EGYPT OIL&GAS NEWSPAPER

Celebrating 20 YEARS
Of Powering The Narrative

ENERGY REALISM: FROM TRANSITION TO ADDITION

Proudly the Official Publication

EGYPES
EGYPT ENERGY SHOW

30 MARCH - 1 APRIL 2026
EGYPT INTERNATIONAL EXHIBITION CENTER, CAIRO

SCAN TO DOWNLOAD EOG MOBILE APP

We take energy forward

We're committed to making energy safer, cleaner, and more efficient for people and the planet. By combining industry-leading technologies and services with operations in over 120 countries, we're collaborating with customers to transform the future of energy – everywhere.

bakerhughes.com

Baker Hughes

"TOGETHER, YOUR PARTNERS IN EGYPT"

PAN MARINE GROUP

YOUR ONE-STOP SERVICE PROVIDER

PAN MARINE GROUP is a diversified and independent Egyptian organization that has been doing business in the Egyptian market for over than forty-five years.

Demonstrating our commitment to quality, environment, safety, and security, our group holds ISO certifications (9001, 14001, 45001, & 29001) from BV. This commitment to excellence allows us to provide one-stop services to our clients in Egypt via our below companies:

1- Pan Marine Shipping Services
2- Pan Marine Logistics Services
3- Pan Marine Petroleum Services FZ
4- Medkon Lines Egypt S.A.E.
5- Pan Ship Supplies

www.pan-marine.net

Britoil Offshore Services

Be Outstanding at Sea

For nearly four decades, Britoil has built a reputation of offshore excellence, specializing in anchor-handling, towing, and sea transportation services. With a fleet of over 60 Offshore Support Vessels, we operate across Africa, Asia Pacific, India, the Mediterranean, the Middle East, and the North Sea.

Driven by a clear vision to Be Outstanding at Sea, we are committed to delivering safe, reliable, and sustainable offshore support. Our values of care, integrity, ingenuity and agility shape a culture of excellence that drives performance and builds lasting partnerships around the world.

With offices in Singapore, the United Arab Emirates, and Italy, Britoil is strategically positioned to meet the evolving demands of the global offshore oil, gas, and renewable energy sectors—delivering trusted service, wherever the sea takes us.

www.britoil.com.sg

Alexandria Head Office
Marhaba Tower, Fouad Street, Off Horeiya Road, Alexandria 21131, Egypt
+2033913820 (10 Lines) +2033913829 Offshore@pan-marine.net
Alexandria | Cairo | Abu Qir | Port Said | Damietta | Suez | Sokhna | Safaga | Ras Ghareb

Editor's Letter

Dear reader,

The April issue arrives at a moment of heightened instability in the Middle East, as the closure of the Strait of Hormuz, production suspensions across Gulf nations, and tightening storage capacity drive sharp spikes in oil and gas prices, clouding the global economic outlook. In this context, our political analysis unpacks the implications of a Hormuz shutdown, from alternative export routes to potential oil price scenarios.

Our overview explores how Egypt, in step with global trends, is moving beyond fossil fuel divestment toward a more pragmatic model of energy diversification, one that prioritizes stability alongside emissions reduction through gradual technological integration.

Across the issue, we examine the forces shaping the energy transition. Our insight piece highlights how innovation is accelerating decarbonization, while our feature on critical minerals shows Egypt's growing ambition to move up the value chain through investment in infrastructure, industry, and global partnerships.

In technology, we spotlight the role of satellite-based methane monitoring in enabling near real-time emissions detection, advancing both transparency and climate action. The economic article explores Egypt's expanding refining capacity and its role in strengthening energy security.

This edition also features an exclusive interview with Andrea Cavo, Head of Strategic Business Unit – Europe, Mediterranean & Americas at Britoil Offshore Services, who outlines the company's rise as a global offshore player and its strengthened leadership in the Mediterranean and Egyptian offshore market.

This is not just another issue, but a timely and in-depth exploration of an energy landscape in transition.

Wishing you a compelling read,

Sherine Samir

Editor in Chief

table Of Contents

16

Britoil's Global Horizon:
Scaling Fleet Capabilities and Regional Leadership

12

Driving Connectivity Across Egypt's: Hydrocarbon Value Chain

18

Energy Realism:
From Transition to Addition

20

Digital Twins, CCS and CSP:
Innovation Secures Egypt's Energy Shift

22

Refinery Expansions and Upgrades Power Egypt's Oil Sector

Egypt's Leading Oil & Gas Monthly Publication

EGYPT OIL&GAS NEWSPAPER

Proudly the Official Publication

EGYPES EGYPT ENERGY SHOW

Mohamed Fouad

Publisher

Tower No.12 - Bavaria Compound, Ring Road in front of sama Tower - Egypt

(+20) 2 27498191 (+20) 2 27498192

info@egyptoil-gas.com

/EgyptOilandGas /EgyptOilandGas /Egypt-Oil-&-Gas

/EgyptOilandGas /EgyptOilandGas

www.egyptoil-gas.com

NESR

Hydraulic Fracturing

Optimized Operations & Engineering Solutions for Conventional & Unconventional Reservoirs

Our comprehensive solutions cover the entire cycle, including pre-intervention, Plug and Perf, fracturing, coiled tubing milling, and flowback testing.

For more information
www.nesr.com

TOP FIVE NEWS 5

Egypt Raises Gasoline, CNG, Butane Prices

The Ministry of Petroleum and Mineral Resources (MoPMR) raised prices of all types of Octane gasoline, Compressed Natural Gas (CNG) for cars, and butane, effective March 10. The decision came "due to the exceptional circumstances in the international energy markets", noted a statement by MoPMR.

According to the decision, fuel prices at the pump will be as follows:

Fuel Type	New Price (EGP/liter)
95 Octane Gasoline	24
92 Octane Gasoline	22.25
80 Octane Gasoline	20.75
Diesel	20.5
Compressed Natural Gas (CNG)	13 EGP /m³

LPG (Butane) Cylinders	New Price (EGP)
12.5 kg	275
25 kg	550

The MoPMR statement noted that the geopolitical developments in the Middle East and their direct impact on global energy markets have led to a significant increase in the costs of imports and domestic production.

It elaborated that the disruptions in supply chains, elevated risk levels, and rising maritime shipping and insurance costs have resulted in a major surge in global prices for crude oil and petroleum products, reaching levels the energy markets haven't witnessed in years.

Since the direct conflict between Israel and Iran escalated with the launch of "Operation Epic Fury" on February 28, 2026, Brent crude oil prices have experienced extreme volatility, surging from approximately $72 to a peak of $119.50 on March 9 before retreating to roughly $94 per barrel today, March 10, following hints of de-escalation.

PetroWeb, BAPETCO Bring New Gas Wells Online

The Egyptian oil and gas sector has successfully added new wells to the gas production map in both the Mediterranean Sea and the Western Desert.

In the Mediterranean, the second well in the West El-Burullus (WEB) offshore field was placed on the production map, increasing the field's output from about 25 to 37 million cubic feet per day (mmcf/d). The project is being developed and produced through a local joint venture (JV) vehicle (PetroWeb) with Cheiron as the operator/lead developer.

Production is planned to grow over 70 mmcf/d of natural gas following the connection of the third well in the coming days. Meanwhile, drilling of the fourth well has been completed with promising results, and preparations are underway to conduct evaluation tests.

The field development plan also includes a program to drill two additional wells on the 'Papyrus' platform, which is linked to the WEB' platform. This initiative aims to maximize the utilization of resources within the concession area and accelerate the pace of production."

Shell Finds Encouraging Gas Signs at Sirius-1X Well

Drilling results from the exploratory well Sirius-1X, located in the North-East Alameya block in the Mediterranean Sea and operated by Shell, showed encouraging preliminary indications after reaching the target depth of 2,115 meters. This improves the prospects for developing new gas resources in the Sirius exploration interval.

Following these results, an early development decision could be reached in 2027. The Sirius-1X discovery is currently planned to begin production by 2029. This will serve as a subsequent phase to the development of the Mina West field.

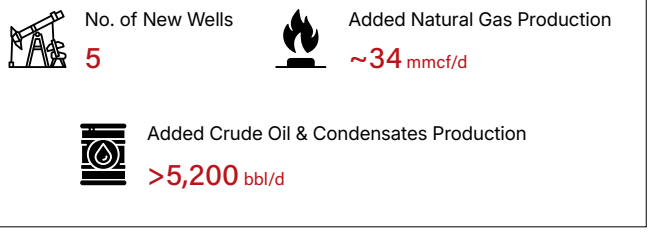
The well marks the first exploratory project executed by Shell in 2026. It is part of a broader Shell's strategy to expand exploration and production (E&P) activities within its Mediterranean concession areas in Egypt. The drilling of Sirius and Mina West 2 wells come within the framework of this strategy.

Shell and its partner, Kuwait Foreign Petroleum Exploration Company (KUFPEC), collaborated with the Egyptian Natural Gas Holding Company (EGAS) to optimize the strategy. By utilizing data collected from the Mina West 2 well in obtaining the geological and technical data needed for drilling the Sirius-1X site, the partners achieved significant cost savings. As a result, no additional data-collection well was required.

Western Desert Discoveries Add 34 mmcf/d of Gas and 5,200 bbl/d of Crude

Four petroleum sector companies have successfully made discoveries in the Western Desert, yielding a total estimated production of over 5,200 barrels per day (bbl/d) of crude oil and condensates, alongside approximately 34 million cubic feet per day (mmcf/d) of natural gas.

Khalda Petroleum has successfully achieved two new gas discoveries. The first is the North Opera-2 in the Matrouh Development area, which was previously announced and tested. Test results confirmed production rates of 21.15 mmcf/d of natural gas, in addition to 3,274 bbl/d of condensates.



The company also achieved a new find, West El Dabaa-2x, in the West El Dabaa concession area. Testing results for the well-yielded production rates of 4.15 mmcf/d of natural gas and 336 bbl/d of condensates. Procedures are currently underway to tie the well into the production grid.

In the same context, the General Petroleum Company (GPC) has successfully achieved a new oil discovery, GPD-1X, in the Sinan development area. Test results showed a production rate of 625 bbl/d of oil.

Meanwhile, PetroFarah, in collaboration with its partner United Energy, has also successfully achieved the SEMR D-3X discovery. Initial test results showed a production rate of 647 bbl/d of oil.

At Agiba Petroleum Company, the Nada-NE-4 well was drilled, yielding positive appraisal results. It is expected to achieve a production rate of approximately 340 bbl/d of oil and 9 mmcf/d of natural gas.

WEPCO Targets 88 mmbbl/y Trading Capacity for El Hamra Port

Ibrahim Massoud, Chairman of the Western Desert Operating Petroleum Company (WEPCO), operator of El Hamra Petroleum Port, announced that the port is targeting a trading volume of approximately 88 million barrels per year (mmbbl/y) for the fiscal year (FY) 2026/27. This throughput, facilitated by the port's offshore facilities and pipeline network, will average 240,000 barrels per day (bbl/d), marking a significant increase in trading activity.

These targets were unveiled during WEPCO's general assembly meeting to approve the FY 2026/27 investment plan. The session also reviewed amendments to the FY 2025/26 budget to account for extensive expansion works aimed at boosting crude oil and petroleum product storage, alongside enhanced trading operations.

Massoud added that the port aims to trade 31 million barrels (mmbbl) of crude oil through its offshore marine facilities. This strategy includes expanding the reception, unloading, and storage of international shipments for third-party clients. Furthermore, WEPCO plans to double its leased storage capacity to 300,000 cubic meters (m³), after bringing two new warehouses into service.

He pointed to progress in expansion plans set in 2025 with the aim to increase crude storage capacity to 5.3 mmbbl, compared to about 2.8 mmbbl. This is in addition to establishing an integrated area for the storage and trading of petroleum products, including northern expansions for crude oil and products storage and southern expansions with a capacity of about 130,000 tons of petroleum products.

SINOPEC

Sinopec Engineering Group
Creating a Better World

中石化炼化工程(集团)股份有限公司
SINOPEC ENGINEERING (GROUP) CO., LTD.

UPSTREAM

Capricorn Energy Output Hits 20,000 boe/d in 2025

UK-listed Capricorn Energy PLC reported production of 20,024 barrels of oil equivalent per day (boe/d) in Egypt through 2025, exceeding the midpoint of its 17,000–21,000 boe/d guidance. Production climbed to 21,003 boe/d by year-end, supported by new wells and an expanded waterflood program at the Badr El Din (BED) field, according to its February 24 operational update

"Our focus in 2025 was to extract value from our existing assets while pursuing the integrated concession agreement with Egyptian General Petroleum Corporation (EGPC) and our partners in Egypt. We drilled a total of 18 development wells across our portfolio, while fulfilling our exploration commitments, with positive results in North Um Baraka (NUMB) and Southeast Horus (SEH)," said Randy Neely, CEO of Capricorn Energy PLC.

In 2026, Capricorn revealed plans to produce between 18,000 and 22,000 (boe/d), of which 43% is forecast to be liquids. The company is progressing with a development lease following the drilling of NUMB-6 well, expected to become onstream in 2026. The company is also advancing the exploration phase of the SHE-6X well and developing the BED field in the first half (H1) of 2026, particularly targeting the Lower Bahariya reservoir.

NATURAL GAS

EGAS to Launch New bid Round in Western Mediterranean

The Egyptian Natural Gas Holding Company (EGAS) plans to launch new a bid round in 2026, offering natural gas exploration licenses across several areas in the Western Mediterranean, according to Chairman and Executive Managing Director Sayed Selim.

The plan also includes drilling 17 exploratory wells during the upcoming Fiscal Year (FY), and commencing the first phase of the seismic survey project in the Eastern Mediterranean during the second half (H2) of the year.

During the meeting, Minister of Petroleum and Mineral Resources Karim Badawi stated that EGAS plays a pivotal role in securing and sustaining natural gas supplies for all sectors of the state, most notably power plants, industrial sectors, and residential homes.

