

EGYPT ENERGY SHOW

**DRIVING ENERGY
TRANSITION, SECURITY
AND DECARBONISATION**



Egypt's Leading Oil And Gas Monthly Publication

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EDITOR'S LETTER

Dear Reader,

This month, the energy landscape in Egypt takes center stage with the rebranded Egypt Energy Show (EGYPES), formerly known as the Egypt Petroleum Show. This bold move reflects a significant shift in focus, embracing the driving forces of energy transition, security, and decarbonization.

As Egypt embarks on a bold journey towards a just and balanced energy transition, our writers delve into the nation's progress, highlighting successes and challenges along the way. We explore fruitful decarbonization efforts, analyze the role of natural gas, and unravel the intricate dance between political and economic developments shaping the global energy landscape.

Our Research & Analysis team provides an insightful reading on the evolving role of natural gas in Egypt's energy mix, while our featured articles illuminate the diverse perspectives surrounding the transition. We believe informed dialogue is crucial to navigating this complex landscape, and we hope this issue sparks productive conversations.

Whether you're attending EGYPES 2024 or simply interested in the future of energy, we invite you to delve into this edition. We're confident you'll find thought-provoking insights, inspiring stories, and valuable information to fuel your own engagement with the energy transition.

We wish you a productive and insightful journey through this issue, and a very fruitful engagement at EGYPES 2024!

Ihab Shaarawy

MANAGING EDITOR

CONTENTS



▶ 12

Egypt Walks the Path towards Sustainable Energy

▶ 10

NATURAL GAS: Fueling Egypt's Journey to Energy Transition

▶ 14

Bridging the Gap: Can Natural Gas Help Us Cross Over to Renewables?

▶ 15

Heat Exchangers in Oil and Gas: A Critical Component for Energy Efficiency

▶ 16

Powering Up Energy Efficiency in the Oil and Gas Industry Through Leveraging Financial Tools

▶ 18

Escalation Echo: Gaza War Spreads Fire to Red Sea

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IPR Energy Announces Yidma/Alamein Discovery in Egypt

IPR Energy Group (IPR) has announced the discovery of the West AY-1X exploration well as well as successfully testing and producing from the new formation, Kharita, in Alamein-44.

The new formation adds an incremental 2,850 barrels per day (bbl/d) of oil to the Yidma-Alamein Western Desert Development Lease. The West AY-1X well was drilled at a depth of 13,166 ft, using a 1500 HP drilling rig. The well encountered 33 ft of perforated interval in the Basal Middle Bahariya (BMB) sand. The new well was lifted by coil tubing/nitrogen, and then it was placed on production with an ESP at a 703 bbl/d rate.

The company is currently assessing the option for additional BMB sand development offset wells to West AY-1X.

During the same campaign, the Alamein-44 well was recompleted into a fractured carbonate attic oil zone in the Alamein Dolomite formation, just 25 meters from the original field discovery well Alamein-1X.

According to IPR CEO, Mohamed K. Dabbous, Fiscal Year 2024/25 represents a major milestone in the life of the A/Y Concession with the average daily production expected to exceed 6,000 BOPD, surpassing the average for FY2023/2024 by about 50%. Alamein is a classic example of innovative reservoir management and exploitation practices.

GUPCO Kicks Off Production at North Safa Oil Field in Gulf of Suez

The Gulf of Suez Petroleum Company (GUPCO) has successfully brought the first well of the North Safa oil field in the northeastern Ramadan region of the Gulf of Suez online. This achievement marks a strong start to the new year and aligns with the Ministry of Petroleum and Mineral Resources' (MoPMR) strategy to bolster national crude oil production.

Minister of Petroleum and Mineral Resources, Tarek El Molla, followed developments of the implementation of the early production plan from the North Safa oil field with Salah Abdel Karim, Chairman of GUPCO. The first phase of the early production project from the field aims to reach 6,000 barrels per day (b/d) in mid-January after the first well was placed on the production map at a rate of 2,500 b/d.

The second well is being completed in mid-January, bringing production to the targeted rates, and it is planned to increase it again to 12 thousand barrels per day through implementing an ambitious plan to drill 7 new wells.

It is noteworthy that the first phase of early production in the North Safa field was implemented by a coalition of Egyptian companies that includes Enppi, Petrojet, and Offshore Petroleum Services to establish and install the North Safa production station and extend two production lines of 10 and 11 km in length, with a total investment of \$125 million.

Centamin to Carry Out Geological Surveys in Nugrus Prospects, Umm Majal, Little Sukari in H1 2024

Centamin has announced plans to execute a number of detailed geological ground physical and mapping surveys in the Nugrus prospects, Umm Majal and Little Sukari, in H1 2024.

This came in a company statement discussing the drilling results of its program on the Eastern Desert Exploration (EDX) landholding in Egypt.

The EDX blocks comprise 3,000 km² of greenfield exploration tenements within Egypt's Nubian Shield—a highly prospective geological belt, which has not been explored using modern exploration methods.

Centamin has finalized a 16,216 meters reverse circulation maiden drill program within eight targets on the Nugrus block, adjacent to the Sukari Mining Concession.

UOG Highlights Promising Results from ASD S-1X Well

United Oil & Gas PLC (UOG) has announced an update on the ASD S-1X exploration well (ASD S-1X), located on the ASD South prospect in the Abu Sennan license, in which UOG holds a 22% working interest.

The ASD S-1X exploration well started drilling on 11 November and reached a total depth of 3,450 meters on 12 December, under budget and ahead of schedule.

The well has now been completed as a single completion in the AR-C reservoir and successfully tested oil on four choke sizes.

Notice of a commercial discovery as well as an application for a development at the ASD South lease is set to be submitted

to the Egypt General Petroleum Corporation (EGPC) by the operator Kuwait Energy Egypt, soon. Output is believed to start shortly after approvals are granted and facilities are installed.

National Pipelines Get Major Efficiency Boost

During the general assembly of the Petroleum Pipeline Company (PPC), Minister of Petroleum and Mineral Resources Tarek El Molla has confirmed that the national oil transport network, which represents the main arteries for supplying the country with energy, has witnessed great interest in strengthening and raising the efficiency of its lines that transport crude oil and petroleum products to refining and distribution areas to consumers.

El Molla explained that the impact of developing network lines is significant on the speed and efficiency of meeting local needs for petroleum products and fuel.

The minister stated that overcoming the challenges related to supplying the local market with butane came about by maximizing and doubling the infrastructure of the trading, transport and storage network for butane, to become six points to receive quantities of butane at ports, trade them and transport them to consumption areas instead of two points previously.

