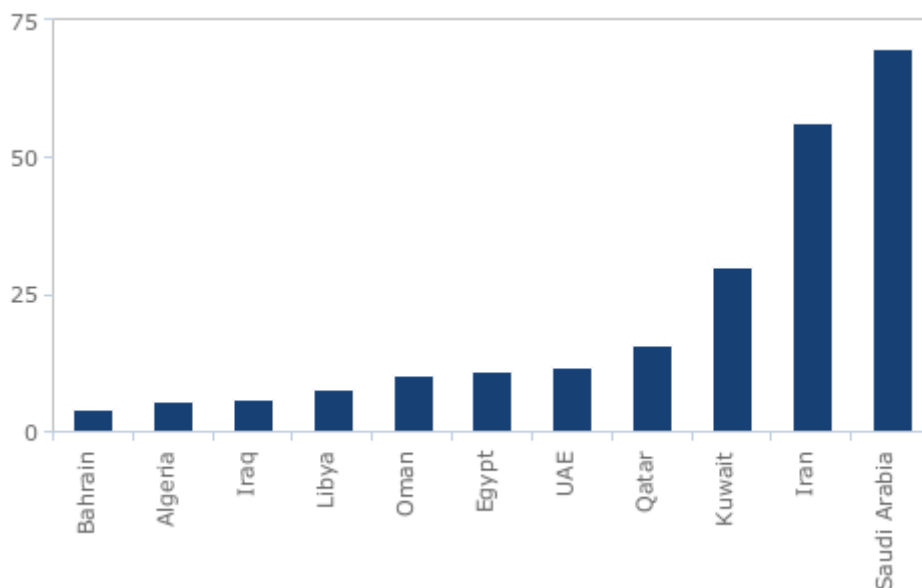


f = forecast. Source: BMI

Positive demographic and economic fundamentals brighten the long-term outlook for energy demand more broadly, in particular across the power, industrial and transport sectors. Furthermore, energy diversification, industrial oil-to-gas switching and growth in the downstream sector should see natural gas take a larger share in final consumption over the coming decade. Iran and Saudi Arabia will be the main engines of growth in the region, accounting for around 60% of regional additions over the 10-year forecast period. This reflects the large size of their domestic gas markets, strong overall energy demand growth, oil-to-gas switching (largely in Iran) and the rising availability of domestic supplies.

Key Markets Posting Healthy Growth

Net Change In Dry Natural Gas Demand, bcm (2024f-2033f)

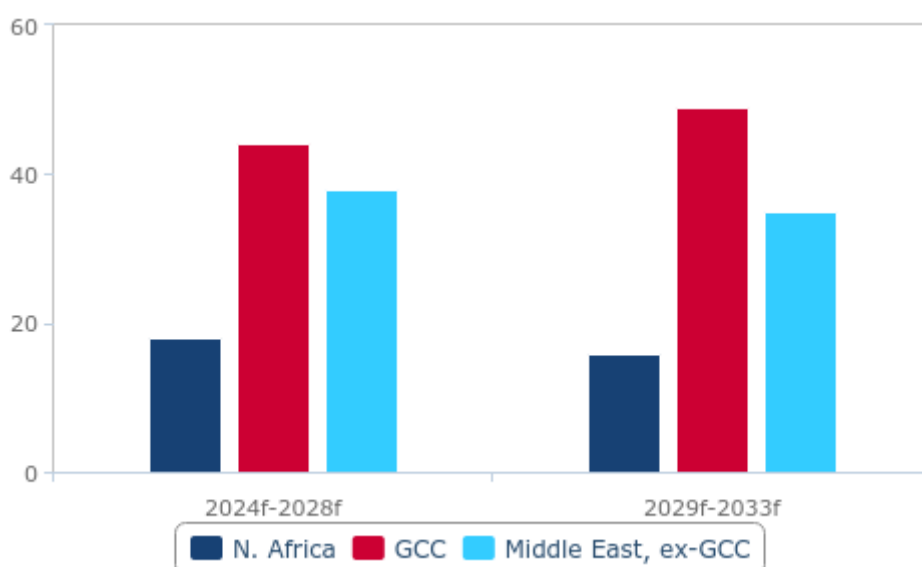


f = BMI forecast. Source: OPEC, national sources, US Energy Information Administration, BMI

