EGYPT
OIL&GAS
NEWSPAPER

EGYPT
2028 — 2031
ALIGNING FOR A SUSTAINABLE FUTURE

THE GAS GAMBIT:
EGYPT'S BET ON A CLEANER FUTURE

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EDITOR'S LETTER

Dear Reader,

As we turn the page on another month, Egypt's energy landscape continues to evolve at a remarkable pace. The nation's strategic commitment to harnessing its natural gas wealth for a cleaner, more sustainable future is evident in the recent strides made by the government and industry players.

This month's issue delves into the multifaceted journey Egypt is undertaking. From becoming a major gas producer to establishing itself as a regional trade hub, the country's efforts to add value to its natural gas resources are commendable. Our writers explore the innovative incentives and policies driving this transformation, highlighting how Egypt is positioning itself as a key player in the global energy market.

We also shed light on the pivotal role natural gas plays in Egypt's economy. Beyond energy generation, gas is fueling industrial growth and creating new opportunities across various sectors. Our analysis underscores the importance of technology and know-how in maximizing the value of our natural gas reserves.

Our Research and Analysis team has prepared a comprehensive report titled "Egypt's Oil & Gas Exploration & Drilling Activities A CATALYST FOR GROWTH," offering valuable insights into the nation's exploration efforts and their potential to drive economic development.

As the summer draws to a close, the oil and gas industry is brimming with activity. We hope this issue provides you with a comprehensive overview of the sector's latest developments and inspires continued progress.

Happy reading!

MANAGING EDITOR

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EGYPT'S **LEADING** OIL & GAS MONTHLY PUBLICATION

EGYPT OIL&GAS NEWSPAPER

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Publisher
Mohamed Fouad

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TOP 5

Badawi Announces New Incentives to Boost Oil, Gas Production

Minister of Petroleum and Mineral Resources Karim Badawi has announced a new set of incentives aimed at increasing oil and gas production during an extensive meeting with important partners in the sector.

These incentives include new mechanisms that are associated with achieving an increase in production beyond the current rates, as well as an increase in exploratory, developmental drilling activities and production operations.

This will result in allocating the revenue generated from the increased production to settle part of the dues owed to the petroleum sector's partners and provide additional petroleum to narrow the gap between local production and consumption.

Moreover, it will contribute to reducing the monthly import bill, thereby providing more financial resources for both parties. This reflects the petroleum sector's commitment to improve the investment climate and encouraging partners to direct more investments, ultimately leading to increased production of gas and crude oil.

Badawi commented that the incentives reflect the oil sector's commitment to improving the investment climate and encouraging partners to direct more investments, which ultimately leads to increased gas and crude oil production.

The partners expressed their praise for the initiative as a step to enhance their efforts to intensify their activities, and thus increase production.

EGAS Launches 2024 International Bid Round for 12 New Oil and Gas Blocks in Egypt

The Ministry of Petroleum and Mineral Resources has announced that the Egyptian Natural Gas Holding Company (EGAS) has launched a new international 2024 bid round for the exploration and exploitation of natural gas and crude oil in 12 blocks in the Mediterranean and Nile Delta.

This includes 10 offshore blocks and two onshore blocks through Egypt Upstream Gateway (EUG) via the following link: https://eug.petroleum.gov.eg.

Karim Badawi, Minister of Petroleum and Mineral Resources, stated that the launch of this bid round for natural gas exploration supports Egypt's direction toward intensifying exploration activities in the Mediterranean, especially in light of the growing interest in achieving new discoveries and increasing natural gas production, which has become a crucial element in both the local and global energy mix.

Moreover, he confirmed that this is the eighth bid round of its kind to be launched using the latest digital tools through EUG which the ministry launched at the beginning of 2021. It provides seamless access to the essential and all updated technical data related to bid rounds, speeding up the process of evaluating investment opportunities and submitting bids.

Egypt, UAE Ink Deal to Boost Al Hamra Petroleum Port Operations

Prime Minister Mostafa Madbouly witnessed the signing of a memorandum of understanding (MoU) between Egypt and the UAE, aimed at leveraging the integrated system at the Fujairah Oil Industry Zone (FOIZ) and applying it to the Al Hamra Petroleum Port on the Mediterranean coast.

The MoU aligns with the petroleum ministry's strategy to maximize Egypt's role as a regional energy hub for trading petroleum and petroleum products and exploiting the port's infrastructure and facilities to receive and trade through petroleum and petroleum products.

The deal includes the possibility of supplying petroleum products to the local market through the existing partnerships of Fujairah Company with global suppliers of oil and gas companies, by providing a competitive advantage to the Egyptian General Petroleum Corporation (EGPC), as well as exploiting the facilities available in the petroleum sector to trade petroleum products.

It also states establishing a new logistics zone for trading in the Mediterranean region by pumping investments that may reach $3 billion, subject to increase.

Additionally, a joint working team was formed between the Egyptian and Emirati sides to follow up on the implementation of the terms of the agreement to overcome any obstacles.

Egypt Launches the National Low-Carbon Hydrogen Strategy

The Egyptian government has announced the launch of the National Low-Carbon Hydrogen Strategy as part of an effort to transition to a low-carbon economy and promote environmental sustainability.

Cabinet Spokesman Mohamed El Homsani said that this strategy depends upon exploiting the geographical location of Egypt and its natural resources, especially solar and wind energy, to support the production of low-carbon hydrogen. It also aims at advancing the cooperation with international partners and financial institutions to foster the development and investment in this field, he added.

Additionally, El Homsani stated that the national strategy is prepared by many international partners, including the European Bank for Reconstruction and Development (EBRD), and its outputs were presented during the COP 27 summit. He explained that its plan involved increasing hydrogen production and its derivatives, in addition to the expansion of its use to reach every sector, especially industry and transportation. It can then also be exported to international markets.

The spokesman also pointed out that the National Council for Green Hydrogen and its Derivatives will monitor and follow up on the implementation of the National Low-Carbon Hydrogen Strategy annually.

The strategy is expected to have significant economic benefits, which include increasing Egypt's gross domestic product (GDP) to about $18 billion by 2040 and creating more than 100,000 new jobs in the same year. It will also support Egypt's energy security by diversifying its sources, in addition to contributing to reducing carbon dioxide emissions and supporting the transition to a green economy.

Egypt to Build $660 Million Marine Facility for Petrochemicals

Minister of Petroleum and Mineral Resources Karim Badawi and Vice Admiral Mohab Mamish have witnessed the signing of a shareholder's agreement to establish the Alexandria Supply Chain Company.

This agreement aims to create a permanent marine facilities station in Dekheila Port in Alexandria Governorate to secure the current and future needs of raw materials for the petrochemical companies operating in Alexandria.

The facility also aims to secure the needs of the projects considered within the national plan for the petrochemical industry.

The new company aligns with the vision of the Political leadership of securing a sustainable supply of raw materials for the petrochemical industry, particularly liquefied ethane gas, in trading quantities of up to 1.1 million tons per year (mtpa).

Minister Badawi indicated that the new company is considered a quantum leap for serving the petrochemical industries in Egypt in general.

The $660 million project would be implemented in partnership between the Egyptian Petrochemicals Holding Company (ECHEM), Sidi Kerir Petrochemicals Company (Sidpec), the Egyptian Natural Gas Company (GASCO), and Gama Construction. Studies of the project showed full adherence to the highest qualitative standards, environmental sustainability, health, and occupational safety as Badawi noted.

ECHEM Chairman Ibrahim Mekki highlighted that the marine berths consist of two docks, each 400 meters long and 20 meters deep. These berths include a ground area of 400,000 square meters designated for the creation of storage warehouses, gasification units, and all necessary services and facilities for the station.

A BLAST FROM THE PAST

The Organization of the Petroleum Exporting Countries (OPEC) was established in September 1960 by five oil-producing countries: Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela. They aimed to unify petroleum policies and ensure stable oil prices, efficient supply, and fair investment returns.

Since its inception, OPEC has grown to include 12 members, with some countries suspending or terminating their membership over the years.

In 1975, OPEC broadened its mandate with the first Summit of Heads of State and Government in Algiers marking a new era of cooperation in international relations in the interests of world economic development and stability. This led to the establishment of the OPEC Fund for International Development in 1976.

OPEC's second and third summits in Caracas and Riyadh in 2000 and 2007 established stable energy markets, sustainable development, and the environment as three guiding themes.

On the collapse of the global financial sector that led to the economic recession of 2008, OPEC became prominent in supporting the oil sector, as part of global efforts to address the economic crisis.

In the 2010s, OPEC continued navigating global economic uncertainties and social unrest while engaging in dialogues on environmental issues, including the Paris Agreement in 2015. OPEC's commitment to environmental protection was also reflected in its participation in the UN Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP) meetings and its advocacy for a balanced approach to oil supply in the context of sustainable development.

OPEC turns 64 in September, marking a significant milestone on the Organization's historic journey.

UNDER THE LIMELIGHT

Establishing a New Mediterranean Trade Logistics Hub in Egypt

$3 billion

Egypt-UAE MoU Strengthens Petroleum Cooperation

Egypt and the United Arab Emirates have signed a memorandum of understanding (MoU) to strengthen bilateral cooperation in the petroleum sector. The MoU seeks to leverage the integrated system of the Fujairah Oil Industry Zone (FOIZ) and apply it at the Al-Hamra Petroleum Port.

In this regard, the MoU outlines the potential to supply petroleum products to the local market via Fujairah Company's global oil and gas partnerships. It aims to provide a competitive edge to the Egyptian General Petroleum Corporation (EGPC), utilizing existing petroleum sector facilities for trading and establishing a new Mediterranean logistics hub at a cost of $3 billion, with the potential for further growth, according to the Cabinet.

PRODUCTION

GUPCO Average Production Reaches 57,000 bbl/d in FY 2023/24

Chairman of Gulf of Suez Petroleum Company (GUPCO) Salah Abdel Kareem has announced that the company's average production recorded 57,000 barrels per day (bbl/d) during the fiscal year (FY) 2023/24 and pumped investments amounted to $415 million in exploration and production.

Salah Abdel Kareem added that putting two new wells on the production stream at the North Safa petroleum field contributed to achieving initial production of 7,000 bbl/d, noting that five new wells are planned to be drilled to raise the field's production to 15,000 bbl/d during H2 of 2025.

He mentioned that GUPCO is implementing a plan to renew the assets such as pipelines and needed compressors for production. Abdel Kareem stated that the commitment to health, safety, and environment measures (HSE) led to achieving 16 million safe hours.

For his part, Badawi stressed the importance of continuing and supporting the ongoing efforts to increase exploration and production activities in GUPCO fields, appreciating the interest of the oil sector partner, the Emirati company Dragon Oil, in supporting investing in the field of research, exploration and developing production facilities to become sustainable and to help quickly put the fields into production.

He also pointed out the importance of exploiting modern technology to increase production, stressing the importance of intensifying efforts to boost and accelerate the activities of drilling wells and developing existing fields in GUPCO concession areas.

Additionally, Ali Al Jarwan, CEO of Dragon Oil, stated that his company intends to increase research and exploration activities in the Gulf of Suez, which supports the achievement of discoveries to increase production and reveal all petroleum potentials in the Gulf of Suez.

He also stressed the company's keenness in this context to transfer modern technology and artificial intelligence (AI) to support and increase production in Egypt, where the company is making great efforts, in addition to increasing efforts to raise the efficiency of operations and accelerate the drilling of wells and fields development.

Badawi Inspects MIDOR Expansions as it Ramps Up Daily Production to 160,000 bbl

Minister of Petroleum and Mineral Resources Karim Badawi has inspected the trial operation of all production units at the Middle East Oil Refinery (MIDOR) in Alexandria, following the completion of recent expansions.

These expansions have successfully increased production capacity to 160,000 barrels per day (bbl/d), now supplying 25% of the gasoline and diesel needs of the local market.

The Minister stated that the success of MIDOR as an integrated system and benefiting from all the capabilities available in it makes it an example and model for attracting new investments to the petroleum sector and maximizing Egypt's competitiveness as a regional energy center.

Badawi emphasized the importance of applying occupational safety and health rules and environmental protection as a first priority for safe operation,

increasing production, attracting investments, and business sustainability.