El Molla confirmed that the New Alamein area is currently witnessing the completion of the implementation of the new area for storing and trading petroleum products. It is planned that it will enter service in the summer of this year after the completion of the works and the project of a line to transport petroleum products from the MIDOR refinery in Alexandria to the Hamra Petroleum Port in El Alamein, with a length of 145 km. This will serve the economic, industrial and urban development efforts that were launched by the Egyptian state under the guidance of the political leadership in New Alamein.

The Minister also directed the speedy completion of the implementation of the new line from the Sokhna area to the Ajroud area in Suez, the first phase of which was completed with a length of 35 km, and the second phase with a length of 65 km is being implemented in order to trade and transport crude oil through linking the area of the petroleum products trading center in Sokhna, and the infrastructure in the Suez Petroleum Region, which maximizes the added value of the infrastructure.

A BLAST FROM THE PAST

This month marks the seventh anniversary of the Egypt International Petroleum Conference and Exhibition (EGYPS), the premier industry event in North Africa and the Mediterranean. Since its inauguration in 2017, EGYPS has played a pivotal role in optimizing the utilization of Egypt's natural resources and propelling the country towards its goal of becoming a regional energy hub.

Held annually, EGYPS provides a platform for energy professionals from around the world to discuss the latest trends and insights. The first event, held in February 2017 under the auspices of President Abdel Fattah El Sisi, brought together key stakeholders to chart a course for Egypt's future energy security.

"Egypt is clearly a growing market with vast opportunities," remarked Christopher Hudson, President of dmg events, Energy Division, organizers of EGYPS. "The conference serves as a crucial forum for local, regional, and international players to collaborate and define strategies for realizing Egypt's energy potential."

Subsequent editions of EGYPS have showcased numerous success stories in the oil and gas sector, fueled by both domestic and international efforts.

This year, EGYPS undergoes a significant transformation: it evolves into the Egypt Energy Show (EGYPES 2024), scheduled for February 19-21. This evolution reflects the industry's

shift towards sustainability, delving into the challenges and opportunities associated with achieving substantial carbon reductions and reaching net-zero emissions. The conference will feature thought leaders driving the transition to sustainable energy production, with a focus on decarbonization and methane reduction strategies.

"EGYPES has become a cornerstone of the African and Mediterranean energy landscape," states Minister of Petroleum and Mineral Resources Tarek El Molla. "Each year, the event fosters increased engagement, valuable partnerships, and significant growth, solidifying Egypt's position as a leading regional energy hub."

UNDER THE LIMELIGHT



FDI Inflows in the Oil Sector
in Q1 2023/24

\$1.4 billion

Potency of Oil Sector to Bring in Foreign Investors

The dynamic growth of the Egyptian economy, driven by many indicators represented in economic reforms, paved the way for more foreign direct investment (FDI) pumped into Egypt. In this regard, during the first quarter (Q1) of the fiscal year (FY) 2023/24, the net FDI inflows in Egypt recorded \$2.3 billion, showing that the oil sector FDI inflows stabilized at \$1.4 billion,

represented 61% of Egypt's total FDI net inflows. This result was achieved thanks to new investments from foreign companies.

Meanwhile, a slight decrease was seen in the oil sector FDI outflows, represented in the cost recovery incurred by foreign partners for previous exploration, development

and operations activities, to record about \$1.6 billion from \$1.7 billion, thus the period under review unfolded an improvement in net outflows to reach \$247.8 million against \$320.5 million, according to the Central Bank of Egypt (CBE).



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ACHIEVEMENTS

Mediterra Eyes 26,000 bbl/d Production Boom in Egypt

Minister of Petroleum and Mineral Resources Tarek El Molla has met with a delegation from Canada's Mediterra Energy Corporation, headed by the company's CEO and President Memet Kont.



The meeting reviewed the company's activities in Egypt and its work plans to raise crude oil production rates from its concession areas in Sinai and Kom Ombo within the framework of the work strategy implemented by the oil and gas sector to improve and increase petroleum production rates.

During the meeting, the company's delegation reviewed the status of its work in the Kom Ombo concession areas (Al-Baraka and West Al-Baraka), and the Sidr, Matarma and Assal areas in Sinai in partnership with the General Petroleum Company (GPC). It also discussed its activities for developing and producing crude oil, which have achieved positive results recently.

The company has succeeded in reaching production to more than 22,000 barrels per day (bbl/d) during the current year in light of the intensive drilling program it is implementing at a rate of drilling eight wells per month, bringing the company's total producing wells to 64 wells.

Mediterra's delegation pointed out that it is targeted to reach the total production to more than 26,000 barrels per day and the number of producing wells to 100 wells by the end of 2024.

The company delegation explained that it took over its concession areas in 2017 with only four producing wells and a total production of 150 barrels per day. It succeeded in improving production and achieving outstanding rates, and that it relies entirely on Egyptian cadres to plan, implement and manage all its activities in Egypt.

Petromaint Successfully Implements PVC Reactor for ECHEM

Petromaint company announced that it has successfully implemented and delivered the project of designing, supplying, installation and operation of the fifth polymerization reactor (PVC) at Egyptian Petrochemicals Holding Company (ECHEM) to increase its production capacity of PVC by 20,000 tons per year with costs estimated at EUR 12 million.



The company added in a statement that after this project, ECHEM's annual production of PVC will reach 100,000 tons with Egyptian hands which comes as part of the Ministry of Petroleum and Mineral Resources' (MoPMR) directions towards maximizing the added-value of the local production, providing foreign currency, and overcoming the challenges which faced the project during the past period due to the volatility of the global economy.

It is worth noting that the trial operation of the project was started, and the reactor entered production at production rates that exceeded the planned, with excellent operating conditions, ideal reaction performance, and at a time period for the reaction phase better than expectation.

PetroSafe Studies Carbon Emissions Reduction Work at PPC's Site in Mostorod

The Petroleum Safety and Environmental Services Company (PetroSafe) plans to implement a study on reducing carbon emissions at the Petroleum Pipeline Company (PPC)'s site in Mostorod.

The implementation of the study on reducing carbon emissions comes within the framework of achieving the petroleum sector's strategy to reduce carbon emissions and improve energy efficiency in all companies in the sector. This comes to achieve the global trend to reduce gaseous emissions that cause the phenomenon of climate change, due to its many negative effects on the environment and various economic activities, and to achieve the goals of sustainable development.

In order to support companies in the sector to achieve their policies to achieve zero emissions, Petrosafe provides many services in this field, including preparing carbon footprint reports and sustainability reports, building capabilities in the field of climate change, and providing consultations regarding Leadership in Energy and Environmental Design (LEED) & EDGE certificates.