On a sub-regional level, growth will be relatively well diversified, with demand rising by 43.5% in the GCC, 22.8% in the Middle East (excluding GCC markets) and 19.2% in North Africa. The bulk of these demand additions will be met by rises in domestic supply. The exception is North Africa, where we see a growing disconnect in the gas market between a bearish outlook on production and bullish prospects for consumption. This will drive a sharp deterioration in the region's gas trade balance, reflecting the combination of a steep decline in exports and more moderate rise in imports.

Gas Deficit Risks Rising In North Africa

MENA - Net Change In Dry Natural Gas Production & Demand, bcm (2024f-2033f)



f = BMI forecast. Source: OPEC, national sources, US Energy Information Administration, BMI

Oil & Gas Glossary

Term	Description	Term	Description
AOR	additional oil recovery	IOC	international oil company
APA	awards for predefined areas	IPO	initial public offering
API	American Petroleum Institute	JOC	joint operating company
bbl	barrel	JODI	joint organisations data initiative
bcm	billion cubic metres	JPDA	joint petroleum development area
b/d	barrels per day	LAB	linear alkyl benzene
boe	barrels of oil equivalent	LDPE	low density polypropylene
BTU	British thermal unit	LNG	liquefied natural gas
capex	capital expenditure	LPG	liquefied petroleum gas
CBM	coal bed methane	mcm	million cubic metres
CEE	Central and Eastern Europe	MENA	Middle East and North Africa
CSG	coal seam gas	MoU	memorandum of understanding
DoE	US Department of Energy	mt	metric tonne
DM	developed markets	mtpa	million tons per annum
EBRD	European Bank for Reconstruction & Development	NGL	natural gas liquids
EEZ	exclusive economic zone	NGV	natural gas vehicle(s)
EIA	US Energy Information Administration	NOC	national oil company
EM	emerging markets	opex	operating expenditure
EOR	enhanced oil recovery	PE	polyethylene
E&P	exploration and production	PP	polypropylene
EPSA	exploration and production sharing agreement	PSA	production sharing agreement
EV	electric vehicle(s)	PSC	production sharing contract
FID	final investment decision	R&D	research and development
FDI	foreign direct investment	R/P	reserves/production
FEED	front end engineering and design	RPR	reserves to production ratio
FLNG	floating liquefied natural gas	SGI	strategic gas initiative
FPSO	floating production, storage and offloading	SoI	statement of intent
FSRU	floating storage and regasification unit	SPA	sale and purchase agreement
FTA	free trade agreement	SPR	strategic petroleum reserve
FTZ	free trade zone	SSA	Sub-Saharan Africa
GCC	Gulf Cooperation Council	tcm	trillion cubic metres
G&G	geological and geophysical	t/d	tonnes per day
GS	geological survey	toe	tonnes of oil equivalent
GTL	gas to liquids	tpa	tonnes per annum
GWh	gigawatt hours	TRIPS	Trade-Related Aspects of Intellectual Property Rights
HDPE	high density polyethylene	TWh	terawatt hours

Term	Description	Term	Description
HoA	heads of agreement	USGS	US Geological Survey
IEA	International Energy Agency	WIPO	World Intellectual Property Organization
IGCC	integrated gasification combined cycle	WTI	West Texas Intermediate

Oil & Gas Methodology

Connected Thinking

BMI employs a unique methodology known as 'Connected Thinking'. This means that our analysis captures the inter-relatedness of the global economy, and takes into account all of the relevant political, macroeconomic, financial market and industry factors that underpin a forecast and view. We then integrate them so as to explain how they interact and affect each other. Our Connected Thinking approach provides our customers with unique and valuable insight on all relevant macroeconomic, political and industry risk factors that will impact their operations and revenue-generating potential in the industry/industries within which they operate.