Meanwhile, Salah Gaber, MIDOR's Chairman, explained that investments in the new refinery expansions amounted to $2.7 billion, and that in addition to the expansions, the existing units were developed.

The project was implemented by the Italian company Technip in collaboration with Egyptian petroleum companies Enppi and Petrojet.

GEMPETCO, ZAFCO Production Reaches 1.7 mmbl During 2023/24

Mohamed El Meligy, the Chairman of Gemsa Petroleum Company (GEMPETCO), has stated that the total production of GEMPETCO and Zaafarana Oil Company (ZAFCO) reached 1.7 million barrels (mmbbl) during the fiscal year (FY) 2023/24.

El Meligy added that the companies will drill two developmental wells, A-18 and A-19, during Q2 of FY 2024/25, in addition to repairing the wells of A-10, A-12, A-14 and A-16.

He stated that the companies successfully exploited the gas associated to the production process in an optimum way by using it in the process of generating electrical power needed for the field through gas generators instead of diesel generators, which has led to a significant saving in the cost of diesel consumption and has had an effective impact on reducing carbon emissions.

Additionally, he stated that the companies recorded 12 million hours without incidents and successfully completed the preparation of a static and dynamic model for the Zaafarana field for both the Rudis and Al-Karim reservoirs.

This study contributed significantly to updating and confirming the remaining petroleum reserves in the field, in addition to determining the locations of drilling new wells, whether developmental or exploratory, and the reserves that these wells could add.

He also explained that, in continuation of exploration efforts in the Zaafarana field, a re-evaluation and analysis of the seismic data in the Zaafarana field is currently underway, which will be used to evaluate the lower layers of the Primiocene reservoir, that could add new reserves of oil in the Zaafarana field.

MOPCO Production Exceeds the Targeted Plan During Q1 2024

Ahmed Mahmoud, the Chairman and Managing Director of Misr Fertilizers Production Company (MOPCO), has announced that the company produced 138% of the targeted production plan of ammonia and produced urea of 943,000 tons which is 100% of the target.

Mahmoud elaborated that MOPCO meets 30% of the urea markets needs and 60% of the ammonia market needs in addition exporting the urea to the outside markets, including Europe followed by the Americas and Asia.

He also explained the company's plan for the coming three years which includes new green economic projects, introducing new products and forging partnerships with promising returns. Additionally, the chairman mentioned MOPCO's progresses during 2024 involving the completion of the company's latest production unit which adds a new product with a capacity of 20,000 tons annually of Adblue from a 32.5% urea solution and exporting the first shipment of this product to European markets in a quantity of 36 tons, at a price of $195/ton, achieving a 200% increase in the export price of a ton of urea.

Within the framework of the new operation plan, Mahmoud reviewed the stages of establishing the company's two new projects, which are the green ammonia production project with a capacity of 150,000 tons annually in cooperation the Norwegian company SCATEC as well as a project to produce melamine with a capacity of 42,000 tons annually, for which a detailed feasibility study has been completed, and negotiations are underway to sign an agreement for promoting 30,000 tons.

He pointed out the importance of the project to develop and raise the efficiency of the company's current plants with the aim of increasing the production of ammonia and urea in the same quantities of natural gas by raising the efficiency of equipment and optimum utilization of energy, in addition to the project of establishing a unit for carbon dioxide recovery to comply with the requirements of CBAM and the European market.

Pharos Energy to Double Production to 6,000 bbl/d within Two Years

Officials from Pharos Energy Company stated that they are looking forward to double production from its concession areas in Egypt from 3,000 barrels per day (bbl/d) to 6,000 (bbl/d).

This came during a meeting between the Minister of Petroleum and Mineral Resources Karim Badawi, the company's CEO Katherine Roe, and Chief Operating Executive Mohamed Sayed in attendance of other officials.

The company's officials affirmed their keenness in developing the operations in Egypt and targeting deeper layers to explore new petroleum reservoirs.

During the meeting, Badawi reviewed the exploratory drilling program of the company, which it implemented in its concession areas in Egypt, and achieved positive results.

He stressed the importance of intensifying the operations of the company to effectively contribute to utilizing the reserves and the necessity of managing the petroleum reservoirs in an optimum way to ensure the efficiency of operations and production.

The minister also highlighted the importance of targeting deeper layers to open new horizons for petroleum explorations.

INVESTMENTS

Shard Capital Proposes $7 Billion Petrochemical Complex in New Alamein

Minister of Petroleum and Mineral Resources Karim Badawi has met with representatives from Shard Capital to study the company's proposal for establishing a new petrochemical project in New Alamein with an investment cost of $7 billion.

This project is one of the most important projects promoted by the Egyptian Petrochemical Holding Company (ECHEM) within the framework of a national strategy to increase petrochemical production.

Badawi affirmed the support provided by the Ministry of Petroleum and Mineral Resources (MoPMR) to the projects to maximize the added value of the state's oil and gas resources. He highlighted the ongoing efforts to encourage investments in oil and gas to maximize the benefit of the infrastructure and support increasing the production of petrochemicals.

Additionally, the minister stressed the necessity of integration in implementing added value projects with the infrastructure and facilities owned by the petroleum sector. He also emphasized the need to study how to benefit from these facilities to provide the needed materials and inputs for the project, in addition to specifying part of the production to the outside markets.

NOSPCO Announces $88 Million Investment for Fourth Phase of North Sinai Fields

The Chairman of North Sinai Petroleum Company (NOSPCO) Mohamed El Degheidy has announced that the company will pump $88 million for the development of the fourth phase of the offshore north Sinai fields, noting that the company has invested $1.2 billion since its establishment.

El Degheidy said that during the inspection tour made by Mohamed Roshdy, Vice Chairman for Production and Fields Development of the Egyptian Natural Gas Holding Company (EGAS), and Ashraf Ramadan, Assistant Chairman for Occupational Health & Safety at EGAS, to the company's fields to follow up the operation and workflow there.

They visited the rig Cairo-2 and reviewed the drilling operations at the Aton-1 well, the second well in the third phase development project (3-b) for the fields

for offshore north Sinai fields and it is targeted to start production at a rate of 20 million cubic feet per day (mmcf/d). The initial production of the well was started in June 2024, at a rate of 17 mmcf/d.

Additionally, El Degheidy explained the plan of the company for the development of the fourth phase.

Maridive Lands $17.8 Million Contract for Q3 2024 Petroleum Projects in Egypt

Maridive Company announced that it has been awarded a year contract for supporting petroleum exploration and production operations in Egypt with total investments of $17.8 million.

According to the announcement, project execution commences in the Q3 of 2024.

"This contract signifies a strong vote of confidence in Maridive company and its related companies' proven track record of successfully delivering major projects for diverse clients within the offshore petroleum services sector," the company said.

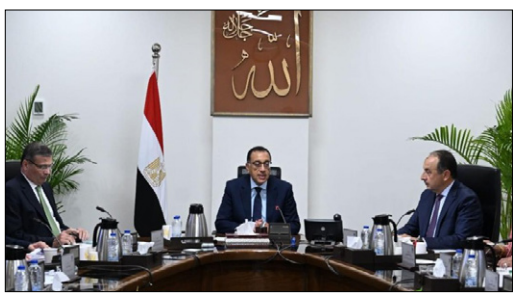
Egypt to Ramp Up Fertilizer Production with Stable Natural Gas Supply

Prime Minister Mostafa Madbouly stated that the government aims to increase fertilizer production by ensuring the necessary natural gas supply to plants, with the goal of eliminating the black market.

Madbouly made this statement during a meeting with Minister of Petroleum and Mineral Resources Karim Badawi and other officials to review the status of fertilizer production.

He added that production had declined recently because some plants had halted production due to a lack of natural gas, which led to the emergence of a black market.

The Spokesman of the Cabinet Mohamed El-Homsani said that the meeting was to ensure that the fertilizer plants resumed production. He added that the meeting stressed the need to close the channels of leakage of subsidized fertilizers to the black market, as directives



were issued to work on controlling this system, which contributes to ensuring that the subsidy reaches its beneficiaries.

He explained that the meeting emphasized the follow-up of the fertilizer supply system from the producing factories in light of the availability of the required quantities of natural gas for production.

MEETING

EGPC Implements Solar Energy in Oil Wells, Saving Millions and Reducing Emissions

The Egyptian General Petroleum Corporation (EGPC) has successfully implemented a number of projects using solar energy instead of diesel in operating oil production wells at the sites of NORPETCO and PetroFarah companies in the Western Desert, as well as Offshore Shukheir Oil Company (OSOCO) in the Eastern Desert.

The program ensures the reduction of emissions and energy transformation in petroleum sites.

The projects, supervised by a committee of specialists from EGPC under the direction of Chairman Alaa El Batal, included the implementation of solar energy solutions to operate artificial lift pumps in wells. This initiative aligns with the committee's vision to expand the use of renewable energy in such projects.

This type of projects is characterized by high returns and economic indicators. It saves the cost of diesel consumption by about EGP 4.3 million annually in total savings from these projects.

In addition, these projects gave an environmental impact of reducing amounts of emissions as a result of replacing diesel with clean, renewable energy, the average emissions reduced in the three projects are estimated at over 420 tons annually of carbon dioxide.

Badawi Announces Forming Committee to Boost Oil Production

Minister of Petroleum and Mineral Resources Karim Badawi has unveiled plans for establishing a consulting committee dedicated to enhancing oil field productivity and implementing scientific, efficient, and safe reservoir management strategies to ensure long-term sustainability.

Committee members include exploration and production executives and seasoned industry veterans with distinguished experience in the oil and gas sector.

Badawi emphasized the critical need to boost production rates, highlighting the importance of human capital, innovative thinking, and advanced technology.

The program aims to enhance investment attraction by implementing new policies and creating lucrative opportunities. This involves maximizing the sector's potential, bridging the production-consumption gap through intensified exploration, and encouraging partners to invest in discoveries and sustain supply.

COMPANY OF THE MONTH

Chevron is an American multinational energy corporation founded in 1879 in San Francisco. The company provides energy products and services and is active in more than 180 countries.

Chevron's Activities in Egypt

Chevron's history in Egypt dates back to 1937. Its portfolio mainly focuses on natural gas production. Chevron has operating interests in four offshore exploration blocks and non-operating interest in two other offshore blocks. Operator of two blocks in N. Sidi Barrani and N. El Dabaa the Western Mediterranean, one block in the Eastern Mediterranean (Nargis) and Red Sea Block 1. It has a non-operating interest in two other blocks in N. Marina and N. Cleopatra.

Chevron is also a major player at the midstream and downstream levels, producing significant quantities of natural gas that it sells to Egypt and other nearby countries. In addition to natural gas, Chevron is involved in lubricant production. It operates a large factory in 6th of October City, where it manufactures various types of lubricants. These products are distributed both within Egypt and to countries in East Africa.

Sources: Chevron's Website

Chevron's Latest Natural Gas Discovery in Egypt

Date	2023
Location	Nargis Offshore Area Concession, in the Eastern Mediterranean Sea
Reserve (tcf)	2.5
Depth	1,014 feet below sea level
Chevron's Share	45%

MEDITERRA TO INCREASE DRILLING OPERATIONS IN EGYPT

The CEO of Mediterra Energy Memet Kont has announced that the company plans to increase its drilling operations and rigs in Egypt, noting that Egypt is an important destination for the company's investments.

This came during his meeting with the Minister of Petroleum and Mineral Resources Karim Badawi as part of a series of talks with international companies working in Egypt to review their business activities and explore opportunities to ramp up production.

Kont added that Mediterra is interested in intensifying its operations in Sinai, pointing out that Sinai has promising potential.

For his part, Badawi highlighted the importance of expanding efforts to reduce the costs per barrel and apply new technology.

He praised the company's plans and operational achievements in Sinai and Kom Ombo.

EGYPT AND DANA GAS TO COLLABORATE ON EXPANDING GAS PRODUCTION

Minister of Petroleum and Mineral Resources Karim Badawi has met with Richard Hall, CEO of Dana Gas, and his accompanying delegation.

The meeting focused on supporting increased production, fostering teamwork, and enabling and boosting investments.

