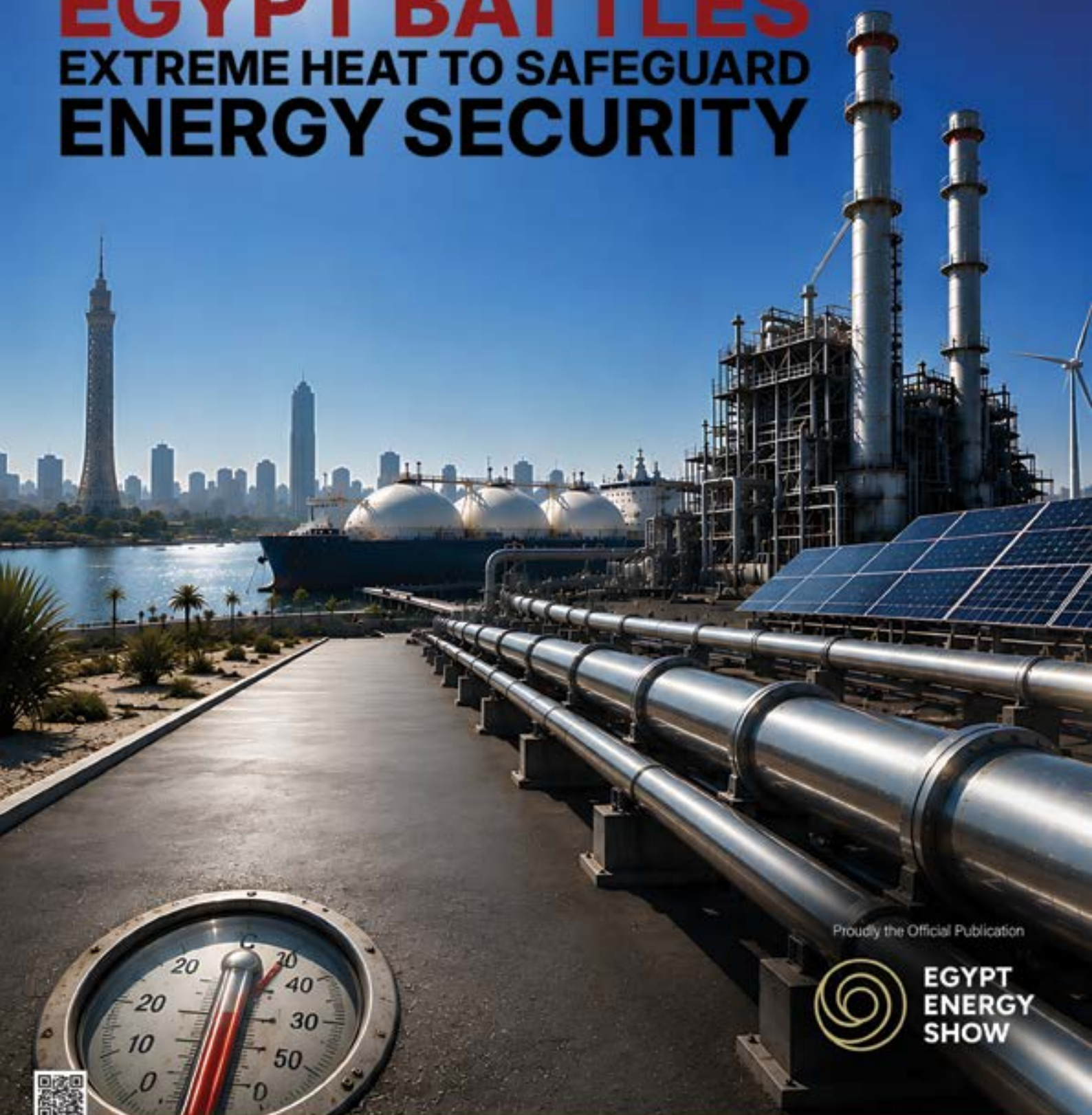


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Editor's Letter

Dear reader,

The weather is sizzling. Egypt's electricity consumption has shattered records, while Europe reels under unprecedented heatwaves that claim lives daily. What was once seen as seasonal discomfort has become a global phenomenon, reshaping energy demand and testing resilience across continents.

In this issue, we explore how soaring temperatures are straining infrastructure, driving consumption, and forcing governments, industries, and households to adapt. Our overview feature examines the toll of extreme heat on energy systems, from pipelines to regasification units, and the mounting costs of keeping them efficient. The technology section highlights innovations at both national and household levels, including smart meters, inverter air conditioners, and insulation techniques that aim to rationalize consumption without sacrificing comfort.

Economically, the surge in electricity demand has weighed heavily on government finances, with LNG imports rising in both volume and value. Our economic analysis considers whether mazut, despite its environmental drawbacks, can serve as a cheaper alternative to power factories during peak demand. Meanwhile, the energy transition piece sheds light on building and construction solutions such as insulation and reflective roofing that can cool homes and reduce reliance on power hungry cooling systems.

On the geopolitical front, our political article explores how Europe's exceptionally hot summer is intensifying demand for LNG imports, positioning Egypt as a strategic supplier thanks to its proximity and liquefaction infrastructure.

Together, these stories reveal a common thread: heat is no longer just a climate challenge, but an energy, economic, and political one. As temperatures rise, so too does the urgency to innovate, diversify, and cooperate.

This August, we invite our readers to see the heat not only as a burden but as a catalyst, pushing Egypt and the wider region to rethink energy, embrace resilience, and seize new opportunities in a warming world.

Sherine Samir
Editor-in-Chief

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TOP FIVE NEWS

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GUPCO Crude Output Hits Seven Year High

Gulf of Suez Petroleum Company (GUPCO), the joint venture (JV) between the Egyptian General Petroleum Corporation (EGPC) and the UAE's Dragon Oil, has raised its crude oil production to 71,250 barrels per day (bbl/d), marking the company's highest output level since July 2019.

This surge is attributed to the Ministry of Petroleum and Mineral Resources (MoPMR)'s strategy of settling dues with investment partners, which has encouraged intensified drilling and exploration.

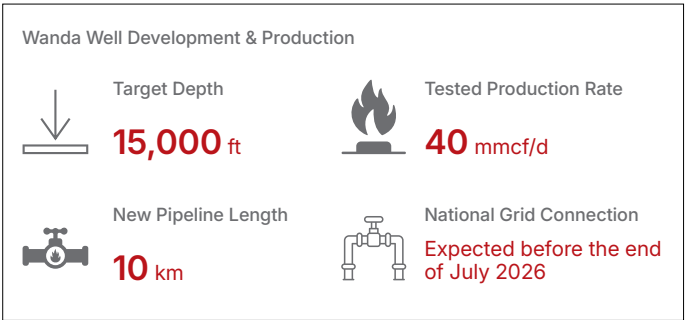
Another driver of this growth is the rapid development of the North Safa offshore field in the Gulf of Suez. The recent addition of well SB293-9 alone helped push the field's total production by 18,000 bbl/d.

Infrastructure upgrades have been vital to this success, including the construction of a new offshore platform and the installation of a new turbine compressor at the M36 station, which improved the efficiency and productivity of existing wells.

Khalda Brings Western Desert Wanda Gas Well Onstream

Khalda Petroleum has brought the Wanda deep natural gas well in Egypt's Western Desert onstream, with initial output of 40 million cubic feet per day (mmcf/d). Production began on June 21, and full integration into the national grid is expected by the end of July, according to the Cabinet.

Drilled to a depth of 15,000 feet, electrical logging at Wanda confirmed significant gas-bearing formations. Production testing verified commercial output at 40 mmcf/d. To fast-track development, Khalda Petroleum built a 10-kilometer (km) \$2.3 million pipeline, directly connecting the well to existing infrastructure.



The discovery supports the Ministry of Petroleum and Mineral Resources' (MoPMR) strategy to ramp up domestic hydrocarbon output and accelerate new developments. It also bolsters exploration in the Western Desert and secures Egypt's natural gas supply.

Genel Builds Egypt Portfolio with \$360 Mn Capricorn Acquisition

British firm Genel Energy is expanding into Egypt with a \$360 million all-cash acquisition of Capricorn Energy, a move designed to reduce Genel's reliance on disruption-prone assets in Iraq's Kurdistan region.

Capricorn, an international oil and gas producer with significant operations in Egypt's Western Desert, will add oil and gas production in a market Genel said offers a stable regulatory framework, secure contracts, and attractive fiscal terms.

Genel's core production currently comes from a 25% non-operated stake in the Tawke field in Iraqi Kurdistan, operated by Norway's DNO. The company has faced recurring export disruptions linked to disputes between Baghdad and the Kurdistan Regional Government, while recent regional tensions have heightened security concerns.

The acquisition will transform Genel into a larger and more geographically diversified producer, with production split roughly equally between Egypt and Iraqi Kurdistan, Reuters reported.

Velox 1X Signals First Oil in Western Mediterranean

Drilling at the offshore Velox 1X exploratory well in the North Cleopatra concession, Western Mediterranean, has revealed encouraging oil indicators, confirming the presence of a functioning petroleum system and crude oil in the area. The findings raise the prospect of the first crude oil discovery in the Western Mediterranean, pending completion of evaluation and technical studies.

Drilling began on May 23 and successfully reached planned geological targets at a final depth of about 6,500 meters (m). Shell operates the well in cooperation with the Egyptian Natural Gas Holding Company (EGAS), US Chevron, and Egypt's Tharwa Petroleum. QatarEnergy is completing procedures to join the partnership. The operation has established encouraging geological results, laying the groundwork for a new phase of exploration in the area.

The results are now being evaluated after collecting a crude oil sample and analyzing technical data to determine next steps, including possible additional exploratory wells. Positive indicators highlight the untapped potential of the Western Mediterranean and raise new hopes for oil and gas discoveries.

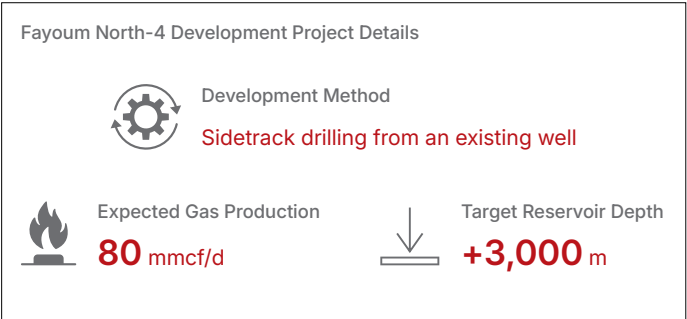
The well is located about 90 kilometers (km) off the Egyptian coast. Drilling, conducted with the Stena IceMAX drillship, and finished 10 days ahead of schedule and under budget, reflecting the efficiency of the operation.

Velox-1X is the deepest offshore well in the Mediterranean and a key frontier exploration project expected to provide valuable geological data, attract new investment, and support Egypt's future hydrocarbon production.

bp Uses Sidetrack Drilling to Accelerate Fayoum North 4 Output

The Ministry of Petroleum and Mineral Resources (MoPMR) and British Petroleum (bp) are preparing to bring the offshore Fayoum North 4 well in the Mediterranean Sea onstream, with an expected initial production rate of 80 million cubic feet per day (mmcf/d).

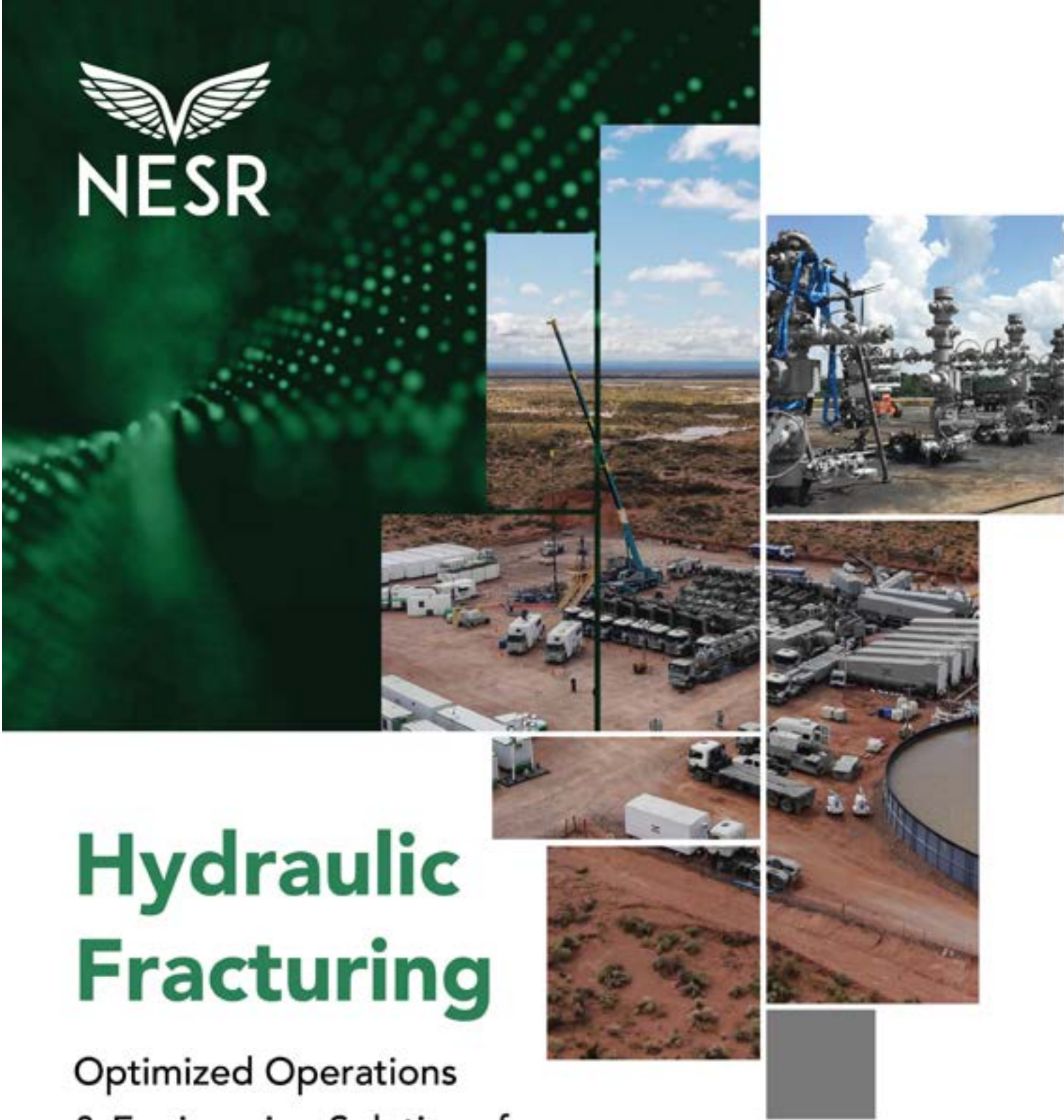
This follows the successful sidetrack drilling of the well allowing access to new gas-bearing layers at depths exceeding 3,000 meters (m) without the need for a separate bore. This approach showcases how innovative engineering delivers extra output quickly and cost-effectively, thereby maximizing existing wells' reserves and infrastructure utility.