We use a transparent forecasting model as a base for our industry forecasts, but rely heavily on our analysts' expert judgement to ensure our forecasts capture all of the insights we derive using our unique Connected Thinking approach. We believe analyst expertise and judgement are the best ways to provide the most accurate, up-to-date and comprehensive insight to our customers.

Oil & Gas Methodology

For the Oil & Gas industry, we have historical data and 10-year forecasts for 45 core industry variables, including oil & gas production, refined fuels production and consumption, refining capacity, refined fuels production, and trade of oil and natural gas. We also have historical data and 10-year forecasts for 36 energy price indicators.

Our forecasts are a combination of analyst expert judgement and a market's own historical time series.

Our Oil & Gas analysts interact with other analytical teams in BMI, including Country Risk, Commodities, Power, Renewables, Autos and Infrastructure. This ensures that they have a comprehensive understanding of external factors that may impact the oil & gas industry outlook on either a market, regional or global level. In addition, our oil & gas forecasts draw on assessments of political risk, regulatory outlook and outlook for capital expenditure by the industry.

There is a constant rolling cycle of data monitoring, with databases being updated on a quarterly basis. Analysts will use their judgement outside of these cycles to implement forecast changes when necessary.

Industry-Specific Methodology

Our approach to forecasting combines both bottom-up and top-down analyses, drawing data from a wide range of corporate, governmental and multilateral sources. The forecasts also leverage proprietary data and analysis from across our 125 markets and 25 industry verticals.

Upstream Production

Our supply-side forecasts are bottom up, aggregating individual projects (both greenfield and brownfield) up to the market level to derive a total number.

We define oil production as crude oil, NGLs and lease condensates.

We define natural gas as dry natural gas, and exclude NGLs, which is captured under oil production.

The data are mostly sourced from companies active in the market and the relevant regulatory agencies such as the EIA and JODI.

We factor in the production capacity as reported by the given company or agency, but will make informed assumptions as to the project start-up date and commissioning periods.

In general, we include only those projects that are post-FID. However, pre-FID projects that we view to have a high probability of progressing will also be included. The likelihood of a project progressing will be decided on a number of factors, including:

- The economics of a given project
- The prevailing oil or natural gas price
- The political and regulatory environment
- Assumptions as to the capital allocation process of the equity partners

Legacy production (production beginning in any year prior to the forecast period) is forecast out, as per historical trends. However, we make adjustments to the assumed decline rate, based on historical decline rates, forecast investment into enhanced oil recovery or legacy field redevelopment, technological developments and other relevant factors.

Production is expressed in b/d for oil and cubic metres for natural gas.

Refining Capacity

Our refining capacity forecasts are bottom up, aggregating individual projects (both greenfield and brownfield) up to the market level and consider nameplate capacity.

The data are mostly sourced from companies active in the market and the relevant regulatory agencies.

We factor in the crude throughput capacity as reported by the given company or agency, but will make informed assumptions as to the project start-up date and commissioning periods. The capacity forecasts cover crude distillation units (otherwise known as atmospheric distillation units). They do not cover secondary processing capacity.

In general, we include only those projects that are post-FID. However, pre-FID projects that we view to have a high probability of progressing will also be included.

It is expressed in b/d.

Refining Capacity Utilisation

This is a derived indicator. The value is calculated as refined fuels production as a proportion of nameplate refining capacity. Given the lower density of refined fuels, a refinery running at 100% of its nameplate (crude) capacity will operate at above 100%, according to this indicator. Process optimisation and debottlenecking, which will increase the crude throughput at a given facility but will not be reflected in our headline refining capacity forecast, can also lead to over-utilisation. In general, new and more complex facilities will run at higher utilisation rates than legacy facilities.

It is expressed in b/d.