During the meeting, Hall highlighted Egypt's attractive investment climate. Expressing keen interest in collaborating to boost production, the company emphasized the need for advanced technology, given Egypt's substantial untapped gas potential.

SHELL REVEALS DRILLING PLANS FOR NEW WELLS IN THE MEDITERRANEAN

Minister of Petroleum and Mineral Resources Karim Badawi has held a virtual meeting with Dalia El Gabry, the Vice President and Country Chair of Shell Egypt N.V. E (Shell Egypt), where a presentation was given about the company's ongoing operations as well as the target plan for drilling new natural gas wells in its concessions areas in the Mediterranean to increase production and develop new discoveries.

They also discussed the company's activities in the fields of oil marketing, carbon reduction, social development projects and the project for liquefied natural gas (LNG).

Shell emphasized its commitment to and cooperation with the Egyptian General Petroleum Corporation (EGPC). El Gabry reaffirmed Shell's dedication to expanding its operations in Egypt, highlighting the strong bilateral relations, productive collaboration, and continuous development over the past 110 years. This enduring partnership reflects a core belief of Shell.

Additionally, the minister discussed the progress Shell has made in its concession areas, including the West Delta Deep Marine (WDDM) in its tenth and eleventh phases for natural gas production. The conversation also covered the North East Amreya concession in the Mediterranean, focusing on developing the new West Mina discovery and bringing it into production, as well as the Harmattan Deep Field project, where Shell is a partner with bp, the primary operator, and ongoing exploration activities in new areas.

Badawi reaffirmed the Ministry's full support for Shell in overcoming any challenges that may arise. He praised the company for its efforts, its commitment to its partnership with Egypt, its ongoing development, and its active participation in social responsibility programs that benefit surrounding communities. He also commended Shell's strict adherence to occupational safety and health procedures and its dedication to environmental preservation.

Badawi emphasized that the new government is strongly determined to address any challenges that could hinder progress and increase production. He noted that a specific plan of procedures will be announced soon in this regard.

ARAMCO BEATS ESTIMATES WITH PROFITS OF $29.3B IN Q2 2024

Aramco has reported a net income of 109.01 billion riyals ($29.03 billion) in the three months to June 30, beating a company-provided median estimate from 15 analysts of $27.7 billion.

Meanwhile, the quarter's profit is 3.4% short of the same period last year due to lower crude volumes and softer refining margins, according to Reuters.

The company reported dividends of $31.1 billion for the Q2, including $10.8 billion in performance-linked payouts.

It expects $124.2 billion in total dividends in 2024, roughly in line with previous guidance of $124.3 billion.

Notably, the Saudi government directly holds nearly 81.5% of Aramco and relies heavily on the company's payouts, which include royalties and taxes. Saudi's sovereign wealth fund PIF holds another 16% of Aramco and also benefits from its dividends.

Aramco's capital expenditure in the second quarter rose nearly 14% year-on-year to $12.1 billion, partly due to investments to maintain crude maximum sustainable capacity at 12 million barrels per day (bbl/d) and expansion of its gas business.

The company stated on Tuesday that it remains optimistic about medium- and long-term demand growth and is committed to its growth strategy.

Saudi Arabia is roughly producing around 9 million barrels per day, utilizing three-quarters of its capacity, and has implemented production cuts alongside other OPEC+ members to stabilize the market.

ADES SECURES $640M DRILLING RIG CONTRACTS IN KUWAIT

ADES Holding Company (ADES) has secured six onshore contracts through its subsidiary with Kuwait Oil Company (KOC). The Award includes new contracts for four of the ADES' current operating rigs in Kuwait as well as two newbuild units.

The oil and gas drilling services company will provide rigs for deep drilling rigs in the 3,000hp category.

The contracts, worth $640 million, are expected to commence during the second and third quarters of 2025 and will run for a five-year firm term with a one-year optional extension.

Following this deal ADES would raise its total operating rig in Kuwait to 12, marking a three-fold increase in ADES' contracted fleet with Kuwait Oil Company over a 24-month period.

SONATRACH SIGNS EPC DEAL WITH CHINESE CPECC FOR NEW BOOSTING UNITS AT ALRAR GAS FIELD

Sonatrach has signed a contract with the Chinese company China Petroleum engineering Corp. (CPECC) for the realization of new boosting units of Alrar gas field, located in the Illizi Basin.

The contract aims to compensate for the drop in pressure and maintain production from the Alrar gas field at 10 million standard cubic meters per day (scm/d).

The contract entails the Engineering, procurement and construction (EPC) of three compression trains, the modification of the intake and inlet separation manifolds at the level of the slug catchers, the installation of booster pumps, the tie-ins with the existing installations and utilities, extension of the fire network and anti-intrusion and remote monitoring systems.

It also includes the construction of an electrical substation and the upgrading of the existing ICSS integrated control and security system.

The completion time for this project is 32 months with commissioning scheduled by the second quarter of 2027.

PETROBRAS ACHIEVES GAS DISCOVERY IN UCHUVA-2 WELL OFFSHORE COLOMBIA

Petrobras has achieved gas discovery in Uchuva-2 well in Colombia and expected to reveal drilling results by 2024.

The discovery was made during the fourth drilling phase of the deepwater Uchuva-2 well in the Tayrona block.

Petrobras, which holds 44.44% operating interest, will continue operations of the project in cooperation with Ecopetrol, which holds 55.56% interest.

Upon reaching the expected drilling depth the companies will characterize the conditions of the reservoirs found, with the prediction of carrying out a formation test by 2024.

ENI EXPANDS OIL, GAS DEVELOPMENT PROJECTS IN INDONESIA

Eni has received the approval of the Indonesian authorities for the Plan of Development (POD) of the Geng North (North Ganal PSC) and Gehem (Rapak PSC) fields, aimed to create a new production hub, called Northern Hub, in the Kutei Basin.

The Indonesian authorities have also approved the POD for Gendalo&Gandang fields (Ganal PSC).

Additionally, Eni has been awarded by the Indonesian authorities a 20-year extension of the IDD licenses named Ganal and Rapak.

Eni is therefore set to establish gas and condensates production of approximately 2 billion cubic feet per day (bcf/d) of gas and 80,000 barrels per day (bbl/d) of oil condensates in the East Kalimantan region.

The production is anticipated for domestic and international markets, leveraging existing facilities in the area, such as the Bontang LNG Plant and the Jangkrik Floating Production Unit (FPU).

The Northern Hub POD envisages the development of the 5 trillion cubic feet (tcf) gas and 400 million barrels (mmbbls) of condensates of the Geng North discovery announced by Eni in October 2023.

The hub also foresees the development of the 1.6 tcf of the Gehem discovery via subsea wells, flowlines and a new built FPSO with a handling capacity of about 1 bcf/d of gas and 80,000 bbl/d of condensates and a storage capacity of 1 mmbbls.

Gas will be treated onboard the FPSO and then piped to the onshore receiving facilities at Santan Terminal and to the East Kalimantan pipeline network. It will be partly liquefied at the Bontang LNG facility and partly piped for domestic market. While the condensates production will be stabilized and stored onboard the FPSO, and then evacuated via shuttle tankers.

Besides the approved Gendalo&Gandang POD anticipates the development of the cumulative 2 tcf of gas reserves in the Ganal PSC via subsea wells tied back to the Jangkrik FPU.

Moreover, the development of Gendalo&Gendang will allow to extend Jangkrik's gas production plateau, which nears 750 mmscf/d, by at least 15 years.

TOTALENERGIES ANNOUNCES FIRST OIL FROM ANCHOR FIELD IN GULF OF MEXICO

TotalEnergies has announced the start of production from the Anchor field, located 225 km offshore Louisiana in the US Gulf of Mexico.

The Anchor field, developed in December 2019, is a partnership between TotalEnergies holding 37.14% interest and Chevron holding the remaining 62.86% interest as an operator.

The field consists of a system of subsea wells connected to a semi-submersible floating production unit (FPU) with a production capacity of 75,000 barrels per day (bbl/d) of oil and 28 million cubic feet per day (mcf/d) of gas.

At plateau, Anchor is expected to reach production of to 30,000 barrels of oil equivalent per day (boe/d) net for TotalEnergies.

Notably, the Anchor FPU has been designed to minimize greenhouse gas emissions through an all-electric configuration, with electric motors and electronic controls, in addition of the utilization of waste heat and vapor recovery technologies.

PETRONAS STARTS GAS PRODUCTION AT KASAWARI FIELD WITH INITIAL RATE OF 200 MMSCF/D

Petronas has commenced its first gas production at the Kasawari field, located in Block SK316, approximately 200 km off the coast of Sarawak, at an initial flow rate of 200 million standard cubic feet per day (mmscf/d).

Block SK316 is operated by Petronas Carigali which holds a 90% participating interest, while the remaining 10% is held by Exploration and Production Malaysia Venture (EPMV).

The Kasawari field, discovered in 2011, is a vital source of natural gas for the Petronas LNG Complex in Bintulu to meet the rising domestic gas requirements. It contains approximately 10 trillion cubic feet (tcf) of natural gas reserves, with a gas sales rate of 545 mmscf/d.

The Kasawari Gas Field Development (GFD) project encompasses the construction of a Central Processing Platform (CPP), a Flare Platform, and a Wellhead Platform (WHP), all of which are linked to the CPP by bridges.

The extracted gas from the Kasawari field is distributed to a newl riser platform at the E11 production hub through an 81km carbon steel pipeline. From there, it is further distributed to customers in Bintulu.

The CPP for the field is listed in the Malaysia Book of Records as the Heaviest Offshore Structure Platform, with a total weight of 53,893 metric tons (MT)

QATARENERGY SIGNS NEW LNG SUPPLY DEAL WITH KPC FOR 15 YEARS

QatarEnergy has signed a 15-year LNG Sale and Purchase Agreement (SPA) with Kuwait Petroleum Corporation (KPC) for the supply of up to 3 million tons per annum (mtpa) of LNG to Kuwait.

According to the SPA, LNG volumes will be delivered ex-ship to Kuwait's Al-Zour LNG Terminal onboard QatarEnergy's conventional, Q-Flex, and Q-Max LNG vessels, starting in January 2025.

"I am pleased to be in Kuwait, a country that is dear to our hearts, and to build a new long-term partnership between KPC and QatarEnergy, that constitutes a central element in supporting Kuwait's sustainability goals particularly in the electricity generation sector. It also reflects our commitment to support the future needs of all our clients, foremost of which is KPC," said Saad Sherida Al-Kaabi, the Minister of State for Energy Affairs.

"Our bilateral relations continue to grow and achieve the aspirations and interests of our peoples under the wise leadership of His Highness Sheikh Tamim bin Hamad Al Thani and His Highness Sheikh Meshal Al-Ahmad Al-Jaber Al-Sabah, which underlines the deep brotherly ties and the long-term partnership between Kuwait and Qatar," Al-Kaabi added.

Notably, this new agreement is the second long term LNG SPA with KPC.

Egypt's Oil & Gas Exploration & Drilling Activities

A CATALYST FOR GROWTH

BY JOLLY MONSEF & NERMEEN KAMAL

Key Takeaways

Rigs Activity Update over (2021-2023)

Per Area	Per Type
111	161

Expansion of Drilled Wells over FYs (2020/21 - 2022/23)

Development	Exploratory
862	251

Total 1,113

New Crude Oil & Natural Gas Discoveries over (2021-2023)

Crude Oil	Natural Gas
132	38

Total 170

Egypt has a long history of pioneering exploration and drilling activities in the oil and gas sector from the early 1880s. Egypt's strategic location and abundant reserves have made it a focal point for global exploration and development.

A significant number of concessions across Egypt's regions are currently under exploration and production (E&P) operations by a wide range of international oil companies (IOCs) and national oil companies (NOCs).

Despite the global challenges from 2021 to 2023, Egypt has attracted significant investment in its oil and gas sector, signing 40 agreements with an investment of about $3 billion. The country has also made significant strides in exploration, with 170 oil and gas discoveries during this period, according to the Ministry of Petroleum and Minerals Resources (MoPMR).

This report examines Egypt's oil and gas exploration activities from 2021 to 2023, by presenting international bid rounds, the sector's signed agreements, the drilling landscape, as well as the key discoveries.