The added gas will help meet domestic demand, reduce import costs, and strengthen Egypt's energy security.

bp is expanding its operational footprint in Egypt, committing \$1.5 billion in investments for gas development and exploration during the 2026/2027 fiscal year (FY). This investment supports bp's continued offshore drilling campaign in the Mediterranean, including the Dennis West-1 exploration well in the El-Tamsah concession area.





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ACHIEVEMENTS

Egypt to Export Cypriot Gas to Europe by 2028 Following Cronos FID

Italian Eni and French TotalEnergies have reached the Final Investment Decision (FID) to develop the Cronos gas field in deep waters offshore Cyprus, with the target of bringing the first Cypriot gas to market in 2028, according to a statement by the Ministry of Petroleum and Mineral Resources (MoPMR).

Cronos field holds more than 3 trillion cubic feet (tcf) of gas initially in place (GIIP). Production is expected to reach 500 million cubic feet per day (mmcf/d), equivalent to around 2.8 million tons per year (mmt/y) of liquefied natural gas (LNG).

The field is in Block 6 offshore Cyprus and is operated by Eni, holding a 50% interest, with TotalEnergies as partner. Cronos gas field was discovered in 2022 and successfully appraised in 2024.

The field will be developed through four subsea wells, and the produced gas will be transported and processed at existing Zohr facilities in Egypt, then transferred and liquefied at the Damietta LNG plant for export as LNG to international markets, primarily Europe.

Badawi: Egypt's Oil Output Hits Two-Year High

Karim Badawi, Minister of Petroleum and Mineral Resources, said Egypt's crude oil production has hit its highest level in nearly two years.



He said settling outstanding payments to investment partners in June restored confidence, attracted new capital, and accelerated exploration and production.

In the first half (H1) of 2026, petroleum product exports topped 2.3 million tons (m/t) with sales of jet fuel, naphtha, waxes, and vacuum distillates bringing in about \$2.3 billion. This figure matches all of 2025. Badawi said exports should reach 2.5 million tons in the second half (H2) of 2026.

PRODUCTION

Dana Gas Egyptian Output Increases by 30,000 boe/d

Dana Gas has reported a significant boost in its Egyptian operations. Recognized as the Middle East's largest regional private natural gas company, it said its total output in Egypt has increased to more than 30,000 barrels of oil equivalent per day (boe/d).



Several new wells were recently completed and tied into existing infrastructure, which not only added to the company's reserves but also provided an immediate lift to production volumes.

To build on this success, CEO Richard Hall met with Karim Badawi, Minister of Petroleum and Mineral Resources, to discuss further expansion plans. The discussions focused on increasing exploration, development, and production activities in the onshore Delta region.

Vaalco Energy Expands Egypt Output with HE-9 Well Launch

US-based Vaalco Energy has expanded its production capacity in Egypt with the launch of the HE-9 development well. The well came online in early June and is a centerpiece of the company's 2026 onshore drilling campaign.

Drilling reached the Asl B reservoir in the Gulf of Suez, encountering 26 meters (m) of net pay. The well delivered a gross initial flow rate of 529 barrels of oil per day (bbl/d), a result that notably surpassed the company's pre-drilling expectations.

The success of the HE-9 well underscores the potential for incremental growth in established Egyptian fields when modern drilling techniques are applied.

For Vaalco Energy, this well represents a high-return investment that provides immediate cash flow and validates its geological modeling of the Gulf of Suez region.

These developments contribute to the upward trend in total crude oil production, which recently climbed back above the 540,000 bbl/d mark.

GUPCO Announces Commissioning Phase 2 of North Safa Field

The Gulf of Suez Petroleum Company (GUPCO) has commissioned the second phase of the North Safa field development project. Located in the Gulf of Suez, the project adds significant production capacity through a successful international partnership.



The development was funded by investments from the UAE's Dragon Oil, working in collaboration with the Egyptian General Petroleum Corporation (EGPC).

The entry of Phase 2 into service is a critical step in GUPCO's efforts to maximize the potential of its maritime concessions and support the Ministry's broader goal of increasing total national oil output. By bringing new wells and infrastructure online, the project directly contributes to that goal.

Egypt Expands Strategic Fuel Reserves to Counter Regional Tensions

Prime Minister Mostafa Madbouly announced that Egypt is proactively strengthening its energy security by increasing strategic reserves of petroleum products and other essential commodities, according to a statement released by the Cabinet.

These measures aim to protect the economy from disruptions caused by ongoing regional tensions, which are impacting shipping corridors, especially those critical to fossil fuel transit.

The Cabinet emphasized Egypt's dual focus on strengthening regional economic ties and safeguarding its oil and gas supply, identifying expanded petroleum inventories as a key response to growing geopolitical uncertainty.

INVESTMENTS

MoPMR Plans 62 EUG Investment Opportunities

Karim Badawi, Minister of Petroleum and Mineral Resources, announced an ambitious plan to offer 62 new investment opportunities through the Egypt Upstream Gateway (EUG).



The plan is part of a broader effort to boost the upstream sector by using digital technology to showcase available acreage to global investors. Badawi outlined the plan during a meeting with the Coordination Committee of Parties' Youth Leaders and Politicians (CPYP), where he reviewed ongoing investment allocations and the sector's strategic direction.

By listing these 62 opportunities on the EUG, the Ministry provides a "one-stop shop" for technical data and bid submissions, helping lower barriers to entry and advance its strategy to attract international energy firms.

Egypt Targets Doubling Crude Output by 2030

The Egyptian petroleum sector has embarked on a five-year plan to double domestic crude oil production by 2030. Karim Badawi, Minister of Petroleum and Mineral Resources, affirmed the target during a meeting with the Board of Directors of the Egyptian General Petroleum Corporation (EGPC).

To achieve such a significant increase in capacity, the Ministry is focusing on the expanded application of advanced technologies, most notably horizontal drilling and hydraulic fracturing. These methods are essential for tapping into unconventional reservoirs and maximizing output from existing mature fields that have seen declining rates in recent years.

In addition to technical upgrades, the plan includes the introduction of new contractual frameworks designed to incentivize international partners to invest in high-cost, high-reward extraction projects.

This strategy is yielding results, as the Minister recently reported that total crude oil production has returned to growth, exceeding 540,000 barrels per day (bbl/d).



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KUWAIT

KOC Signs \$16 Bn Pipeline Lease Deal

Kuwait Oil Company (KOC) finalized a \$16 billion lease-and-leaseback deal for its domestic and export crude pipeline network. The consortium, led by Blackstone, Brookfield, and private equity firm KKR, marks the largest foreign direct investment in Kuwait’s history.



A new joint venture (JV), 51% owned by KOC, will lease usage rights for 13 pipelines (320 km) for 20.5 years. KOC retains ownership and operational control, paying a volume-based tariff.

The deal gives KOC \$7.85 billion upfront to help fund its target of 4 million barrels per day (mmbbl/d) by 2035. KPC officials said the agreement shows investor confidence in Kuwait, despite geopolitical tensions.

UAE

ADNOC Reaches \$6.2 Bn FID for Umm Shaif Gas

Development

The Abu Dhabi National Oil Company (ADNOC) has secured a significant \$6.2 billion final investment decision (FID) to advance the offshore Umm Shaif Gas Cap project.



This strategic development, a partnership between ADNOC, TotalEnergies, Eni, and Chinese National Petroleum Corporation (CNPC), aims to produce over 600 million cubic feet per day (mmcf/d) of natural gas by 2030. This output represents approximately 10% of the UAE’s current daily gas consumption.

The investment includes \$5.1 billion for large-scale offshore infrastructure across three engineering, procurement, and construction (EPC) packages. Furthermore, ADNOC Drilling will execute a \$365 million 14-well drilling program over 18 months using three rigs.

UAE Crude Oil Output Tops 3.8 mmbbl/d After OPEC Exit

The UAE’s crude oil production climbed above 3.8 million barrels per day (mmbbl/d) in June, reaching its highest point since April 2020. This surge follows the country’s official withdrawal from OPEC and OPEC+ production quotas on May 1, allowing Abu Dhabi to maximize its output. June production levels notably exceeded those recorded before the US-Israeli conflict with Iran.

UAE Minister of Energy Suhail Al Mazrouei stated that the country must utilize its expanded capacity to meet market demand and satisfy investors. While OPEC data estimated May production at 2.11 mmbbl/d, the International Energy Agency placed it higher at 2.8 mmbbl/d.

To facilitate increased sales, ADNOC has been offering crude cargo through tenders at discounted rates. The UAE’s recovery has outpaced other Gulf producers, which remain below pre-conflict production levels.

LIBYA

NOC: Essar Discovery Deemed Commercially Viable

Libya’s National Oil Company (NOC) confirmed the "Essar" discovery by OMV Austria is commercially viable, following drilling of well B1-106/4 and successful project evaluation.

The Essar find holds 195 million barrels (mmbbl) of oil in the Sabil reservoirs, with projected production of 5,000 barrels per day (bbl/d). Zueitina Oil Operations will operate the development. Production should start quickly due to nearby infrastructure.

OMV is transitioning to an integrated, sustainable energy company. NOC aims to responsibly use Libya’s resources for national progress.

ALGERIA

Algeria's Sonatrach Delivers Inaugural LNG Cargo to

German Market

Sonatrach, Algeria’s state energy firm, exported its first liquefied natural gas (LNG) cargo to Germany. The shipment arrived July 2 at the Wilhelmshaven 1 floating storage and regasification unit (FSRU).



The cargo, shipped on the Sonatrach-owned Tessala from the GL2Z complex in Bethioua, marks a milestone for Germany as it diversifies gas imports away from Russian pipeline supply, which has sharply declined.

IRAQ

ConocoPhillips Acquires 42% Stake in bp Kirkuk

ConocoPhillips agreed to acquire a 42% stake in bp Energy Company of Kirkuk Limited (bp ECKL) from British Petroleum (bp), supporting the redevelopment of four major oil fields in northern Iraq with over 3 billion barrels (bbl) of extractable resources.



The deal was announced during Iraqi Prime Minister Ali Al-Zaidi’s visit to Washington, where he sought US investment in Iraq’s energy sector. bp ECKL is the primary contractor with Iraq’s North Oil Company for rehabilitation and optimization of these fields. The project covers both redevelopment and exploration.

Iraq Opens New Export Route for Fuel Oil to US

The US received its first Iraqi fuel oil imports via Syria, marking a shift in Iraq’s export diversification. Three Aframax tankers loaded at Baniyas, Syria, between June and July for delivery to the US Gulf Coast.

Fuel oil is trucked from Iraq across the border, with about 900 tankers delivering daily. The route, established in May, bypasses Strait of Hormuz disruptions caused by the war with Iran.

The tanker On Passion delivered 716,600 barrels; Nissos Christina and Green Warrior are due in August. This Mediterranean route lets Iraq access North American and European markets and reduces reliance on Gulf routes.

Iraq Sold About 42 Million Barrels of Oil in July Via Türkiye

Iraq sold about 42 million barrels (mmbbls) of oil in July, including 35.5 mmbbls from its southern ports and 7 mmbbls through Türkiye’s Ceyhan port, Ali Nizar al-Shatari, Director General of Iraq’s state-run Oil Marketing Company (SOMO), said in comments to Dijlah TV.

Shatry said the fee for transporting crude oil through Turkey was \$1.62 per barrel under a one-year agreement recently signed by the two countries.