Refined Products Production

Headline refined fuels production is a function of a market's refining capacity and its forecast utilisation rates. We further break down production into gas oil/diesel, gasoline, jet fuel, kerosene, fuel oil, LPG and other products. The breakdown of production is modelled on historical trends.

It is expressed in b/d.

Refined Products And Natural Gas Consumption

Our refined products as well as natural gas consumption forecasts are top-down and leverage a range of market-level forecasts from other analytical teams in BMI, in addition to a market's own historical time series. Common drivers of fuels demand include the domestic economic and political environment, demographic trends and developments in energy-intensive sectors of the economy, as well as infrastructure build out and availability.

As with refined fuels production, we further break down refined products consumption into gas oil/diesel, gasoline, jet fuel, kerosene, fuel oil, LPG and other products.

It is expressed in b/d for oil and billion cubic metres per year for natural gas.

Oil Trade

This is a derived indicator.

We calculate crude and other liquids net exports as crude, NGPL and other liquids production, plus refining capacity gains, less refined products production.

For refined products net exports, the value is calculated as refined products production less refined products consumption. As with our production and consumption forecasts, we further break down trade into gas oil/diesel, gasoline, jet fuel, kerosene, fuel oil, LPG and other products. For total net oil exports (crude, plus, products), the value is calculated as crude, NGPL and other liquids production, plus refining capacity gains, less refined products consumption.

As derived indicators, our net export forecasts do not take account of annual stock change. This can lead to some small discrepancies between our historical data set and observed trade flows.

It is expressed in b/d.

Gas Forecasts

Gas Trade

As derived indicators, our net export forecasts do not take account of annual stock change. This can lead to some small discrepancies between our historical data set and observed trade flows.

Dry Natural Gas Net Exports

This is a derived indicator. It is calculated as dry natural gas production less dry natural gas consumption.

Of which, LNG Net Exports

LNG net exports are derived based on gross LNG exports, less gross LNG imports.

Gross export and import forecasts are bottom up, aggregating individual liquefaction and regasification projects (both greenfield and brownfield) up to the market level. We rely on our LNG Projects Database, which is a comprehensive catalogue of liquefaction, regasification facilities in each market.

Of which Pipeline Net Exports

This is a derived indicator. It is calculated as theoretical natural gas net exports less LNG net exports. Given that stock changes are implicitly captured in the pipeline net export forecast, there may be small discrepancies between our historical data set and observed trade flows.

Upstream Oil & Gas Risk/Reward Index

Our Upstream Oil & Gas Risk/Reward Index (RRI) quantifies and ranks a market's attractiveness within the context of the oil industry, based on the balance between the **risks** and **rewards** of entering and operating in different markets.

We combine industry-specific characteristics with broader economic, political and operational market characteristics. We weight these inputs in terms of their importance to investor decision-making in a given industry. The result is a nuanced and accurate reflection of the realities facing investors in terms of the balance between opportunities and risks, and between sector-specific and broader market traits. This enables users of the index to assess a market's attractiveness in a regional and global context.

The index combines our proprietary forecasts and analyst assessment of the regulatory climate. As regulations and forecasts change, so the index scores change, providing a dynamic and forward-looking result.

The Upstream Oil & Gas Risk/Reward Index comprises **72 markets**.