The meeting reviewed the status of recent exploratory wells, West Denis-1, Sirius, and Jannat-1, alongside preparations to drill four additional wells during the second half of FY 2025/26.

On the production front, EGAS plans to implement 6 new projects and complete 3 others, while placing 51 wells on the production map during FY 2026/27.

DOWNSTREAM

MIDTAP Handles Over 5 mmt of Petroleum Products in 2025

Middle East Oil Tankage and Pipelines (MIDTAP), Egypt's operator of oil storage, pipelines, and marine terminal services, handled more than 5 million tons (mmt) of petroleum products in 2025, including diesel, jet fuel and styrene, one of the petrochemical products, with the total number of tankers reaching 180, said Chairman Hasanen Mohamad Hasanen during the company's general assembly meeting to approve its 2025 fiscal year (FY) results.

He noted that the company's marine dock recorded growth in activity in the movement of petroleum products compared to the previous year. In 2024, MIDTAP recorded a total of 4.7 mmt of petroleum products traded at its dock, receiving 153 tankers.

During the meeting, Hasanen reviewed the company's operational results, highlighting its role in implementing the petroleum ministry's pillars, which include receiving petroleum product shipments via the company's marine berth at Dekheila Port and pumping them into the local market through the national petroleum product pipeline network.

He added that MIDTAP contributed to maximizing the economic value of refining operations, accelerating the loading and unloading of products from the Middle East Oil Refinery (MIDOR), and securing crude oil supplies to the refinery, which increased its processing in February to 170,000 barrels per day (bbl/d).

The company is studying a project to establish liquefied petroleum gas (LPG) handling and storage

facilities in Alexandria with a capacity of 80,000 tons, he added.

INVESTMENTS

Petrobel Increases 2025/26 planned investments to $460 Mn

Belayim Petroleum Company's (Petrobel) planned investments for the fiscal year (FY) 2025/26 has been increased to approximately $460 million, Tharwat El Gendy, Petrobel's Chairman, announced during the company's general assembly that was recently held to approve the revised investment plan for the current FY and the investment plan for the FY 2026/27.

The funding is earmarked to complete development works, including the drilling of five development wells in the Sinai fields, the "East Denis-1X" exploratory well in the Temsah concession area, and the "Nidoco North-2" well in the Nile Delta. Additionally, the budget covers several projects aimed at improving the efficiency of existing facilities.

During the first half (H1) of FY 2025/26, the company managed to maintain strong production rates of 178,600 barrels of oil equivalent per day (boe/d), overcoming the challenges of natural field decline. The company also resumed developmental drilling activities with the "BM-133" well in the Gulf of Suez, which achieved a production rate of 1,500 barrels per day (bbl/d) of crude oil and half a million cubic feet per day (0.5 mmcf/d) of associated gas.

The proposed investment plan for the upcoming FY has reached $764 million to complete development projects and boost production capacities. This plan includes drilling the "North Feiran 1XV" exploratory well and ten development wells, alongside executing projects to improve facility efficiency and implementing maintenance programs to ensure the readiness of production platforms.

GPC to Drill 66 Wells with EGP 8 Bn Investments in FY 2026/27

The General Petroleum Company (GPC) targets drilling 66 wells, including eight exploratory ones, with total investments of EGP 8 billion during the coming fiscal year (FY), Chairman Mohamed Abdel Mageed told the company's General Assembly, convened to approve the 2026/27 FY investment plan.

Abdel Mageed noted that a five-year plan is being prepared to double production and quadruple reserves, with estimated investments of around EGP 55 billion.

"GPC made investments totaling EGP4.1 billion during the period from July to December 2025. During that period, the company averaged approximately 78,000 barrels per day (bbl/d), including production from its own fields and its share in joint ventures (JVs)," Abdel Mageed added.

He explained that GPC has drilled two exploratory wells and 26 development wells to offset natural production decline, and has expanded the use of modern technologies, which helped restore several mature wells to production at a rate of 1,000 bbl/d.

The company plans to double exploratory drilling in the first half (H1) of 2026 to enhance reserves and increase crude oil and gas production, in parallel with implementing several projects to develop and expand infrastructure and production facilities, said Abdel Mageed.

FUGRO

Class 5 Torque Tool

Engineered for precision and durability, Fugro's Class 5 Torque Tool is a compact and robust solution for rotary override of API Class 5 torque receptacles. Designed for manipulator deployment via remotely operated vehicles (ROVs), it delivers high-accuracy turn feedback for reliable subsea operations.

The tool operates using a proportional, bi-directional hydraulic supply from the ROV. For optimal performance and enhanced control, Fugro recommends integrating a Torque Tool Control System, enabling precise operation and real-time feedback through a surface controller, typically a laptop interface.

IRAQ

Iraq Cuts Southern Oil Output 70% as Storage Hits Capacity

Oil production from Iraq's main southern fields has dropped by around 70% to about 1.3 million barrels per day (mmbbl/d) as the country's crude storage had reached its maximum capacity. Moreover, it struggles to export crude through the Strait of Hormuz amid the ongoing Iran war. Output from the fields stood at roughly 4.3 mmbbl/d before the conflict erupted.

An official at the state-run Basra Oil Company told Reuters that due to lack of storage capacity authorities had to slash production and direct the remaining output to domestic refineries.

Iraq's crude exports have also plunged sharply, averaging around 800,000 barrels per day (bbl/d).

ADNOC

Hormuz Chaos Strains ADNOC Oil Storage

Abu Dhabi National Oil Company (ADNOC) said that it is modifying offshore production levels to manage storage constraints triggered by the ongoing conflict between the US, Israel and Iran, while onshore production facilities remain fully operational.

In a statement, the company said the measures are intended to maintain operational flexibility and allow a swift return to normal output once conditions stabilize.

The war between the US, Israel and Iran has disrupted energy flows across the Gulf. The conflict has effectively halted shipping through the Strait of Hormuz, a route that carries about 20% of global oil and Liquefied Natural Gas (LNG) supplies.

For the UAE, the disruption has forced producers such as ADNOC to adjust output and rely on alternative export routes and overseas storage to maintain supply to international markets.

QATAR

QatarEnergy Invokes Force Majeure as LNG Output Halts

QatarEnergy has declared force majeure to several buyers after announcing a halt in the production of liquefied natural gas (LNG) and related products.

Force majeure is a legal clause that allows a company to temporarily suspend or cancel its contractual obligations when extraordinary events, like wars, prevent it from fulfilling them.

QatarEnergy said it values its relationship with all stakeholders and will continue to provide updates as more information becomes available regarding the situation and potential timelines for resuming production.

RUSSIA

Putin Warns Russia Could Halt Gas Supplies to Europe

Russia's President Vladimir Putin warned that Russia may halt gas supplies to Europe as energy prices surge following the escalating crisis involving Iran.

Putin said the possibility was being considered as the European Union (EU) moves toward banning purchases of Russian pipeline gas by 2027 and restricting new short-term contracts for Russian liquefied natural gas (LNG) from April 2026.

Global oil and gas prices have spiked after US and Israeli attacks on Iran and retaliatory strikes by Tehran against Gulf Arab neighbors.

The Russian president said rising oil prices were driven by what he described as "aggression against Iran as well as Western restrictions on Russian oil".

According to a Kremlin transcript, Putin suggested it might ultimately be more profitable for Russia to redirect gas supplies to other markets that are opening up rather than continue selling to Europe. He said the idea was not yet a decision but rather a possibility under consideration, and that the Russian government would be instructed to study the issue with energy companies.

LIBYA

Eni Consortium Wins Libya's Offshore O1 Block

A consortium of Eni and QatarEnergy have won the offshore exploration license of Libya's O1 block. This came as part of Libya's National Oil Corporation (NOC) 2025 competitive bid round, further consolidating the two companies' upstream footprint in the country.

The offshore block spans around 29,000 square kilometers (km^2) and is located in the marine extension of the prolific Sirte Oil and Gas Basin. The area is considered highly prospective, with significant zones still lacking 3D seismic data and the potential for additional hydrocarbon discoveries.

Under the agreement, Eni will act as operator holding 60% interest, and QatarEnergy will hold a 40% participating interest throughout the exploration and potential development stages.

US

Trump Draws on Petroleum Reserves to Counter Price Hikes

President Donald Trump announced that his administration will tap the US Strategic Petroleum Reserve (SPR) to combat skyrocketing gas prices fueled by the ongoing conflict with Iran, according to CBS News.

The move, confirmed by Energy Secretary Chris Wright, will see the United States release 172 million barrels (mmbbl) of oil starting next week. The release is part of a massive, coordinated effort by the 32-member International Energy Agency (IEA) to inject a total of 400 million barrels (mmbbl) into the global market; the largest emergency release in the organization's history.

Energy Secretary Wright stated that the 172mmbbl drawdown will take approximately 120 days to complete. He also pledged that the US would work to replace about 200 mmbl within the next year to restore the nation's emergency stockpile, which currently sits at roughly 415mmbbl.

The SPR, housed in sprawling underground caverns across Texas and Louisiana, currently holds approximately 415 million barrels(mmbbl). On a broader scale, the IEA reports that its member nations maintain a collective stockpile exceeding 1.2 billion barrels(bbbl).

Chevron in Exclusive Talks to Acquire Iraq's West Qurna 2 Oilfield

Chevron has entered exclusive negotiations with Iraq over the giant West Qurna 2 oilfield, moving closer to acquiring the asset from Russia's Lukoil, which remains under international sanctions. The talks mark a significant step for the American oil major as it seeks to expand its footprint in Iraq's upstream sector.

Chevron said the discussions will involve sharing confidential information and could significantly expand its presence in Iraq, following Baghdad's decision to nationalize the West Qurna 2 field.

The office of Iraqi Prime Minister Mohammed Shia al-Sudani confirmed that an agreement had been signed between Chevron and the Basra Oil Company (BOC).

Under the arrangement involving BOC, Lukoil, and Chevron, the West Qurna 2 contract will be temporarily transferred to BOC. Once new contractual terms are finalized, BOC will then reassign the project to Chevron, according to the Iraqi prime minister's office.

ITALY

Eni's Production Hikes by 7% YoY in Q4 2025

Eni's global production climbed 7% year-on-year(Y-O-Y) in the fourth quarter (Q4) of 2025, reaching 1.84 million barrels (mmbbl) of oil equivalent per day (mmboe/d). This growth was driven by a combination of accelerated project start-ups and robust performance across the company's core assets.

The company's adjusted net income reached €1.2 billion, marking a 35% YoY increase, while cash flow from operations rose 4% to €3 billion.

This came as Eni's Board of Directors, chaired by Giuseppe Zafarana, approved the unaudited consolidated results for the quarter and the whole fiscal year on February 25, 2026.

SMA

For Oil & Maritime Services

Emission Monitoring and quantification Services for Oil and Gas Sector ground-based and Drone capabilities

SMA For Oil & Maritime Services (Free zone) and its affiliated companies are leading companies in advanced emission monitoring, gas leak detection, and safety solutions for the oil, gas, energy, and maritime sectors. With proven expertise in both offshore and onshore operations, the company combines expert ground teams and cutting-edge drone technology to deliver the precision, speed, and reliability required in today's oil and gas industry.

Our state-of-the-art aerial fleet, equipped with optical, thermal, and specialized gas-detection sensors, can safely inspect offshore platforms, flare stacks, storage tanks, and remote desert pipelines — capturing data that keeps facilities safe and compliant.

On the ground, our skilled engineers use world-class Optical Gas Imaging, high-flow sampling, and other advanced tools to detect and quantify emissions with unrivaled accuracy, in full compliance with OGMP 2.0 Level 4 and Level 5 standards for methane emission monitoring.

SMA is also a trusted leader in H_2S safety services, providing robust detection and quantification of hazardous gases to protect people, assets, and the environment across both offshore and onshore sites.

SMA — delivering safety, sustainability, and innovation solutions from ground to sky.

Contact Us

Info@sma.company

commercial@sma.company

+20 2 28138703 /+20 2 28138705

+20 1018465398/+20 1018493692

- Plot 187, Second Sector - New Cairo, Cairo, Egypt.
- 18 A St. Abdellatif Al-Sofany, Sidi Gaber, 13/12 Floor-Alex, Egypt
- Ataka Building No.5, Suez, Egypt.

https://sma.company/

Driving Connectivity Across Egypt's Hydrocarbon Value Chain

By Nermeen Kamal & Mahmoud Yasser

Egypt's hydrocarbon sector in fiscal year (FY) 2024/25 came under intensifying operational and structural strain, as external trade imbalances, escalating transport costs, and uneven route performance continued to erode overall sectoral efficiency. Although aggregate hydrocarbon transport volumes were stable, transportation expenditures increased at a fast rate, reflecting the rising unit costs and compounding cost pressures across the hydrocarbon value chain.

These pressures were also reflected in the local transport system, where hydrocarbon flows increasingly exposed structural constraints in modal utilization and delivery patterns. This was particularly evident in segments where declining, or only marginally changing volumes, were accompanied by notable increases in spending, underscoring rigidities in the movement of hydrocarbons across the domestic market.

At the same time, the performance of Egypt's key transport modes and routes revealed an increasingly uneven logistics landscape. Pipelines remained the backbone of hydrocarbon mobility, while railway utilization stayed limited, trucking activity remained concentrated in key fuel flows, and coastal tanker performance showed mixed trends. These internal pressures were further compounded by regional shipping disruptions, which continued to weigh on Suez Canal activity and broader trade connectivity.

Against this backdrop, the report analyzes Egypt's hydrocarbon external trade, domestic transport dynamics, key transport routes, and maritime transit performance to evaluate the imbalances and cost pressures shaping the sector in FY 2024/25.