The fee covers the operation and maintenance of the pipeline by Turkey’s state-owned energy company BOTAS, Shatry added.

MIDDLE EAST

Middle East Gulf Crude, Condensate Exports Surge

Middle East Gulf crude and condensate exports rose sharply during the first half (H1) of July, reaching their highest level since before the outbreak of the Iran war in late February, supported by a temporary easing of tensions between the US and Iran, according to shipping data from Kpler and Vortexa, reported by Reuters. Crude and condensate exports from Saudi Arabia, the UAE, Iraq, Kuwait and Iran increased by about 16% from June’s daily average to 12 million barrels per day (mmbbl/d) during H1 of July, according to Kpler. Vortexa estimated exports at an even higher 13.06 mmbbl/d over the same period.

Saudi Arabia, Iran and Iraq drove the increase in exports, Kpler said. Vortexa estimated that Iraq recorded the largest month-on-month increase, while exports from the UAE eased from the record levels seen in June.

UNITED STATES

US Crude Reserves Hit Lowest Level Since 1983

US crude oil stocks in the Strategic Petroleum Reserve (SPR) declined by 5.1 million barrels (mmbbl) last week to 311.4 mmbbl, the lowest level since March 1983, according to data from the US Department of Energy.

The drawdown is part of a US program to release a total of 172 mmbbl from the SPR. Since the US-Israeli war on Iran began at the end of February, SPR inventories have decreased by 104.04 mmbbl as of July 17.

Total US crude oil inventories, including commercial stocks and the SPR, fell by 129 mmbbl to 726.2 mmbbl as of July 10.

Baker Hughes Posts \$6.74 Bn Q2 Revenue

Baker Hughes reported second-quarter 2026 revenue of \$6.74 billion, a 2% year-on-year decrease primarily due to the divestiture of its PSI and SPC businesses. Despite this revenue dip, the company posted a net income of \$681 million and achieved a record \$7.1 billion in orders for its Industrial & Energy Technology (IET) segment.



CEO Lorenzo Simonelli noted strong momentum in gas infrastructure and data center markets, with electricity demand for data centers driving significant turbine orders. Major highlights include liquefaction equipment contracts with Venture Global and Cheniere in the US, and a multi-year services extension for Nigeria LNG.

Trump Urges US Oil Companies to Cut Fuel Prices

US President Donald Trump renewed his call for oil companies to lower gasoline prices for American consumers, while criticizing Chevron CEO Mike Wirth for failing to acknowledge his administration’s support for the US oil industry, Reuters reported.

In a post on his Truth Social platform on August 3, Trump said Wirth had deliberately omitted the role of his administration in strengthening the U.S. energy sector.

“The only thing he conveniently forgot to mention is that, without the genius, foresight, strength, and stability of the Trump Administration, the Oil Industry, and our Country itself, would be Dead,” Trump wrote.

The president also cited Chevron’s operations in Venezuela, saying the company had been forced out of the country but has since returned under his administration’s policies.

UK

bp Starts Process to Sell North Sea Assets

British Petroleum (bp) is launching a process to market its North Sea business for a potential sale, as part of its ongoing portfolio review and its approach to capital allocation for creating a simpler, stronger, and more valuable assets, according to bp statement.

The company had been in talks in June with Ithaca Energy, a North Sea oil and gas operator and producer, over the sale of its UK North Sea assets in a deal valued at nearly \$2.69 billion, according to Reuters.

While the negotiations failed to reach a final agreement in recent weeks, bp continues to explore other options for the assets and could pursue a transaction with other interested parties.

“The North Sea remains integral to the UK’s energy system. However, as we focus our portfolio and direct capital to our highest-value opportunities, we believe our North Sea business will be better positioned as part of another company,” said Meg O’Neill, CEO of bp.

Shell Signs Deal to Sell European Onshore Renewables

Portfolio to TotalEnergies

Shell announced signing a Sale and Purchase Agreement (SPA) to sell its entire European onshore renewables portfolio to TotalEnergies as part of its strategy to optimize capital allocation and focus on businesses where it has a competitive advantage, noted a press release by Shell.

The transaction covers development-stage and operational renewable energy assets across Italy, the Netherlands, Spain, and the UK. Financial terms of the deal were not disclosed. The acquisition remains subject to regulatory approvals and is expected to close by the end of 2026.

Shell said the divestment aligns with the strategy unveiled during its 2025 Capital Markets Day, under which the company is actively reshaping its power portfolio by recycling capital into businesses that generate stronger long-term returns.

“This agreement reflects Shell’s continued focus on actively managing and high-grading its power portfolio in line with the strategy set out at Capital Markets Day 2025,” said Machteld de Haan, President, Downstream, Renewables and Energy Solutions at Shell.

NORWAY

Equinor Reports 127% Increase in Net Operating Income for Q2 2026

Norway’s Equinor posted a net operating income of \$12.99 billion for the second quarter (Q2) of 2026, a 127% increase compared to the same period in 2025. The company’s adjusted operating income also rose to \$11.48 billion.



Equinor’s net income for the quarter totaled \$4.84 billion, supported by strong production and higher energy prices. CEO Anders Opedal emphasized the company’s role in delivering reliable energy amid global geopolitical volatility.

Equinor reaffirmed its 2026 production growth guidance of 3% and plans \$13 billion in organic capital expenditure. Growth is driven by performance on the Norwegian Continental Shelf and international progress in the US, Brazil, and Angola.



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From Emergency Imports to Strategic Resilience

Egypt's Energy Shift



By Nermeen Kamal & Mahmoud Yasser

Egypt's energy import strategy is entering a new phase in which energy security depends not only on securing fuel volumes, but also on managing procurement timing, price exposure, and financial settlement under market stress. Rising summer electricity demand, renewed pressure on natural gas imports, regional supply disruptions, and volatile fuel markets have turned energy procurement into a broader risk-management challenge affecting power supply, industrial activity, public finances, and foreign-currency liquidity.

Consequently, procurement timing has become a central pillar of Egypt's energy security strategy. A cargo secured at the wrong point in the price cycle, settled during foreign-exchange pressure, or linked to an unfavorable benchmark can still create fiscal stress even if it supports physical supply. As a result, import risk can no longer be assessed solely by volumes, but by the interaction among procurement timing, payment terms, fuel flexibility, and budget assumptions.

Why Timing Matters?

Seasonal Demand Peaks

Egypt's energy imports are highly sensitive to seasonal demand. As electricity consumption rises by 15–20% during the summer months, fuel requirements for power generation increase significantly, making procurement timing of natural gas and mazut (fuel oil) critical to maintaining grid stability, according to the Egyptian Cabinet.

Power Sector Fuel Requirements

Egypt's power sector relies heavily on fossil fuels (including natural gas and heavy fuel oil), which account for over 85.9% of the total electricity generation mix in 2025, with natural gas being the dominant source at approximately 76.1%, according to the Energy Institute (EI).

When the natural gas supply is disrupted, Egypt's power sector relies on mazut as a strategic backup fuel to sustain electricity generation.

Geopolitical Risk, Supply Disruptions, and Market Volatility

Egypt's energy import bill remains vulnerable to geopolitical risks beyond its direct control, particularly regional conflicts and disruptions to critical energy corridors. This vulnerability became evident during the 2025–2026 escalation involving the US-Israel alliance and Iran.

When Israel suspended natural gas exports to Egypt from the Tamar and Leviathan fields, the disruption had an immediate and material impact. The pipeline gas imports declined from around 2.6 billion cubic meters (bcm) in the first quarter (Q1) 2025 to 1.7 bcm in Q1 2026.

Against this backdrop, Egypt is increasingly relying on several protection layers, including flexible liquefied natural gas (LNG) procurement, expanded Floating Storage and Regasification Unit (FSRU) capacity, petroleum-product readiness, trade-finance arrangements, and hedging tools.

These measures strengthen short-term resilience, but they also create trade-offs between supply continuity, import affordability, and fiscal exposure.

This report assesses Egypt's energy import risk management strategy through three dimensions: procurement timing, hedging, and domestic supply recovery. It also examines how associated gas utilization, renewables, and battery storage can reduce future import dependence. Together, these measures can strengthen energy security while limiting pressure on the budget, exchange rate, and wider economy.

Electricity Peak Load in Summer of 2025



40,500 MW

Source: The Egyptian Cabinet

To preserve grid stability during supply shortages, the government has prioritized natural gas allocation to the power sector by temporarily curtailing supplies to selected industrial users, maximizing mazut consumption at power plants, and operating some generating units on diesel where technically feasible, reducing the risk of electricity load shedding, according to the Ministry of Petroleum and Mineral Resources (MoPMR).

The decline was further compounded by temporary disruptions to Israeli gas supplies, including the suspension of exports to Egypt in February 2026, according to Enterprise and S&P Global.

Beyond reducing supply volumes, the disruption significantly increased import costs. Egypt's monthly natural gas import bill surged by 195%, rising from ~ \$560 million before the US-Iran war in June 2025 to \$1.65 billion for the same import volume as of March 2026. As a result, the country's overall energy import bill increased to 2–2.5 times its pre-conflict level, according to the Egyptian Cabinet.

Conflict Impact on Energy Import Costs*



Indicator	Before the Conflict	During the Conflict	Impact
Brent Crude Oil Price (\$/bbl)	69	108.5	57%
Diesel Price (\$/t)	665	1,604	141%
Butane Price (\$/t)	510	720	41%

*As of March 2026

Source: The Egyptian Cabinet

Egypt's Procurement Strategy

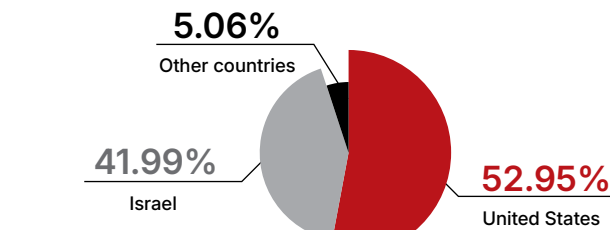
Egypt is now purchasing resilience in layers: inventory for the first disruption, contracts for replacement volumes, FSRUs for import access, and trade finance for settlement. This is more robust than reliance on emergency tenders alone, but it also means that the system can be physically prepared while remaining financially exposed.

LNG Import Flexibility

Egypt has strengthened its near-term LNG supply security by combining a large procurement program with more flexible contractual terms. The Egyptian Natural Gas Holding Company's (EGAS) 2025–2026 program covers approximately 235 purchased, contracted, or planned cargoes, supported by deferral rights, optional volumes, and nine-month payment periods. These arrangements allow delivery and settlement schedules to be adjusted as seasonal demand changes.

Egypt's LNG import profile changed sharply in 2025 after remaining relatively stable during the previous two years. LNG imports declined from approximately 6.27 million metric tons (mmt), worth \$2.34 billion, in 2023 to 5.4 mmt, worth \$2.25 billion, in 2024. However, import volumes more than tripled to 16.4 mmt in 2025, while their value rose to \$8.89 billion, representing year-on-year increases of approximately 203.7% and 294.6%, respectively, according to the Central Agency for Public Mobilization and Statistics (CAPMAS).

Egypt's LNG Imports by Country in 2025



Source: CAPMAS

Petroleum Products Supply Readiness

Egypt's petroleum-products supply readiness remains constrained by the availability of crude feedstock. Egypt has the largest nominal refining capacity in Africa, estimated at around 840,000 barrels per day (bbl/d), which is nearly double the local crude oil production, equivalent to an average of around 451,000 bbl/d.

The wide gap between domestic crude output and nominal refining capacity means that maximizing refinery utilization requires sufficient imported or locally produced feedstock.

Price Risk Management and Hedging

Egypt can secure every planned cargo and still miss its budget. Physical contracts reduce delivery uncertainty, while the final cost remains exposed to the benchmark, product spread, freight, and exchange rate. Hedging must therefore be designed against the source of budget variance rather than treated as an extension of procurement.

Budget Exposure and Import-Cost Uncertainty

Egypt's net petroleum position makes international price increases fiscally adverse even though they can support export receipts. Full-year oil imports increased from \$13.4 billion in FY 2023/24 to \$19.5 billion in FY 2024/25, up 45.5%. This pressure continued in the first half (H1) of FY 2025/26, when the oil-trade deficit widened by approximately one-third as imports rose and exports declined, meaning the additional import cost outweighed the benefit on the export side. The result is greater structural demand for foreign currency before any subsidy or exchange-rate effect is added, according to the Central Bank of Egypt (CBE).

The effectiveness of Egypt's procurement strategy should therefore be assessed through the interaction between these layers, not by cargo or capacity announcements in isolation, according to the Egyptian Cabinet, the International Gas Union (IGU) and the Ministry of Planning and Economic Development.

LNG supplier structure shifted significantly between 2022 and 2025, reflecting a gradual diversification of import sources. In 2022, Israel was the sole LNG supplier, accounting for 100% of Egypt's imports. Its share declined to 91.1% in 2023, before falling further to 73.8% in 2024, when the United States and Spain also entered the market.

Following heightened geopolitical tensions in the Middle East, the supplier mix changed markedly in 2025, with the United States becoming Egypt's largest LNG supplier, accounting for 51% of import quantities, followed by Israel, Senegal, and Trinidad and Tobago. This marked a notable expansion in Egypt's supplier base, reducing its reliance on a single source and strengthening the geographic diversification of LNG imports, according to CAPMAS.