INTERNATIONAL BID ROUNDS

As part of Egypt's efforts to increase production and add more reserves to drive growth within the oil and gas sector, Egypt Upstream Gateway (EUG) launched a group of international bids. These bid rounds apply the latest international methods and technologies to encourage investors and IOCs to invest in oil and gas exploration activities.

It is worth mentioning that in March 2023, the MoPMR announced the initiation of a brownfields international bid round by the Egyptian General Petroleum Corporation (EGPC) through EUG. The bid round includes eight producing fields in the Gulf of Suez and the Eastern Desert. Two of the fields are under the supervision of the Suez Oil Company (SUCO) and five are being supervised by the Offshore Shukheir Oil Company (OSOCO).

Bid Rounds Highlights over (2021-2023)

Blocks

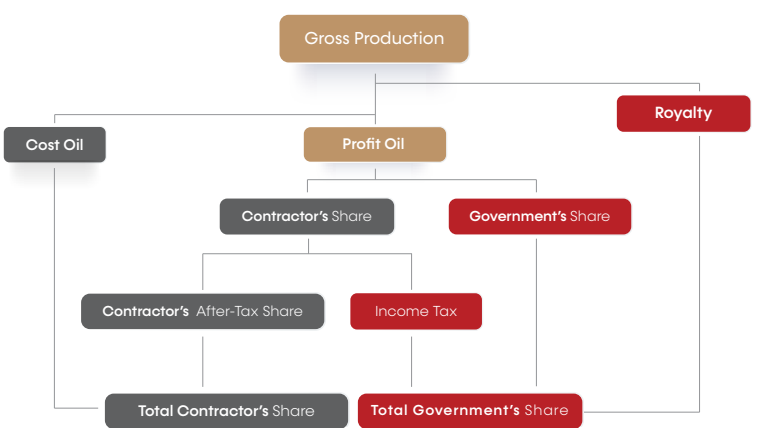
Total	Awarded	Ongoing
68	21	23

AGREEMENTS HIGHLIGHTS

Framework of PSAs

Production Sharing Agreements (PSAs) are the contractual framework Egypt adopted to facilitate the relationship between the government and IOCs for the exploration and development of oil and gas resources. These agreements aim to balance Egypt's sovereignty over its natural resources with the IOCs' desire to maximize profit.

Framework of PSAs

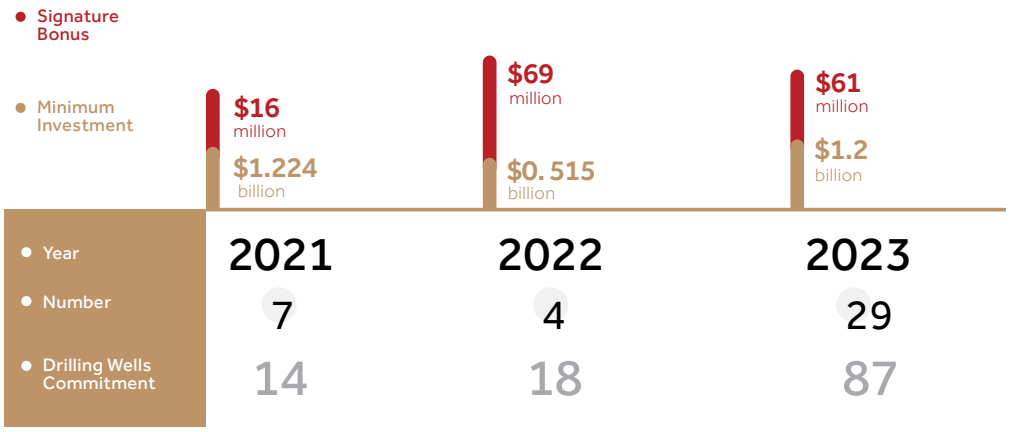


Signed Landmark Investment Agreement

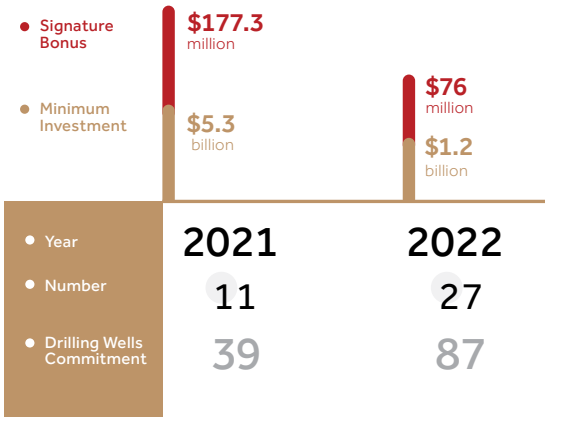
The oil and gas sector consistently seeks to sign agreements with local and international companies to enhance investment in promising regions and its contribution to the national economy.

Over the period from 2021 to 2023, the year 2023 saw the highest number of signed agreements with 29, according to the MoPMR. This aligns with the MoPMR's vision to boost production through collaborative partnerships.

Signed Agreements



Issuance Phase Agreements in 2021 & 2022

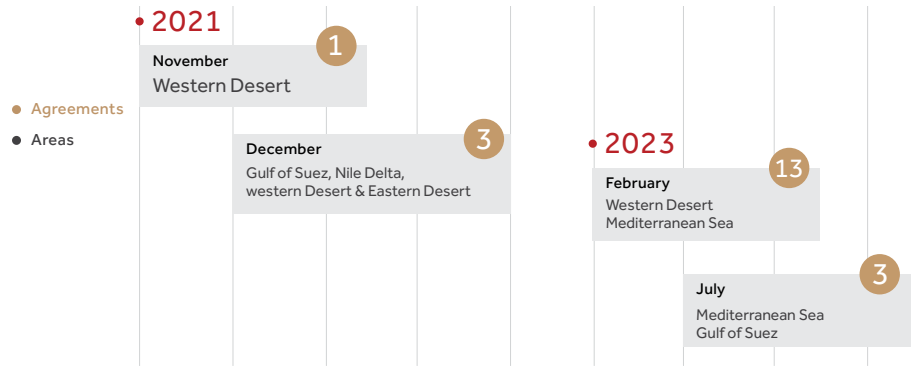


Approvals of Successful Agreements

Aligned with Egypt's vision to translate plans into action, the Egyptian Cabinet approved various crude oil and natural gas project agreements for the EGPC, Egyptian Natural Gas Holding Company (EGAS), and several IOCs to explore, develop, and exploit resources in promising regions.

The Cabinet has approved 12 crude oil and natural gas agreements in various regions, including the Mediterranean Sea, the Gulf of Suez, the Western Desert, and the Nile Delta, from early 2024 to July, according to the Egyptian Cabinet.

Approved Agreements



Active Agreements

With Egypt's intention of promoting E&P activities, supporting crude oil and natural gas production, and increasing investments, Egypt has succeeded in attaining a total of 113 active agreements until August 2024.

The Western Desert region is the dominant region, with a share of 47%, followed by the Gulf of Suez at 31%. On the other hand, the Nile Valley is the least region with only one agreement, according to EGPC.

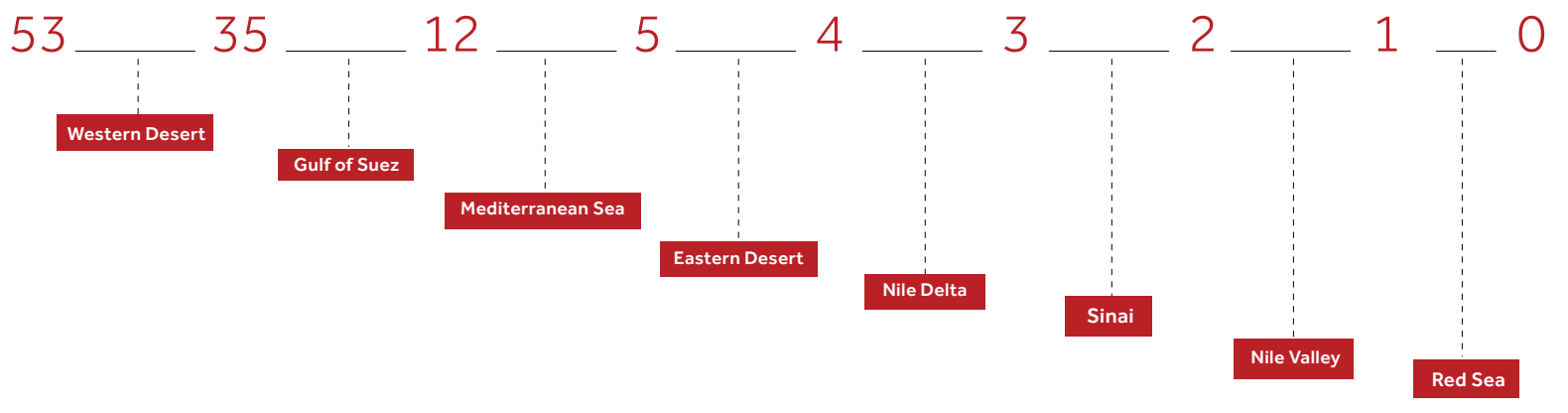
Signed Development Leases

Over the period from 2021 to 2023, a series of development leases were signed to enhance production from existing oil and gas fields in the Mediterranean Sea, Western Desert and Eastern Desert, and Gulf of Suez.

These efforts culminated in the completion and commencement of production from five new development projects in 2023. Notably, in 2021, six projects were launched, followed by two in 2022, according to MoPMR.

Oil & Gas Development Leases

Active Agreements Per Destination Until August 2024



OIL & GAS EXPLORATION ACTIVITIES

A. Rigs & Drilling Landscape

Rigs Activity Update

During the mentioned period, the average number of Egypt's rigs across all areas reached 332. The Western Desert had the highest number of rigs with an average of 206, accounting for 62% of the total. Land Workover rigs were the most numerous types of rigs, averaging 150 with a share of 31%. Land Drilling followed with an average of 139 on average and a 29% share, according to EGPC.

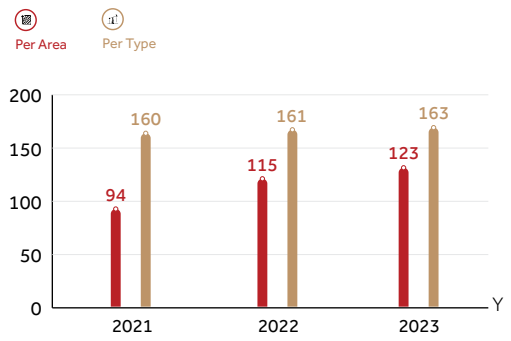
Expansion of Drilled Wells

Egypt's total drilled wells in fiscal year (FY) 2021/22 saw a significant increase of 58% compared to FY 2020/21, reaching 398. Development wells accounted for the largest share of 77%, totaling 308 wells, while exploration wells recorded only 90 wells, representing a 23% share.

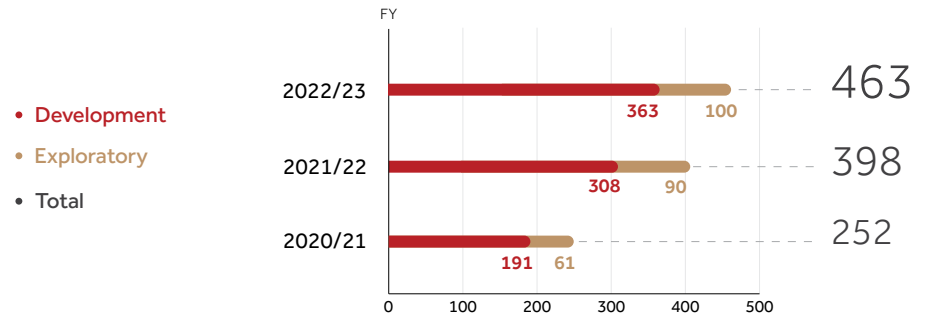
In FY 2022/23, the number of drilled wells continued to rise by 16% to reach 463, with development wells comprising 78% and exploratory wells making up 22% of the total, according to EGPC.