External Hydrocarbon Trade Flows

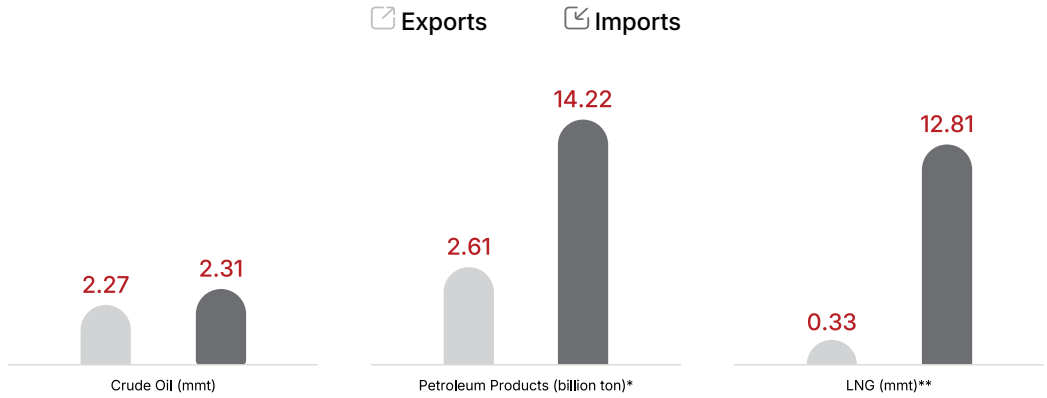
Egypt's hydrocarbons trade structure in FY 2024/25 reflects varying degrees of import dependence across energy streams. Crude oil trade remained broadly balanced, with imports exceeding exports by roughly 2%, indicating relative equilibrium in upstream production and refining requirements.

In contrast, petroleum products recorded a significant trade gap, as import volumes were more than four times export levels, equivalent to an import surplus of approximately 445% over exports, despite efforts to compensate for natural gas supply shortfalls during periods of high demand, supply disruptions, and peak-hour consumption.

The most pronounced imbalance appeared in natural gas, where imports were nearly 38 times higher than exports, underscoring a sharp shift toward external sourcing to meet local demand, according to the Central Agency for Public Mobilization and Statistics (CAPMAS).

Egypt's natural gas exports remained limited,13.6 billion cubic feet (bcf) to Jordan via the Arab Gas Pipeline (AGP). Meanwhile the Liquefied natural gas (LNG) from Idku recorded 3.76 bcf in a single shipment. Imports dominated, totaling 344 bcf via pipelines plus 84 LNG shipments for regasification with a total of 5.76 million tons (mmt), according to Egyptian Natural Gas Holding Company (EGAS).

Hydrocarbons Trade Dynamics in FY 2024/25



Source: CAPMAS

*Include Fuel oil, Gas Oil, Jet Fuel (ton), 95 octane gasoline, kerosene, Butane, Diesel oil, Diesel fuel, and their mixtures

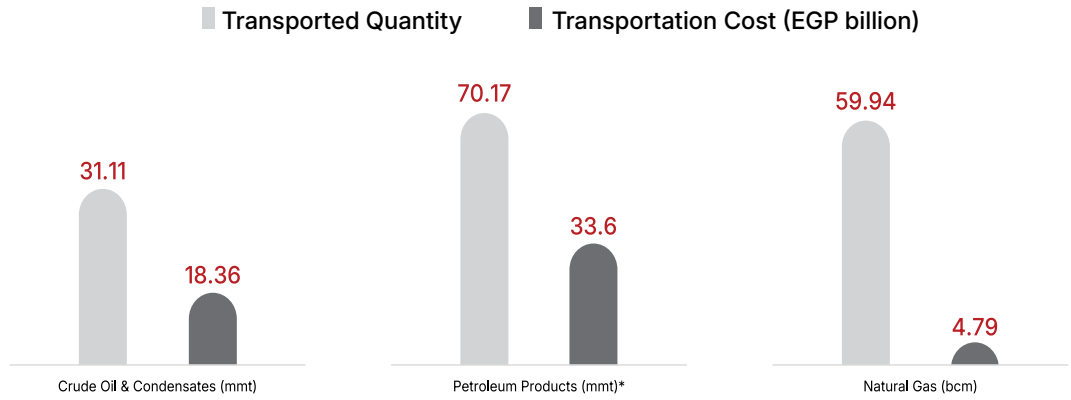
**Excluding the six shipments exported to Europe and Canada during FY 2025/26

Hydrocarbon Local Transport Dynamics

Egypt's petroleum transportation cost structure in FY 2024/25 reflects intensifying cost pressure despite broadly stable transport volumes. Total transport volumes increased marginally by around 0.5%, while expenditure rose by nearly 13%, driving a clear double-digit increase in average cost per ton. On a total hydrocarbon transport spending basis in FY 2024/25, petroleum products accounted for about 59% of total expenditure, crude oil and condensates represented roughly 32%, and natural gas contributed around 8%, indicating that liquid fuels remain the primary driver of overall transport costs.

Fixed-cost pressure also intensified year-on-year (YoY) across segments. Crude and condensate volumes declined by nearly 10%, yet costs still rose in the mid-single digits, lifting unit costs to the high-teens. For petroleum products, volumes increased by around 6%, but costs expanded faster, raising unit costs by about 10%. Natural gas showed the sharpest divergence, with volumes down roughly 7% while costs surged by nearly 50%, pushing implied unit costs up by around 60%, according to CAPMAS.

Hydrocarbons Transportation Highlights in FY 2024/25



Source: CAPMAS

*Include Gas Stove (Butane), Nafta, Gasoline, Kerosene, Turbine (Jet Fuel), Solar/Samar Diesel, Fuel Oil (Mazout), Reformat

Key Transportation Routes

Railway Tanks

The number of Egypt's operational railway tanks declined by 17.5% in FY 2024/25 compared to FY 2023/24, reaching 224 tanks. Meanwhile, the total petroleum railway tank fleet, including non-operational units, stood at 816 tanks.

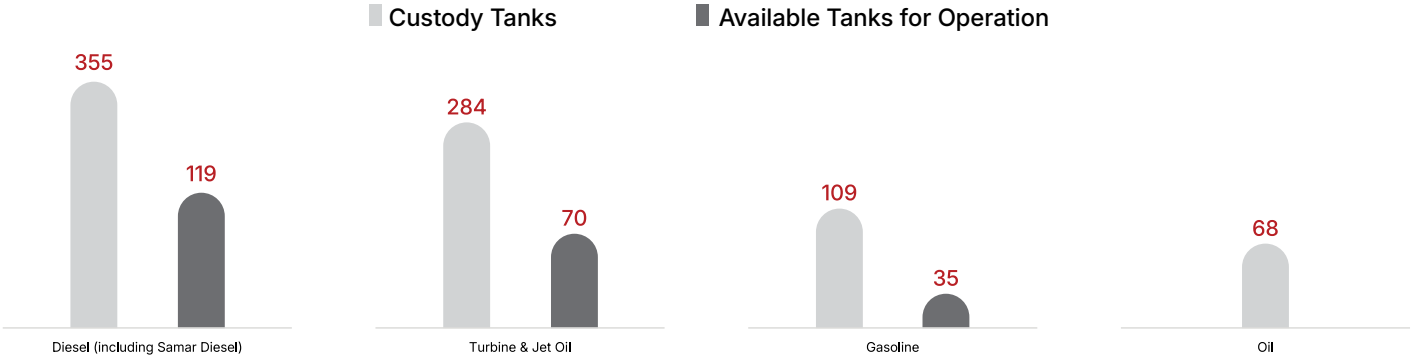
Approximately half of the railway tanks were allocated to the transportation of diesel. The remaining fleet was distributed among turbine and jet fuel, gasoline, and fuel oil.

Oil tanks were not available for operation during both FYs; a total of 68 oil tanks were under construction in FY 2024/25. All product tanks under construction represent approximately 72.5% of the total custody railway tanks, according to CAPMAS.

Total Transported Quantities in FY 2024/25

289,068 t

Railway Tankers Breakdown by Product in FY 2024/25



Petroleum Pipelines

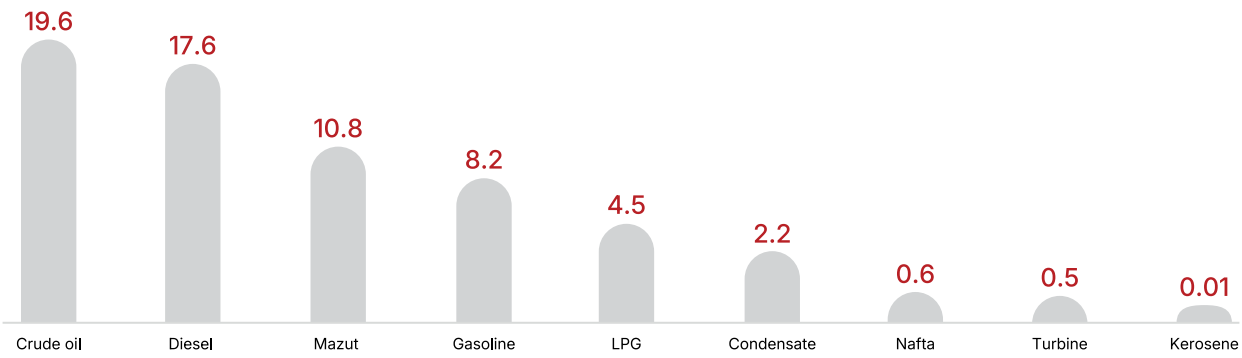
Egypt relies on a well-established network of internal and trunk pipelines to transport petroleum products efficiently across domestic and international markets. These pipelines facilitate the movement of crude oil, condensates, liquefied petroleum gas (LPG), and other refined products.

The total number of pipelines reached 88, totaling more than 6334 kilometers (km). The network comprises 24 crude oil lines and 43 petroleum product lines, including 15 butane lines and six condensate lines.

Crude oil and diesel accounted for the largest share of products transported through Egypt's petroleum pipeline network during FY 2024/25, averaging 57.8% of total quantities transmitted.

Mazut ranked third, contributing approximately 16.7% of total transported volumes, followed by other petroleum products, which accounted for around 12.7% of the total quantities transported, according to CAPMAS.

Transported Quantities by Pipelines in FY 2024/25 (mmt)



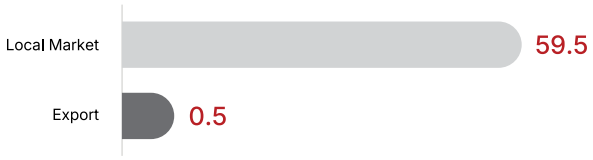
Natural Gas Pipelines

Egypt's total natural gas pipeline network length remained stable at 8,291.5 km in FY 2024/25, indicating no new expansions in cumulative line infrastructure during the period.

Export volumes witnessed a sharp contraction of 77.5% in FY 2024/25 compared to FY 2023/24. Consequently, the export share narrowed significantly to 0.8% in FY 2024/25, compared to 3.4% a year earlier, highlighting a pronounced shift toward prioritizing domestic consumption.

Nevertheless, local transportation volumes fell by 4.5% in FY 2024/25, reflecting a decline in natural gas production, according to CAPMAS.

Natural Gas Transported Quantities in FY 2024/25 (bcm)

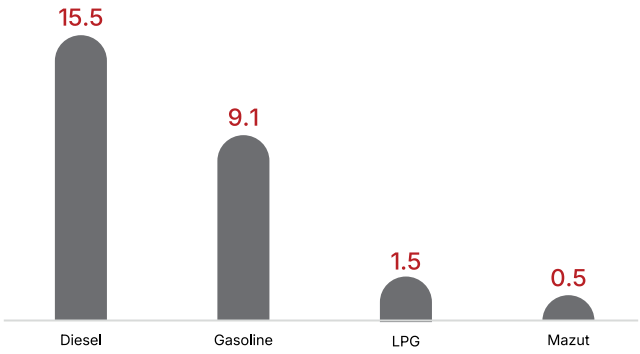


Trucks

Total transported quantities by trucks recorded a 0.8% increase in FY 2024/25, rising by 224 tons. Diesel accounted for the largest share of petroleum products transported by trucks, representing 58.1% of total volumes, followed by gasoline at 34.3%.

Transported quantities of mazut by trucks declined by 14%. This contraction can be partially attributed to the increased reliance on pipelines for mazut transportation, which recorded a significant rise of approximately 47.2%, according to CAPMAS.

Transported Quantities by Trucks in FY 2024/25 (mmt)

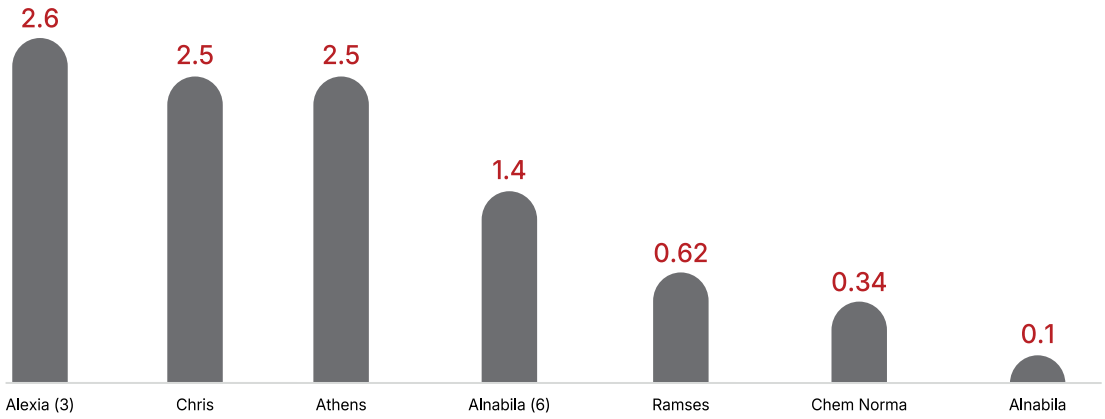


Coastal Tankers

Quantities transported by coastal tankers decreased by 12.9% in FY 2024/25, reaching a total of 9.8 mmt. Alexia (3) held the largest share at 26.8% of quantities transported by coastal tankers in FY 2024/25, followed by Athens at 25.7% and Chris at 23.5%.