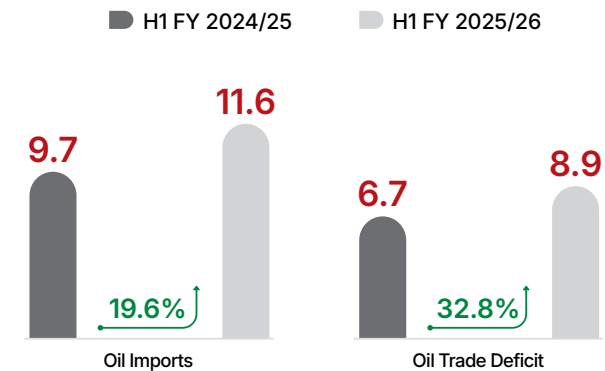
Egypt has supported this procurement strategy by expanding the receiving and regasification options available to imported LNG. Multiple FSRUs allow cargoes to be redirected if a terminal becomes unavailable or an operational disruption affects one entry point, reducing infrastructure-related supply risk. This capacity, however, only ensures that LNG can be received and injected into the domestic network; it does not guarantee cargo availability or the foreign currency required to pay suppliers.

The immediate bottleneck is therefore shifting from physical access to Egypt's ability to secure cargoes at manageable prices, schedule dollar payments, and align deliveries with domestic demand, according to the IGU and S&P Global.

Maintaining adequate petroleum-product supplies therefore depends not only on available refining capacity, but also on securing crude volumes, sustaining refinery availability, optimizing product yields, and ensuring efficient transportation and distribution across consumption centers, according to the MoPMR, EGPC, and the International Trade Administration (ITA).

Supply readiness is expected to improve further from August 2026, when the Cairo Oil Refining Company (CORC)'s gasoline complex is scheduled to add around 2,000 tons per day (t/d) of gasoline production, potentially reducing imports by approximately \$70 million per month, according to the MoPMR.

First-Half Oil Trade Performance (\$ billion)



Source: CBE

Crude Oil, Petroleum Products, and LNG Hedging Instruments

Petroleum-product requirements are reportedly hedged, while natural gas remained outside the program during the March 2026 shock. Meanwhile, a summer heat wave and peak electricity demand prompted EGPC to secure additional LNG cargoes for August delivery, underscoring that LNG imports continue to drive a significant share of Egypt’s rising energy import bill despite the existing hedging framework, according to Ahram Online, citing the MoF, Reuters, Enterprise, and Bloomberg.

For crude oil and petroleum products, options, swaps, and fixed-price contracts can limit budget exposure while preserving varying degrees of flexibility.

The FY 2026/27 budget remains highly exposed to the combined effect of higher import volumes, commodity-price volatility, and exchange-rate depreciation. Although it assumes oil at \$75/bbl and an exchange rate of EGP 47 per dollar, the March 2026 shock pushed the dollar above EGP 52 and could raise Egypt’s energy-import bill by an additional \$1–2.4 billion if disruptions persist.

Hedging can reduce exposure to benchmark-price movements, but it cannot fully offset the impact of larger import requirements or a weaker currency.

At the same time, the planned 20% decline in combined energy subsidies to EGP 120 billion leaves less fiscal space to absorb such shocks. Petroleum-product support is set to fall by 78.9% to EGP 15.84 billion, while electricity support rises by 38.9% to EGP 104.16 billion, increasing the likelihood that any cost overrun would be reflected in higher domestic fuel prices, additional EGPC financing, or a wider budget deficit, according to the Ministry of Finance (MoF), Ahram Online, and Reuters.

LNG requires separate instruments because its contracts may be linked to TTF, oil prices, or capped formulas, meaning an oil hedge alone cannot cover a European gas-price shock.

Egypt’s strongest approach is therefore a layered portfolio in which stocks absorb short disruptions, flexible contracts secure replacement volumes, regasification capacity preserves supply access, and matched hedges cap benchmark-price exposure, according to the World Bank, the IGU, CME Group, the Intercontinental Exchange (ICE) and Reuters.

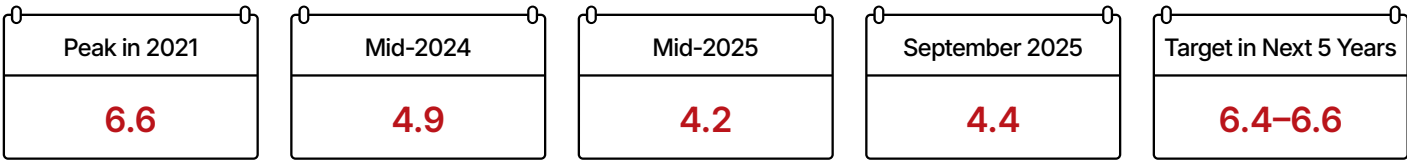
Building Long-Term Energy Resilience

Egypt is reinforcing its long-term energy resilience by rebuilding domestic supply and reducing structural dependence on imported fuels. The strategy is centered on restoring hydrocarbon production, expanding associated gas utilization, and accelerating renewable energy and battery storage deployment.

Domestic Hydrocarbon Recovery

Crude oil and condensate production has stabilized at around 513,000 bbl/d in 2025, after reaching ~600,000 bbl/d in 2020. Meanwhile, natural gas production is entering a recovery phase, supported by improving investment conditions and the full settlement of outstanding financial obligations to international oil companies (IOCs) by June 2026, according to the MoPMR and EGPC.

Natural Gas Production Recovery Trend (bcf/d)



Source: EGPC

The recovery is expected to gain further momentum in 2026. Fitch Solutions forecasts an 8% year-on-year (YoY) increase in natural gas production, with annual output reaching 46.6 bcm (~4.51 bcf/d), according to the Egyptian Cabinet.

This improvement is underpinned by new production coming online across the Mediterranean, the Western Desert, and the Nile Delta. At the same time, continued drilling activity has expanded proven reserves across existing concessions, reinforcing expectations of sustained production growth as exploration and field development accelerate.

Natural Gas Key Reserves Added in 2026

Discovery	Denise W-1	Bustan South-1X	West Mina Field - Phase I	Badr-15
Added Production	70 mmcf/d	10 mmcf/d	45 mmcf/d	15 mmcf/d 500 bbl/d
Added Reserves	2 tcf 130 mmbbl	10-25 bcf	245 bcf 5 mmbbl	15 bcf

Source: MoPMR

Associated Gas Utilization

Beyond reducing emissions, associated gas utilization is becoming an increasingly important source of incremental domestic gas supply. By capturing gas that would otherwise be flared, Egypt is recovering additional hydrocarbons for processing, power generation, and industrial use, improving resource efficiency while reducing the need for higher-cost imported fuels. This strategy complements the recovery in upstream production by increasing the volume of marketable gas available to the domestic energy system without requiring new field discoveries.

Gas Flaring in 2025



Source: Energy Institution

EGPC Flare Gas Utilization Results in FY 2024/25



Source: MoPMR

Upstream operators are increasingly translating this resource recovery strategy into operational investments that strengthen both energy security and environmental performance. By recovering associated gas, reducing diesel consumption, and expanding electrification.

The General Petroleum Company (GPC) commissioned a 1.5 MW flare gas power generation plant in Abu Sennan, with plans for future capacity expansion, alongside broader electrification initiatives, including the Ras Gharib grid connection, which saves around 730 million cubic feet (mmcf) of natural gas, and the Ash El-Mallaha flare gas utilization project, which

Egypt has accelerated this strategy by expanding gas gathering and processing infrastructure, commercializing associated gas, and deploying advanced production technologies.

As a result, gas flaring remained low in 2025 at approximately 2.5% of total natural gas production, while the volume flared declined by 1.5% YoY, reflecting continued improvements in gas recovery, utilization, and upstream operational efficiency, according to the Energy Institute.

EGPC expanded flare gas utilization initiatives across its affiliated companies during FY 2024/25, recovering associated gas that would otherwise have been lost through routine flaring. The captured gas was converted into value-added petroleum products, increasing resource utilization, supporting domestic fuel availability, and reducing greenhouse gas emissions simultaneously, according to the MoPMR.

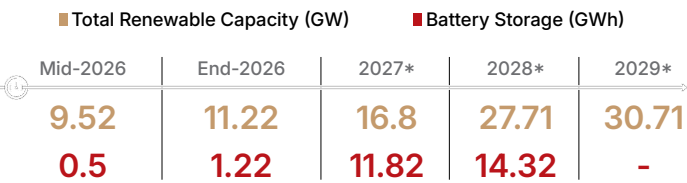
replaces diesel-based power generation, saving 108,000 liters of diesel, according to the MoPMR.

Pharaonic Petroleum Company (PhPC) continues to advance flare gas recovery, capturing approximately 200 mmcf/y of gas, while supporting its FY 2025/26 target to reduce emissions by 23,000 tons. Meanwhile, Belayim Petroleum Company (PETROBEL) is expanding centralized electrification through the Menace MU project, which is expected to save 19,000 tons per year (t/y) of diesel and generate around \$15 million in annual savings, according to the MoPMR.

Renewables and Battery Storage Integration

Egypt’s expansion of solar, wind, and battery storage capacity is emerging as a structural lever against import exposure, because every megawatt of renewable generation added to the grid displaces gas that would otherwise need to be burned and, given the trajectory of domestic gas production, increasingly imported to meet the same load, according to the Egyptian Cabinet.

Renewable Capacity and Battery Storage Roadmap



*Target

Source: The Egyptian Cabinet

Battery Energy Storage Project Pipeline

Date	September 2024	January 2026		2026 (Golden License)	2026
Project	Obelisk Solar	Energy Valley Solar, Minya	TEDA's BESS	Benban BESS	Zafarana BESS
Battery Storage Capacity	200 MWh	3.9 GWh	10 GWh	600 MWh	500 MWh

Source: The Egyptian Cabinet & Scatec

Egypt’s energy security strategy reflects a system in transition, combining near-term procurement flexibility with a strengthening long-term supply base. Diversified contracting, expanding regasification capacity, and structured trade finance have improved the country’s ability to secure volumes under varying market conditions, while a recovering domestic production base and accelerating renewable and battery storage deployment are gradually reducing reliance on imports over time. Hedging instruments add a further layer of protection, tempering exposure to benchmark and currency movements even as coverage continues to evolve alongside the composition of the import mix. Taken together, these measures indicate a deliberate, multi-pronged approach: physical readiness through stocks and infrastructure, contractual flexibility through diversified sourcing, and financial protection through targeted hedging. As domestic supply expands and renewable capacity scales further, Egypt is well positioned to shift the balance of its energy strategy from managing import exposure toward reinforcing self-sufficiency, provided procurement, hedging, and fiscal planning continue to advance in coordination.



EGYPT BATTLES EXTREME HEAT TO SAFEGUARD ENERGY SECURITY

By Sarah Samir

Egypt's intensifying summer heat is no longer a seasonal inconvenience; it is emerging as a defining challenge for the nation's energy system. Rising temperatures are straining pipelines, regasification units, and gas-fired power plants at the very moment electricity demand surges, creating a costly cycle of higher fuel consumption, accelerated asset wear, and heightened risk of outages. Consequently, the country's resilience now hinges on a dual response: deploying advanced digital tools to safeguard oil and gas operations, while expanding renewable energy to ease dependence on fossil fuels and strengthen long-term energy security.

Heating Up Demand

Egypt is expected to continue to warm at a pace above the global average. Relative to pre-industrial levels, temperatures between 2081 and 2100 are projected to rise by about 2.5°C under a low-emissions pathway and nearly 6°C under a high-emissions scenario. This intensifying heat, compounded by rapid urbanization and population growth, is expected to drive a sharp increase in extreme heat events and electricity demand for cooling, according to the International Energy Agency (IEA).

Across much of North Africa, seasonal temperatures have risen at twice the global average, driven by human-induced climate change, with heat extremes and warm-season conditions becoming more frequent and more severe—conditions that directly translate into higher cooling needs for homes, offices, and public services, according to the Sixth Assessment Report issued by the Intergovernmental Panel on Climate Change (IPCC), which is a United Nations (UN) body that provides nations with scientific climate change assessment.

In addition, this warming, combined with significant population growth, has created a 'feedback loop' of rising electricity demand

in Egypt. Because residential and commercial buildings are often thermally inefficient, they rely heavily on mechanical cooling, forcing the energy sector to ramp up production to meet peak summer loads, according to a journal published by MDPI Open Scientific Publisher, a leading open-access publisher of peer-reviewed scientific journals, in May 2026.

Egypt's electricity demand during the Summer of 2026 alone is expected to increase by 8% compared to Summer of 2025, as revealed by Mahmoud Esmat, Minister of Electricity and Renewable Resources, in June.

As a result, Egypt remains highly dependent on fossil fuels for electricity generation, which places intense pressure on oil and gas infrastructure to deliver reliably under the same conditions that reduce efficiency and elevate operational risk.

Strained Energy Infrastructure

The operational strain of extreme heat impacts oil and gas pipelines leading the hydrocarbon to expand and to increase pressure according to Forbes. This challenge does not stop at pipelines; it

extends across Egypt's wider energy infrastructure, from turbines to digital control systems, amplifying vulnerabilities during peak demand.