It is worth mentioning that in July 2023, Egypt announced the beginning of implementing an ambitious program, in cooperation with numerous IOCs, to drill 35 new natural gas exploration wells in the Mediterranean Sea and the Nile Delta within two years from 2023 until July 2025.

Average Rigs



Drilled Wells

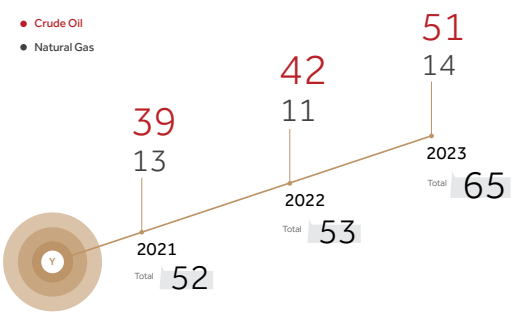


B. Discoveries Updates

Over three years, the MoPMR's sustained efforts to boost production and promote exploration and research resulted in the identification of 170 oil and gas discoveries. Specifically, the increase in crude oil and natural gas discoveries by 30% and 7.7%, respectively, in 2023 compared to 2021 reflects the ongoing commitment to exploration activities, according to the MoPMR.

It is worth mentioning that some companies recorded their first discovery during the mentioned period. For example, Dragon Oil announced its first oil discovery in the Gulf of Suez in Egypt in February 2022. The initial estimated oil reserves for the discovery were about 100 mmbbl in the North East Ramadan area. This discovery is one of the largest oil discoveries in the Gulf of Suez in 20 years, according to the MoPMR.

New Crude Oil & Natural Gas Discoveries



Most Prominent Discoveries

Company
Depth
Production

April 2021
DSWS-1X
General Petroleum Company (GPC)
Abu Sennan Concession
1,200 bbl/d | 1.2 mmcm/d

March 2022
SD-5X
SDX Energy Plc
South Disouq Development Concession
7,855 ft | 55.5 ft of net pay gas

January 2023
ED-2X
Wintershall Dea
East Damanhour Block
2,627 M | 15 mmcf/d

Narges-1
Chevron
Narges Offshore Concession
5,000 M

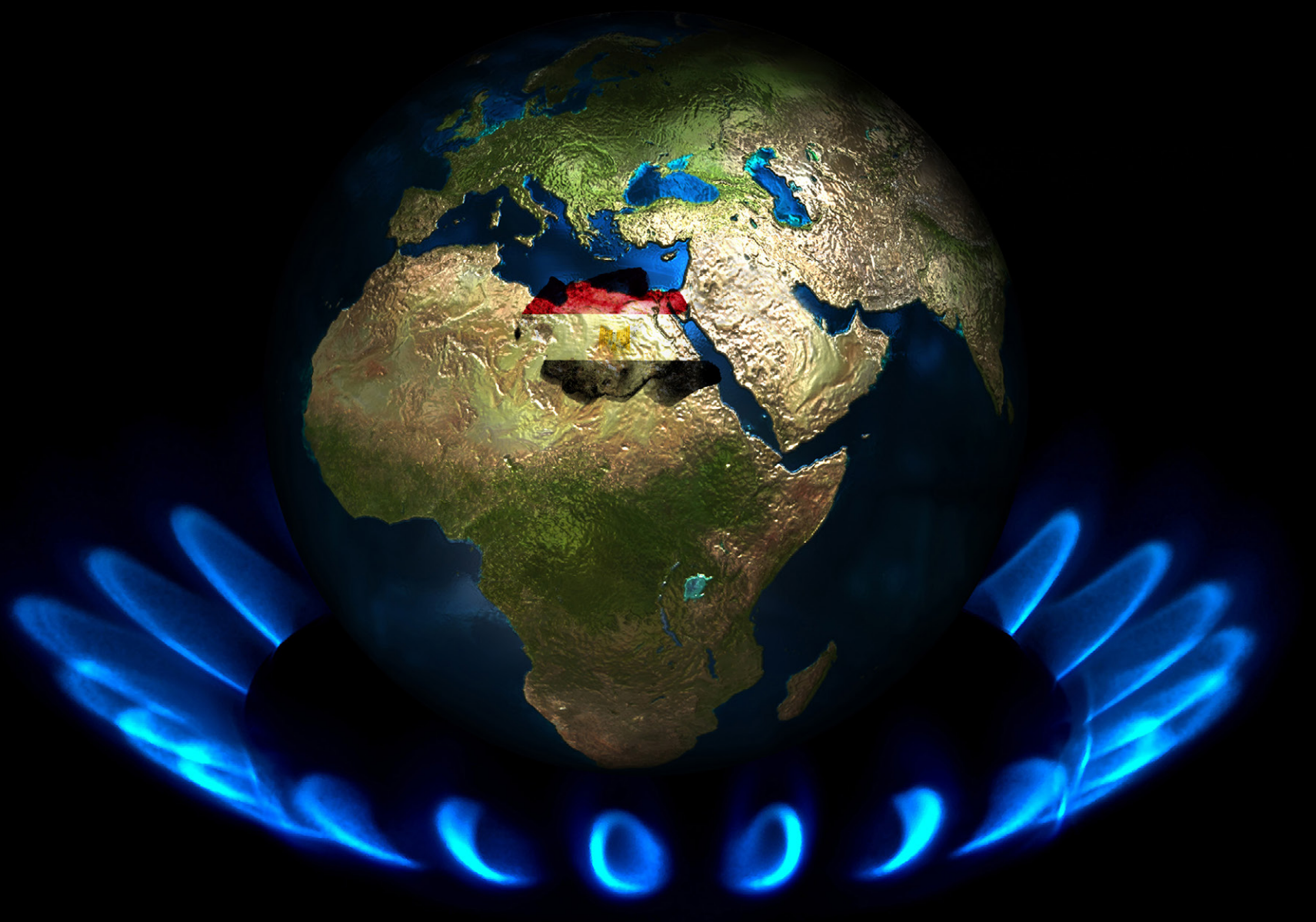
June
ED-2X
Wintershall Dea
Abu Madi Reservoir
3,070 M

Exploration and drilling activities are the cornerstone of Egypt's oil and gas sector, driving economic growth and energy security. By expanding exploration and drilling operations in partnership with IOCs, Egypt is creating substantial investment prospects while addressing the supply-demand imbalance. These activities not only contribute to domestic development but also solidify Egypt's role as a reliable and attractive investment destination in the global energy market.

As part of Egypt's ongoing efforts to promote E&P activities, EGAS initiated the Egyptian 2024 International Bid Round in August 2024, offering 12 blocks located in the Mediterranean Sea and the Nile Delta.

THE GAS GAMBIT:

EGYPT'S BET ON A CLEANER FUTURE



BY SARAH SAMIR

Egypt, like many nations, is grappling with the dual challenges of ensuring energy security and transitioning to a low-carbon future. The country's energy landscape is currently dominated by fossil fuels, particularly natural gas, which plays a pivotal role in meeting the nation's growing energy demands. Natural gas plays a complex role in Egypt's energy transition, paving the way to an environment-friendly future despite facing a number of challenges across the path.

Egypt's Energy Transition: Navigating a Path Towards Sustainability

Egypt's energy security is under pressure due to rising domestic energy consumption, a heavy reliance on natural gas for power generation, and the increasing vulnerability of energy supply and demand to climate change. Therefore, the need emerges for Egypt to work diligently on its renewable energy file.

Egypt has been a consistent participant in the COP conferences, aligning its policies with global climate goals. The country has prioritized energy transition, with natural gas serving as a cornerstone of its energy mix. Natural gas currently fuels 60% of Egypt's energy needs across sectors including electricity, industry, transportation, and manufacturing, Former Minister of Petroleum and Mineral Resources, Tarek El Molla, revealed during the Egypt Energy Show (EGYPES 2024).

This comes amid Egypt's plans to further diversify the energy mix. Egypt's energy supply is mainly reliant on fossil fuels. However, as the country plans to have a more sustainable future it faces several challenges due to the imbalance in the energy mix, which has led to electricity shortage more than one time. Therefore, it becomes crucial to walk steadily down Egypt's energy transition path.

Natural Gas: A Bridge to a Cleaner Energy Future in Egypt

As Egypt is working on transitioning into an energy clean future, the government recognizes the challenges of totally shifting from fossil fuels to renewable resources. Therefore, natural gas emerges as a cleaner and more affordable fossil fuel that allows the country to achieve its energy transition targets based on a feasible plan. This comes as Egypt targets to boost the use of renewables in the energy mix to become 42% by 2035 and to produce 1.5 million tons annually of green hydrogen and related products by 2030.

This comes as natural gas, primarily composed of methane, offers a higher energy density than many other fuels, leading to relatively lower carbon dioxide (CO_2) emissions per unit of energy produced, according to the EIA.

Egypt's total natural gas production reached 45 million tons during 2023. This comes as the country has a number of significant natural gas producing fields, including the Zohr field that was discovered in 2015. Moreover, during 2023, 5 projects for crude oil and natural gas fields have been completed and added to the production map with the aim of producing about 15,000 barrels of crude and condensates per day, and about 144 million cubic feet of gas per day. The total investment cost of the projects is about 307 million dollars.

The Challenges and Opportunities of Natural Gas in Egypt

Despite its advantages, the widespread utilization of natural gas necessitates significant investments in infrastructure development, while also considering the potential impact of price fluctuations on the energy sector. Egypt already owns a powerful natural gas infrastructure that boosts the country's potential to become a natural gas trading hub. This comes as the country owns two liquefaction plants that enable it to not only transport its natural gas to Europe but also to be a transit country transporting its neighbors' natural gas to Europe. Moreover, the country is developing its internal natural gas network and pipelines connecting new places to the national gas grid every year.

Furthermore, addressing environmental concerns, such as methane emissions, and exploring carbon capture and storage (CCS) technologies are crucial for ensuring a sustainable path forward. While Egypt currently lacks operational carbon capture projects, the government has taken a proactive stance by initiating a comprehensive two-phase offshore study in the Nile Delta. Additionally, Eni has made a significant investment of $25 million in a pilot carbon capture project at its Southeast Meleiha oil and gas concession.

Egypt's energy transition is a complex undertaking, requiring a delicate balance between ensuring energy security and mitigating environmental impacts. Natural gas, while a cleaner alternative to coal, presents both opportunities and challenges. As the country strives to increase its renewable energy capacity, natural gas can serve as a bridge, providing a more sustainable energy source in the interim.

STORING FOR SECURITY: NATURAL GAS KNOW-HOW

BY RANA AL KADY

There is no question that when it comes to Egypt's potential to harness and transport natural gas, Egypt has exceeded expectations of the international oil and gas community. In order for Egypt to remain on top, storage solutions for the transitional fuel is imperative.

In brief, natural gas is a hydrocarbon that is non-renewable, colorless, odorless, combustible, and environmentally friendly. In addition, it's expanding. Natural gas is almost universally used in homes and can be stored relatively effectively; it is far more efficient than renewable energy sources.

However, questions remain regarding natural gas storage methods, the size of the potential for Egypt's natural gas storage capacity, and the most typical types of natural gas storage facilities.

General Overview of Storage Techniques

First of all, the most popular place to store oil and natural gas is in exhausted fields, usually near major population centres. Businesses can utilize existing pipeline connections, collection systems, and wells by turning a field into a storage facility. Because they are the most accessible, they are also the most popular sites.

Second of all, if an impervious cap rock is placed on top of the water-bearing sedimentary rock formation, then the aquifer can be used for gas storage. Although exhausted producing fields and aquifers have a similar geology, using aquifers for gas storage typically calls for additional base gas, or cushion gas, and more stringent monitoring of injection and extraction efficiency. The existence of an active water drive may improve deliverability rates.

Furthermore, the withdrawal and injection rates offered by these storage facilities are exceptionally high in comparison to their operating gas capacity. The needs for base gas are minimal. The bulk of salt cavern storage facilities are found in the Gulf Coast states, namely in salt dome formations. When comparing the cost of cavern construction to depleted field conversions, the former is more expensive per thousand cubic feet of working gas capacity. However, the per-unit cost of each thousand cubic feet of gas injected and withdrawn is lower due to the ability to perform multiple cycles of withdrawal and injection each year.