In terms of annual performance, quantities transported by Alnabila (6) increased by 5.5%, and Chem Norma recorded a significant surge of 113%. By contrast, volumes transported by Alexia (3) declined by 17.7%, Athens by 18.8%, and Chris by 28%. Kim Alia and Diamond-t recorded a full drop in activity 100%, while Ramses entered operations during the year, according to CAPMAS.

Transported Quantities Per Coastal Tanker in FY 2024/25 (mmt)



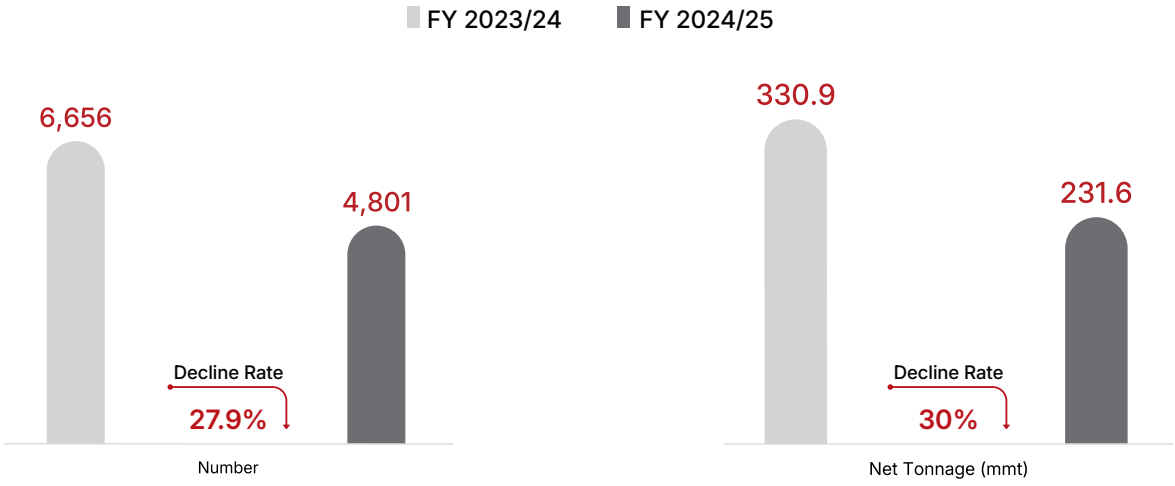
Suez Canal Navigations

Despite the Suez Canal's role as one of the world's key maritime corridors, Red Sea shipping disruptions weighed on transit activity in FY 2024/25. Suez Canal transit receipts declined by 45.5% to $3.6 billion, compared to $6.6 billion in FY 2023/24, according to the Central Bank of Egypt (CBE). Net tonnage also fell by 55.1% to 482.8 mmt, while the number of transiting vessels dropped by 38.5% to 12,400. In the second half (H2) of FY 2024/25, receipts were broadly stable, edging down by 1.4% to $1.80 billion from $1.83 billion.

Oil Tankers

Oil tanker traffic through the Suez Canal declined in FY 2024/25, as the number of tankers fell by 27.9% compared to FY 2023/24, according to the Suez Canal Authority (SCA). Despite the drop, oil tankers accounted for around 38.7% of total vessels transiting the Canal in FY 2024/25.

Oil Tankers Navigation Statistics



Egypt's hydrocarbon balance the mix between domestic production, consumption, and trade-remains structurally uneven. Crude oil trade is broadly balanced, with exports and imports offsetting each other. By contrast, petroleum products and natural gas show persistent deficits, as Egypt relies on imports to meet local demand. The product shortfall reflects strong domestic consumption and limited refining flexibility, while the gas gap underscores continued dependence on imported volumes to cover household and industrial needs.

At the same time ,transport expenditures rose disproportionately to throughput, driving up unit costs and revealing structural rigidities, most notably in the natural gas segment, where costs increased despite declining volumes. Modal dynamics further underscore system constraints, with limited railway utilization, heavy pipeline reliance, concentrated trucking in key fuel flows, and fluctuating coastal tanker performance. Red Sea disruptions compounded these pressures by affecting Suez Canal navigation and regional trade flows.

BRITOIL'S GLOBAL HORIZON:

SCALING FLEET CAPABILITIES AND REGIONAL LEADERSHIP

Founded in 1988, Britoil Offshore Services (Britoil) has evolved from a niche Singapore-based provider into a global offshore player. Built on operational reliability and disciplined investment, the company's trajectory shifted decisively in 2021 with strategic backing from HICO Investment Group and Pérez y Cía. Group. This partnership accelerated modernization and culminated in the landmark 2023 acquisition of Vroon Offshore Services, a move that doubled Britoil's fleet and expanded its reach across the Mediterranean, North Sea, and Asia-Pacific.

In this interview, Andrea Cavo, Head of Strategic Business Unit – Europe, Mediterranean & Americas at Britoil Offshore Services outlined a future defined by versatility and regional depth. He explained that the company's fleet of Anchor Handling Tugs and Platform Supply Vessels now supports the full lifecycle of offshore assets, from exploration to decommissioning. A key highlight is the company's proactive embrace of the energy transition: converting vessels such as the BOS Princess for geotechnical drilling and trialing sustainable fuels, Britoil is positioning itself at the intersection of oil and gas and the growing offshore wind market.

Cavo noted that central to Britoil's strategy is a localized approach to global operations. In Egypt, Britoil builds on a long-standing partnership with Pan Marine Petroleum Services to support operators including Petrobel, BP, and Chevron. By combining a modern, high-spec fleet with dedicated business units that ensure client proximity, Britoil is not merely supplying vessels' it is delivering technical expertise and sustainable frameworks to navigate an evolving offshore energy landscape.

Since inception, what milestones shaped Britoil's position as a leading offshore services provider?

Since its founding in 1988, Britoil has built its reputation in the offshore sector on operational reliability, disciplined fleet investment, and long-term partnerships with offshore energy operators. Starting with anchor-handling, towing, and marine transportation services, the company steadily expanded its capabilities and geographic reach over nearly four decades.

> **The acquisition of Vroon Offshore Services in 2023 was a transformational step for Britoil. It effectively doubled the company's fleet size and expanded its operating footprint into the Mediterranean, Black Sea and the North Sea, complementing its established presence in the Middle East, Africa, and Asia Pacific.**

A major milestone came in 2021, when strategic investments from HICO Investment Group and Pérez y Cía. Group strengthened the platform for long-term growth. With the backing of these partners, we were able to acquire modern tonnage as well as selected unfinished hulls, which were subsequently reactivated and completed as newbuild vessels tailored to today's market requirements. This approach enabled the company to modernize the fleet efficiently, reinforce organizational capabilities, and respond quickly to evolving offshore market demands.

In 2023, Britoil further expanded its global presence through the acquisition of Vroon Offshore Services, significantly strengthening its footprint in the Mediterranean, North Sea and Black Sea while doubling the scale of its operations. Building on this momentum, Britoil launched a newbuilding program in 2025 for six anchor-handling tug vessels, with options for two additional units. Together, these developments reflect Britoil's long-term approach to growth and its continued commitment to supporting offshore energy operations worldwide.

Would you highlight how projects with key clients have driven Britoil's growth and expertise, giving examples?

Britoil's growth has been closely shaped by long-standing collaborations with major international operators and Engineering, Procurement and Construction (EPC) contractors. Working alongside companies such as ENI, Total, and Shell, as well as EPC partners including McDermott, Subsea 7, and Larsen & Toubro, has enabled the company to develop deep operational experience across a wide range of offshore activities.

Through these projects, Britoil has supported complex operations including anchor handling, offshore construction support, and marine logistics in demanding environments. Exposure to large-scale offshore developments across multiple regions has strengthened both technical capabilities and operational discipline.

Importantly, Britoil's work with these clients is not confined to a single geography. The company supports operators globally, deploying its fleet and expertise wherever projects are awarded, while maintaining strong local support to meet regional operating and regulatory requirements. Beyond day-to-day operations, these partnerships have also fostered collaboration in areas such as operational efficiency and sustainability, reinforcing Britoil's position as a reliable and adaptable offshore support partner.

How has the Vroon acquisition enhanced Britoil's fleet and market share in the Mediterranean?

The acquisition of Vroon Offshore Services in 2023 was a transformational step for Britoil. It effectively doubled the company's fleet size and expanded its operating footprint into the Mediterranean, Black Sea and the North Sea, complementing its established presence in the Middle East, Africa, and Asia Pacific.

> **A notable milestone was the successful trial of 100% Hydrotreated Vegetable Oil onboard BOS Champagne, conducted in collaboration with ENI and industry partners, demonstrating the practical viability of lower-carbon fuels within offshore operations..**

Importantly, the addition of a management office in Genoa strengthened Britoil's regional presence, enabling closer engagement with Mediterranean clients and continuity for existing operations. The combined fleet also benefits from a relatively young average age, enhancing reliability and competitiveness in demanding offshore markets.

What key features do Britoil's vessels provide in offshore oil and gas operations?

Britoil operates a diverse fleet comprising Anchor Handling Tug Vessels, Anchor Handling Tug Supply Vessels, Platform Supply Vessels, and Multi-Purpose Support Vessels. These vessels are designed to perform safely and efficiently across a wide range of offshore oil and gas activities, including anchor handling, towing, marine logistics, construction support, and standby duties.

High bollard pull capabilities, dynamic positioning systems, and generous deck and cargo capacities enable the fleet to support complex offshore operations while meeting stringent safety and performance requirements. Collectively, the vessels are capable of supporting every stage of the offshore oil and gas field lifecycle, from geotechnical survey work and construction through drilling, production support, and decommissioning activities.

These operations are supported by Britoil's headquarters in Singapore, which serves as a central hub for global operations and technical oversight, ensuring consistent standards, operational excellence, and reliable support across the worldwide fleet.

How is Britoil adapting its fleet to support offshore renewables alongside oil and gas?

As offshore energy continues to diversify, Britoil has been adapting its fleet to support renewable projects, particularly offshore wind. Where appropriate, we configure vessels to support activities such as environmental mitigation measures, geotechnical and geophysical surveys, and offshore construction support, building on capabilities developed through decades of oil and gas operations.

A clear example is the conversion of BOS Princess into a geotechnical drilling vessel under a long-term partnership with Seas Geosciences. Purpose-designed to support offshore wind developments, the project reflects how we leverage existing offshore expertise while investing in capabilities aligned with the energy transition.

In parallel, vessels such as BOS Prelude have supported offshore wind work in Europe, including projects in Germany. Together, these initiatives demonstrate Britoil's approach of maintaining fleet flexibility while supporting both conventional offshore energy projects and renewable developments with the same focus on safety, reliability, and operational performance.

What initiatives define Britoil's sustainability strategy?

Sustainability is embedded in Britoil's operations through a structured Environmental, Social, and Governance framework aligned with the United Nations Sustainable Development Goals. Rather than treating sustainability as a standalone initiative, the company integrates it into day-to-day decision-making across fleet operations, people development, and governance.

From an environmental perspective, Britoil focuses on reducing emissions, improving operational efficiency, and minimizing its impact on the marine ecosystems in which it operates. A notable milestone was the successful trial of 100% Hydrotreated Vegetable Oil onboard BOS Champagne, conducted in collaboration with ENI and industry partners, demonstrating the practical viability of lower-carbon fuels within offshore operations.

Partnerships play a central role in Britoil's sustainability journey. Over the past year, the company has partnered with The Mission to Seafarers to support initiatives that care for vulnerable seafarers. More recently, Britoil became a founding member of the Maritime Association of Clean Seas, reinforcing its commitment to driving meaningful impact through collective action.

Alongside environmental initiatives, Britoil places strong emphasis on workforce safety, skills development, and robust governance practices, supporting responsible operations and long term resilience.

Looking ahead, how will Britoil grow its portfolio and regional leadership?

Looking ahead, Britoil intends to build on its expanded fleet and geographic reach by continuing to invest in modern assets, operational efficiency, and emerging offshore energy segments. Growth will be supported by a disciplined fleet strategy and the strengthening of its regional Strategic Business Unit (SBU) offices, which allow the company to remain close to clients while responding quickly to local market requirements.

Through these regional SBUs, we combine global operational oversight with strong local execution, enabling Britoil to support projects across multiple geographies with consistent standards and reliable delivery. This approach positions the company well to scale its portfolio, deepen regional leadership, and support both conventional offshore energy projects and new opportunities as the energy landscape continues to evolve.

What role does Britoil play in supporting Egypt's offshore projects and operators?

Egypt is a fundamental part of Britoil's operating footprint. Drawing on decades of offshore experience accumulated both on the Mediterranean as well as Red Sea side with key clients such as Petrobel, Chevron, BP, Burullus, GUPCO, PMS, etc, we work closely together with our long lasting partner Pan Marine Petroleum Services to deliver safe, reliable, and efficient offshore solutions.

With the invaluable support of Pan Marine Petroleum Services, Britoil's role extends beyond vessel provision. The company supports operators by aligning closely with project requirements, local operating conditions, and regional standards, ensuring continuity and operational reliability throughout offshore project lifecycles. Its proven ability to operate in challenging offshore environments, combined with long-standing experience supporting major international oil companies, has established Britoil as a trusted partner for offshore activities in Egypt and the wider region.

How is Britoil building partnerships with operators in Egypt and the Mediterranean?

Britoil's partnerships are built on long term collaboration, local presence, and operational reliability. In the Mediterranean, our Genoa management office strengthens engagement with regional operators and partners, while established relationships with international clients across the Britoil group support continuity across Egypt and the wider region.

By combining a capable, modern fleet with a collaborative and adaptable approach, Britoil positions itself as a long term partner for operators navigating both today's offshore demands and tomorrow's energy landscape.

ENERGY REALISM:
FROM TRANSITION TO ADDITION

The idea of transition, as a simple linear shift from fossil fuels to renewables, dominated the global energy debate for many years. However, reality has turned out to be more complicated. Egypt and other nations serve as examples of how energy transformation is a balancing act between economic necessity and climate ambition rather than a straight line. Natural gas continues to be the foundation of Egypt's power system, guaranteeing stability and affordability in the face of growing demand, even though renewable energy sources are growing quickly. This changing narrative, which is sometimes referred to as "energy realism," recognizes that decarbonization must continue without jeopardizing industrial competitiveness, national development, or energy security.