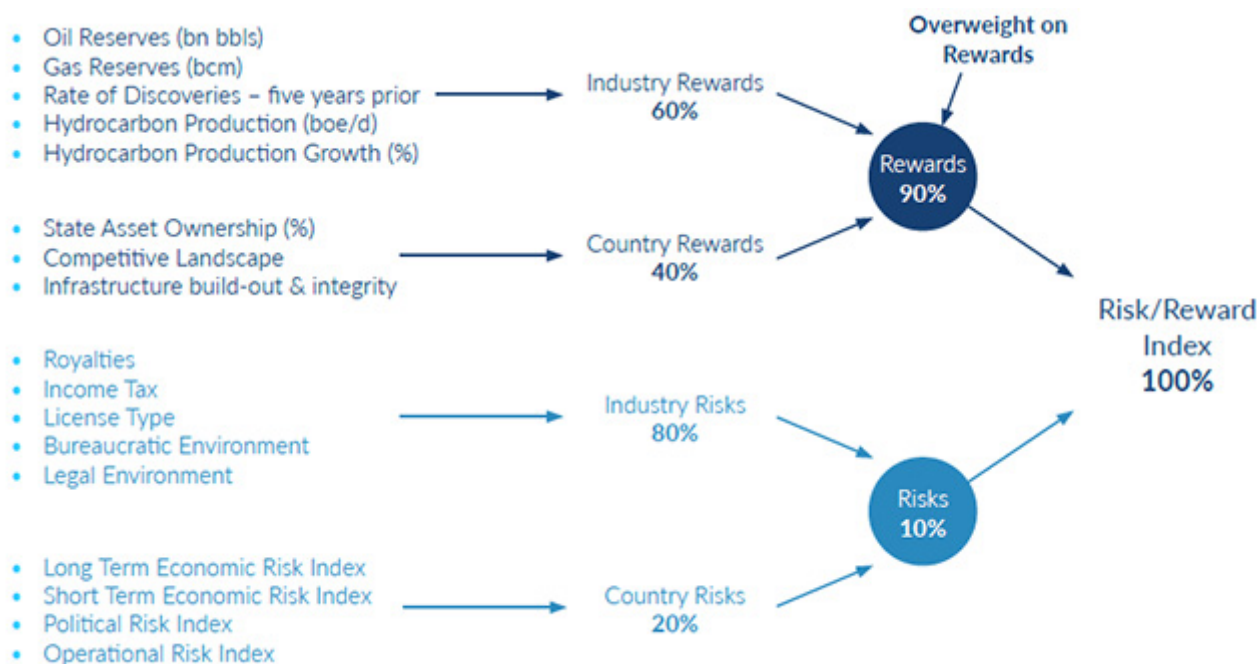
Benefits Of Using Our Upstream Oil & Gas RRIs

- **Global Index:** A global table, ranking all the markets in our universe for upstream oil & gas from most attractive (closest to zero) to most risk (closest to 100).
- **Accessibility:** Easily accessible, top-down view of the global, regional or sub-regional risk/reward profiles.

- **Comparability:** Identical methodology across 72 markets for upstream oil & gas allows users to build lists of markets they wish to compare, beyond the confines of a global or regional grouping.
- **Scoring:** Scores out of 100 with a wide distribution provide nuanced investment comparisons. The higher the score, the less favourable the profile.
- **Quantifiable:** Quantifies the rewards and risks of doing business in the upstream industry in different markets around the world and helps identify flashpoints in the overall business environment.
- **Comprehensive:** Comprehensive set of indicators assessing industry-specific risks and rewards alongside political, economic and operating risks.
- **Entry Point:** A starting point to assess the outlook for the upstream oil & gas industry, from which users can dive into more granular forecasts and analysis to gain a deeper understanding of the market.
- **Balanced:** Multi-indicator structure prevents outliers and extremes from distorting final scores and rankings.
- **Methodology:** It is a combination of proprietary BMI forecasts, analyst insights and globally acceptable benchmark indicators.

Weightings Of Categories And Indicators

Upstream Risk/Reward Index



Source: BMI

The RRI matrix is divided into two distinct categories:

Rewards: Evaluation of an industry's size and growth potential (**Industry Rewards**), and macro industry and/or market characteristics that directly affect the size of business opportunities in a specific industry (**Country Rewards**).

Risks: Evaluation of micro, industry-specific characteristics, crucial for an industry to develop to its potential (**Industry Risks**) and a quantifiable assessment of the political, economic and operational profile (**Country Risks**).