AGREEMENTS

EMRA Signs Two Gold Exploitation Contracts

Minister of Petroleum and Mineral Resources Tarek El Molla has signed a contract for the exploitation of gold ore and associated minerals in the Abu Marwat region in the Eastern Desert between the Egyptian Mineral Resources Authority (EMRA) and Canadian mining firm Aton Resources.

This came after achieving a commercial discovery of gold in the Hamama Gharb and Rodrin areas, located in the Abu Marwat concession, in an area of about 58 square kilometers.

EMRA's Chairman, Yasser Ramadan, and Tonno Vahk, CEO of Aton Resources, participated in the signing.

El Molla further witnessed the signing of a contract between EMRA and the British company AKH GOLD to search for gold in an area of 350 square kilometers in the areas of Bir Asl and Jabal al-Mit in the Eastern Desert, within the framework of the English company's expansion in investing in searching for gold in Egypt after its success in a number of regions in the global bidding to search for gold in its first and second rounds.

The contract was signed by Ramadan and Gerard De Hert, the Executive Director of the British company.

After the signing, El Molla confirmed that the reforms implemented in the Egyptian mining sector's work system contributed to attracting investments from international companies to search for gold and precious metals.

Abu Qir Fertilizers, Petrojet, ABB, MPS Sign Green Hydrogen MoU

Minister of Petroleum and Mineral Resources Tarek El Molla has witnessed the signing of a memorandum of understanding (MoU) between the Abu Qir Fertilizers Company, ABB International Group, MPS Infrastructure Company, and Petrojet.



The MoU aims to supply the North Abu Qir for Agricultural Nutrients Company the green hydrogen and renewable electricity needed to produce green ammonia, which is considered a raw material for the production of granulated ammonium nitrate fertilizer with a capacity of 2,400 tons per day.

The agreement was signed by Abed Ezz El Regal, Abu Qir Fertilizers Chairman; Waleed Lotfy, Petrojet's Chairman; Ahmed Sherbini, Vice President of ABB Group; Waleed Hefnawy, Director of the Chemical Sector in ABB Group; and Yasser Fouad, Advisor to the Chairman of MPS.

After the signing, El Molla confirmed that the oil and gas sector has distinguished and great capabilities, especially in the field of infrastructure. He added that the national oil and gas industry is always keen to work with the private sector to implement the state's strategic objectives in the field of oil, gas and green energies.

EL Molla stated that the Egyptian oil and gas sector enjoys great investment opportunities that must be exploited in parallel with efforts to reduce emissions and preserve the environment.

The MoU comes from the keenness of the North Abu Qir for Agricultural Nutrients Company to keep pace with the global trend to reduce environmental problems, especially reducing carbon emissions.

COOPERATION

Egypt, Saudi Arabia Ink MoU for Cooperation in Mining

Minister of Petroleum and Mineral Resources Tarek El Molla has signed a memorandum of understanding (MoU) with the Saudi's Minister of Industry and Mineral Resources Bandar Ibrahim Alkhorayef to cooperate in the mining sector.

This came on the sidelines of the third International Mining Conference hosted in Saudi Arabia.



After signature, El Molla elaborated that this agreement aims at technical cooperation in the field of exploration, geological information exchange, training, and developing skills in the field of petroleum and mining between the two countries.

The Egyptian minister added that Egypt has success stories on the mining investment climate through reform procedures at both the legislative and financial levels. He stressed the ministry's interest in achieving the highest value from the expansion in the mining sector, within the framework of completing the steps of the program to develop and modernize the mining sector on all axes, working on attracting new investments, and supporting digital transformation in the sector's activities.

For his part, Alkhorayef affirmed the desire of the two countries to boost and develop cooperation in mining which can support scientific, technical, and advisory capabilities that contribute to the development of mineral resources and their optimal exploitation in the two countries.

He indicated that this MoU will allow the private sector in the two countries to invest in the mining sector and identify the mining opportunities available in both countries, pointing out that it was agreed to form a joint teamwork to determine and implement the necessary procedures to activate the MoU.

PetroSafe, bp to Cooperate in Safety, Waste Management

The Petroleum Safety and Environmental Services Company (PetroSafe) has won a contract assigned by bp to implement the projects of managing hazardous and non hazardous wastes to support the drilling and exploration operations at Abu Qir site according to the standards determined by environment law.

The contract includes business areas of transportation, safe final disposal of waste by applying the highest standards of safety and control to ensure the preservation of the surrounding environment, which is one of the basic priorities for preserving natural resources and applying the pillars of sustainable development.

Ethydco, Alexandria Social Solidarity Directorate Sign Cooperation Protocol

The Egyptian Ethylene and Derivatives Company (Ethydco) has signed a cooperation protocol with the Social Solidarity Directorate of Alexandria to implement a comprehensive rehabilitation center project to provide physical therapy and rehabilitation services for people of determination in Amriya, Alexandria.



The signing comes within the framework of the Ministry of Petroleum and Mineral Resources' strategy for social responsibility, which aims to support and increase the sector's contribution to community development, especially in the most vulnerable areas.

The protocol was signed by Hisham Riad, Chairman of the Board of Directors of Ethydco

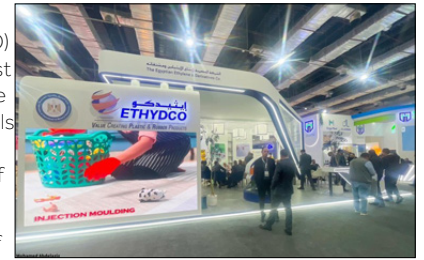
The signed protocol aims to carry out development and equipment work on the ground floor and the first upper floor of the Ministry of Social Solidarity building, which is located in front of the New Nasiriyah Residences in the second Amriya neighborhood in Alexandria Governorate, and to equip it as a comprehensive rehabilitation center to provide physical therapy and rehabilitation services for people of determination in accordance with the Egyptian standard specifications for those works.

The signing of the protocol comes within a series of efforts made by the Ministry of Petroleum and Mineral Resources to promote sustainable development and improve the quality of life in local communities in various governorates of Egypt.

EVENTS

ETHYDCO Takes Center Stage at PLASTEX2024

The Egyptian Ethylene and Derivatives Company (ETHYDCO) has participated in one of the most important economic events in the field of plastics and petrochemicals industry in one of the largest exhibitions serving the markets of the Middle East and North Africa.



The distinguished participation of ETHYDCO in PLASTEX2024 came as one of the most important and largest pavilions in this event as the Platinum Sponsor.