With that, it's important to note that greater underground storage is needed to compensate for seasonal variations in consumption as well as large peak loads, which are caused by fluctuations in gas consumption. The two types of underground storage are classified as: artificial cavern storage found in salt mines, and organically formed porous spaces such as water-bearing aquifers or former oil and gas reservoirs in permeable rock formations, which are referred to as pore storage

The Way Forward

These days, there are significant seasonal variations in gas consumption between summer and winter in addition to transient shifts in demand for gas. This is counteracted by storing a significant amount of gas underground in our gas storage facilities. In order to be able to safely and quickly make up for winter demand peaks, the gas storage facilities are also crucial to the stability of the gas networks. As suggested by a Climate Change Specialist, "[Storage facilities] are the missing puzzle piece to Egypt becoming a leading country with natural gas exports and energy security; there is no point in having a surplus of energy and not storing and making use of the modern efficient techniques."

Further variations will arise in the future decarbonized energy supply if, for example, the sun and wind are not available. This energy supply will have a high percentage of renewable energies. It will thus be increasingly more crucial in the future to be able to respond quickly to rising demand changes.

Nevertheless, subterranean gas storage facilities have substantially bigger gas storage capacities than surface storage solutions. It is absolutely essential to make a distinction between porous rock storage facilities and natural reservoirs in porous rock, which function similarly to stable sponges and allow for the large-scale storage of natural gas. Cavern storage facilities are high injection and withdrawal capacity subterranean salt domes with artificially constructed voids. There are many hundred meters high in these caverns.

Finally, because it can be stored underground like natural gas, hydrogen is viewed as the key to the energy shift. The regional hydrogen industry depends on large-scale subterranean storage, which will also increase the sector's economic feasibility. The viability of appropriate storage facilities for the hydrogen market is still in question. However, in order to facilitate the conversion and development of additional subterranean hydrogen storage facilities, a clear regulatory framework is currently required.

INNOVATIVE BREAKTHROUGH IN GREEN HYDROGEN PRODUCTION FROM NATURAL GAS

BY DOAA ASHRAF

As the world strives toward a more sustainable energy future, hydrogen demand, as an energy carrier, is on the rise. This is because when it burns or reacts with air in a fuel cell, it produces water vapor as the only byproduct, emitting no greenhouse gases or pollutants.

Hydrogen produced worldwide reached approximately 95 million metric tons by 2021, 47% of the global hydrogen production is from natural gas, 27% from coal (primarily in China), 22% from oil (as a by-product) and only around 4% from electrolysis.

Herein, natural gas is a bridge fuel in the transition to cleaner energies. That is what scientists from the Skolkovo Institute of Science and Technology in Moscow found as they explored – for the first time – a more sustainable technology for green hydrogen production from natural gas.

Why natural gas?

Natural gas is considered a cleaner fuel than coal. Though it still emits carbon dioxide when burned. Accordingly, some countries including Egypt are implementing carbon capture and storage (CCS) projects to eliminate the emissions and pollutants that come with steam methane reforming process (SMR) process to turn natural gas into clean hydrogen.

Another important reason for utilizing natural gas in the first place is that nuclear or renewable resources, that produce green hydrogen, are much more expensive than fossil fuels.

According to the US Department of Energy (DOE), the cost of hydrogen production from natural gas via SMR process ranges from $1.43/kg to $2.27/kg along with applying CCS. Notably, the cost depends on the delivered natural gas price and differs from country to country.

On the other hand, the cost of hydrogen production from electrolysis at a centralized station is estimated at $5/kg to $6/kg with electricity from nuclear or wind resources.

Thereby, hydrogen from zero-carbon electricity (nuclear or wind) is 2.5-4 times more costly than hydrogen from carbon-neutral or net-negative carbon fossil resources.

But what if there is an innovative approach that could combine both factors, affordability and sustainability?

A Promising Future for Hydrogen Production

Skoltech researchers have explored the conversion of methane into hydrogen in the gas reservoir, rich with hydrocarbons, with zero oil saturation via steam methane reforming initiated by in situ gas combustion without releasing greenhouse gases into the atmosphere.

The outcome reveals a range of variations, each yielding different concentrations of hydrogen produced depending on these adjustable parameters. They found incredible potential for underground hydrogen generation in natural gas reservoirs.

"All the stages of the process are based on well-established technologies that have not previously been adapted for hydrogen production from real gas reservoirs," said Elena Mukhina, PhD, a senior research scientist at Skoltech Petroleum and the leader of the RSF-supported project.

"We have demonstrated that our approach can help convert hydrocarbons into 'green' fuels in the field environment with an efficiency of up to 45%. In the future, we plan to test our method in real gas fields," Mukhina added.

Laboratory Experiment

Researchers tested the process in lab reactors that simulated a real gas reservoir environment. They placed crushed rock in the reactor and then pumped in methane, the main component of natural gas, along with steam and a catalyst, and then oxygen. The pressure inside the reactor was maintained at a level typical of gas reservoirs, eighty times higher than atmospheric pressure.

As the experiment progressed, the team analyzed the composition of the gases in the reactor to assess the efficiency of the methane conversion into hydrogen. It turned out that most of the hydrogen, 45% of the total gas volume, was formed at 800° C with large amounts of steam injected into the reactor.

In the experimental model, different rock porous media were utilized and the process parameters such as temperature and the steam-to-methane ratio were varied.

For example, to make the reaction as efficient as possible, steam should be four times more than natural gas. Moreover, the researchers chose the 800° C temperature because it is easily achieved in natural gas combustion and does not need to be artificially maintained.

The hydrogen yields also depended on the composition of the rock. In experiments with porous alumina, the hydrogen yield reached 55% i.e. natural rock contains other, more active minerals that can react with the components of the gas mixture and affect the hydrogen yield.

The process details

The process begins with the injection of steam into the well along with a catalyst that will later help separate hydrogen from the natural gas components.

Then, air or pure oxygen is pumped in to ignite the gas directly in the reservoir. Assisted by steam and catalyst, the natural gas burns and is converted into a mixture of carbon monoxide and hydrogen.

The carbon dioxide formed from the carbon monoxide remains in the reservoir and does not contribute to the greenhouse effect.

At the final stage, hydrogen is extracted from the well through a membrane that blocks other combustion products, leaving the carbon monoxide and carbon dioxide trapped underground.

Notably, the study supported by a Russian Science Foundation (RSF) grant was published on January 15, 2024.

This innovative technology developed by researchers at the Skolkovo Institute of Science and Technology offers a promising solution for generating 'green' hydrogen from natural gas. As the research progresses to real-world testing, it holds the potential to contribute to a cleaner and more sustainable energy future.

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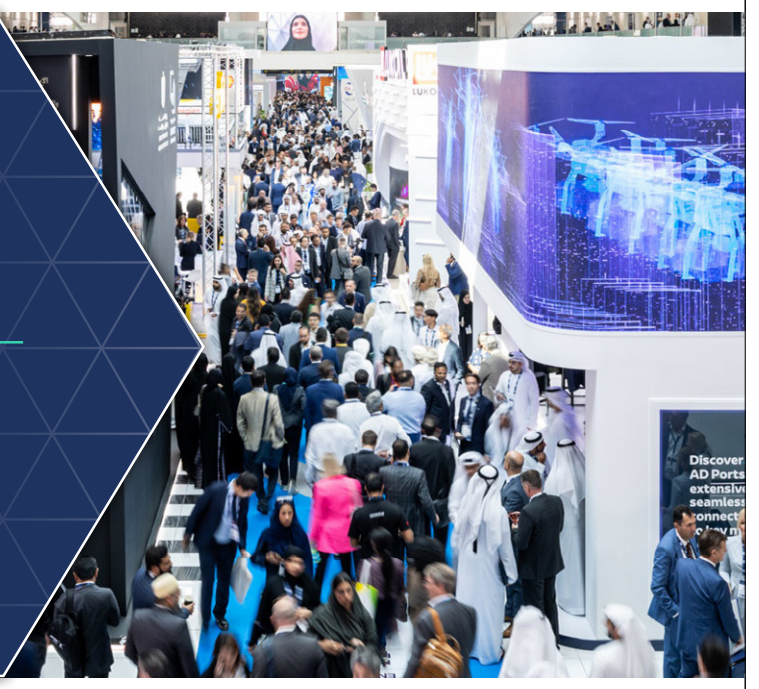

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DOES NATURAL GAS HAVE A FUTURE IN A LOW-CARBON ECONOMY?

BY NADER RAMADAN

Ever since the global community announced its commitment to significantly lower emissions, the future of fossil fuels has often been questioned, with some raising serious doubts about its viability as an energy source for the future. Global conditions and expert opinions prove quite the contrary, especially regarding natural gas. Natural gas is practically the fuel the international community needs to propel itself into creating a low-carbon economy around the world and by almost all accounts, it will be an integral part of a low-carbon economy once it is fully established. Though climate goals have always been ambitious, an element of realism is required for the energy transition to become a complete success.

As the global economy stands now, fossil fuels are still the primary product that provides economies all over the world with their essential needs. This is especially true for developing economies where renewable energy technologies still have not been established on firm ground. All economic indicators have pointed to surging demand for natural gas for the coming period, especially in major global markets.

"Europe's and Asia's LNG regasification capacity is expected to increase dramatically by 2025. Following Russia's invasion of Ukraine, the 2022 energy crisis in Europe motivated investors to support the construction of regasification infrastructure for non-Russian gas supply. Compared to the previous 10 years, the rate of new approvals for liquefaction capacity has doubled since the Russian invasion," it said in an April 2024 study titled "The Future of Natural Gas in a Low-Carbon World" published by the EFI Foundation.

By all accounts, there is consensus that natural gas is a viable traditional substitute, quite possibly the only other option, to other fossil fuels to generate the renewable energy needed to power a low-carbon economy.

"Natural gas can also address energy equity and affordability issues. Natural gas has been an essential component of lowering the cost of decarbonization by complementing intermittent renewable energy generation from wind and solar. Natural gas can be used in key industrial processes, ensuring the affordability and competitiveness of a country's industrial sector, while lowering emissions of CO2 and other pollutants. These roles of natural gas, while country-specific, have made it a key enabler of global and regional energy security and economic growth while offering reliable and generally affordable energy," it said in the EFI Foundation study.

As an economic powerhouse that has consistently proven its reliability, natural gas will be playing an essential role in the industrial and manufacturing sectors and will continue to do so even in low-carbon carbon economies. This will especially be the case in the US well into 2050.

"Given the complex value chain of critical industrial manufacturing sectors, the value to national economies and jobs, and the lack of current commercialized, deployed, and affordable technologies for high-heat electrification of a significant percentage of industrial processes, it is likely that natural gas will continue to play a major role in the U.S. industrial sector. The industrial decarbonization road map from the U.S. Department of Energy (DOE), for example, shows that even in 2050, natural gas will continue to account for a large share of the energy consumption of key, albeit carbon-intensive, industrial subsectors," it said in the EFI Foundation study.

Though natural gas is here to stay for the foreseeable future, especially in a low-carbon economy, innovations need to be explored to ensure that the natural gas supply chain is completely decarbonized in all its components.

"Governments, international bodies, and industry initiatives have put varying emphasis on natural gas as a strategy for meeting energy security, energy equity, and environmental sustainability goals, but substantial tasks remain. Major consumers of LNG in Europe and Asia are concerned about the reliability and affordability of LNG. Many countries have committed to net-zero emissions goals, but emissions from the natural gas supply chain have not decreased significantly," according to the study.

Though policies may be successful in pulling people in the right direction to make the decisions to give natural gas its rightful place in the world's low-carbon future, it is really scientific inquiry and research that can build the symbiosis that the world needs to exist between natural gas and emissions reduction ambitions. For these innovations to materialize, the international community must demonstrate a better commitment to ensuring greater bonds and stronger partnerships to facilitate the unfettered free flow of ideas from experts around the world. Natural gas is not only the key to sustaining a low-carbon economy but remains an essential element to build the bridges that we need to fully realize global sustainability.