Assessing Our Weightings

Our matrix is deliberately overweight on **Rewards** (90% of the final RRI score for a market) and within that, the **Industry Rewards** segment (60% of final Rewards score). This is to reflect the fact that when it comes to long-term investment potential, industry size

and growth potential carry the most weight in indicating opportunities, with other structural factors (demographic, labour statistics and infrastructure quality) weighing in, but to a slightly lesser extent. In addition, our focus and expertise in emerging and frontier markets has dictated this bias towards industry size and growth to ensure we are able to identify opportunities in markets where regulatory frameworks are not as developed and industry sizes not as big as in developed markets, but where we know there is a strong desire to invest.

Upstream RRI Indicators - Explanation And Sources

	Source	Rationale
Rewards		
<i>Industry Rewards</i>		
Oil Reserves (bn bbl)	National sources, BMI data	Indicates size of the opportunity for oil developments. Data is for the current year.
Gas Reserves (bcm)	National sources, BMI data	Indicates size of the opportunity for gas developments. Data is for the current year.
Discoveries Rate - last five years	BMI calculation	Outlines the prospectivity and potential of the upstream.
Hydrocarbon Production (boe)	BMI forecast	Five-year forward looking indication of production volumes.
Hydrocarbon Production Growth (boe, %)	BMI forecast	Five-year forward looking indication of production growth.
<i>Country Rewards</i>		
State asset ownership (%)	BMI calculation	Total share NOCs control. Demonstrates the potential access and restrictions to resources.
Competitive Landscape	BMI calculation	Divides resource base by the approximate number of companies operating to indicate the level of competition.
Infrastructure Integrity	BMI calculation	Calculates the extent and quality of oil and gas infrastructure, indicating ease of access and level of maintenance investment needed.
Risks		
<i>Industry Risks</i>		
Licence Type	BMI calculation	Outlines a market's score based on whether oil and gas licences are offered as concessions, production sharing agreements or service contracts.
Income Tax	Government sources	Outlines the relative tax rate incurred by oil and gas companies.
Royalties & Special Taxes	Government sources	Indicates further required payments (and supplementary taxes) beyond income tax.
Bureaucratic Environment	BMI Operational Risk score	Outlines the ease of business processes, with a particular emphasis on mitigating the risk of delay to project timelines.
Legal Environment Risk	BMI Operational Risk score	A second ease of business indicator, highlighting potential challenges with the transparency and effectiveness of rule of law.
<i>Country Risks</i>		
Long-Term Economic Risk Index	BMI Country Risk Index	The Long-Term Economic Risk Index takes into account the structural characteristics of economic growth, the labour market, price stability, exchange rate stability and the sustainability of the balance of payments, as well as fiscal and external debt outlooks for the coming decade.
Short-Term Economic Risk Index	BMI Country Risk Index	The Short-Term Economic Risk Index seeks to define current vulnerabilities and assess real GDP growth, inflation, unemployment, exchange rate fluctuation, BOP dynamics, as well as fiscal and external debt credentials over

	Source	Rationale
		the coming two years.
Political Risk Index	BMI Country Risk Index	The Political Risk Index is a score made up of the mean average across three distinct pillars: Governance Risk, Society Risk and Security Risk. These are aggregated into an overall assessment of Political Risk.
Operational Risk Index	BMI Operational Risk Index	Our Operational Risk Index focuses on existing conditions relating to four main risk areas: Labour Market, Trade & Investment, Logistics, and Crime & Security.

Source: BMI

Downstream Oil & Gas Risk/Reward Index

Our Downstream Oil & Gas RRI quantifies and ranks a market's attractiveness within the context of the downstream industry, based on the balance between the **risks** and **rewards** of entering and operating in different markets.

We combine industry-specific characteristics with broader economic, political and operational market characteristics. We weight these inputs in terms of their importance to investor decision-making in a given industry. The result is a nuanced and accurate reflection of the realities facing investors in terms of the balance between opportunities and risks and between sector-specific and broader market traits. This enables users of the index to assess a market's attractiveness in a regional and global context.

The index combines our proprietary forecasts and analyst assessment of the regulatory regime. As regulations and forecasts change, so the scores change providing a dynamic and forward-looking result.