The ETHYDCO pavilion witnessed a huge turnout from an audience of visitors, participants, and officials, who took part in the opening of the exhibition, where Yasmine Fouad, Minister of Environment, visited the ETHYDCO pavilion. She praised the pavilion, its organization, and its features. Fouad also praised ETHYDCO's distinguished role in preserving the environment.

Meanwhile, ETHYDCO Chairman Hesham Riyad as well as the company's leaders, officials, and those concerned in the marketing and sales departments were keen to be present at the company's pavilion, receive visitors, engage with them, and respond to their inquiries.

Visitors to the ETHYDCO pavilion expressed their admiration for the pavilion as well as the publications and brochures it included that shed light on the company's products. They also expressed their admiration for the documentary film that was shown on a huge screen in the company's pavilion and deals with the history of ETHYDCO, its products, achievements, projects, and its role in developing the surrounding communities based on its societal responsibilities.

In its 10th edition, PLASTEX2024 included 360 companies from 12 countries and attracts thousands of visitors from specialists, interested people, visitors and major international companies in this field. It is held on an area of 30,000 square meters at the Egypt International Exhibition Center.

The sectors participating in the exhibition include producers of intermediate and final products of plastics, raw materials, petrochemicals and plastics.

El Molla Highlights Mining Sector Development in Egypt During International Mining Conference

Minister of Petroleum and Mineral Resources Tarek El Molla has highlighted the comprehensive development and upgrading of Egypt's mining sector through the implementation of an integrated modernization program.



This came during his participation in the ninth consultative meeting of Arab ministers of mineral resources on the sidelines of the International Mining Conference held in Saudi Arabia.

The minister added that the program successfully enhanced the sector's competitiveness, attracting massive Arab and foreign investments through gold and mineral bid rounds.

He highlighted the seven pillars of the development program, which focused on enhancing mining legislation as well as reforming the financial and licensing systems. This is in addition to adopting the policy of maximizing the added value from minerals, building capabilities, digitalization and developing mining promotion strategies.

The meeting also involved a presentation about the Arab world's initiatives and mutual efforts for developing the mining industry. They reviewed the results of the first phase of the mining guidance system developed by the Arab Organization for Industrial Development, Standardization and Mining.

The meeting also witnessed a presentation about digitizing mining raw materials production data in Arab countries with a business intelligence system and developing a platform for requests and offers for Arab industrial and mining products. It also discussed initiatives to revive old mines and quarries to achieve sustainable development. The meeting reviewed updates related to the Arab Platform for Future Minerals, specifically clean energy minerals as a first stage, as well as its official launch.

COMPANY OF THE MONTH



Shell was founded in 1907. The company is one of the world's major energy companies, where it operates in more than 70 countries.

Presence in Egypt

The company first entered Egypt in 1911 to operate two concessions in Gemsa and Hurghada. Currently, its operations are mainly concentrated in the Mediterranean Sea. Its portfolio includes operations in N. Marina, N. Cleopatra, N. Sidi Gaber, N. El Fanar, and N.E. El Amryia offshore in the Mediterranean Sea.

Source: Shell's Website

Shell's Latest Natural Gas Discovery in Egypt

Date	November 21, 2023
Location	North East El-Amriya block in the Mediterranean Sea
Depth	250 meters below sea level
Shell's Share	60%

SHELL ANNOUNCES START OF PRODUCTION OF FPSO SEPETIBA IN SANTOS BASIN, BRAZIL

Shell Brasil Petróleo Ltda., a subsidiary of Shell plc, has announced the start of production of the FPSO Sepetiba in the Mero field, located offshore in the Santos Basin of Brazil.

This state-of-the-art floating production, storage, and offloading vessel, also known as Mero-2, has an impressive operational capacity of 12 million cubic meters of natural gas and 180,000 barrels of oil per day. It is connected to six production and six injector wells in the field, making it a significant addition to the first wave of production.

The construction and operation of the FPSO Sepetiba have been made possible by the application of cutting-edge technology, which increases production efficiency and also contributes to reducing emissions.

The FPSO Sepetiba is located 180 kilometers from the coast of Rio de Janeiro, at a water depth of 2,050 meters. Its predecessor, the FPSO Guanabara, also known as Mero-1, announced its first production in April 2022.

The consortium plans to receive two more FPSOs by the middle of the decade. Shell's world-leading deep-water business comprises two prolific basins in the US and Brazil and an exciting exploration portfolio with a sustained track record of strong cash generation and operational performance.



ENI INTRODUCES GAS INTO TANGO FLNG FACILITY IN CONGO

Eni has announced the successful introduction of gas into the Tango Floating Liquefied Natural Gas (FLNG) facility in Congolese waters only twelve months after the final investment decision was made.

This marks a significant milestone for the Congo LNG project, which has utilized new technologies and a strong synergy with existing producing assets, as Eni stated in a press release.

Following completion of the commissioning phase, Tango FLNG will produce its first LNG cargo by the first quarter of 2024, placing the Republic of Congo on the list of LNG-producing countries.

The Tango FLNG facility, which has a liquefaction capacity of about 1 billion cubic meters per year (bcm/d), is moored alongside the Excalibur Floating Storage Unit (FSU) using an innovative configuration called "split mooring," a first for a floating LNG terminal.

The Congo LNG project is expected to enhance the gas resources of the Marine XII permit and achieve a plateau gas liquefaction capacity of approximately 4.5 bcm/d through phased development. The project also has a target of zero routine gas flaring. Moreover, a second FLNG facility with a capacity of about 3.5 bcm/d is currently under construction and is expected to begin production in 2025. All the LNG produced will be marketed by Eni.



CNOOC ANNOUNCES PRODUCTION OF LUFENG OILFIELDS PHASE II DEVELOPMENT PROJECT

China's CNOOC has announced the commencement of production for the Lufeng Oilfields Phase II Development Project.

This project, located in the eastern South China Sea, has an average water depth of 136 meters and includes the Lufeng 8-1, Lufeng 9-2, and Lufeng 14-8 oilfields.

The company has built a new drilling platform and plans to put 14 development wells into production, including 13 production wells and 1 water-injection well. It is estimated that the project will reach a peak production of 22,600 barrels of crude oil per day in 2025.

Notably, CNOOC holds a 100% interest in this project and is also the operator.



TECHNIPFMC AWARDED MAJOR SUBSEA CONTRACT BY BP IN THE GULF OF MEXICO

TechnipFMC has been awarded a major contract by BP for the Argos Southwest Extension project in the Mad Dog field, located in the Gulf of Mexico.

The contract involves the installation of a pipe and an umbilical, connecting three new wells to the Argos platform. The contract also entails TechnipFMC manufacturing and installing pipeline end terminations.