Egypt's Energy Landscape

In 2023–2024, Egypt's total inputs for electric power generation reached 37.891 million tons of oil equivalent (mmtoe). The mix was overwhelmingly fossil-fuel based, with natural gas alone supplying 29.758 mmtoe and petroleum products adding another 5.746 mmtoe, mainly in specialized off grid uses. Renewables, by contrast, contributed just 1.295 mmtoe from hydro and 992,000 tons equivalent from solar and wind combined, according to CAPMAS' Energy Balance Bulletin.

This puts the renewable share at barely 6% of Egypt's energy mix—far below the national targets of 42% by 2030 and over 60% by 2040.

According to these figures, Egypt's reliance on fossil fuels remains high, making any sudden energy transition impossible. Instead, the country's path must be gradual, balancing economic necessity with climate ambition.

Energy Realism

Egypt, as well as the rest of the world, is changing its approach from fossil fuel divestment to energy portfolio diversification. It is no longer about how fast to eliminate, but also how to maintain stability while reducing emissions. Accordingly, the energy systems are evolving through technological layering rather than the immediate erasure of existing infrastructure.

Tharwat Hassane, Petrophysical Advisor and Operational General Manager at Sahara Oil and Gas Company, tells Egypt Oil & Gas that while the world is moving toward cleaner energy and net-zero goals, it still depends heavily on oil and gas. Fossil fuels remain essential because they provide reliable, high-density energy and keep power grids stable, something renewable sources like wind and solar cannot fully achieve yet.

Egypt's economy, industrial competitiveness, and export revenues remain closely linked to natural gas and petroleum activities. A rapid or poorly sequenced phase-out of fossil fuels could create several interconnected risks, including grid instability, rising electricity costs, Industrial and petrochemical slowdown, foreign currency pressure, and employment

impacts across energy-intensive sectors." Alaa Mostafa Abd elrahime, Energy efficiency and sustainability expert, told Egypt Oil & Gas.

Abd elrahime explains that "from a crisis management perspective, sudden transitions can generate structural economic shocks. Energy realism mitigates these risks by advocating for a phased and balanced transition strategy. Natural gas, for example, can function as a lower-carbon bridge fuel while renewable infrastructure, storage capacity, and grid flexibility are strengthened."

Additionally, Hassane points out that "diversification in the energy mix will significantly reduce price volatility and geopolitical risks. This translates to a range of available prices."

Therefore, "a resilient transition is not defined by speed alone, but by stability, affordability, and security of supply. Energy realism ensures decarbonization progresses without compromising national energy security or economic sustainability," according to Abd elrahime.

Replacing Gas Infrastructure

> **A resilient transition is not defined by speed alone, but by stability, affordability, and security of supply. Energy realism ensures decarbonization progresses without compromising national energy security or economic sustainability".**
>
> **Alaa Mostafa Abd elrahime**
>
> Petrophysical Advisor and Operational General Manager at Sahara Oil and Gas Company

Egypt's energy system is built on decades of investment in gas-fired power plants, pipelines, processing facilities, and industrial complexes. Replacing this infrastructure outright with new systems would require massive capital outlays at a time when Egypt is already facing fiscal pressures, for example, it is set to repay roughly $50.8 billion in foreign debt by the end of next September 2026, based on recent World Bank data.

Retiring fossil fuel assets prematurely would not only strand enormous capital but also destabilize electricity supply, industrial output, and export revenues, making full replacement economically unrealistic and potentially catastrophic. Instead of abandoning its gas infrastructure, Egypt can add low-carbon technologies to existing systems, transforming old assets into tools for decarbonization without requiring new land, new transmission corridors, or massive capital replacement.

By the end of 2024, Egypt's national gas network stretched 8,200 km with a daily capacity of 262 million cubic meters. (mmcm) Green hydrogen can be blended into this system at up to 20%, allowing households to use it for heating and cooking without new infrastructure. This adaptability means Egypt can begin integrating hydrogen into its energy mix while conserving natural gas, avoiding the need for costly network upgrades.

Using existing gas pipelines for hydrogen is only a temporary solution. While hydrogen can be blended with natural gas, it reacts with steel, making pipes brittle and prone to leak, a safety risk. To address this, Egypt will eventually need dedicated hydrogen infrastructure, either by reinforcing current pipelines or building new transport systems, according to the Shaf Center for Future Studies and Analysis of crisis and Conflicts.

Future Outlook

According to Hassane, Egypt can achieve energy balance through two main strategies. First, by expanding exploration campaigns supported by new tenders in areas such as the Red Sea, the Mediterranean, the Western and Eastern Deserts, and the Gulf of Suez. This would open up more exploration zones, leading to fresh discoveries and higher production. Second, by boosting output from aging wells. Many of Egypt's wells have been operating for decades and now face challenges like declining pressure, depletion, and rising water cuts, all of which reduce production over time. Addressing these issues is essential to sustain and increase output.

Hassane noted that Egypt is currently producing about 4.1 billion cubic feet (bcf) of natural gas per day, with output expected to rise to 6 bcf per day within the next five years. This means that the country is on track to regain self-sufficiency, supported by discoveries coming into production and the localization of emerging industries such as green hydrogen and advanced renewable energy.

Additionally, "significant upgrades are underway in wind, solar, and nuclear power plants by 2028, leading to a diversified energy mix and enabling Egypt to achieve self-sufficiency and reclaim its position as a regional energy hub," according to Hassane, who expects that in the future a huge amount of Egypt's natural gas production can be used in petrochemicals, fertilizers and ammonia.

Supported by the European Commission and Canada's Cowater International, Egypt has restructured its energy roadmap to prioritize wind, solar, and low carbon hydrogen. A cornerstone of this plan is the National Low Carbon Hydrogen Strategy, approved in 2024, which aims to capture up to 8% of the global market. To fuel this growth, Egypt is leveraging the "Build, Own, Operate" (BOO) model to attract private investment, already securing 32 Power Purchase Agreements totaling 1,465 megawatts (MW).

Egypt's energy journey is an example of energy realism in action: a practical combination of dependable natural gas, quick growth in renewable energy, and creative adjustments like hydrogen blending that make use of current infrastructure in the face of financial and international constraints. This approach protects affordability, stability, and economic growth without the risks of hurried transitions as AI-driven demand soars and decarbonization quickens. Egypt is positioned not only for self-sufficiency but also to become a resilient regional energy leader by increasing gas production, developing low-carbon hydrogen to capture global markets, and improving solar, wind, and nuclear capacities.

> **While the world is moving toward cleaner energy and net-zero goals, it still depends heavily on oil and gas. Fossil fuels remain essential because they provide reliable, high-density energy and keep power grids stable, something renewable sources like wind and solar cannot fully achieve yet.**
>
> **Tharwat Hassane**
>
> Petrophysical Advisor and Operational General Manager at Sahara Oil and Gas Company

DIGITAL TWINS, CCS AND CSP: INNOVATION SECURES EGYPT'S ENERGY SHIFT

By Sarah Samir

Egypt's energy transition is taking place at a critical juncture where it is necessary to pursue both energy security and decarbonization concurrently. At the core of this change is innovation, not just as a tool but also as the vital enabler that makes both objectives possible.

Innovation as the Engine of Decarbonization in Egypt

Innovation has become the defining force shaping Egypt's energy transition. As the country advances toward its Vision 2030 and 2050 climate strategies, technology is no longer a supporting element, it is the central enabler that allows Egypt to decarbonize while safeguarding the reliability of its power system.

"Egypt's transition is driven primarily by natural gas as the anchor fuel, supported by critical infrastructure investment in grid modernization and battery storage. Digital tools and smarter grid management can further extend efficiency and reliability." El Hussein Essam, Energy Economist, told Egypt Oil & Gas.

He added that while natural gas and grid upgrades guarantee the gradual rise in the share of renewables and drive the reduction in emissions, innovation on the demand side will play a bigger role in reducing overall consumption.

For industries where emissions are structurally embedded carbon capture and storage (CCS) technologies offer a realistic decarbonization pathway. "CCS offers Egypt something very valuable in the transition: time. For industries like cement, fertilizers, and refining where emissions are embedded in the process itself. CCS provides a realistic way to reduce carbon without shutting down production or eroding competitiveness." Said Shady Henein, Senior Energy Analyst at Nexus Analytica, a consultancy services and data-driven solutions provider with a strong focus on the energy and industrial sectors.

> **"Egypt's transition is driven primarily by natural gas as the anchor fuel, supported by critical infrastructure investment in grid modernization and battery storage. Digital tools and smarter grid management can further extend efficiency and reliability."**
>
> **El Hussein Essam**
> Energy Economist

> **"Energy transitions only succeed if the lights stay on. Solar and wind are essential, but they are variable by nature. Hybrid systems where renewables are paired with flexible gas generation and BESS offer balance."**
>
> **Shady Henein**
> Senior Energy Analyst at Nexus Analytica

> **"Concentrated Solar Power (CSP) is one of the most strategic long-duration energy storage solutions to be integrated with the Egyptian energy mix, as it could be the smoothest for the renewable shift in the Egyptian grid."**
>
> **Abdelkareem Younis**
> Energy Consultant

According to Henein, CCS, allows industry to move forward while lowering its carbon footprint.

Meanwhile, Egypt's emerging hydrogen economy reflects a pragmatic sequencing strategy. In the near term, blue hydrogen leverages existing gas infrastructure, while long-term competitiveness will come from green hydrogen powered by Egypt's abundant solar and wind resources. Henein notes that "hydrogen can decarbonize heavy industry while opening new export opportunities," positioning Egypt as a potential regional hub.

Egypt's renewable share remains modest, about 12% of the national grid in fiscal year (FY) 2023/24 with an aim to reach 20% in FY 2025/26, according to the Ministry of Planning and Economic Development.

In this regard, Abdelkareem Younis, Energy Consultant, explains that "Concentrated Solar Power (CSP) is one of the most strategic long-duration energy storage solutions to be integrated with the Egyptian energy mix, as it could be the smoothest for the renewable shift in the Egyptian grid.

CSP uses mirrors to turn sunlight into heat. This heat is used to generate electricity right away or is stored in molten salt to be used later to produce power, making it more like a giant, thermal battery than a traditional solar panel.

Younis further notes that "CSP could help in two different aspects; it could co-produce energy with existing steam and combined power stations, decreasing the dependence on imported natural gas and foreign currencies. In addition, it will make the energy prices less sensitive to price changes in case of international conflicts or disasters."

This highlights CSP's potential as both a complementary technology to Egypt's current energy infrastructure and a strategic buffer against external shocks. By reducing reliance on imported fuels, CSP could strengthen energy security and stabilize costs, which is particularly important for a country vulnerable to global market fluctuations.

Moreover, Younis emphasizes that "CSP can be the resuscitation breathing for the expansion of the green hydrogen market in Egypt. It could help in the development of a green corridor grid by acting as an energy storage system using molten salt and as a grid stabilizer during unstable energy production periods in line with other promising energy storage systems like Battery Energy Storage Systems (BESS)."

Here, CSP is framed not just as a power generator but as an enabler of Egypt's green hydrogen ambitions.

On the other hand, Younis points out that "scaling and deployment of CSP technology in Egypt could be very challenging in terms of the needed CAPEX, availability of market expertise, and optical designs. The system requires a high initial cost in terms of engineering and raw materials needed. Taking in considerations that the technology is not yet mature in terms of local entities in both the private and the public sectors. This could be solved by joint ventures between international experts and the local entities supported by green finance programs."

Innovation as the Guardian of Energy Security

Digital twinning is emerging as a transformative tool for Egypt's energy reliability. Younis highlights that digital twins provide "strong analytical insights for the governmental decision makers, by identifying the most efficient energy consumption guidelines and fast corrective actions, especially in large-scale facilities like district cooling systems." By mirroring real-time system behavior, digital twins enhance planning, reduce downtime, and optimize energy efficiency across large-scale facilities.

Meanwhile, smart grids and Artificial Intelligence (AI)-driven analytics are essential for balancing Egypt's evolving energy mix. Younis notes that AI can forecast climate patterns, predict system failures, and optimize economic dispatch, ensuring "reliability, affordability, resilience, flexibility, energy planning, data cybersecurity, and smoother integration with Distributed Energy Resources (DERs)." These capabilities are indispensable as Egypt scales intermittent renewables.

Moreover, Hybrid systems, pairing renewables with flexible gas generation and storage, are central to maintaining grid stability. Essam highlights that "Hybrid systems' effectiveness depends on upgraded transmission grids and utility-scale battery storage to manage intermittency. Gas supplies dispatchable power when solar and wind underdeliver, while grid and storage investments ensure that renewable output is never wasted."

Henein stresses that "Energy transitions only succeed if the lights stay on. Solar and wind are essential, but they are variable by nature. Hybrid systems where renewables are paired with flexible gas generation and BESS offer balance."

This comes as "BESS plays a particularly important role. It absorbs excess solar or wind power during peak production, releases it during high demand, and helps stabilize the grid in real time. Gas plants, operating more flexibly, can provide backup when needed. Together, they create a system where renewables can grow confidently without compromising reliability," according to Henein.

Essam reinforces this point, stating that: "natural gas remains Egypt's true bridge fuel, while grid infrastructure and battery storage are the enabling backbone without which neither gas nor renewables can deliver reliable power at scale." His emphasis on digital tools and smarter grid management underscores the role of innovation in extending efficiency and reliability.

Forward-Looking Perspective

Egypt's transition is not a zero-sum shift away from hydrocarbons. Instead, innovation enables oil and gas assets to evolve into pillars of the new energy system. As Henein explains, "Existing infrastructure can be repurposed for hydrogen production or CO_2 transport. Gas plants can shift from baseload operation to flexible backup roles." This integrated approach strengthens energy security while accelerating decarbonization.