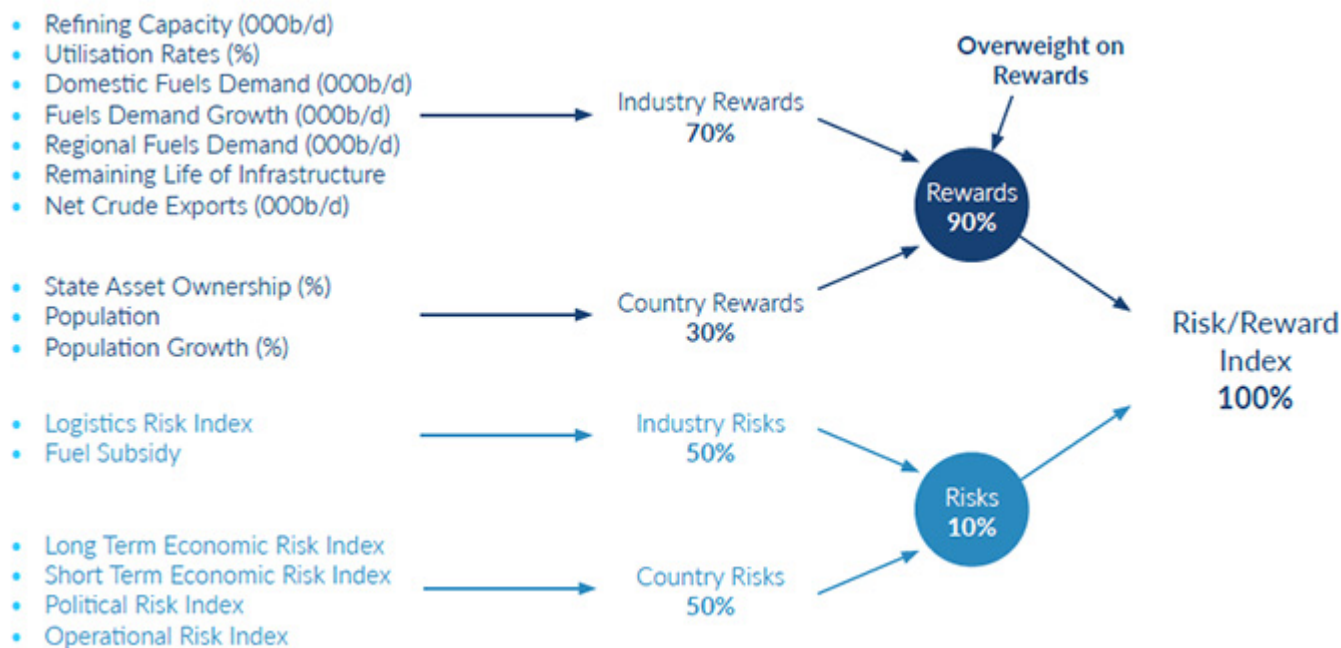
The Downstream Oil & Gas Risk/Reward Index comprises **92 markets**.

Benefits Of Using Our Downstream Oil & Gas RRIs

- **Global Index:** A global table, ranking all the markets in our universe for downstream oil & gas from most attractive (closest to zero) to most risk (closest to 100).
- **Accessibility:** Easily accessible, top-down view of the global, regional or sub-regional risk/reward profiles.
- **Comparability:** Identical methodology across 92 markets for oil & gas allows users to build lists of markets they wish to compare, beyond the confines of a global or regional grouping.
- **Scoring:** Scores out of 100 with a wide distribution provide nuanced investment comparisons. The higher the score, the less favourable the profile.
- **Quantifiable:** Quantifies the rewards and risks of doing business in the downstream industry in different markets around the world and helps identify flashpoints in the overall business environment.
- **Comprehensive:** Comprehensive set of indicators assessing industry-specific risks and rewards alongside political, economic and operating risks.
- **Entry Point:** A starting point to assess the outlook for the downstream oil and gas industry, from which users can dive into more granular forecasts and analysis to gain a deeper understanding of the market.
- **Balanced:** Multi-indicator structure prevents outliers and extremes from distorting final scores and rankings.
- **Methodology:** It is a combination of proprietary BMI forecasts, analyst insights and globally acceptable benchmark indicators.