For TechnipFMC, a significant contract is between \$75 million and \$250 million. This award was included in the fourth quarter of 2023 Subsea inbound orders.

Notably, bp started production from its Argos offshore platform in the Gulf of Mexico in April. Argos is considered bp's fifth deepwater platform in the Gulf of Mexico, marking the first new bp-operated production facility there since 2008.

bp is the operator with 60.5% working interest, along with co-owners Woodside Energy (23.9%) and Union Oil Company of California, an affiliate of Chevron (15.6%).



SLB RECORDS \$33.1B REVENUES IN 2023

SLB has announced its full-year results for 2023 revealing a significant increase in revenue, reaching \$33.1 billion, representing an 18% year-on-year growth.

The company also reported an Adjusted EBITDA of \$8.11 billion, marking a 25% increase compared to the previous year.

SLB's free cash flow of \$4.0 billion enabled a reduction of net debt by \$1.4 billion and a return of \$2.0 billion to shareholders through dividends and stock repurchases.

According to Olivier Le Peuch CEO & Director of SLB, the company's strong performance was fueled by the international and offshore markets and was supported by robust sales in digital and integration of the acquired Aker subsea business.

Notably, fourth-quarter revenue saw an 8% sequential increase, with the acquired Aker subsea business accounting for approximately 70% of the growth.

The company's international shift in investment has accelerated during the year with fourth-quarter revenue growth driven by the Middle East, Asia, Europe, and Africa where the company continues to benefit from long-cycle developments, capacity expansions and exploration and appraisal activities.

Year on year, fourth-quarter revenue increased 25%, propelled by significant growth in Saudi Arabia, the United



Arab Emirates, Egypt & East Mediterranean, Kuwait, Oman, and East Asia GeoUnits.

In the offshore basins, the company benefited from long-cycle developments, capacity expansions, and exploration and appraisal activities with remarkable growth in Brazil and Angola and very solid increases in the US Gulf of Mexico, Guyana, and Norway.

In North America, while activity moderated as expected in the second half of the year, revenue increased by 12% year on year, outpacing the rig count. This outperformance was driven by the company's technology-leveraged portfolio in both US land and the US Gulf of Mexico.

Le Peuch noted that the company have also seen further investments in digital technologies for planning and

operational efficiencies. This is driving growth today and presenting opportunities into the future.

SLB, a global technology company with a presence in more than 100 countries, has more than 6,000 DELFI users and achieved full-year digital revenue of over \$2 billion, with new technology platforms growing at a CAGR of 60% since 2021.

ADNOC EXPANDS ITS CARBON CAPTURE PORTFOLIO

ADNOC has taken 10.1% equity stake in Storegga to Advance Global Carbon Capture and Storage (CCS) Projects to become a lead investor in Storegga, a UK-based company focused on developing carbon capture and storage (CCS) projects worldwide.

The investment is made possible by ADNOC's initial allocation of \$15 billion towards low-carbon solutions and decarbonization technologies.

ADNOC has set a target of achieving a carbon capture capacity of 10 million metric tons per annum (MMtpa) by

2030, which is equivalent to taking over 2 million internal combustion vehicles off the road.

This marks ADNOC's first international equity investment in carbon management and supports the company's strategy to leverage partnerships and technology to accelerate decarbonization efforts.

Storegga has a portfolio of CCS projects in the UK, US, and Norway. In the UK, Storegga is leading the development of the Acorn CCS project, which has the potential to store up to 10 MMtpa of CO2 by 2030.

The company has also been granted a license, in partnership with others, to develop the Trudvang CCS project in Norway. Additionally, Storegga is working on several CCS opportunities in the US, with the Harvest Bend CCS project in Louisiana being the most advanced.

Meanwhile, ADNOC operates Al Reyadah, the world's first commercial-scale operation to capture and store CO2 from the steel industry, with a capacity of 800,000 tons per year.



EXXONMOBIL EXITS WEST QURNA 1 OILFIELD IN IRAQ, HANDING OVER OPERATIONS TO PETROCHINA

US energy giant ExxonMobil Corp. has officially exited the West Qurna 1 oilfield in southern Iraq and handed over its operations to PetroChina as the lead contractor.

The handover was marked by a meeting between senior Iraqi oil officials and executives from ExxonMobil, PetroChina, and Basra Oil Co. on Monday at the West Qurna 1 field near Basra.

PetroChina now holds the largest stake in the field after the departure of Exxon.

Last year, Iraq and Indonesia made a significant move in the energy sector by acquiring ExxonMobil's stake in West Qurna

1. This sale agreement was signed by Iraq's state-run Basra Oil Co. (BOC) and Indonesia's state-owned Pertamina, with Iraq acquiring 22.7% and Indonesia acquiring 10% of Exxon's stake. This move has served the interests of both parties, as stated by Mohammed, and is expected to boost production in the coming years.

West Qurna 1, one of the world's largest oilfields, currently produces around 550,000 barrels per day (bbl/d). With recoverable reserves estimated at more than 20 billion barrels, it is a valuable asset for both Iraq and Indonesia. The acquisition of Exxon's stake will give them a larger share in this

lucrative oilfield and increase their control over its production.



In order to further increase production, Iraq and PetroChina have plans to boost production to 600,000 bbl/d by the end of 2024.



NATURAL GAS

Fueling Egypt's Journey to Energy Transition

BY JOLLY MONSEF, MARIAM AHMED & ALAA AL MASRY

Key Takeaways

6.6 bcf/d
Average Natural Gas Production in FY 2022/23

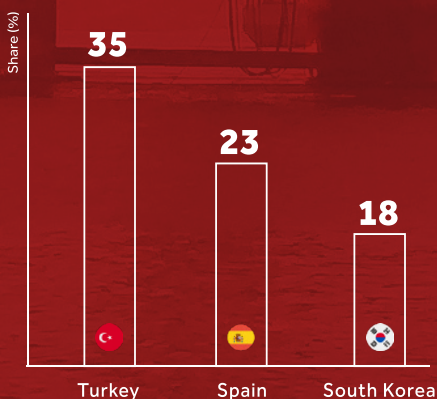
LARGEST PRODUCING AREA

76% Mediterranean Sea

ELNG and DLNG Plants Exports in 2023

Volume (bcf)	293
Cargoes	80

Top Three Egypt's LNG Importers in FY 2022/23



56.85% Electricity Share from Natural Gas Consumption

Egypt intensifies its focus on energy transition and decarbonization, and using cleaner, less carbon-intensive, and more environmentally friendly fuels. In accordance with that, Egypt's oil and gas sector put a comprehensive strategy for energy transition and enhancing decarbonization. In this regard, natural gas increasingly became Egypt's first fuel choice to

complement its renewable energy generation. Achieving self-sufficiency and recent discoveries paved the way for natural gas to be a reliable source for power generation plants in Egypt. It became the most important fuel in Egypt's energy mix, accounting for 55% in 2022, according to the 2023 Statistical Review of World Energy Report.