Essam similarly emphasizes that Egypt's transition rests on "three physical pillars: sustained gas supply, modernized grids, and scalable storage." Innovation is what binds these pillars together, ensuring that renewables can expand without destabilizing the system.

Additionally, "with clear policies and coordinated planning, conventional and renewable assets can operate as parts of one integrated system. Done strategically, Egypt can strengthen energy security, protect economic stability, and accelerate decarbonization at the same time without forcing an abrupt or disruptive shift," Henein.

Egypt's energy transition is not defined by a single technology or resource, it is defined by innovation itself. From hydrogen and CCS to digital twins, smart grids, and hybrid systems, innovation serves two purposes: it promotes decarbonization while ensuring energy security. It ensures that Egypt's transition is resilient, strategic, and economically sound by bridging the legacy oil and gas sector with the renewable future.

REFINERY EXPANSIONS AND UPGRADES POWER EGYPT'S OIL SECTOR

By Doaa Ashraf

Oil-importing nations like Egypt face a persistent challenge: balancing rising domestic demand with the volatility of global energy markets. By building and upgrading refining capacity, countries can reduce their dependence on imported finished products such as gasoline and diesel, which are often subject to price swings and supply disruptions. Egypt ranks among the African countries with the highest refining capacity, currently estimated at 650,000 barrels per day (bbl/d)-a 10% increase since February. Plans are underway to further expand capacity to accommodate both local and imported crude, aiming to close the supply gap.

Driving Output Recovery

In January, the petroleum sector recorded a total output of 520,197 bbl/d of crude oil and condensate. In November, Karim Badawi, Minister of Petroleum and Mineral Resources, explained that lower investment in exploration and production had led to a decline in gas and oil output. Since 2021, oil output averaged 600,000 bbl/d, stabilizing in February 2025 at 540,000 bbl/d. "We will start the phase of increasing production in oil," Badawi said.

To support this, the government reduced overdue payments to International Oil Companies (IOCs), settling $5 billion in debts in late 2025. It also introduced incentive packages and applied the R-factor mechanism to make production-sharing agreements more flexible and profitable. These measures attracted new investment, led to fresh discoveries, and boosted production from field developments in 2025. The ministry has also set a plan to drill over 100 wells in 2026, including 67 wells in the Western Desert. Recently, four wells discovered in the Western Desert added about 4,500 bbl/d of crude oil and 2.6 million cubic feet of natural gas per day (mmcf/d) to local output.

More Refineries, Lower Import Bil

Alongside exploration, the ministry has prioritized expanding refining capacities and implementing upgrades to process more imported crude. Although Egypt's refining capacity exceeds its domestic crude output, refinery expansion reduces reliance on finished product imports such as gasoline and diesel.

By refining more crude domestically, Egypt gains greater control over supply and pricing of petroleum products, insulating itself from global market volatility. Currently, Egypt imports about 28% of its gasoline and 45% of its diesel, Badawi noted during a cabinet meeting on March 10.

Data from the Central Bank of Egypt showed that in the first quarter of fiscal year (FY) 2025/2026 (July–September 2025), oil imports rose by $1 billion, reaching $6.4 billion, compared with $5.4 billion in the same period a year earlier.

Major Refinery Expansion Projects

Badawi previously announced six refinery upgrade projects with total investments exceeding $4 billion. These upgrades aim to maximize the use of both domestic and imported crude, reduce reliance on imported refined products, and strengthen energy security.

One of the most notable upgrades took place at the Middle East Oil Refinery (MIDOR) in Alexandria. After modernization works, MIDOR reached its maximum production capacity of 170,000 bbl/d in 2025. The upgrades included restarting production units at full capacity and activating kerosene treatment operations for the first time. The refinery produced 49 million barrels (mmbbl) of crude in 2025, compared with 47 mmbbl in 2024, generating 6.6 million tons (mmt) of petroleum products.

Similarly, Cairo Oil Refining Company (CORC), which operates the Mostorod and Tanta refineries, allocated EGP 4.47 billion for replacement, renewal, and environmental projects during FY 2025/26. Plans also include

investments in local manufacturing workshops, efficiency improvements, solar energy installations, and energy-saving systems.

In Upper Egypt, Assiut Oil Refining Company (ASORC) is expanding refining capacity to process 4.2 million tons of crude annually. Projects include a new atmospheric distillation unit, a gas recovery unit for LPG production, and sustainability initiatives such as renewable energy and water recycling.

While refinery expansion cannot fully offset Egypt's crude production shortfall, it maximizes the utility of both domestic and imported crude. This strategy shifts Egypt closer to self-sufficiency in refined products and opens opportunities for regional exports.

Innovation in Oilfield Chemicals

The ministry is also promoting local innovation in oilfield chemicals. A recent breakthrough was the development of a locally manufactured demulsifier, a chemical used to separate water from crude oil before refining.

Developed by Developed by a team lead by the Egyptian General Petroleum Corporation (EGPC) in cooperation with CORC the product reduces reliance on costly imports. "Petroleum companies use a wide range of chemicals, most of which are imported and priced in dollars," explained Ehab Shokry, Production Chemist at Khalda Petroleum Company. "During the pandemic and the inflation that followed, costs increased significantly. That's when the idea emerged to develop a locally manufactured product using mainly Egyptian raw materials."

The demulsifier was tested on crude samples from multiple oil fields, including GPC's Sinai fields, securing a supply contract of around 1,000

Shokry added that testing is ongoing at PetroBaker and PetroShahd fields, with new trials scheduled at Mogawish and Esh El-Mallaha. The project's business plan targets 4,500 barrels of production in 2026, rising to 7,000 barrels by 2027, with a five-year strategy that includes potential exports to Iraq, Libya, and Oman.

Expanding Oil Logistics Infrastructure

To complement refinery expansion and exploration activities, the ministry has optimized port and pipeline infrastructure to boost crude and refined product trading.

El Hamra Oil Port expanded its storage capacity from 2.8 to 5.3 million barrels (mmbbl) through new tank construction, according to BMI's Oil and Gas report (2025). The Western Desert Operating Petroleum Company, WEPCO Chairman Ibrahim Massoud announced plans to trade approximately 88 mmbbl/y in FY 2026/27.

Key storage facilities at Ain Sokhna and Sidi Kerir serve the SUMED Pipeline, which now handles up to 2.5 mmbbl/d. The pipeline provides a vital route for transporting crude from the Arabian Gulf to the Mediterranean, enabling efficient supply to European and global markets.

Toward Greater Self-Sufficiency

While refinery expansion cannot fully offset Egypt's crude production shortfall, it maximizes the utility of both domestic and imported crude. This strategy shifts Egypt closer to self-sufficiency in refined products and opens opportunities for regional exports.

Such efforts are particularly significant amid disruptions affecting major fuel storage facilities and ports across neighboring Arab countries following the US and Israel strikes on Iran since February 28. By strengthening refining and logistics infrastructure, Egypt positions itself as a resilient energy hub in the region.

By building and upgrading refining capacity, countries can reduce their dependence on imported finished products such as gasoline and diesel, which are often subject to price swings and supply disruptions.

CRITICAL MINERALS: A STRATEGIC OPPORTUNITY FOR EGYPT IN THE ENERGY TRANSITION

By Rana Al Kady

As the global energy transition accelerates, critical minerals are becoming increasingly central to the development of clean energy technologies. Minerals such as lithium, cobalt, nickel, copper, rare earth elements, and titanium-bearing minerals are essential for manufacturing solar panels, wind turbines, electric vehicles, and energy storage systems. According to the International Energy Agency (IEA), global demand for critical minerals used in clean energy technologies could increase by up to six times by 2040 if countries meet their climate and renewable energy targets. In particular, mineral demand for electric vehicles and battery storage systems alone could grow more than thirty times over the same period.

At the same time, the economic value of the critical minerals sector is concentrated primarily in the processing and refining stages rather than in raw extraction. Currently, global refining capacity for many critical minerals is highly concentrated in a few countries. For example, China accounts for roughly 60% of global lithium refining capacity and more than 80% of rare earth processing. As governments seek to diversify supply chains and improve energy security, new regional hubs for mineral processing and manufacturing are being explored.

In this context, Egypt has begun developing infrastructure, industrial projects, and international partnerships that could allow it to play a larger role in the global critical minerals value chain. Rather than focusing exclusively on mineral extraction, current initiatives emphasize domestic processing, industrial development, and integration into international supply chains that support clean energy technologies.

Egypt's Critical Minerals Wealth

To begin with, Egypt possesses a range of mineral resources relevant to modern industrial and energy technologies. Among the most notable are the country's black sand deposits located along the Mediterranean coastline. According to Egypt's Cabinet Information and Decision Support Center, the country holds approximately 1.3 billion cubic meters (bcm) of black sand reserves extending across roughly 400 kilometers from Rashid to Rafah.

Within these deposits, several valuable heavy minerals are present, including ilmenite, zircon, rutile, magnetite, and monazite. Geological estimates suggest that Egypt's black sands contain approximately 285 million tons (mmt) of mineral-bearing sands with average heavy mineral concentrations of around 3.4% instead. These minerals are used in multiple industrial sectors including ceramics, electronics, pigments, aerospace materials, and advanced engineering applications. Some government estimates indicate that the total potential value of minerals contained within Egypt's black sand deposits could exceed $16 trillion if fully developed over the long term.

In addition, Egypt possesses significant phosphate reserves estimated at more than three billion tons, placing the country among the world's major phosphate producers. Phosphate is widely used in fertilizer production, but it is also increasingly relevant for lithium iron phosphate battery technologies used in electric vehicles and energy storage systems. Egypt also has notable deposits of quartz, silica, and other industrial minerals in the Eastern Desert and the Golden Triangle region that support manufacturing and technology industries.

Developing Mineral Processing Infrastructure

In recent years, Egypt has taken concrete steps toward processing these mineral resources domestically. One of the most important developments is the Black Sand Minerals Complex located in Burullus in Kafr El Sheikh governorate. The complex, which was inaugurated in 2022, was constructed at an estimated cost of approximately EGP 4 billion.

The project includes several industrial processing units designed to dredge, concentrate, and separate heavy minerals from black sands using modern technologies. According to official estimates, the facility is expected to reduce Egypt's mineral imports by approximately $50 million annually while increasing exports by roughly $100 million each year.

Similarly, Egypt has also invested in phosphate processing and fertilizer production complexes designed to increase domestic value-added manufacturing. These facilities allow phosphate resources to be processed locally rather than exported as raw material, thereby increasing industrial output and export revenues while supporting related manufacturing industries.

Critical Minerals and the Energy Transition

Beyond industrial applications, critical minerals play a direct role in enabling Egypt's own energy transition. The deployment of renewable energy systems requires significant quantities of minerals used in power generation technologies, transmission infrastructure, and energy storage systems.

For example, copper is a key component of electrical systems due to its high conductivity. Solar photovoltaic installations require copper for wiring, inverters, and grid connections, while wind turbines depend on copper for generators and electrical systems. According to energy sector estimates, a typical onshore wind turbine can contain up to four tons of copper, while offshore turbines can require significantly more.

In addition, battery technologies used for electric vehicles and grid-scale energy storage rely on minerals such as lithium, nickel, cobalt, and graphite. As renewable energy penetration increases, large-scale battery storage systems are expected to play a growing role in stabilizing electricity grids and managing intermittent generation from solar and wind power.

Likewise, rare earth elements are essential for producing permanent magnets used in wind turbine generators and electric vehicle motors. As Egypt continues expanding renewable energy capacity, particularly in areas such as the Gulf of Suez where wind resources are among the strongest in the region; these materials will remain critical inputs for energy infrastructure.

Strategic Partnerships and Supply Chains

In parallel with domestic industrial development, Egypt has also pursued international partnerships aimed at strengthening critical mineral supply chains. In late 2024, Egypt signed a Strategic and Comprehensive Partnership agreement with the European Union that includes cooperation on critical raw materials under the EU's Global Gateway initiative.

The agreement includes a financial and investment package worth approximately €7.4 billion for the period between 2024 and 2027.

Geographic and Industrial Advantages

In addition to mineral resources, Egypt's geographic location provides a strategic advantage for participation in global supply chains. The country lies at the intersection of Africa, Europe, and Asia and hosts the Suez Canal, which handles roughly 12% instead of global trade.

This location, combined with existing port infrastructure and expanding industrial zones, positions Egypt as a potential logistics and processing hub connecting mineral-rich African economies with global manufacturing markets. Several African countries (including the Democratic Republic of Congo, Zambia, and South Africa) possess significant reserves of critical minerals such as cobalt, copper, and manganese but have limited domestic refining capacity.

At the same time, Egypt has invested heavily in industrial zones such as the Suez Canal Economic Zone and the Golden Triangle development area. These zones are designed to support export-oriented industries and energy-intensive manufacturing activities that could include mineral processing and advanced materials production.

Challenges and Future Outlook

Despite these opportunities, several challenges remain for Egypt to fully establish itself as a regional hub in the critical minerals value chain. Mineral processing industries demand significant capital investment, advanced technologies, and specialized expertise. Building competitive refining and advanced materials industries will therefore require continued investment in infrastructure, workforce development, and research capabilities.

Global competition in the critical minerals sector is intensifying as countries seek to secure strategic resources and develop domestic supply chains. Major economies including the United States, the European Union, and China are investing heavily in mineral processing, battery manufacturing, and raw material supply chains.

Environmental considerations also present a challenge. Mineral extraction and processing can have serious impacts if not managed properly. Developing sustainable mining practices, improving monitoring, and ensuring responsible resource management will be essential as the sector expands.

Overall, global demand for critical minerals is expected to grow significantly over the coming decades as clean energy technologies expand. Egypt's mineral resources, growing processing infrastructure, strategic location, and emerging partnerships provide a foundation for greater participation in evolving supply chains. With continued investment and policy support, the country could strengthen its position in the global critical minerals economy while advancing its broader energy transition goals.