Weightings Of Categories And Indicators

Downstream Risk/Reward Index



Source: BMI

The RRI matrix is divided into two distinct categories:

Rewards: Evaluation of an industry's size and growth potential (**Industry Rewards**), and macro industry and/or market characteristics that directly affect the size of business opportunities in a specific industry (**Country Rewards**).

Risks: Evaluation of micro, industry-specific characteristics, crucial for an industry to develop to its potential (**Industry Risks**) and a quantifiable assessment of the political, economic and operational profile (**Country Risks**).

Assessing Our Weightings

Our matrix is deliberately overweight on **Rewards** (90% of the final RRI score for a market) and within that, the **Industry Rewards** segment (70% of final Rewards score). This is to reflect the fact that when it comes to long-term investment potential, industry size and growth potential carry the most weight in indicating opportunities, with other structural factors (demographic, labour statistics and infrastructure quality) weighing in, but to a slightly lesser extent. In addition, our focus and expertise in emerging and frontier markets has dictated this bias towards industry size and growth to ensure we are able to identify opportunities in markets where regulatory frameworks are not as developed and industry sizes not as big as in developed markets, but where we know there is a strong desire to invest.

Downstream RRI Indicators - Explanation And Sources

	Source	Rationale
Rewards		
<i>Industry Rewards</i>		
Refining Capacity ('000b/d) - 5-year ave	BMI forecast	Quantifies the current size of the refining sector as a comparison to peer markets.
Utilisation Rates (%) - 5-year ave	BMI calculation	Outlines the efficiency of the existing facilities, identifying over or under capacity.
Domestic Fuels Demand ('000b/d) - 5-year ave	BMI forecast	Shows the size of the domestic market demand as a comparison to peer markets.
Fuel Demand (% growth) - 5-year ave	BMI forecast	Identifies the domestic demand opportunity and trend in consumption patterns.
Regional Fuel Demand - 5-year ave	BMI forecast	Shows the regional export market size to represent the opportunity for exports.
Life Span Of Infrastructure	BMI calculation	Approximate calculation of the life span of infrastructure to identify the remaining operating life.
Theoretical Net Crude Exports ('000b/d) - 5-year ave	BMI calculation	Identifies spare capacity of domestic oil supply as a potential feedstock.
<i>Country Rewards</i>		
State asset ownership (%)	BMI calculation	Indicates how much of the given market is open for private investment.
Population	BMI calculation	Assesses market size based on total population size.
Population Growth (%)	BMI calculation	Assesses potential market size based on the population growth rate over five years.
Risks		
<i>Industry Risks</i>		
Logistics Risk	BMI Operational Risk Index	Offers a comparative indicator on ease of transport for feedstock supply, fuels distribution and import/export flexibility.
Fuel Subsidies	BMI calculation	Penalises a markets' score if fuels prices are sold at below market costs.
<i>Country Risks</i>		
Long-Term Economic Risk Index	BMI Country Risk Index	The Long-Term Economic Risk Index takes into account the structural characteristics of economic growth, the labour market, price stability, exchange rate stability and the sustainability of the balance of payments, as well as fiscal and external debt outlooks for the coming decade.
Short-Term Economic Risk Index	BMI Country Risk Index	The Short-Term Economic Risk Index seeks to define current vulnerabilities and assess real GDP growth, inflation, unemployment, exchange rate fluctuation, balance of payments dynamics, as well as fiscal and external debt credentials over the coming two years.
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Operational Risk Index	BMI Operational Risk Index	Our Operational Risk Index focuses on existing conditions relating to four main risk areas: Labour Market, Trade & Investment, Logistics, and Crime & Security.

Source: BMI



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