Mohamed Ali, Energy Digital Transformation Manager at the Egyptian General Petroleum Corporation (EGPC), explains that "rising temperatures are not only an operational challenge but also a data and asset management challenge. Higher temperatures can reduce the efficiency of critical equipment, increase cooling requirements, accelerate asset degradation, and raise the likelihood of unplanned outages. As energy demand typically increases during extreme heat events, infrastructure operators must maintain reliable operations under greater stress." Ali emphasizes that resilience now depends on the ability to collect, analyze, and act upon operational data in real time, with digitalization—through IoT sensors, predictive analytics, and digital twins—emerging as a key enabler for anticipating failures before they occur.

Complementing these digital resilience measures, the Ministry of Petroleum and Mineral Resources (MoPMR), in close coordination with the Ministry of Electricity and Renewable Energy (MoERE), are advancing the state's summer energy security plan to guarantee sufficient fuel supplies for power generation and industrial operations. Egypt's liquefied natural gas (LNG) import system continues to function efficiently through regasification vessels that receive cargoes and channel natural gas into the national grid. At the same time, the Damietta LNG plant serves as a strategic hub for storing imported volumes and re-injecting them when required, ensuring reliable energy availability alongside domestic gas production. This dual approach—digital innovation and fuel security—illustrates how Egypt is working to stabilize its energy system under intensifying heat stress.

Sherif Salah, Energy Regulation and Market Design Expert, highlights the direct impact on power generation by stating that, "High temperatures cut gas plant efficiency because turbines perform best with cooler intake air. In heatwaves, hot air is less dense, so turbines generate less electricity from the same fuel. The challenge in Egypt is that this happens at exactly the same time electricity demand is at its highest because of air conditioning." He also notes that while combined-cycle plants and inlet air cooling systems can reduce losses, they also increase the needed investment and operating costs.

Also, renewables are not immune to heat stress. For example, solar panels lose efficiency as their temperature rises, and high temperatures can alter wind conditions, reducing output from wind farms. Nevertheless, despite the challenges of heat-induced efficiency losses in solar panels and altered wind conditions, Salah stresses that Egypt's renewable projects remain highly competitive. "Egypt still has excellent solar and wind resources, so these projects remain highly competitive. Developers already account for local weather conditions when estimating how much electricity a project will generate over its lifetime," Salah notes.

Accordingly, Egypt is steadily diversifying its power generation portfolio by scaling up renewable energy projects and advancing energy storage technologies. These efforts aim to strengthen grid stability during peak demand periods while elevating the quality and efficiency of electricity services across the country.

Leveraging AI for Energy Resilience in Egypt

The combined effect of reduced efficiency and higher demand translates into escalating costs. Specifically, fuel consumption rises, maintenance cycles shorten, and the risk of outages

☞ Artificial intelligence can analyze large volumes of historical and real-time data to identify patterns associated with heat-related degradation, enabling predictive maintenance strategies that reduce downtime and improve asset reliability. ☞

Mohamed Ali

Energy Digital Transformation Manager at EGPC

grows. Consequently, Egypt's reliance on natural gas for power generation means that every megawatt lost to heat inefficiency requires additional fuel, tightening the balance between domestic consumption and export potential.

To address this, digitalization and predictive maintenance, as Ali underscores, are essential to shift from reactive to proactive asset management. "Artificial intelligence can analyze large volumes of historical and real-time data to identify patterns associated with heat-related degradation, enabling predictive maintenance strategies that reduce downtime and improve asset reliability. Furthermore, digital platforms can provide early warning indicators, risk-based maintenance recommendations, and operational optimization insights, helping organizations transition from reactive maintenance to proactive asset management," Ali points out.

☞ High temperatures cut gas plant efficiency because turbines perform best with cooler intake air. In heatwaves, hot air is less dense, so turbines generate less electricity from the same fuel. ☞

Sherif Salah

Energy Regulation and Market Design Expert

"Looking ahead, as transport and other sectors become more electrified, renewable energy can also reduce the country's dependence on oil products. This improves energy security and reduces pressure on foreign currency by lowering fuel imports and allowing more natural gas to be exported instead of consumed domestically," Salah explains, underscoring the broader strategic benefits of clean energy expansion.

In Egypt, the intensifying summer heat is reshaping energy reliability from a manageable seasonal issue into a national systems challenge. As temperatures rise, they simultaneously drive higher electricity demand and undermine the performance of both fossil-fuel infrastructure and electricity generation capacity—compressing margins for operators and increasing the likelihood of outages. This creates a difficult, compounding cycle: inefficiencies raise fuel consumption, accelerating wear and maintenance needs while amplifying operational risk at the very moment loads peak.

Accordingly, the strategy for success is twofold: utilizing digital innovation to predict and manage climate risks, while rapidly scaling up renewable energy to reduce reliance on traditional fuels. By integrating predictive analytics with a robust expansion of solar and wind capacity, Egypt can protect its power systems against extreme weather, bolster long-term energy security, and enhance its ability to export power. Ultimately, these environmental pressures offer a strategic opportunity to upgrade infrastructure, diversify the energy mix, and secure a more resilient and sustainable future.



MAZUT: BRIDGING EGYPT'S SUMMER ENERGY GAP

By Doaa Ashraf

Egypt finds itself navigating a delicate balancing act at the intersection of surging domestic demand, structural supply constraints, and grid stability targets. A combination of natural field declines-most notably at the flagship Zohr offshore field-and heightened residential cooling demand during intense summer heatwaves has strained the country's natural gas balance sheet. Simultaneously, while renewable energy ambitions remain central to long-term national policy, capacity additions face persistent bottlenecks around grid integration, financing timelines, and storage infrastructure, preventing clean energy from absorbing rapid peak-load spikes in the immediate term. What exacerbates the problem is the fact that the government expects an 8% rise in electricity demand over last year's record peak of 40,000 megawatts (MW).

Fuel Oil Steps In

To honor its commitment to prevent residential power outages and eliminate public load-shedding, the government has adopted a pragmatic, albeit fiscally and environmentally taxing, stopgap strategy. Central to this plan is a temporary return to heavy fuel oil, or mazut, as an emergency thermal backstop for power plants.

According to Mohamed Atia, Process Engineer at the Egyptian Refining Company (ERC), the government's decision to prioritize uninterrupted electricity for households during the summer reflects a strategic reallocation of natural gas toward the power sector. "During the summer, electricity generation consumes around 60–65% of Egypt's natural gas, while peak electricity demand has exceeded 39 gigawatts (GW) in recent years due to extreme temperatures and increased air-conditioning use."

"To maintain uninterrupted power for households, some industrial facilities have switched to fuel oil (mazut) or adjusted production schedules as gas supplies became more constrained. This strategy has successfully prevented power outages for consumers, but it has effectively shifted part of the energy burden to industry through higher fuel costs and lower operational efficiency," said Atia who is also Head of the energy Policies Committee as El Adl Party told Egypt Oil & Gas.

Why Return to Mazut?

As China returned temporarily to coal as an alternative solution to solve its energy supply gap amid the war, Mazut becomes a more suitable solution for Egyptian factories for powering their operations as a more accessible solution than natural gas.

"From an energy security perspective, fuel oil (mazut) is more reliable than natural gas during geopolitical tensions not because it is a superior fuel, but because its supply is more resilient and less vulnerable to disruption," said Atia.

●● **Increases in natural gas or mazut prices raise the cost of locally manufactured products, particularly in energy-intensive industries such as fertilizers, cement, ceramics, iron and steel, and glass,** ●●

Wafaa Ismail

Energy Sector Head at Environmental compliance office, Federation of Egyptian Industries (FEI).

"Natural gas depends on continuous domestic production, pipeline imports, or liquefied natural gas (LNG) cargoes, all of which can be affected by regional disruptions. In contrast, mazut can be stored for months in strategic reserves and transported more flexibly, making it a reliable backup fuel during supply constraints," he added.

Despite ongoing tensions in the Arabian Gulf and the Strait of Hormuz, the petroleum sector has successfully bolstered its strategic reserves of petroleum products, ensuring the stability of the local market and meeting the needs of various sectors, most notably the electricity sector.

A source from the Egyptian General Petroleum Corporation (EGPC) recently stated to the News Room website that current stocks of petroleum products are sufficient to meet the country's needs for up to three months.

EGPC pumps about 15,000 tons of Mazut daily to power generation plants to keep electrical units operating and support the stability of the national grid, particularly during peak demand periods.

The current Mazut stockpile stands at around 800,000 tons, providing a secure reserve to meet the needs of power plants.

Costs Complications

In March, Prime Minister Mostafa Madbouly said the country's monthly natural gas import bill has surged from \$560 million to \$1.65 billion, reflecting a sharp \$1.1 billion increase since the outbreak of the US-Israeli war on Iran.

To manage mounting costs, the government raised natural gas prices for industrial consumers in May. Cement producers pay \$14 per million British thermal units (MMBtu), while iron and steel manufacturers, non-nitrogen fertilizer producers, and petrochemical companies pay \$7.75 per MMBtu. Other industrial activities are charged \$6.75 per MMBtu.

In April 2025, mazut prices for industries were EGP 10,500 per ton, up from EGP 9,500 per ton. Although the increase is less significant than recent natural gas price hikes, it continues to add pressure on manufacturers already coping with rising operating expenses.

"Higher fuel prices directly increase production costs because energy is a major component of manufacturing, operations, and transportation expenses. Consequently, increases in natural gas or mazut prices raise the cost of locally manufactured products, particularly in energy-intensive industries such as fertilizers, cement, ceramics, iron and steel, and glass," said Wafaa Ismail, Energy Sector Head at Environmental compliance office, Federation of Egyptian Industries (FEI).

"If domestic production costs rise while imported products originate from countries with cheaper energy or greater government subsidies, Egyptian manufacturers may lose part of their price competitiveness. This could squeeze profit margins or force producers to pass higher costs on to consumers," she added.

Mazut's Environmental Costs

Mazut is a heavy, low-quality fuel oil. It also generates a greater amount of power at a lower cost, but it produces 20–30% more carbon dioxide (CO₂) emissions than natural gas per unit of electricity generated. When burnt, it releases toxic gases, like sulphuric acids

●● **Mazut is more reliable than natural gas during geopolitical tensions, not because it is a superior fuel, but because its supply is more resilient and less vulnerable to disruption.** ●●

Mohamed Atia

Process Engineer at the Egyptian Refining Company (ERC)

and nitrogenous acids. These emissions contribute to air pollution, respiratory illnesses, acid rain, and climate change, while its high sulfur content also increases equipment corrosion and maintenance costs.

As temporarily as it may seem, utilizing Mazut doesn't provide the perfect, most sustainable alternative in the long run.

Atia explained that utilizing natural gas remains the preferred fuel due to its higher efficiency; combined-cycle plants achieve around 55–62% efficiency compared to 35–42% for conventional fuel oil-fired units. Fuel oil also produces 20–30% more CO₂ and higher sulfur emissions, increasing operating and maintenance costs.

According to Ismail, greater reliance on high-emission fuels such as mazut increases the risk of additional costs or environmental restrictions in markets like the European Union (EU), particularly as international trade increasingly incorporates carbon-related regulations.

This makes it increasingly important for manufacturers to secure stable fuel supply contracts, improve energy efficiency, and gradually transition toward renewable energy sources as she noted.

Toward a Cleaner Industrial Future

The Ministry of Industry has launched the Sun of the Industry (Shams el Sena'a) initiative which aims to install rooftop solar panels across 7,000 factories with a combined capacity of 1,000 megawatt (MW) of clean energy and reduce reliance on traditional fossil fuels.

Solar power Installations will be tailored according to each factory's consumption rates, eventually covering 26% of its electricity consumption.

According to Ismail, the initiative will help cover a significant share of daytime electricity demand, including lighting, cooling systems, pumps, and certain production lines, thereby reducing electricity and fuel costs.

For now, mazut remains an essential bridge fuel helping Egyptian factories secure electricity supplies during one of its most challenging summer energy seasons. However, its environmental footprint and lower efficiency underscore that it can only serve as a temporary solution while the country accelerates domestic gas production, renewable energy deployment, battery storage, and industrial energy efficiency.

SMARTER ENERGY USE: EFFICIENCY TO EASE EGYPT'S RISING POWER DEMAND

By Fatma Ahmed

Dynamic growth in electricity demand continues to reshape the global energy system. According to the International Energy Agency's (IEA) World Energy Outlook 2025, electricity will play an increasingly important role in meeting future energy needs, driven by the rapid expansion of renewable energy. At the same time, artificial intelligence (AI), data centers, rising temperatures, and urbanization are accelerating electricity consumption, with cooling emerging as one of the fastest-growing sources of demand, particularly in emerging economies. The IEA projects global peak electricity demand could increase by around 40% by 2035, largely due to higher cooling requirements.

For Egypt, where summer peaks already strain the grid and swallow billions of dollars in imported liquefied natural gas, electricity generation remains the single largest consumer of natural gas. In this context, improving efficiency is no less critical than expanding capacity. Smarter technologies and sharper energy management can ease the burden, helping the grid withstand demand surges while reducing the country's costly dependence on imported fuel.

Passive Cooling

Buildings account for around 30% of global final energy consumption, according to the IEA, with cooling, heating, lighting, and household appliances representing the largest share. Electricity use for space cooling has more than tripled since 1990 and is expected to continue rising as temperatures increase.