This report covers a comprehensive overview about the natural gas market in Egypt, highlighting production, consumption, main discoveries, and exports. Furthermore, it reflects the efforts made by the state to enhance decarbonization through exploiting natural gas.

Natural Gas Market Overview in FY 2022/23

Natural Gas Production

Egypt's natural gas produced from all fields averaged around 6.6 billion cubic feet per day (bcf/d).

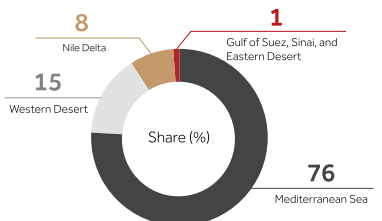
The year witnessed drilling and commencing production from 36 producing wells including 33 development wells and 3 new wells from projects, according to the Egyptian Natural Gas Holding Company (EGAS) Annual Report 2022/23.

6.6 bcf/d
Average Production

6.2 bcf/d
Average Sales Gas Production

Areas' Share in Total Production

The Egyptian natural gas production scores in six main regions: the Mediterranean Sea, the Western Desert, the Nile



Natural Gas Discoveries

Moving on to exploration activities, 3D seismic surveys in Nour Offshore, N. Rafah Offshore, and Nargis Offshore areas were carried out with a total of 3,964 km².

As a result of these successfully implemented surveys, Egypt witnessed 18 natural gas discoveries in different regions in FY 2022/23, according to EGAS Annual Report 2022/23.

Discoveries

2 Mediterranean Sea	3 Nile Delta	13 Western Desert
----------------------------	---------------------	--------------------------

Added Reserves

1.98 tcf Natural Gas	17.39 mmbl Condensates
-----------------------------	-------------------------------

Nargis Discovery in 2023

Location	Eastern Mediterranean Sea
Reserves (tcf)	2-2.5
Operator	Chevron

Sectors' Reliance on Natural Gas

Natural gas local consumption reached about 2,136 bcf with an average amount of 5,853 mmcf/d. The electricity sector is the largest gas consumer, where natural gas consumption reached about 1,214.5 bcf, representing 56.85% of total local natural gas consumption. This is followed by the industry sector which represents 25% of total consumption, according to EGAS Annual Report 2022/23.

Exports

Egypt put itself among the world's leaders in liquified natural gas (LNG) and Natural gas exports. The State allocated investments heavily in transnational pipelines and LNG terminals. It seeks to become a regional energy center for the neighboring countries, through the two liquefaction plants located on the Mediterranean in Idku and Damietta.

In FY 2022/23, most of Egypt's LNG went to Turkey as it is the largest LNG importer with an average amount of 1,388 million cubic feet (mmcf), followed by Spain which reached about 903 mmcf, in addition to South Korea, Netherlands and China, with an average amount of 697 mmcf, 522 mmcf and 457 mmcf respectively, as the five largest importers, according to Central Agency for Public Mobilization and Statistics (CAPMAS).

Natural Gas Exports



To **Jordan**
Through **Arab gas pipeline**
Volume (bcf) **19.85**

LNG Exports



	Cargoes	Volume (bcf)
ELNG	39	139.7
DLNG	41	153.2

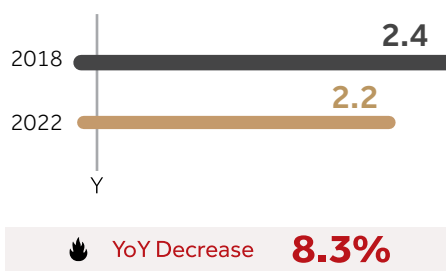
The Role of Natural Gas in Decarbonization

Gas Flaring

Egypt aims to significantly expand zero-flare projects, aligning with the World Bank's Zero Routine Flaring by 2030 (ZRF) initiative. The oil and gas sector has successfully implemented 30 zero-flare projects. This has contributed to reduce emissions by 1.4 million tons per year (mmt/y) of CO₂ equivalent and saved about \$200 million annually, according to the Ministry of Petroleum and Mineral Resources (MoPMR).

Moreover, the intensity of gas flaring declined to 9.50 cubic meters per barrel (m³/bbl) in 2022, a 2.4% decrease compared to 2018, according to Global Gas Flaring Data from the World Bank (WB).

Natural Gas Flaring Volume (bcm)



Source: 2023 Statistical Review of World Energy Report

Emissions Reduction

The sector adopted a clear vision and action plan for curbing emissions from all crude oil and natural gas activities. This vision focuses on expanding the use of natural gas as a low-carbon transitional fuel, optimizing production processes, and boosting energy efficiency and decarbonization.

Co₂ Annual Emissions Reduction in 2023

Volume (mmt)	Through
0.9	Delivery of Natural Gas to about 14.5 million Residential Units
+2	Converting about 534,000 Cars to Run on CNG*

*Since Starting the Activity



The natural gas market in Egypt has witnessed significant expansion, fueled by remarkable discoveries. Committed to the global energy transition, Egypt aims to rely on diverse energy sources including using natural

gas as a cleaner transition fuel. Natural gas acts as a powerful engine for Egypt's energy transition, bringing the gap until renewables take over.

EGYPT WALKS THE PATH TOWARDS SUSTAINABLE ENERGY

BY SARAH SAMIR

The current energy landscape in Egypt is undergoing a significant transformation, with a growing focus on driving energy transition, ensuring energy security, and decarbonization. The Egypt Energy Show (EGYPES 2024) is a key event that highlights these priorities. Egypt is positioning itself as a regional energy hub, with a focus on climate-conscious strategies, including decarbonization and methane reduction. This comes as the Ministry of Petroleum and Mineral Resources (MoPMR) is working on diversifying energy sources and achieving sustainable development.



Energy Security in Egypt

Egypt faces several energy security challenges, including a growing domestic demand, reliance on natural gas for electricity generation, and the impact of climate change on energy supply and demand. To address these challenges, Egypt has been exploring various energy sources, such as solar, wind, shale gas, and Hydrogen.