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THE CALM BEFORE THE STORM:
IRAN'S STRATEGIC RESPONSE TO HANIYEH'S KILLING

BY IHAB SHAARAWY

The recent assassination of Ismail Haniyeh, the political chief of Hamas, in Tehran has sharply escalated tensions between Israel and Iran. This event, coupled with the killings of several Hezbollah figures, has created a dangerous situation in the Middle East, where the possibility of an Iranian retaliatory strike looms large. The potential for such an action raises concerns about a broader regional conflict that could involve multiple actors across the region.

Israel's Actions and Regional Tensions

The death of Haniyeh is widely attributed to an Israeli operation, part of a broader campaign against Iran and its allied forces across the Middle East. This campaign has seen a significant escalation in recent months, with Israel conducting devastating attacks on Gaza, resulting in the deaths of over 40,000 Palestinians, and targeting key figures within the "axis-of-resistance"—a network of pro-Iranian entities opposed to U.S. and Israeli influence in the region. Since October 7, at least 39 commanders or senior members of this alliance have been killed by Israel.

The assassination of such a high-profile figure like Haniyeh in the heart of Tehran represents a serious breach of Iran's internal security and has undoubtedly embarrassed the Iranian government. The reaction from Tehran has been a mix of public vows of revenge and private caution, as Iranian officials weigh the risks of a direct military confrontation with Israel.

Iran's Calculated Response

Iran's initial response to the assassination was to threaten a "devastating" retaliation against Israel. However, this rhetoric has since been tempered. Iranian officials, including those from the Islamic Revolutionary Guard Corps (IRGC), have indicated that any response will be carefully considered, with timing and tactics that may not be immediate. Brig. Gen. Ali Mohammad Naeini, an IRGC spokesman, noted that "time is at our disposal," suggesting that Iran might take its time before taking action.

This cautious approach is likely influenced by Iran's current internal challenges. The country is grappling with significant economic difficulties and a delicate political situation following the recent election of a new reformist president, Masoud Pezeshkian. His administration, still in its early days, is focused on addressing domestic issues, particularly the economy, and a full-scale conflict with Israel could undermine these efforts.

Despite the public declarations of revenge, Iran's private messaging to its allies, including various militias across the region, has been more restrained. Tehran has urged these groups to show restraint, balancing the need to demonstrate strength with the desire to avoid triggering a broader tangible war.

Strategic Considerations

The cautious stance taken by Iran is reminiscent of the aftermath of the U.S. assassination of Iranian General Qasem Soleimani in 2020. At that time, Iran's Supreme National Security Council reportedly considered 13 different "revenge scenarios," but ultimately chose a measured response that avoided a full-scale war with the United States. This strategic patience suggests that Iran is well aware of the risks associated with an immediate and forceful retaliation, particularly when dealing with a powerful adversary like Israel.

The situation in Gaza further complicates Iran's decision-making process. The ongoing conflict between Israel and Hamas adds another layer of complexity. Israeli officials have made it clear that they intend to achieve their objectives in Gaza, which include neutralizing the threat posed by Hamas. This has left Iran in a position where it must carefully consider its next move, knowing that any action it takes could have far-reaching consequences for the region.

Retaliation Scenarios

Given the current landscape, several scenarios could unfold in the coming weeks and months as Iran contemplates its response to the assassination of Haniyeh.

Prolonged, controlled conflict is one of these scenarios where Iran may opt for a prolonged and controlled conflict, leveraging its "axis of resistance" allies, such as Hezbollah in Lebanon and the Houthis in Yemen, to apply pressure on Israel. This approach would allow Iran to respond without escalating into a full-scale war, maintaining a level of deniability and avoiding direct confrontation.

Coordinated regional attack is another possibility where Iran may launch a coordinated regional attack involving multiple actors within the axis of resistance. This could include missile strikes or asymmetric warfare tactics aimed at Israeli targets, designed to send a strong message without provoking a full-scale Israeli military response.

However, some analysts are convinced that Iran might choose to exercise strategic patience, waiting for an opportune moment to carry out targeted strikes against Israeli interests, possibly outside the immediate region. This could involve cyberattacks, covert operations, or other forms of non-conventional warfare that allow Iran to inflict damage while minimizing the risk of a broader conflict.

Iran could also engage in diplomatic maneuvering, using its influence over various proxies to apply pressure on Israel indirectly. This could involve ramping up support for Palestinian groups in Gaza or encouraging Hezbollah to increase its activities along the Israeli-Lebanese border, all while avoiding direct Iranian involvement.

As tensions between Iran and Israel continue to rise, the Middle East stands at a critical juncture. Iran's response will likely be shaped by a combination of strategic considerations, internal challenges, and the broader geopolitical landscape. Whether through a measured, controlled conflict or a more forceful response, Iran's actions in the coming months will be crucial in determining the future of stability in this region.

The assassination of such a high-profile figure like Haniyeh in the heart of Tehran represents a serious breach of Iran's internal security and has undoubtedly embarrassed the Iranian government.

EARLY PRODUCTION FACILITIES: A PROPOSED SOLUTION TO BOOST OIL, GAS PRODUCTION

Matching with the pushing necessity for providing energy resources to overcome the recent growing electricity needs, a challenging national target has been set by the Egyptian government to ramp up the country's natural gas production by 8% higher in the upcoming fiscal year 2024/2025.

There is an urgent need and objective to boost average daily production to 5.7 billion cubic compared to the current production level of 5.3 billion cubic feet per day during the fiscal year of 2023/2024, as mentioned by Asharq Bloomberg.

An optimum proposed solution to elevate production with a lower potential economic risk would be Early Production Facilities (EPF).

EPFs would be designed to accelerate the production process during the development procedure of the other activities inside the production field in parallel with preparing the permanent facilities.

EPFs are considered fast-track projects that can create early cash flow for investors with only a minimum cash outlay. Early production systems would be considered as a suitable solution for smaller production wells that would be financially unstable or to go through a permanent production facility.

EPF systems can be reused for other producing wells in case the current wells are not producing. They can also be reused for other new discoveries until a full production plant is being prepared to handle higher capacities of the same producing wells if luckily the reservoirs are producing more products with the same characteristics.

Moreover, EPFs vary according to many factors that could be mainly summarized as the type of wells, compositions, and production conditions in terms of temperature, pressure, and flow rates. They also can be simply classified into High Pressure, Medium Pressure, and Low Pressure services. Another expression could be according to the type of gas wells either sour or sweet gas. However, the sour ones could be more expensive if the sour gas is required to be treated.

An added privilege could be that all equipment could be brought as mobile skids to the site to accelerate production. An optimum design shall be capable of absorbing the multivariable capacities of well production.

In case of wells depletion, the Mobile skids would be moved from the site to another promising site, avoiding the economic risks due to production loss.

Hopefully, the oil and gas companies would adopt such solutions and other creative ones aiming at accelerating oil and gas production and also avoiding losing money and time in the fluctuating market and variable wells production keeping in mind the factor of carbon dioxide reduction and sustainability scope 1 and 2 factors.

Mohamed Kamal Gaber

Process Section Head, Petrojet

EXPLORING WAYS TO ENHANCE REFINERY EFFICIENCY

Optimizing refinery efficiency is crucial for converting crude oil into valuable products, such as gasoline, diesel, and petrochemicals while reducing waste, energy usage, and environmental impact. Refinery efficiency is commonly assessed through energy efficiency, yield efficiency, and operational efficiency.

Energy Efficiency

Energy efficiency is vital because refineries use significant amounts of energy, mainly from natural gas, electricity, and processed products. Enhancing energy efficiency entails optimizing energy usage in fundamental processes like distillation, cracking, and reforming while reducing heat loss. Heat integration is a key approach, involving the use of heat exchangers and recovery systems to recycle heat within the refinery, thereby conserving energy and reducing operating costs.

Yield Efficiency

The concept of yield efficiency is centered around maximizing the production of valuable products, such as gasoline and diesel from crude oil. This is achieved through the use of advanced catalysts in processes such as fluid catalytic cracking (FCC) and hydrocracking, which improve the conversion rate and selectivity towards the desired products. By optimizing refining processes, refineries can boost the output of these highly sought-after products while reducing the production of less valuable by-products.

Operational Efficiency

Operational efficiency involves optimizing refining processes, equipment, and human resources. This includes the following key areas:

1. Process Optimization: Advanced process control (APC) systems adjust variables to maintain optimal operating conditions. Process simulation and modeling help predict and improve refining processes.
2. Equipment Reliability: Preventive and predictive maintenance ensures equipment operates smoothly, minimizing downtime and repair costs. Effective asset management extends equipment lifespan and reduces costs.
3. Workforce Efficiency: Continuous training and shift optimization enhance workforce productivity. Strong collaboration and communication across teams ensure efficient operations.
4. Supply Chain Management: Optimizing inventory, logistics, and vendor relationships reduces costs and ensures timely delivery of products.
5. Energy Management: Implementing energy efficiency programs, conducting regular energy audits, and using cogeneration systems to improve energy conservation.
6. Digitalization and Automation: Leveraging the Industrial Internet of Things (IIoT), automation systems, and data analytics enhances real-time monitoring, predictive maintenance, and process optimization, leading to significant efficiency gains.
7. Operational Excellence Programs: Continuous improvement, monitoring key performance indicators (KPIs), and maintaining high safety standards contribute to higher efficiency.

Environmental Efficiency

Environmental efficiency aims to minimize the environmental impact of refining operations by reducing emissions, such as greenhouse gases (GHG) and sulfur emissions, and controlling pollution in the air and water. Effective waste management practices, including waste minimization, recycling, and reuse, are essential. Conservation of resources, particularly energy and water, is also critical. Refineries can achieve this by adopting eco-friendly technologies, complying with environmental regulations, and conducting lifecycle assessments (LCA) to reduce their environmental footprint.

Improving refinery efficiency is crucial for cutting costs, boosting profits, and complying with environmental regulations. Refineries can enhance productivity, lower expenses, and minimize their environmental footprint by concentrating on energy, yield, operational, and environmental efficiency. This will make them more competitive and sustainable.

Wael Essam El Rayes

GPC Vice Chairman

ACHIEVING AND MEASURING ENERGY INDEPENDENCE FROM A LEGAL PERSPECTIVE

Achieving energy independence is vital for Egypt's national security, economic stability, and environmental sustainability. This ambitious goal involves reducing reliance on imported energy by increasing domestic production and diversifying energy sources. The journey to energy independence is complex, encompassing various technical, economic, and legal dimensions.

Energy independence means Egypt can meet its energy needs without depending on external sources. This objective requires developing a comprehensive legal and regulatory framework that encourages domestic energy production, promotes renewable energy, and ensures sustainability. From a legal perspective, achieving energy independence involves addressing multiple issues, including legislation, regulation, international trade, and environmental protection.

The foundation of Egypt's energy independence lies in the legal framework governing domestic energy production. This includes laws and regulations that incentivize the exploration and exploitation of domestic energy resources, such as oil, natural gas, and renewable sources like wind and solar energy. Egypt has substantial reserves of oil and natural gas, which the government has been actively developing to reduce the country's dependency on imports. To encourage investment in domestic energy projects, the government has implemented policies that provide tax incentives and subsidies. Additionally, legal provisions for streamlined permitting processes and reduced bureaucratic hurdles are essential to facilitate the rapid development of energy infrastructure. For instance, Egypt's new investment law offers significant incentives for energy projects, including tax breaks and guarantees for investors, creating a favorable environment for energy development.

Renewable energy plays a crucial role in achieving energy independence for Egypt. The country has abundant solar and wind resources, and the government has set ambitious targets for renewable energy production. The Feed-in Tariff (FiT) program, launched in 2014, aims to attract investment in solar and wind energy projects by guaranteeing fixed prices for the electricity produced. One of the most notable examples of this initiative is the Benban Solar Park, one of the largest solar parks in the world, which illustrates Egypt's commitment to expanding its renewable energy capacity. Such projects not only foster the growth of the renewable energy sector but also contribute to long-term energy security and sustainability.

Measuring energy independence involves assessing the extent of reliance on domestic versus imported energy. Key metrics include the energy balance, which accounts for production, imports, exports, and consumption; the energy self-sufficiency ratio, indicating the percentage of total consumption met by domestic production; import dependency, measuring the share of energy needs met through imports; and the diversity of energy sources, which reduces supply disruption risks and enhances resilience. Legal frameworks should promote a mix of renewable and non-renewable sources to achieve a diversified energy portfolio.