TRACKING METHANE FROM SPACE: A NEW ERA OF EMISSIONS MONITORING

By Fatma Ahmed

Methane emissions have become a central focus of global environmental policy, particularly in the oil and gas sector. Methane is a highly potent greenhouse gas, with a warming effect far stronger than carbon dioxide over short timeframes. Scientists estimate that methane has contributed to nearly 30% of the global temperature rise since the Industrial Revolution, highlighting the urgent need for effective mitigation strategies. Beyond environmental concerns, unmitigated leaks also represent lost energy resources and reduced operational efficiency.

Reducing methane emissions has become both an environmental responsibility and an operational priority for energy producers. Effective reductions require reliable measurement, reporting, and verification (MRV) systems. Satellite methane monitoring technology has emerged as a powerful tool, enabling detection of emissions across large areas, including remote or offshore facilities. By providing near real-time detection of emission sources, satellites support climate action and more sustainable energy operations. For Egypt, this technology can enhance environmental management while strengthening operational efficiency across the energy sector.

Understanding the Technology

Satellite methane monitoring uses space-based systems to detect and measure methane in the atmosphere. These satellites observe emissions over wide regions or specific sources such as oil fields, pipelines, and gas facilities. "Methane in the atmosphere absorbs energy, which allows shortwave infrared sensors to measure the amount of methane present," Mamdouh El Oufy, MENA Account Director Oil &Gas at GHGSAT, one of the satellite methane monitoring developers, explained to Egypt Oil and Gas (EOG). Satellite-mounted spectrometers detect subtle changes in reflected light and convert them into methane concentration measurements, identifying "super-emitters" and potential leakage sources.

"[By] using this technology, we can differentiate methane from other gases and identify methane plumes from oil and gas facilities, landfills, and other human activities across vast areas," El Oufy noted. Satellite monitoring allows authorities and operators to map emissions and prioritize mitigation.

Satellite observations fall into two main types: point-source detection and area-flux monitoring. Point-source satellites focus on small areas with high

precision, detecting plumes from specific facilities. The Carbon Mapper Coalition's Tanager satellites exemplify this approach.

Area-flux satellites scan broader regions, like entire basins or countries, revisiting locations frequently to provide consistent monitoring over time. The European Space Agency's Sentinel-5P with the TROPOMI spectrometer is a prominent example.

Today, more than 25 satellites track methane globally, including NASA's EMIT, Germany's EnMAP, and commercial GHGSat constellations. "The global oil and gas sector has access to methane detection data from public satellites capable of identifying the largest emissions, as well as from high-resolution GHGSat satellites that can detect smaller sources of around 100 kilogram per hour (kg/hr)," El Oufy highlighted.

Why It Matters

Satellite methane monitoring provides operational advantages, including rapid detection across large areas. Experts described the benefit as "speed, coverage, and repeatability at national scale," allowing multiple facilities to be monitored simultaneously while tracking emissions over time.

"Satellite methane monitoring is increasingly deployed as a 'screening and targeting' layer, where wide-area satellites first flag potential emission hotspots, and higher-resolution satellites then help quantify those emissions and prioritize repair actions," María Fernanda President of PlanetAI Nature Space, also one of the satellite methane monitoring innovators, told EOG. She added that the company use software and algorithms that work with existing multispectral satellite images, allowing large asset areas to be monitored without the need for specialized methane-detection satellites.

Satellites can monitor operations regardless of location. The advantage of satellites is that they can monitor oil and gas fields anywhere, regardless of how remote or extensive the operations are, experts noted. In contrast, "traditional ground-based monitoring requires personnel to visit every facility, even in remote locations, and the process must be repeated continuously," El Oufy discussed.

Case Studies in Egypt's Oil and Gas Sector

Satellite methane monitoring is increasingly important in the Middle East and North Africa, including Egypt. The country has committed to reducing methane emissions through the Global Methane Pledge and is strengthening monitoring and mitigation across its energy sector.

One of the key initiatives is the Oil and Gas Climate Initiative (OGCI) Satellite Monitoring Campaign, covering several countries including Egypt. "The most recent project in Egypt was conducted through OGCI, revealing multiple methane plumes from selected assets and helping identify and mitigate emission sources," GHGSAT's MENA Account Director said. Satellite data also supported broader assessments. "Various areas across Egypt have also been monitored to support the identification of problematic locations for future mitigation," he noted.

The initiative demonstrates how emission hotspots can be identified and addressed. "The key insight is that satellite-based monitoring helps identify persistent high-emitting sources that can be prioritized for mitigation," Fernanda underlined.

Given the geographic diversity of Egypt's energy operations, satellite monitoring is especially valuable. "Egypt's oil and gas sector is spread across large concessions including the Western Desert, Eastern Desert, Nile Delta, Gulf of Suez, and the Mediterranean," El Oufy noted, adding that top-down satellite monitoring can help operators identify emission hotspots and guide mitigation efforts across these vast areas.

Supporting Egypt's Energy Transition

Satellite monitoring provides accurate, repeatable data that strengthens emissions transparency and mitigation strategies. "Satellite monitoring can significantly accelerate emissions reduction by helping operators target the largest and most persistent leaks first," Fernanda said, noting that this approach improves efficiency while reducing product loss.

Satellite systems also enhance MRV credibility. "Satellite-based monitoring enhances MRV systems by providing transparent evidence of emission reductions and supporting international climate commitments through transparent evidence of reductions , including retrospective baselining, since satellite archives allow looking back several years for 'before/after' quantification," she said.

Beyond detection, satellite-based MRV can support carbon markets. "Satellite-based MRV systems can support the certification of methane reduction projects," Fernanda revealed. Also, she noted "if operators demonstrably reduce methane emissions, satellite data, including historical baselines from archived imagery, can be used to document verified reductions and support the issuance of carbon credits". For his part, El Oufy highlighted the potential impact saying, "such efforts could support reducing up to 65% of oil and gas CO_2-equivalent emissions by 2030."

Satellite methane monitoring represents a transformative advancement for Egypt's oil and gas sector, bridging the gap between environmental stewardship and operational efficiency. By combining global satellite capabilities with local expertise, the technology allows for rapid identification of high-emitting sources, supports transparent MRV practices, and strengthens the country's climate commitments. Beyond immediate emission reductions, these systems offer long-term benefits, including improved resource management, operational cost savings, and the potential for carbon credit certification. As Egypt continues to modernize its energy infrastructure, integrating satellite-based monitoring into standard practices positions the country as a regional leader in sustainable energy development while providing a model for responsible greenhouse gas management worldwide.

> **"By using the satellite methane monitoring technology, we can differentiate methane from other gases and identify methane plumes from oil and gas facilities, landfills, and other human activities across vast areas. ."**

Mamdouh El Oufy
MENA Account Director Oil &Gas at GHGSAT

> **"Satellite methane monitoring is increasingly deployed as a 'screening and targeting' layer, where wide-area satellites first flag potential emission hotspots, and higher-resolution satellites then help quantify those emissions and prioritize repair actions."**

María Fernanda
President of PlanetAI Nature Space.

CHOKEPOINT CRISIS: HOW HORMUZ STRANGLES GLOBAL ENERGY

By Sherine Samir

The Strait of Hormuz remains the world's most consequential energy chokepoint, a narrow waterway that functions as the beating heart of global commerce. In 2024, this vital artery carried roughly 25% of all seaborne oil and 20% of global Liquefied Natural Gas (LNG) flows-a staggering volume that anchors the world's energy security. Following the February 28 US and Israeli strikes on its leadership and facilities, Iran has turned the Strait into a high-stakes geopolitical weapon. Bordering the northern side of the passage, Tehran exerts significant control over shipping through the waterway due to its proximity to primary lanes and its robust military presence. By leveraging these factors, Iran has effectively throttled the waterway through ship detentions, navigational interference, and sea mines, restricting transit almost exclusively to Iranian-flagged vessels.

Regional and International Counteractions

These retaliatory measures have forced Gulf neighbors to shut down wells as storage hits capacity, while Qatar has entirely suspended its LNG production. In a desperate bid for stability, Saudi Arabia is diverting exports through inland pipelines as the International Energy Agency (IEA) coordinates a global release of strategic reserves. Yet, a striking irony remains: while regional exports have plummeted, Iranian crude continues to flow at a near-normal pace. Data from maritime intelligence firm TankerTrackers.com shows that Iran has successfully exported roughly 13.7 million barrels (mmbbl) since the conflict began, according to Reuters. Despite this steady Iranian flow, market anxiety persists; Brent crude remains anchored near $100 per barrel, and with LNG prices soaring, the global energy landscape remains in a state of high-priced paralysis.

Inland alternative routes

Gulf countries are increasingly utilizing strategic bypasses to move their product. Saudi Arabia's East-West Pipeline, or Petroline, serves as a high-capacity lifeline capable of shunting 5 million barrels per day (mmbbl/d)-representing over 75% of the Kingdom's projected 2025 exports-away from the Gulf and toward the Red Sea port of Yanbu. Notably, the capacity of this pipeline was expanded to 7 mmbbl/d in

2019. Meanwhile, a 1.8 mmbbl/d pipeline transports crude oil from Abu Dhabi's inland fields to Fujairah, which sits safely outside the Strait of Hormuz. "These routes represent more than just infrastructure; they are the regional powers' definitive hedge against a closed Strait, ensuring that global energy flows can pivot even when the gates of Hormuz are under pressure", according to Capital Economics, a UK-based think tank.

Red Sea Threats

Recent developments have sharpened a central geopolitical question: will Tehran permit Saudi Arabia to continue exporting crude through Yanbu without attempting to interfere? According to the Middle East Economic Survey (MEES), an energy industry publication, Yemen's Iran-backed Houthis may be emboldened to resume attacks on vessels in the southern Red Sea, effectively closing-once more-the Bab al-Mandeb chokepoint. Oil tankers carrying Saudi crude bound for Asian markets must navigate this narrow passage, making it a critical vulnerability in the Kingdom's export strategy.

While regional exports have plummeted, Iranian crude continues to flow at a near-normal pace. Data from maritime intelligence firm TankerTrackers.com shows that Iran has successfully exported roughly 13.7 million barrels since the conflict began.

Suez Canal and SUMED Options

If the Bab al-Mandeb were to be shut, Saudi Arabia would have limited alternatives and would likely be forced to reroute its crude shipments north toward the Suez Canal and Egypt's SUMED pipeline, which links the Red Sea port of Ain Sukhna with the Mediterranean terminal at Sidi Kerir. Indeed, in early March, Egypt's Minister of Petroleum and Mineral Resources, Karim Badawi, stated that Cairo stands ready to facilitate the transfer of Saudi crude from the Red Sea to the Mediterranean via the SUMED Pipeline. However, the logistics of such a shift are complex.

Fully loaded Very Large Crude Carriers (VLCCs) cannot transit the Suez Canal, which forces them to discharge part of their cargo at Ain Sukhna before continuing the journey. Saudi Arabia's reliance on the SUMED route typically involves VLCCs shuttling crude between Yanbu and Ain Sukhna, where the oil is offloaded, transmitted through the pipeline, and then reloaded onto other tankers at Sidi Kerir for onward delivery.

While this appears to be a viable solution, this route primarily facilitates sales into European markets across the Mediterranean, whereas the majority of Saudi oil is marketed in Asia.

The MEES report noted that the only exit from this dilemma would be for tankers to load cargoes at Sidi Kerir, exit the Mediterranean, and sail around the southern tip of Africa to reach Asia-a journey that would take considerably longer and involve significantly higher costs.

Even if enough buyers were willing to accept this option, Ain Sukhna itself represents a logistical bottleneck. The SUMED pipeline has the capacity to handle up to 2.5 mmbbl/d of crude oil flows, which is just half of what Aramco hopes to export from Yanbu. This is not the whole picture, as crude from other Gulf producers lacks even this flexibility. Unlike Saudi Arabia and the UAE, most oil flows originating from Iraq, Kuwait, and Iran cannot be rerouted. As a result, a Capital Economics report highlighted that somewhere between 10–20% of global oil supplies could end up trapped.

Trapped LNG Supplies

Regional LNG flows face even steeper challenges, as they cannot be diverted. The absence of alternative routes explains why the European Title Transfer Facility (TTF) natural gas benchmark has registered sharper increases than Brent crude. The TTF is a virtual trading hub for natural gas and serves as Europe's leading benchmark for wholesale gas prices, much like Brent does for oil. Two weeks into the conflict, TTF prices had surged by about 60% to €50–52 per Megawatt-hour (MWh), while Brent crude rose roughly 30–35%, moving from $75–80 per barrel to approximately $100–102 per barrel as of March 14.

Most LNG shipments passing through the Strait originate from Qatar, a dominant player in the global market, while nearly 40% of the crude oil transiting Hormuz-around 5.3 mmbbl/d-comes from Saudi Arabia. Overall, 80–90% of the crude and LNG flows through the Strait are destined for Asia. China stands as the largest buyer, importing both Iranian oil and other crude passing through Hormuz. Combined, these volumes amount to about 5.4 million barrels per day, representing just under half of China's total crude imports. This gives Beijing significant leverage and a profound interest in ensuring uninterrupted energy trade.

The Price of Volatility

As markets priced in the growing risk of Middle Eastern conflict, oil prices had already climbed approximately 15% this year, reaching about $72 per barrel prior to the latest military strikes, according to Capital Economics. In the most benign near-term scenario, the firm anticipates a geopolitical risk premium of roughly $10–15 per barrel being added to the baseline cost.

A broader regional conflict would naturally catalyze a wider range of potential outcomes. In a middle scenario, persistent hostilities would keep risk premiums elevated without necessarily causing a major disruption to actual physical supply. Under these specific conditions, analysts expect that oil prices could remain stabilized within the $70–80 per barrel range for an extended duration. However, in a more severe scenario-one where energy flows face sustained and significant disruptions-crude prices could realistically climb above the $100 per barrel threshold.

The impact extends significantly beyond oil into the global gas markets. If Qatari LNG exports were to be disrupted, European TTF natural gas prices could surge to approximately €80–100 per MWh. While such a spike would represent roughly double current price levels, it would notably remain well below the €200-plus peaks recorded in the third quarter of 2022 following the invasion of Ukraine.