This trend is particularly relevant for Egypt, where prolonged heatwaves have driven higher summer electricity demand. Egypt Vision 2030 identifies energy efficiency as a key pillar of sustainable development, while the Ministry of Electricity and Renewable Energy continues to promote demand-side management to enhance grid reliability and support the country's energy transition.

Reducing the need for air conditioning is one of the most effective ways to improve energy efficiency. According to the World Economic

Forum (WEF), passive cooling relies on building materials and design techniques that reduce heat gain without consuming electricity.

Emerging solutions include radiative cooling materials that reflect sunlight while releasing heat into the atmosphere, phase-change materials (PCMs) that absorb heat during the day and release it at night, and hydrogel-based materials that provide evaporative cooling. Established approaches, such as cool roofs, reflective coatings, insulation, natural ventilation, external shading, and green roofs, also lower cooling demand, improve indoor comfort, and reduce electricity consumption.

Inverter Air Conditioners (AC): The Biggest Opportunity

Among household technologies, inverter air conditioners offer one of the greatest opportunities to reduce electricity consumption. Unlike traditional air conditioners that constantly turn their compressor on and off, inverter ACs automatically speed up or slow down to keep your room at a steady temperature. This smooth, continuous adjustment saves power, reduces wear and tear, and keeps the unit running much more quietly.

The IEA considers high-efficiency inverter ACs among the most effective technologies for limiting future cooling demand, helping households reduce electricity bills while improving comfort.

However, technology alone is not enough. Mostafa Madbouly, an expert in Smart Grids, CCPP, and Intelligent Energy Systems at Petrojet, believes affordability remains the biggest obstacle.

"Inverter air conditioners save about 40% per unit, but nearly 60% of the Egyptian market is still using cheaper non-inverter models, so the main barrier is the upfront cost rather than the technology itself," Madbouly said.

Behavior also plays a key role. Japan's "Cool Biz" campaign promotes lighter clothing and higher thermostat settings during summer, while Spain and Italy adopted similar measures during the 2022 energy crisis. In Egypt, the Egyptian Electricity Holding Company (EEHC) requires manufacturers to display energy efficiency labels and meet minimum performance standards for air conditioners. Alongside these obligations, it also recommends consumer practices such as setting thermostats no lower than 25°C, carrying out regular maintenance, and keeping doors and windows closed while cooling.

Madbouly noted that thermostat policies work best where compliance can be monitored. "Japan's Cool Biz campaign recommends a thermostat setting of 28°C, while Egypt already applies 25°C in shopping malls and public buildings. Such measures are most effective where compliance can be observed, rather than inside private homes," he said.

Smart Meters: Modernizing Energy Consumption

Digital technologies are reshaping energy management. Smart meters provide consumers with real-time information while allowing utilities to monitor consumption remotely, improve billing accuracy, detect outages faster, and manage peak demand more effectively.

Countries including Italy, Spain, Sweden, and the UK have integrated smart meters into broader smart-grid strategies, supporting time-of-use pricing and greater consumer awareness. Egypt is also replacing conventional electricity meters with smart and prepaid digital meters. According to the International Trade Administration (ITA), around 12 million smart prepaid meters had been installed in Egyptian homes by mid-2025, moving toward the government's target of replacing 38 million traditional meters.

Madbouly believes the rollout has already produced tangible benefits. "The clearest results so far have been better billing accuracy, lower losses, and improved visibility for the grid operator. The next priorities are expanding the supporting data and communications infrastructure and introducing time-of-use tariffs that encourage consumers to shift their electricity consumption," he said.

Smart metering can also improve natural gas efficiency. Attia Elsayed, General Manager of Technical Affairs and Business Development at Town Gas, believes upgrading Egypt's gas metering infrastructure would reduce losses and improve resource management.

"Replacing outdated mechanical gas meters with modern smart meters would allow Egypt to recover large volumes of natural gas lost through declining measurement accuracy, while ensuring customers' consumption is recorded with far greater precision," Elsayed said.

He added "Equipping smart natural gas meters with AI would help eliminate gas losses resulting from unauthorized increases in

consumption, theft, tampering, and manipulation of conventional mechanical meters, which lack the technological capabilities to detect or prevent such practices."

Together, smart electricity and gas metering can strengthen operational efficiency and support Egypt's wider digital transformation.

💡 **Inverter air conditioners save about 40% per unit, but nearly 60% of the Egyptian market is still using cheaper non-inverter models, so the main barrier is the upfront cost rather than the technology itself.** 💡

Mostafa Madbouly

Coordination & Follow-up Engineer at Petrojet

Smart Homes: Using Technology to Reduce Waste

Smart home technologies, including automated lighting, intelligent thermostats, and energy management systems, optimize electricity use based on occupancy and household habits. AI enhances this efficiency by tailoring cooling schedules to local weather patterns. Because air conditioning accounts for the largest share of summer electricity use, smart cooling controllers offer the greatest potential for low-cost, high-impact savings.

Globally, smart buildings are core to modern energy policy. Egypt is advancing this transition through its digital transformation agenda and the Ministry of Housing's National Smart Cities Strategy, launched in October 2025 to accelerate intelligent building adoption.

Looking Ahead

Meeting Egypt's future electricity needs will require more than expanding generation capacity. Improving efficiency across homes and buildings will be essential to lowering electricity consumption, reducing energy costs, and maintaining grid reliability.

Passive cooling, inverter air conditioners, smart meters, smart homes, and battery storage each address different aspects of the challenge. Together, they provide a practical pathway toward a more efficient, resilient, and sustainable electricity system.

Elsayed believes these efforts should be complemented by expanding distributed renewable energy. "Future plans should also promote the installation of rooftop solar photovoltaic systems on residential, commercial, and administrative buildings, while legislation should require all newly constructed residential, commercial, and industrial buildings to incorporate solar photovoltaic systems," he said.

Supported by government policies, consumer awareness, and continued investment in renewable energy, these measures can help Egypt meet rising electricity demand while advancing Egypt Vision 2030 and strengthening the country's energy security.

COOLING EGYPT WITH SMARTER BUILDING MATERIALS

By Rana Al Kady

As Egypt faces rising temperatures and surging demand for cooling, the country's energy transition may need to begin with a simple but overlooked question: what if the most effective way to cut electricity use is to stop heat from entering buildings in the first place? The answer lies not in the grid but in Egypt's built environment, the walls, roofs, and surfaces that shield homes, offices, factories, schools, and commercial spaces. Smarter materials could make buildings the first line of defence against rising heat and soaring demand.

Behind the steel scaffolding and humming cranes transforming city skylines lies a stark reality: the world's building craze is quietly fueling the climate crisis. Globally, the construction and building sector accounts for roughly 37% of all carbon dioxide CO₂ emissions, placing it directly at the heart of both energy and environmental emergencies.

That footprint begins long before a ribbon is cut. The relentless appetite for new architecture drives nearly half of all global material extraction, requiring immense energy to mine, refine, and manufacture core ingredients like cement, steel, and glass. Once built, these structures continue to pull heavily on the grid—with the International Energy Agency (IEA) estimating that operating existing buildings consume about 30% of global energy for heating, cooling, and power. From the heavy manufacturing of raw materials to the daily flipping of a light switch, the way we construct and inhabit our built environment remains one of the largest obstacles to a net-zero future.

For Egypt, the stakes are rising as hotter summers, rapid urbanization, population growth, and heavier reliance on air conditioning drive electricity demand higher. The challenge is not only to generate more power but to reduce the cooling that buildings require. That makes sustainable construction materials central to the energy transition debate.

Building Materials or Energy Technology?

The energy performance of a building is often associated with the efficiency of its air-conditioning system or the electricity generated by its solar panels. However, the materials used in walls, roofs, windows, and façades can determine how much energy is required before either technology begins operating. Heat moves through buildings by conduction, convection, and radiation. The materials used in the building envelope influence each of these processes.

That is why building materials can be seen as energy technologies in their own right. Insulation slows the transfer of heat. Reflective surfaces bounce back sunlight instead of absorbing it. High performance glazing cuts unwanted heat and glare. Phase change materials store excess warmth and release it later. Recycled and bio based products lower the carbon footprint of construction while often improving thermal performance. The most effective solution is likely a mix of these functions working together.

A Need for a Cooling Strategy

The importance of reducing heat transfer is becoming increasingly apparent as global electricity demand responds to rising cooling needs. According to the IEA, cooling accounts for approximately 10% of annual

global electricity consumption but can represent around 30% of peak electricity demand. The agency has also warned that more frequent, intense, and prolonged heatwaves could add approximately 700 terawatt-hours to global electricity demand by 2035.

For countries with hot climates, the challenge is particularly challenging. Cooling demand rises sharply during the hottest hours and months, precisely when electricity systems are already under pressure. Improving building materials can help address this challenge at its source.

A building with greater thermal resistance requires less energy to maintain indoor comfort. At a national scale, this could reduce pressure on generation capacity and limit the need for additional power infrastructure dedicated to meeting short periods of extreme demand.

Insulation and Lower-Carbon Materials

Insulation is among the most direct ways to reduce conductive heat transfer through walls and roofs. Yet the sustainability of insulation cannot be judged solely by its thermal conductivity. The material's environmental footprint must also be considered

Some conventional insulation products are manufactured using fossil-fuel-based feedstocks and can be energy-intensive to produce. This has increased interest in alternatives derived from recycled, bio-based, or locally available materials.

Cellulose, recycled fibres, cork, wood fibre, agricultural residues, and other bio-based materials could provide opportunities to reduce the embodied carbon of insulation systems. For Egypt, agricultural residues may offer an additional opportunity to develop locally relevant construction products.

The Importance of Embodied Carbon

The energy consumed by buildings after construction is only one part of their environmental footprint. The materials themselves also carry emissions associated with extraction, processing, manufacturing, transportation, installation, maintenance, and disposal.

According to United Nations Environment Programme (UNEP) and GlobalABC, cement and steel alone account for approximately 18% of building-related emissions. This makes material selection a critical part of the decarbonisation agenda. For Egypt, this creates a dual challenge. Construction materials must help reduce the operational energy required to cool buildings, while the production of those materials must also become less carbon-intensive.

Recycled and Circular Materials

The construction sector also offers an important opportunity to develop circular material systems. Instead of extracting virgin resources, manufacturing products, constructing buildings, and ultimately sending demolition waste to landfills, materials can increasingly be designed for reuse, recycling, and recovery.

Moreover, recycled aggregates, industrial by-products, recycled metals, supplementary cementitious materials, and products incorporating construction and demolition waste can reduce demand for virgin resources. The scale of the opportunity is significant. UNEP estimates that the buildings and construction sector is responsible for nearly half of global material extraction.

Advanced Materials for Heat Management

Sustainable materials are becoming increasingly sophisticated. Reflective roof coatings cut solar radiation before it penetrates building surfaces. High performance glazing reduces conductive and solar heat gains.

Phase change materials absorb and release thermal energy, moderating indoor temperature swings. These technologies are especially relevant to Egypt because they lower cooling demand without requiring changes in occupant behavior.

Building materials can be seen as energy technologies. Insulation slows the transfer of heat. Reflective surfaces bounce back sunlight instead of absorbing it. High performance glazing cuts unwanted heat and glare.

A phase change material, for instance, stores heat during peak temperatures and releases it later as conditions cool—effectively adding thermal storage to the building envelope. Reflective roofs, meanwhile, lower external surface temperatures before heat reaches the structure. The challenge is ensuring these materials are cost effective, durable, locally available, and suited to Egypt's climate.

Performance in practice often differs from specifications. The efficiency of a window, wall, or roof depends on how components interact. Temperature differences, installation quality, thermal bridges, moisture, surface conditions, and surrounding environment all influence heat transfer. Experimental testing is therefore essential to identify which materials and assemblies work best under Egypt's conditions.

From Buildings to Materials

This aligns with Egypt's broader climate objectives. The National Climate Change Strategy 2050 sets out a framework for cutting emissions and building resilience, while the World Bank highlights rising temperatures and climate risks as key vulnerabilities.

The construction sector can therefore play a central role. Sustainable materials should be seen not just as a cost but as infrastructure investment. A material that lowers cooling demand for decades eases pressure on the electricity system. Recycled products reduce the need for virgin resource extraction. Locally manufactured insulation creates industrial value. Durable materials cut future replacement and waste. In this way, the benefits extend far beyond the building itself.

Egypt's Energy Future in Its Walls

The global buildings sector produces about 37% of CO₂ emissions and nearly half of material extraction, while cooling demand is becoming a major driver of electricity use. For Egypt, these trends pose both a challenge and an opportunity.

Sometimes the most effective step is simply stopping heat from entering. As Egypt prepares for a hotter future, the walls, roofs, windows, and façades of its buildings will become vital energy infrastructure. The country's construction challenge is therefore also an energy challenge—and the materials chosen today will shape how much power Egypt needs tomorrow.

A building with greater thermal resistance requires less energy to maintain indoor comfort. At a national scale, this could reduce pressure on generation capacity and limit the need for additional power infrastructure.