Several legal challenges can hinder the pursuit of energy independence in Egypt. Regulatory uncertainty, resulting from frequent policy changes, can

deter investment in domestic energy projects. Environmental regulations, while crucial for sustainability, may pose challenges for energy development. Balancing environmental protection with energy needs requires careful legal considerations. Land use and property rights issues can arise during energy resource development, necessitating clear legal frameworks for land acquisition, compensation, and landowner rights. Regulatory barriers can impede critical energy infrastructure development, such as pipelines and transmission lines. Addressing these barriers through streamlined permitting processes is essential. Navigating complex international trade and investment laws is also necessary to ensure compliance while promoting domestic energy development.

While domestic energy production is critical, international trade also plays a significant role in achieving energy independence for Egypt. The country has positioned itself as a regional energy hub by leveraging its strategic location and natural gas resources. The discovery and development of the Zohr gas field, one of the largest in the Mediterranean, has significantly boosted domestic production. Egypt has also engaged in international agreements to export liquefied natural gas (LNG), securing stable and affordable energy imports while minimizing vulnerabilities associated with global energy markets. Legal frameworks addressing trade tariffs, import quotas, and intellectual property rights related to energy technology are essential for these activities. Additionally, the government must establish strategic reserves and diversify energy import sources to enhance energy security. Legal measures to promote energy efficiency and conservation can also reduce dependence on imported energy by lowering overall demand.

Achieving energy independence must not come at the expense of environmental protection. Legal frameworks must balance energy production with environmental sustainability. This includes regulations on emissions, waste management, and land use to minimize the environmental impact of energy projects. Environmental Impact Assessments (EIAs) and public participation processes are essential components of the legal framework, ensuring that energy projects are developed responsibly and with community input. For example, Egypt's Environmental Law mandates comprehensive assessments of the environmental effects of major energy projects before they can proceed, promoting sustainable energy development. These measures ensure that energy projects align with environmental goals and address community concerns, fostering a balanced approach to energy development.

Several countries have made significant progress toward energy independence through effective legal frameworks and policies. Egypt, too, has made considerable strides in this direction. The development of the Zohr gas field, supported by the government's strategic vision and regulatory measures, has reduced reliance on imported natural gas. Investments in renewable energy projects, such as the Benban Solar Park, supported by the FiT program and international partnerships, further diversify Egypt's energy portfolio. Additionally, the new investment law and environmental regulations ensure a balanced approach to energy development, considering both economic and environmental factors.

Achieving energy independence is a complex yet attainable goal for Egypt, requiring a comprehensive and coordinated legal framework. Implementing robust regulatory policies, energy legislation, market mechanisms, and international agreements can help Egypt reduce reliance on imported energy, enhancing security, economic stability, and environmental sustainability. Measuring energy independence through various metrics provides valuable insights for progress and improvement. Addressing legal challenges such as regulatory uncertainty, environmental regulations, land use issues, infrastructure development, and international trade laws is crucial for success. By learning from successful case studies and continuously adapting legal frameworks, Egypt can move closer to achieving and sustaining energy independence.

In summary, achieving and measuring energy independence from a legal perspective requires a multifaceted approach encompassing domestic energy production, renewable energy regulation, international trade, environmental protection, and robust metrics for assessment. A comprehensive legal framework supporting investment, innovation, and sustainability is essential to ensure long-term energy security. By adopting and enforcing effective legal measures, Egypt can reduce its reliance on external energy sources, promote economic growth, and protect the environment. As the global energy landscape evolves, the role of law in shaping and securing energy independence remains critical for Egypt's future.

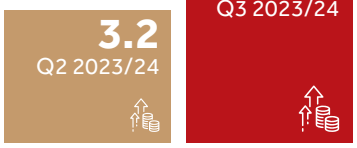
By Mohamed El Haythem, M.phil., DBA, MBA
Energy Security Expert
Strategic Planner & Business Consultant

EGYPT OIL&GAS RESEARCH & ANALYSIS

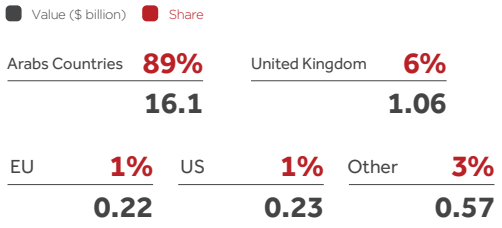
QUARTERLY INDICATORS

Quarterly Indicators

Foreign Direct Investments (FDI) ($ billion)



Net FDI per Destination



During the third quarter (Q3) of the fiscal year (FY) 2023/24, Egypt experienced a significant increase in the net foreign direct investment (FDI), which rose by approximately 466% compared to the second quarter (Q2) of the same FY. This surge followed the conclusion of the Ras El-Hekma deal and the initiation of several green hydrogen projects. It is noteworthy that Arab countries stand as the primary contributors to net FDI in Egypt, accounting for 89% of the total net FDI in Q3 2023/24.

EGX HIGHLIGHTS

Performance of Listed Petroleum Companies

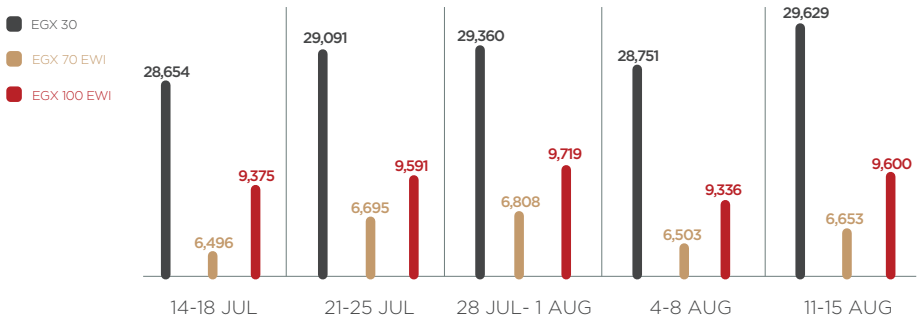
July 2024

TAQA	NDC	AMOC
Close Price EGP 16.35	Close Price -	Close Price EGP 9.24
YTD Price Change 21.56%	YTD Price Change 0%	YTD Price Change 6.29%
P/E* 34.47	P/E* 2.01	P/E* 8.70

Egypt Gas	ADNOC
Close Price EGP 26.69	Close Price EGP 27.57
YTD Price Change 33.28%	YTD Price Change 5.16%
P/E* 22.56	P/E* 8.48

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

Capital Market Indicators



MONTHLY INDICATORS

Annual Inflation Headline

CPI (%)

June 2024	July 2024
27.1	25.2

Egypt's annual inflation kept its downturn path in July, easing to 25.2%. This decline in inflation was mainly driven by a decline in meats and poultry prices by 5.7%, sugar and sugary products by 2%, grains and bread prices by 1.4%, and oils and fats by 0.8%. Despite the declining trend in inflation rates, it remains significantly above the Monetary Policy Committee (MPC) upcoming inflation targets at 7% (± 2%) on average by the fourth quarter (Q4) of 2024 and 5% (± 2%) on average by Q4 2026.

Net International Reserves

($ billion)

June 2024	July 2024
46.384	46.489

Egypt's net international reserves recorded a slight increase of 0.23% to reach $46.489 billion in July compared with June. Foreign currency reserves dipped slightly from $36.9 billion in June to $36.3 billion in July. Despite that, foreign currencies still dominate Egypt's international reserves, constituting about 78% of the total reserves. It is worth mentioning that the International Monetary Fund (IMF) completed its 3rd review of Egypt's Extended Fund Facility (EFF) in late July, enabling Egypt to immediately draw about $820 million from its $8 billion loan.

Non-Oil Private Sector

PMI (Point)

June 2024	July 2024
49.9	49.7

Egypt PMI fell to 49.7 in July from 49.9 in June. As a result, the index moved further below the 50 threshold, highlighting a slight deterioration in business conditions. Businesses reported a minor yet persistent contraction in activity levels at the start of the third quarter (Q3). The output dropped because of weakening sales, with some firms also commenting on rising price pressures.

New orders experienced a slight downturn after a while of growth in June. Approximately 9% of surveyed firms reported a decline in sales, whereas 7% noted an expansion. On the other hand, new export orders saw an increase for the third consecutive month, driven by improved demand from foreign markets.

EGYPT OIL&GAS RESEARCH & ANALYSIS

EXPANDING PETROCHEMICALS INDUSTRY WITH NEW PROJECTS

Establishing A New Petrochemicals Project in New Alamein

On August 1, Shard Capital Co. proposed establishing a petrochemicals complex in the New Alamein Industrial Zone, one of the most important projects promoted by the Egyptian Petrochemical Holding Co. (ECHEM) within the framework of a national strategy to increase petrochemical production.

Investments
$7 billion

Investing Company
Shared Capital

Setting up Alexandria Supply Chain Co.

On August 1, the Egyptian Petrochemicals Holding Co. (ECHEM), Sidi Kerir Petrochemicals Co. (SIDPEC), the Egyptian Natural Gas Company (GASCO), and Gama Construction decided to establish the Alexandria Supply Chain Company to create a permanent marine facilities station. This company aims to secure the raw materials needed by the petrochemical companies in Alexandria.

$660 million — Targeted Investments

Dekheila Port — Location

up to **1.1** mmt/y — Importing Liquefied Ethane Gas (LEG)

Developing Abu Qir Natural Gas Fields Production

Within the framework of the Ministry of Petroleum and Mineral Resources' (MoPMR) strategy to follow up on natural gas production processes and improve production rates from the fields, the Egyptian Natural Gas Holding Co. (EGAS) has conducted an inspection visit to the Abu Qir natural gas fields.

NAQ-PII EAST Exploration Well

Location: North Abu Qir Field

Drilling Targets: Layer No.1 in Kafr El-Sheikh Basal Sand Layer in Abu Madi

Reserves

Natural Gas	Crude Oil	Starting Production Date
106 bcf	25 mmbbl	Mid-August 2024

North Amriya and North Idku Fields

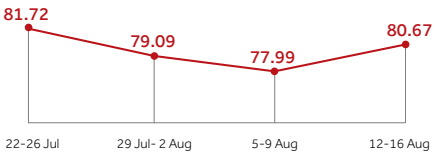
Production

Put into Production Date	Natural Gas	Condensates
December 2023	80 mmcf/d	1,250 bbl/d

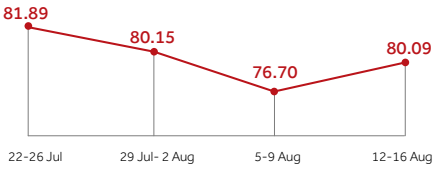
PRICING HIGHLIGHTS

Average International Prices

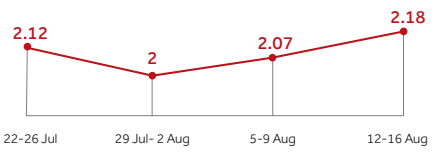
BRENT ($/BBL)



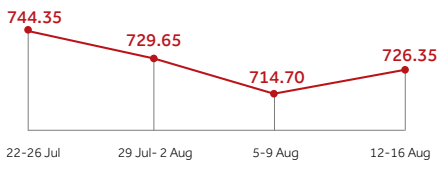
OPEC BASKET ($/BBL)



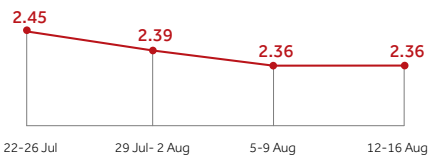
NATURAL GAS ($/MMBTU)



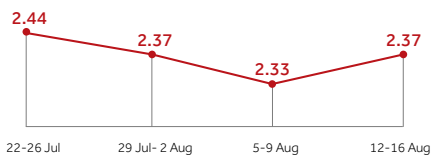
GAS OIL (Nymex) ($/MT)



RBOB GASOLINE (Nymex) ($/GAL)



HEATING OIL (Nymex) ($/GAL)



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