Accordingly, Egypt is working to enhance energy security by diversifying the energy mix, increasing the use of renewable energy, and developing infrastructure to support the transition to a more sustainable and diverse energy sector. The country's efforts and initiatives include boosting the share of renewable energy in its energy mix, with a target of 42% of total electricity production by 2035. Moreover, the country adopted the National Climate Change Strategy (NCCS) 2050, which aims to integrate climate resilience into infrastructure projects and diversify power generation technologies. The NCCS 2050 proposes integrating climate resilience into infrastructure projects and diversifying power generation to reduce the country's dependence on fossil fuels.

Decarbonization Efforts

Egypt is exerting efforts to transition towards low-carbon energy sources, such as solar and wind power, and is exploring the potential of green hydrogen production to reduce reliance on hydrocarbons and meet its decarbonization goals. These efforts are crucial for Egypt to ensure energy security, meet its environmental targets, and contribute to the global transition to a more sustainable energy future.

As part of its Vision 2030 sustainable development strategy, Egypt aims to reduce greenhouse gas (GHG) emissions in the energy sector by 10% by 2030. Meanwhile, the MoPMR is committed to advancing its decarbonization agenda and collaborating with all stakeholders and partners to advance energy transition. This comes as the MoPMR has been sealing several methane management project agreements as well as green hydrogen Memoranda of Understanding (MoUs) and contracts. "The oil and gas sector is working to implement decarbonization projects to progressively lower the carbon footprint (carbon intensity) of the sector. The sector developed a six-year decarbonization projects plan with expected reductions of 8 million tons (mmt) of CO₂ equivalent with investments reaching \$600 million," Minister of Petroleum and Mineral Resources, Tarek El Molla, told Egypt Oil & Gas in October 2023.

Egypt has further been encouraging the use of natural gas as a cleaner source of energy, and as a significant step towards energy transition. During 2023, the total number of housing units benefiting from natural gas across the country increased to about 14.5 million housing units, which raises the number of beneficiaries of the urban natural gas service to more than 62 million citizens. Additionally, MoPMR adopted a plan for the rapid spread of stations for fueling cars with compressed natural gas (CNG) on various roads and axes throughout the Republic, which contributed to a significant increase in the number of stations to nearly 1,000 stations serving about 534,000 gas-fueled cars.

Driving Energy Transition

As Egypt thrives toward a low-carbon future, the country is hosting the Egypt Energy Show (EGYPES 2024), which aims to accelerate the energy transition in Egypt. The event is supported by the Egyptian Ministry of Petroleum and Mineral Resources and will take place from February 19-21, 2024, at the Egypt International Exhibition Center in Cairo. The overarching theme of the event is "Driving Energy Transition, Security, and Decarbonization."

EGYPES 2024 will host a multifaceted conference program, including the Future Energy Zone and Theatre, which will leave no aspect of energy transition unexplored. The event is expected to welcome over 35,000 attendees and 2,200 delegates from across the energy value chain to connect and explore business-critical avenues for growth.

The EGYPES 2024 conference and exhibition will further empower innovation as it features the CLIMATECH Challenge platform. The CLIMATECH Challenge serves as a global platform for start-up companies to introduce their business models and technological solutions in front of an influential judging committee panel. The platform is set to highlight pioneering start-ups that have cutting-edge solutions to accelerate the energy transition and features the role played by energy innovators in approaching net-zero targets.



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BRIDGING THE GAP:

CAN NATURAL GAS HELP US CROSS OVER TO RENEWABLES?

BY RANA ALKADY

For many years, natural gas has been heavily promoted as a useful bridge to renewable energy instead of coal. The idea is that natural gas can replace "dirtier" petroleum products like coal and, in certain situations, oil, as solar power plants and turbines for wind energy are constructed.

Since natural gas possesses a smaller carbon footprint than coal yet calls for similar centralized infrastructure and can be built in a short period of time, it has been widely marketed as a transition fuel for nations that rely on coal for their electricity needs. Gas was listed as a link for cleaner energy in the European Commission's environmentally friendly investment handbook previously, which infuriated environmental activists prior to the Russian attack on Ukraine.

General Overview

For nations ranging from Ghana, Senegal, and Mozambique to Algeria and Egypt, natural gas is an abundant and priceless asset. In order to accelerate the energy transition, an amalgamation of renewable energy sources along with less polluting fuels, like natural gas, is crucial, based on a report by the United Nations Economic Commission for Africa. African society has historically relied on biomass, coal, and oil.

In a previous publication this past year, the G20 noted that natural gas provides endurance and supply security in the midst of unfavorable weather and uncertain markets, accounting for a significant portion of seasonal energy demand in many countries. Together with this immediate function, the group proposed that natural gas could align with a net-zero route in the years to come through a broad implementation of CCUS technology and hydrogen production.

Consequently, considering the scope and pressure of the decarbonization obstacle, expanding up CCUS will be essential for both energy production and heating. It is not probable that natural gas will be eliminated anytime soon, but it will still be utilized to generate hydrogen and speed up the deployment of CCUS until hydrogen generated from nuclear or renewable energy sources can be used profitably as a fuel for heating.

It additionally reflects an opportunity for swift triumph for lowering emissions, given the length of time it takes to carry out enhancements to energy efficiency and ramp up new renewables. If the corresponding costs and laws support the potential, moving from coal to currently operating gas-fired plants could reduce CO₂ emissions in the power industry by up to 1.2 gigatonnes. By doing this, CO₂ emissions from the energy sector would be reduced globally by 10% and overall by 4%; an opportunity not to be missed.

Renewable Energy Cross-Over

By leveraging their unique qualities, natural gas and renewable energy sources can form a successful alliance. Now let's examine the advantages of integrating these two power resources.

With that, high levels of efficiency enable natural gas power plants to react swiftly to changes in the demand for electricity. In order to balance the sporadic nature of alternative power sources, they may rapidly increase up or down their output. When renewable energy sources lack the capacity to produce electricity, natural gas's adaptability guarantees a steady supply of power, stabilizing the grid and offering dependability.

Natural gas produces a lot less greenhouse gas than coal and oil, even though it is still a fossil fuel. We can drastically cut carbon emissions in the power industry by combining natural gas with renewable energy sources.

Additionally, Natural gas is a plentiful and reasonably priced energy source. Because of this cost effectiveness as well as the declining costs of renewable energy sources like solar and wind, investors and consumers have a greater number of choices. The combination of the two energy sources can provide financial benefits that will quicken the world's shift to renewable energy sources.



Moreover, the variability in renewable energy sources' generation patterns may pose challenges to the grid's dependability. Natural gas power plants and renewable energy sources can be combined to ensure a stable and dependable electrical grid. Natural gas plants provide a backup option in the event that renewable energy sources are unable to provide all of the required power. This reduces the likelihood of disruptions and enables efficient power conveyance to clients.