EUROPE'S HEAT CRISIS, EGYPT'S ENERGY OPPORTUNITY

By Samar Samir

Europe's latest heatwave is doing more than straining electricity grids; it is reshaping the fundamentals of gas markets and exposing the vulnerabilities of the continent's energy system. As temperatures soar, electricity demand has surged across major economies. In Germany, daily power consumption increased by 10.18% from 1,267 gigawatt-hours (GWh) to 1,396 GWh within a fortnight, according to Eurelectric, the association representing the European electricity industry. Meanwhile, wholesale electricity prices climbed to nearly €160 per megawatt-hour (MWh) in France and exceeded €200 per MWh in Germany, with intraday spikes surpassing €600 per MWh at the height of the crisis, according to the European Gas Hub.

Recurring heatwaves are turning the European summer into a decisive season for energy security. Rising temperatures are reshaping both demand and supply, making proximity, flexibility, and reliability as critical as price. In this new landscape, climate pressures are emerging as one of the strongest forces redefining Europe's energy ties—and Egypt sits at the centre of these shifting dependencies.

Cooling Demand, Supply Stress

"Heatwaves in Europe are increasing demand while also reducing supply... air cooling demand has significantly risen... meanwhile, supply risks have also heightened, especially for nuclear and hydropower generation, leading to a supply output decline." Jessica Obeid, Founding Partner, New Energy Consult, told Egypt Oil & Gas.

The surge in cooling demand is also reshaping Europe's electricity consumption patterns. Summer demand builds rapidly and peaks after sunset, when solar generation declines. According to the International Energy Agency (IEA), more than 40 countries accounting for nearly 70% of global electricity demand set new peak demand records during heatwaves in 2024. European air-conditioning ownership has also risen by about 50% over the past decade, reflecting a broader rise in cooling needs.

One immediate consequence is a shift in buyer behavior. As recurring heatwaves drive up cooling demand, buyers are increasingly turning to short-term LNG contracts to secure additional supply. However, Obeid warns that this trend comes at a particularly challenging time: "European buyers are increasingly seeking liquefied natural gas (LNG) cargoes in short-term contracts. Yet, this is happening at a difficult time as LNG exports

from the Gulf have been negatively impacted by the conflict and have increased global market volatility."

The real weakness exposed by heatwaves is not a lack of overall generating capacity, but the shortage of flexible capacity exactly when demand peaks. France offers the clearest example. During the June 2026 heatwave, river temperatures rose so high that nuclear plants could no longer discharge cooling water without breaching environmental limits designed to protect aquatic ecosystems. As a result, output from eight reactors was cut by 6.3 gigawatts—around 14% of national demand at the time, according to Reuters. In such conditions, gas plants become indispensable for stabilizing the grid. The European Gas Hub notes that gas fired generation, together with price insensitive LNG imports via the Suez Canal, provided the critical flexibility needed to meet peak summer demand.

Who Is Filling the Supply-Demand Gap?

Europe's growing reliance on LNG has reshaped its supplier landscape since Russia's invasion of Ukraine in 2022. According to the European Council, Russia's share of EU piped gas imports fell from around 40% in 2021 to about 6% in 2025, while the United States became the bloc's largest LNG supplier, accounting for nearly 58% of imports. Norway remained the leading pipeline gas supplier, followed by Algeria, according to Eurostat.

In this shifting landscape, North Africa's geographic proximity gives it a strategic advantage in meeting Europe's seasonal demand. While Algeria supplies Italy and Spain via pipelines, Qatar has secured long-term LNG contracts, and the United States remains Europe's flexible swing supplier. According to think tank Bruegel, Egypt competes alongside these players, helping diversify the EU's gas imports within an increasingly competitive regional market.

Egypt's Hub Potential, Supply Limits

Egypt is well positioned to benefit from Europe's growing demand for flexible LNG supplies. Its strategic location, access to the Suez Canal, and the existence of the Idku and Damietta LNG plants give it a unique role in the Eastern Mediterranean. As the US Energy Information Administration (EIA) notes, Egypt is the region's only country capable of importing natural gas from neighboring states, liquefying it, and re-exporting it as LNG. Obeid notes that these assets "mean that, in theory, Egypt should be able to respond quickly to market signals."

That opportunity, however, depends on having sufficient gas to export. As Obeid explains, "The key challenge remains in the availability of gas. Supply security starts with production security. The summer's soaring temperatures also increase domestic demand for gas for power generation. Thus, Egypt faces the dilemma of balancing domestic energy security with export needs during periods of peak demand."

Egypt's position will depend largely on the pace of its domestic production recovery. According to the Arab Center DC, Egypt produced an average of 4.6 billion cubic feet per day (bcf/d) of natural gas in 2024 against consumption of 5.8 bcf/d, making it a net importer. While production fell to 43.1 billion cubic meters (bcm) in 2025, Fitch Solutions expects output to rebound to 46.6 bcm in 2026 as drilling resumes at the Zohr field and the second

phase of the Raven project comes online. To support this balance, Egypt is also expanding imports of Israeli natural gas. Blue Ocean Energy signed a \$35 billion agreement in 2025 to double imports from the Leviathan field to approximately 1.25 bcf/d, reinforcing Egypt's role as a regional gas hub.

☞ **European buyers are increasingly seeking LNG cargoes in short-term contracts. This is happening at a difficult time as LNG exports from the Gulf have been impacted by the conflict and have increased global market volatility.** ☞

Jessica Obeid

Founding Partner, New Energy Consult

Europe's evolving energy needs extend beyond securing additional gas volumes. According to the Oxford Institute for Energy Studies, from 2027, EU importers must demonstrate that imported gas complies with methane monitoring, reporting, and verification (MRV) requirements equivalent to those under the EU Methane Regulation, making methane performance an increasingly critical competitive factor.

Capitalizing on the Strategic Opening

Europe's increasingly frequent heatwaves are becoming a structural driver of gas markets, boosting demand for flexible LNG supplies while exposing the limits of low-carbon power generation. For Egypt, this creates a strategic opening, but capitalizing on today's market conditions will depend on reliable production, competitive emissions performance, and the ability to consistently balance domestic demand with export commitments.

As the European Environment Agency has estimated, the impacts of extreme weather events on Europe's power systems are measured in the tens of billions of euros annually—a figure that will only grow as the climate warms. Europe will continue needing flexible energy partners, and Egypt's opportunity does not expire with the season. However, as Obeid's analysis makes clear, these advantages are necessary conditions, not sufficient ones. The ultimate determinant of success will be a long-term strategy, on production, carbon credentials, and hub positioning, that outlasts the heatwaves that created the opening.

Egypt is well positioned to benefit from Europe's LNG growing. Its location, access to the Suez Canal, and the existence of the Idku and Damietta plants give it a unique role in the Eastern Mediterranean.

REACHING THE GOLD STANDARD: OGMP 2.0 LEVEL 4 & LEVEL 5 METHANE SERVICES, DELIVERED LOCALLY

Methane reporting has evolved from estimation to direct measurement. SMA provides Egypt's operators with a locally based partner capable of conducting both source-level and site-level campaigns required for the highest tiers of the Oil and Gas Methane Partnership (OGMP) 2.0 framework, combining certified drone operations with experienced ground survey teams.



From Estimates to Measurement

The Oil and Gas Methane Partnership (OGMP) 2.0, the United Nations Environment Program's (UNEP) flagship methane reporting framework, is the global benchmark for methane emissions transparency. Its five-level structure rewards operators who move from generic emission factors toward direct, measurement-based reporting.

The two highest tiers, Level 4 and Level 5, define the Gold Standard Pathway, with members expected to report material operated assets at these levels within roughly three years. For operators across Egypt, that makes measurement capacity a near-term priority. SMA for Oil & Maritime Services, a Free Zone company holding all required permits and certifications, has built its offering squarely around these two levels.

Level 4 — Source-level Quantification

Level 4 calls for a detailed, bottom-up inventory: emissions quantified source by source using company-specific factors from direct measurement. SMA's ground-based survey teams deliver exactly this — combining Optical Gas Imaging (OGI) with high-flow sampling to detect and quantify leaks across components and volumes, producing a credible, defensible Level 4 inventory.

Level 5 — Site-level Reconciliation

Level 5 raises the bar to independent, site-wide measurement reconciled against the Level 4 inventory: the top-down check on the bottom-up numbers. Here SMA's drone fleet is decisive— industrial drones with specialized sensors measure methane across an entire facility, enabling the reconciliation that defines Level 5. Few providers in the region can execute both halves of that equation.

One Partner, Both Levels

By combining licensed drone operations with proven ground survey techniques, SMA bridges the gap between levels 4 and 5 under one roof. The same teams also deliver hydrogen sulfide (H₂S) and toxic-gas detection, including carbon monoxide (CO), carbon dioxide (CO₂), sulfur dioxide (SO₂), methane (CH₄), which is critical during drilling, testing, work-over and production. In addition, SMA conducts thermal and visual inspections of flare stacks, storage tanks, pipelines and chimneys. As regulatory and investor scrutiny of methane intensifies, this integrated capability provides Egyptian operators a credible, locally grounded route to the Gold Standard.

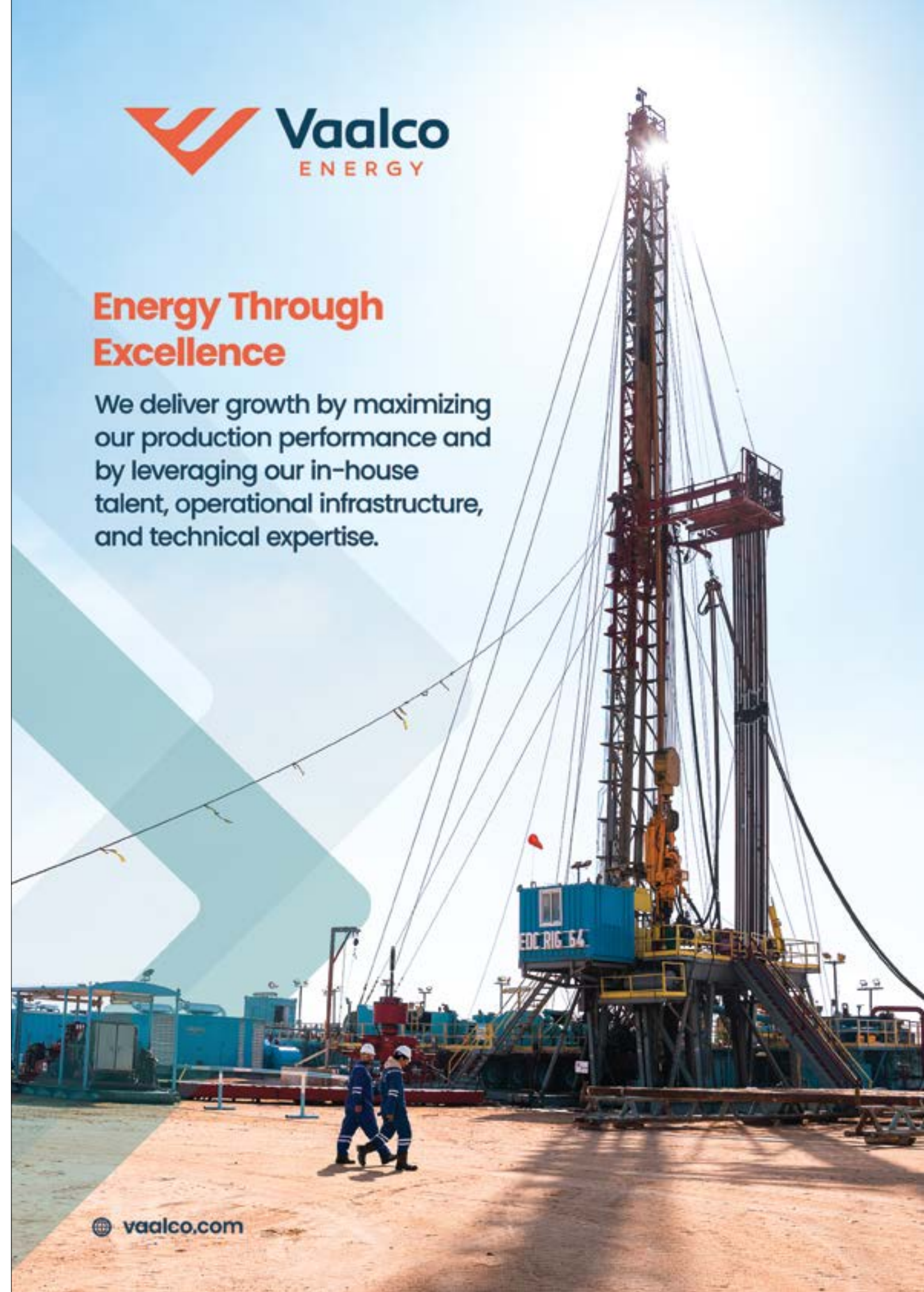
SMA OGMP 2.0 CAPABILITY

- Level 4 — OGI + high-flow sampling (source-level)
- Level 5 — drone quantification & reconciliation
- Licensed drone operations at oil & gas facilities in Egypt
- H₂S & toxic-gas detection: H₂S, SO₂, CO, CO₂, CH₄
- Flare, tank, pipeline & chimney thermal / visual inspection

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From Reservoir Depletion to Digital Gaps:

Barriers to Sustainable Production

With a mix of onshore and offshore resources, including long-established oil fields in the Gulf of Suez and Western Desert, along with major gas discoveries in the Mediterranean, the oil and gas sector recorded impressive production levels. However, maintaining these outputs over time is becoming increasingly difficult due to a range of technical constraints that demand continuous innovation and investment.