STRAIT OF HORMUZ SHOCKWAVES:

The New Calculus for Egypt's Gas Model

The military escalation between US-Israel axis and Iran, has violently exposed a critical truth: regional economic interdependence is often a brittle facade, not a foundation for peace. The practical fallout of this strategic failure is centered on the Strait of Hormuz, a global energy artery currently under cardiac arrest. With nearly 18 million barrels (mmbbl) of oil passing through daily, even a minor tremor in the region sends prices climbing by double digits within hours, creating a ripple effect that turns energy markets into a high-stakes gamble for the rest of the world.

Egypt's position is particularly exposed. The country has anchored a regional energy model in which imported gas flows are reprocessed and exported, leveraging domestic infrastructure to earn foreign currency and political leverage. Yet that model presumes a baseline of predictability that no longer exists. At various points, Egypt has relied on roughly 0.8–1.0 billion cubic feet per day (bcf.d) of gas imports from neighboring fields.Such numbers are large enough that an abrupt halt forces immediate trade-offs between domestic supply, industrial demand, and export commitments.

In practice, that means policymakers face stark choices: diverting gas to power plants at the expense of industry and export revenues or absorb expensive spot Liquefied Natural Gas (LNG) purchases in a global market that becomes fiercely competitive during crises.

The strategic calculus is compounded when Washington's posture changes the stakes. US involvement through deterrence, force posture, or diplomatic signaling, widens the theatre of risk beyond bilateral tit-for-tat. A confrontation that draws in US strategic interests raises the probability of prolonged disruptions in key maritime corridors. For Egypt, the potential simultaneity of lost regional gas supplies coupled with global price spikes from Gulf instability would inflict a dual blow: dwindling export earnings and sharply higher import bills. Spot LNG premia can surge 25–30% in acute stress episodes, creating fiscal and monetary strain that could push headline inflation higher and squeeze foreign-exchange reserves.

This is not a theoretical warning but a call to immediate, structural action. Egypt must accelerate three interlocking priorities. First, rapidly expand strategic gas storage and deploy flexible LNG import capacity (including loating storage and regasification units) to short-circuit supply interruptions. Second, fast-track domestic supply: unlock proven fields, incentivize marginal production, and scale renewable generation to reduce fuel demand for power. Third, harden financial resilience through targeted hedging, reserve buffers, and contingency fiscal plans so price shocks do not force abrupt subsidy cuts or social retrenchment.

Diplomatically, Cairo must preserve maximum maneuverability: sustain regional partnerships while aggressively diversifying supply relationships beyond immediate neighbours. The era in which contractual ties alone could guarantee stability is over. The lesson of this escalation is both blunt and actionable interdependence without redundancy is vulnerability. For Egypt, the moment demands a shift from opportunistic regional integration to deliberate, sovereign resilience: not to withdraw from cooperation, but to harden the nation's ability to withstand its collapse. The alternative is not merely lost revenue; it is strategic exposure in a neighborhood where shocks recur and patience runs thin.

By Mohamed Atia

Process engineer at Egyptian Refining Company

POLITICS, PRICES, AND POWER:

Why Egypt Must Commit to an Energy Mix

Politics has become a decisive force in shaping the prices of gold and oil, leaving stability and predictability increasingly out of reach. For Egypt, this volatility compounds structural challenges in the energy sector. Fossil fuel consumption is rising by no less than 10% annually, while crude oil production naturally declines at a rate of 10–15% each year. Gas reservoirs face an even steeper depletion rate, ranging between 10% and 25% annually.

This widening gap between rising demand and falling supply underscores the urgency of action. The Ministry of Petroleum must adopt proactive strategies to offset consumption growth and counter natural decline. That means intensifying exploration, accelerating the development of new fields, and ensuring that new production areas are brought online quickly.

Also, timely payment of dues and a clear timetable for settling outstanding debts are essential to reassure investors and encourage further participation.

We then come to what every expert in the energy field has long been calling for: a clear commitment to an energy mix that reduces reliance on fossil fuels while steadily increasing the share of new and renewable sources. Egypt is uniquely positioned to lead this transition, given its geographic location and climate, which provide ideal conditions for expanding wind and solar generation. Experts agree that Egypt could raise the share of renewables in its energy mix to as much as 50%.

Wind energy also offers significant potential. While wind farms require high upfront capital, their operating costs are minimal, making them a cost-effective option over time. Alongside wind and solar, Egypt should accelerate efforts to produce biogas and harness agricultural waste for thermal energy. This approach not only preserves the environment but also generates financial returns, turning waste into value instead of burning it and contributing to pollution, acid rain, and soil degradation.

All of this points to a pressing question: could the government establish a dedicated fund to drive the energy mix transition? Fossil fuels, though still the backbone of industry and daily life, are finite and increasingly volatile. A structured fund would provide the financial backbone for Egypt's shift toward renewables, ensuring that the country builds resilience, safeguards its environment, and secures a sustainable energy future.

By Sabry El Sharkawy

Amal Operations Manager- Cheiron

Vaalco
ENERGY

Energy Through Excellence

We deliver growth by maximizing our production performance and by leveraging our in-house talent, operational infrastructure, and technical expertise.

vaalco.com

EGYPT OIL&GAS RESEARCH & ANALYSIS

From Fields to Pipelines: Egypt's Journey into Smart Energy

Egypt's petroleum industry is increasingly integrating digital technologies to improve operational efficiency, safety, and environmental performance across the value chain. As part of the Oil and Gas Sector Modernization Project led by the Ministry of Petroleum and Mineral Resources (MoPMR), companies have begun deploying artificial intelligence (AI), Internet of Things (IoT) sensors, supervisory control and data acquisition (SCADA) systems, and predictive analytics to enhance monitoring and decision-making across upstream and midstream operations.

Beyond field operations, digitalization is reshaping how exploration opportunities are marketed and shared with investors. The Egypt Upstream Gateway (EUG) provides an online platform that enables access to subsurface and exploration data, markets exploration opportunities and facilitates data availability for investors, according to EUG.

Another sector-wide digital initiative is the Takamol Platform, a cloud-based environment designed to integrate information technology systems across petroleum and mineral companies. The platform provides a unified digital workspace that enhances collaboration, operational efficiency, and connectivity across the sector. The system currently serves around 150 companies and more than 250,000 employees while allowing each company to maintain secure and independent data environments within a shared infrastructure, according to MoPMR.

In parallel, the Egyptian General Petroleum Corporation (EGPC) has begun rolling out several "in-house" digital systems across its affiliates to unify operational data and strengthen sector oversight. In January 2026, the corporation launched a centralized Environmental Monitoring Platform designed to aggregate emissions and fuel-consumption data from petroleum companies nationwide, supporting more integrated environmental monitoring and reporting across the sector, according to MoPMR.

These initiatives underpin the sector's broader development schemes and upstream expansion plans, which aim to drill approximately 480 wells with investments of around $5.7 billion across the Western Desert, Mediterranean, Gulf of Suez, and Nile Delta by 2030, according to MoPMR.

Field-Level Digital Applications

Across Egypt's fields, international and local operators have launched digital projects with measurable gains.

In the Western Desert, Khalda Petroleum and Weatherford completed Phase I of a "Digital Oil Field" program using Weatherford's CygNet platform to enable real-time monitoring and improved asset management across multiple wells, according to MoPMR.

Artificial intelligence is also being applied to mature assets to improve drilling outcomes. The General Petroleum Company (GPC) deployed AI-based reservoir analysis models to identify stratigraphic traps in brownfields in Egypt's Western Desert, helping guide drilling decisions and unlock additional production potential.

Using this approach, the company successfully drilled new wells in mature fields, demonstrating the role of data-driven analysis in revitalizing declining reservoirs, according to MoPMR.

Khalda Digital Oil Field SCADA Program

Production Results of AI-Optimized Brownfield Wells

Pipeline and Distribution Digitization

In midstream, the Petroleum Pipelines Company (PPC) launched a three-phase program to digitally upgrade Egypt's national petroleum pipeline network, which extends more than 7,000 kilometer (km) across the country.

In 2025, EGPC signed a memorandum of understanding (MoU) with a consortium comprising Siemens, DNV, and EnExpert Energy to introduce advanced technologies including industrial automation, digital twin models, and real-time monitoring tools across the pipeline system. The initiative aims to enhance operational safety, improve asset management, and strengthen the efficiency and sustainability of petroleum transportation and storage infrastructure, according to MoPMR.

In the downstream segment, similar digital monitoring technologies are being deployed to improve oversight of petroleum product distribution.

Petrogas has implemented a SCADA system across all company sites nationwide following the completion of all implementation phases. The system enables real-time monitoring of Liquefied Petroleum Gas (LPG) stocks and connects operations directly to the Petroleum Products Movement Monitoring Center at EGPC, strengthening transparency and operational control across the LPG supply chain, according to MoPMR.

EGYPES

EGYPT ENERGY SHOW

SUPPORTED BY

وزارة البترول والثروة المعدنية
Ministry of Petroleum & Mineral Resources

SAVE THE DATE

29 - 31 MARCH 2027

10th ANNIVERSARY EDITION

Brought to you by: dmg events

Key Egyptian Economic Insights in February 2026

Annual Headline Inflation

11.5% | **+1.4** pp from January

Non-Oil Private Sector PMI

48.9 pts | **-0.9** pts from January

Net International Reserves

$52.7455 Bn | **+$0.151** Bn from January

Avg Exchange Rate

47.2 EGP/USD | **-0.1%** from January

EGX Listed Petroleum Companies Performance in February 2026

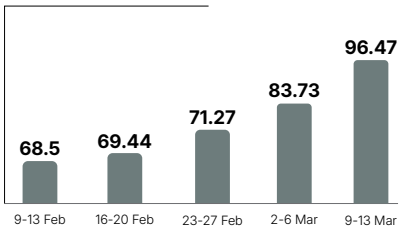
	Close Price	YTD Price Change	P/E*
TAQA Petroleum	12.6 EGP	⊕ 13.03%	21.57
EDC	-	0%	3.89
AMOC	7.11 EGP	⊕ 2.6%	5.92
EGYPT GAS	41.96 EGP	⊕ 5.2%	20.8
Sidpec	16.65 EGP	⊕ 15.05%	16.59

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

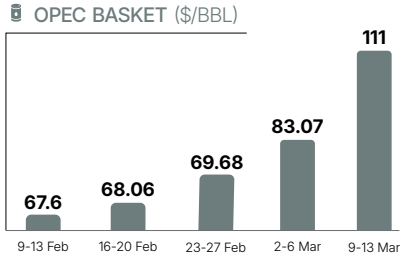
Petroleum Pricing Highlights

Average International Prices

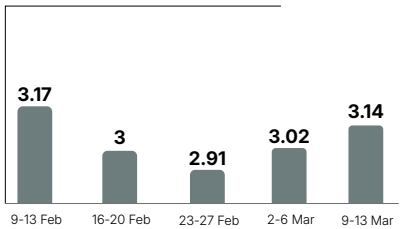
BRENT OIL ($/BBL)



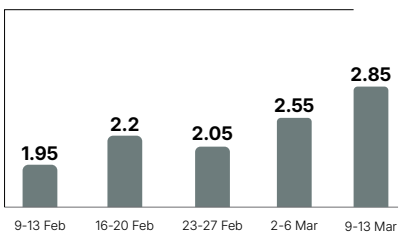
OPEC BASKET ($/BBL)



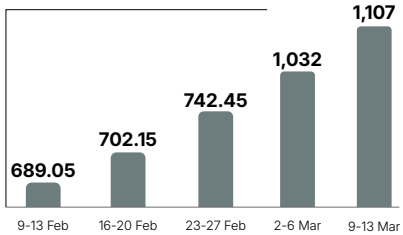
NATURAL GAS ($/MMBTU)



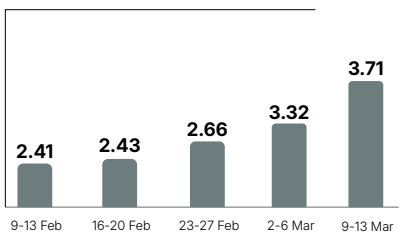
RBOB GASOLINE (NYMEX) ($/GAL)



GAS OIL (NYMEX) ($/MT)



HEATING OIL (NYMEX) ($/GAL)



أديبك
ADIPEC

Host
أدنوك
ADNOC

2-5 November 2026
Abu Dhabi, UAE

WHERE THE WORLD'S ENERGY LEADERS UNITE

ADIPEC will convene leaders from across energy, technology, finance and policy to explore practical pathways for building future-ready energy systems - capable of meeting rising demand, enabling digital and industrial growth, supporting global development, and advancing emissions management.

ADIPEC in numbers:

2,250+
Exhibiting companies

US$53B
Generated across 49,131 business deals

239,000+
Exhibition attendees

16,500+
Conference delegates

JOIN THE GLOBAL ENERGY COMMUNITY

Supported by

وزارة الطاقة والبنية التحتية
MINISTRY OF ENERGY & INFRASTRUCTURE

وزارة الصناعة والتكنولوجيا المتقدمة
MINISTRY OF INDUSTRY & ADVANCED TECHNOLOGY

مصدر
MASDAR

دائرة الثقافة والسياحة
DEPARTMENT OF CULTURE AND TOURISM

دائرة التعليم والمعرفة
DEPARTMENT OF EDUCATION AND KNOWLEDGE

مكتب أبوظبي للاستثمار
ABU DHABI INVESTMENT OFFICE

setcore

40 Years of Excellence

Proudly serving the oil and gas industry since 1985 — delivering excellence across Egypt, Saudi Arabia and the UAE

- Asset Integrity Management Solutions
- Well Integrity & Intervention Solutions
- Partnership Solutions
- Pipe Recovery Solutions
- Plug & Abandonment Solutions
- Data Management Solution

It’s time to elevate your operational performance with Setcore.

www.setcore.com

Contact Us Now