A primary issue lies in the advanced age of many producing reservoirs. Numerous fields have been in operation for decades, resulting in natural reservoir depletion. As pressure declines and water production rises, extraction becomes more complex and less efficient. Operators are often required to implement enhanced recovery methods, optimize artificial lift systems, and apply advanced reservoir management techniques. Additionally, incomplete or outdated data from older wells complicates accurate modeling and forecasting, making informed decision-making more challenging.

Another major concern is asset integrity and aging infrastructure. Many wells suffer from deterioration such as casing corrosion, weakened cement, and tubing or seal failures. These conditions raise operational risks, increase downtime, and necessitate frequent maintenance interventions. Offshore installations-particularly in the Gulf of Suez-face accelerated degradation due to harsh environmental conditions like high salinity and temperature. Addressing these issues requires robust monitoring systems, modern diagnostic tools, and cost-effective repair strategies such as well recompletions and the use of liners or patches.

Complex geological conditions further complicate drilling operations. Egypt's subsurface formations include fractured carbonates, high-pressure shale zones, and salt structures, all of which increase the risk of wellbore instability, circulation losses, and pipe sticking. In deeper or high-pressure/high-temperature (HPHT) fields, narrow safety margins make drilling operations even more demanding and costly. Overcoming these obstacles depends on optimized drilling fluid systems, real-time operational monitoring, and improved well design practices.

From a production perspective, sand control and water handling remain persistent challenges. In unconsolidated formations, sand production can damage both downhole equipment and surface facilities. Meanwhile, excessive water production reduces efficiency and raises operating costs. Effective management often requires the deployment of advanced sand control technologies and targeted water shut-off techniques, both of which involve careful planning and economic evaluation.

Finally, the adoption of modern digital technologies presents both an opportunity and a challenge. While digitalization, automation, and data analytics can significantly enhance operational performance, their implementation is often hindered by outdated infrastructure and limited instrumentation in older fields. Moreover, a lack of technical expertise in these advanced systems can slow down digital transformation efforts. Overcoming these barriers requires investments not only in technology but also in workforce development and data integration strategies.

In summary, the sustainability of Egypt's oil and gas production is influenced by multiple interconnected technical challenges, including reservoir depletion, infrastructure aging, geological complexity, and technological limitations. Addressing these issues will require tailored engineering solutions, strong asset management practices, and effective use of modern technologies. With a strategic and long-term approach, Egypt can extend the lifecycle of its hydrocarbon assets while maintaining reliable energy production.

By Mohsen Ahmed Farhan Ali

Oil & Gas Well Drilling Expert
Chevron Oil Company Consultant - Kuwait

AI's Energy Revolution

Smart Grids, Predictive Maintenance, and Renewables

With the continuous increase in global energy demand and the need to reduce environmental impacts, Artificial Intelligence (AI) provides innovative solutions for creating smarter, more efficient, and more sustainable energy systems. AI leverages sophisticated data analysis, machine learning and automation to enhance energy production, distribution and usage, as well as the shift to clean energy. AI is expected to play a crucial role in enhancing the efficiency of power generation, one of the primary functions in the energy sector.

Modern energy buildings generate large volumes of data from sensors, machines, and monitoring devices. These sensors are smart devices that measure factors such as temperature, lighting, occupancy, and energy use. The information they collect can be fed into AI systems to optimize performance and detect potential issues early.

This process, known as predictive maintenance, helps reduce equipment failures, cut maintenance costs, and improve power plant reliability. AI is also playing a crucial role in renewable energy systems. Renewable sources like solar and wind energy are reliant on changes that could occur during the day. AI can identify weather forecasts, previous energy production data, and environmental conditions to forecast the amount of energy that will be produced. Predictive forecasting enables energy providers to optimize supply and demand and improve integration of renewable energy into the grid.

AI technologies are also essential to smart grids. Smart grids are digitally controlled network of systems that manage electricity flow, in contrast to conventional power grids. AI can forecast energy demand, manage energy flow and minimize energy loss. These systems can also facilitate energy storage and contribute to Electric Vehicle (EV) charging management, thereby enhancing the flexibility and reliability of the energy network.

Moreover, AI plays a role in enhancing energy efficiency in buildings, industries, and cities. Intelligent energy management systems can regulate lighting, heating and cooling and industrial systems according to demand. AI can predict user behaviour and energy use patterns to minimise the energy consumed which reduces carbon emissions. As such, AI is a key asset in creating smart cities that are sustainable.

AI is also advantageous to the oil and gas industry. The geological data is analyzed using AI technologies, the process of drilling was improved and the production operations were optimized. AI monitoring systems have the potential to identify issues, enhance safety, and mitigate environmental risks through advanced capabilities. These uses enable the traditional energy sectors to be more efficient and eco-friendlier.

While AI offers numerous benefits for the energy industry, it also comes with certain challenges. It takes substantial high-quality data, robust cybersecurity infrastructure, and capable personnel to implement AI. It is also crucial to have the digital infrastructure in place to enable AI-powered energy solutions.

To conclude, AI plays a tremendous part in developing a smart and sustainable energy system. AI promotes efficiency, renewable energy use, improves smart grids, and minimizes energy waste, contributing to a cleaner and more reliable energy future. The future of AI in global sustainability is promising, and it will play a significant role in meeting the global sustainability targets.

By Mohamed Atia

Process engineer at Egyptian refining company

HELD UNDER THE PATRONAGE OF HIS EXCELLENCY ABDEL FATTAH EL SISI, PRESIDENT OF THE ARAB REPUBLIC OF EGYPT



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The Substitution Search: How Egypt Is Rebuilding Its Crude Supply Map

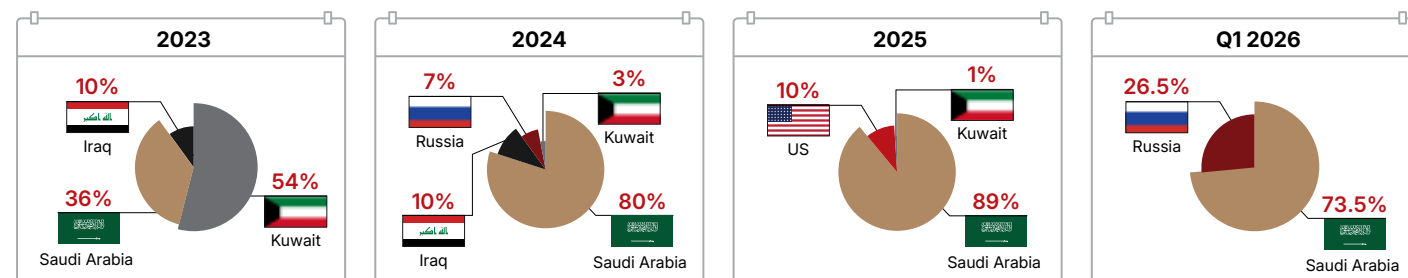
The Structural Starting Point

Egypt's crude production has declined steadily in recent years, with the steepest losses in the last two years. The roots trace back to 2021, when arrears owed to international oil and gas partners began to accumulate. Within two years the outstanding debt exceeded \$6 billion, discouraging further drilling investment. Although the Ministry of Petroleum and Mineral Resources (MoPMR) fully settled the arrears in June, production has yet to recover from the earlier losses.

How Egypt's Crude Supply Map Changed

Egypt's crude imports bridge the widening gap between domestic output and refinery demand and energy needs. The crude import portfolio has become increasingly concentrated. In 2023, imports were sourced from Kuwait, Saudi Arabia, and Iraq, but by 2024, Saudi Arabia had emerged as the dominant supplier with 80% of the total crude imports. By 2025, Iraqi crude had been eliminated from the import mix, while Kuwaiti volumes had become negligible. In the first quarter (Q1) of 2026, Saudi Arabia had further consolidated its position as Egypt's dominant crude supplier, with Russia remaining a notable source after Iraq and Kuwait's exit, according to the Central Agency for Public Mobilization and Statistics (CAPMAS).

Egypt's Crude Imports Volume by Country



Source: CAPMAS

This concentration increased Egypt's exposure to disruptions affecting Gulf export routes. That vulnerability became evident in early 2026, when tensions surrounding the Strait of Hormuz disrupted regional crude flows, and Kuwait declared force majeure. With declining domestic production, Egypt responded by accelerating a multi-track substitution strategy that focused on supplier diversification, strategic infrastructure development, and domestic production recovery.

The Substitution Track

Reopening a Neighbor: Libya

Egypt quickly activated its energy cooperation with Libya. Building on the January 2026 MoU, EGPC agreed to import 1–1.2 million barrels (mmbbl) of Libyan crude per month from eastern Libyan fields. Although the crude requires blending before refining, the agreement provided an immediate substitute for disrupted Gulf supplies while expanding Egypt's regional sourcing options, according to EnterpriseAM.

Algeria's direct supply MoU

Egypt also expanded cooperation with Algeria. In May 2026, EGPC and Algerian state-owned Sonatrach signed a framework agreement for direct crude supplies, adding another regional source compatible with Egyptian refineries and reducing reliance on Gulf exporters, according to the MoPMR.

The Long-Term Solution

Beyond supplier diversification, Egypt's most durable response has been the restoration of domestic production. Clearing international oil companies (IOCs)' arrears is already supporting renewed drilling activity. While production recovery will take time, increasing domestic output remains the most sustainable way to reduce Egypt's structural dependence on imported crude.

Facilitating Saudi Crude through Red Sea Ports and SUMED Pipeline

Egypt also strengthened its role as a regional transit hub. As Saudi Aramco rerouted crude exports through Yanbu on the Red Sea, the Suez-Mediterranean (SUMED) pipeline provided an alternative corridor linking the Red Sea with the Mediterranean. Although its 2.5 mmbbl/day capacity cannot replace the Strait of Hormuz, it offers a strategic bypass that improves supply flexibility for both Egypt and regional producers, according to the MoPMR.



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Key Egyptian Economic Insights
in June 2026

Annual Headline Inflation

 **12.2%** -0.8 pp from May

Non-Oil Private Sector PMI

 **46 pts** -1.1 pts from May

Net International Reserves

 **\$55.072 Bn** +\$1.938 Bn from May

Avg Exchange Rate

 **50.7 EGP/USD** -4.3% from May

EGX Listed Petroleum Companies Performance
in June 2026

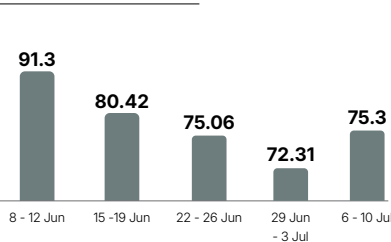
	Close Price 14.7 EGP	YTD Price Change ⬆️ 1.45%	P/E* 16.47
	Close Price 4.69 USD	YTD Price Change 0%	P/E* 2.36
	Close Price 7.75 EGP	YTD Price Change ⬆️ 11.8%	P/E* 6.45
	Close Price 49.58 EGP	YTD Price Change ⬆️ 12%	P/E* 22
	Close Price 15.86 EGP	YTD Price Change ⬆️ 19.08%	P/E* 15.8
	Close Price 35.17 EGP	YTD Price Change ⬆️ 15.31%	P/E* 8.93

*Price-Earnings Ratio (P/E): the ratio of a company's share price to the company's earnings per share.

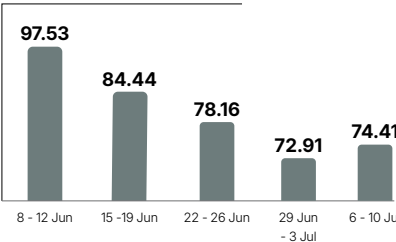
Petroleum Pricing Highlights

Average International Prices

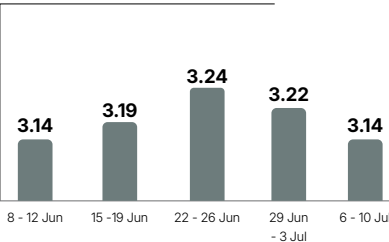
◊ BRENT OIL (\$/BBL)



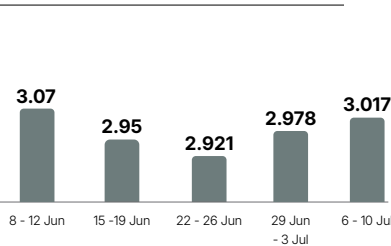
🛢️ OPEC BASKET (\$/BBL)



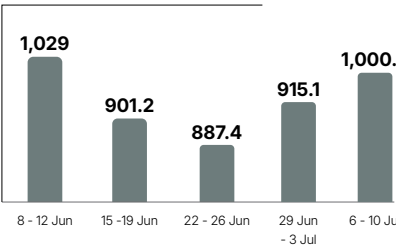
🔥 NATURAL GAS (\$/MMBTU)



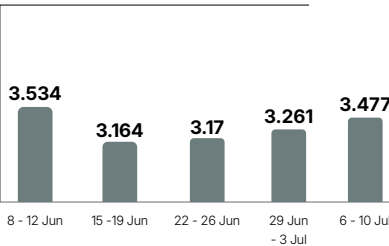
🛢️ RBOB GASOLINE (NYMEX) (\$/GAL)



🛢️ GAS OIL (NYMEX) (\$/MT)



🛢️ HEATING OIL (NYMEX) (\$/GAL)



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