Thus, a poor bridge would result from a protracted or sluggish move away from other fossil fuels and from high gas

infrastructure expenditure. With advantages for the environment and air quality, natural gas has already supplanted coal as the preferred fuel for the generation of electricity in numerous nations. In an increasing number of places, renewable energy sources like solar, wind, and other renewable technologies are becoming even more cost-effective alternatives to gas. Since gas boilers can be turned on immediately, whereas coal-fired power plants take a long time to get started, gas has an important role in the energy transition as a reserve to renewable-based power systems.

BY LEVERAGING THEIR UNIQUE QUALITIES, NATURAL GAS AND RENEWABLE ENERGY SOURCES CAN FORM A SUCCESSFUL ALLIANCE.

NATURAL GAS POWER PLANTS AND RENEWABLE ENERGY SOURCES CAN BE COMBINED TO ENSURE A STABLE AND DEPENDABLE ELECTRICAL GRID.

HEAT EXCHANGERS IN OIL AND GAS: A CRITICAL COMPONENT FOR ENERGY EFFICIENCY

BY FATMA AHMED

The oil and gas industry is focusing on exploring new energy efficiency methods while seeking to save costs and reduce the harmful emissions released during operations. Since heat is essential for the oil and gas industry, heat exchanger technology is one of the modern innovations that can help the industry's operators achieve this target. It has a critical role in improving energy efficiency among all production processes of the oil and gas industry as well as ensuring the safety and reliability of operations.

Wider View on Heat Exchangers Equipment

According to an article published by IFSolution, a heat exchanger is a device that is designed to transfer heat between two media. It explained that "one medium is process fluid and the other is a heat-absorbing coolant." These media can be gas or liquid or a gas or a combination of both, an article published by IPIECA, elaborated. The media may be separated by a solid substance to avoid mixing, or it may be in direct contact but the majority of the heat exchanger types have separating barriers between them. This equipment removes the heat produced during the industrial process to cool it and prevent any up-normal rise in temperature during production. It also can be used to produce heat for certain production processes when a higher temperature is needed.

Heat Exchanger Classification

Heat exchangers are classified into three categories according to the method of heat exchanger interaction, the physical state of fluids and the design and flow of the heat exchanger fluids. The direct heat exchanger method places the fluids in direct contact within a tubing system. This method is not preferred when the two fluids are volatile, which is risky. The other method is the indirect contact exchanger, which separates the two fluids with a barrier.

Also, the types of heat exchangers may vary according to the state of the fluids; such as gas-solid exchangers, liquid-gas exchangers, and liquid-solid exchangers. The last classification for the exchangers depends on flow and form of fluids; these include parallel flow exchangers, counter-flow exchangers, and cross-flow according to the direction of the flow between the two fluids.

Paving the Way for Oil & Gas Efficient Operations

As mentioned previously, heat exchanger technology plays an effective role in the oil and gas industry. It provides several positive functions within the operation processes to ensure its efficiency and keep it safe. According to an article released by the Mechanical Engineering World via LinkedIn platform, this technology enables temperature control by regulating temperatures transferred between the different fluids to be implemented at suitable temperature ranges. Additionally, it enables condensation and vaporization processes needed during industrial operations.

Also, heat exchangers allow operators to achieve energy efficiency and reduce costs accordingly, as they facilitate the recovery and

reuse of waste heat and the heat produced from byproducts of oil and gas operations. Moreover, heat exchanger equipment can be used to cool down some operations to keep the stability and safety of equipment and products, especially during refining operations and natural gas liquefaction. Another benefit of heat exchangers for oil and gas is that they are designed with materials resistant to corrosion which reduces maintenance costs and time.

The most important thing is that it helps in reducing harmful emissions and achieving sustainability goals as it enables operations to be carried out with less energy consumption in addition to facilitating the recovery of waste heat. Besides that, it enables process integration by transferring heat between the different phases of the production process.

Applications in Oil & Gas

There are different types of the heat exchangers in the oil and gas sector, which can be used in different phases of the operation. One of these types is Shell and Tube Exchangers, which consists of a group of tubes covered with a pressurized outer shell. This equipment channels a fluid mainly from the hot process through the smaller tubes and the other through the outer shell. This type is the most prevalent in oil and gas industry, according to an article released by offshore technology.

Another type is the Evaporators and Boilers, which go through two phases of heat transfer process and changes the physical state of one or more

of the fluids. Also, there are Double Pipe heat exchangers, which are comprised of two concentric pipes in which a smaller diameter pipe is included inside a larger one which brings two fluids closely, an article issued by IFSolutions mentioned. Moreover, Plate Heat Exchangers, consist of several thin plates, are set together in stacks that create channels where fluids interact.

Also, there are several applications for heat exchangers in the petroleum industry such as hot oil/heat transfer systems, fuel gas conditioning skids, cold ammonia flow control, lube oil systems and SCR units. Other applications for heat exchangers include exchangers on utility fluids, exchangers on cleaning in place, production of hot water, fuel heaters and kettle, an article published by Barriquand stated.

In conclusion, advanced heat exchanger technologies hold immense potential to revolutionize the oil and gas industry. These innovations are not merely components; they are strategic enablers that drive progress across several key areas. These technologies play a critical role in achieving energy and operation efficiency, optimizing production, reducing costs, and achieving sustainability.

ADVANCED HEAT EXCHANGER TECHNOLOGIES HOLD IMMENSE POTENTIAL TO REVOLUTIONIZE THE OIL AND GAS INDUSTRY.





POWERING UP ENERGY EFFICIENCY IN THE OIL AND GAS INDUSTRY THROUGH LEVERAGING FINANCIAL TOOLS

BY NADER RAMADAN

Many energy experts would agree that a key factor in realizing the accomplishment of sustainable development goals (SDGs) by using all means possible to enhance energy efficiency both in the energy industry and in other sectors of the global economy. Financing the reforms that need to take place for energy efficiency to become a core aspect of the industry is one challenge, but creating a business environment and economy where energy efficiency can be maintained is another struggle. Financial sustainability of costly energy efficiency enhancements has become a central concern for oil and gas policy-makers and field experts as the global economy heads for more tumultuous times with the beginning of a new year. Yet, hope is not lost. With the right financial tools, economists can create strategies to ensure enhancing energy efficiency is cost-effective and does not hinder economic growth.

The first and most obvious financial tool that boosts the development of an energy-efficient market is investments, specifically to finance the capacity-building programs, technologies, and other essential activities that cultivate a better business where green policies can be prioritized adequately. Energy efficiency investments are essential for realizing carbon neutrality as experts insist that “in order to reach net zero by 2050, investment needs to triple by 2030. The European Union has identified a need to increase investment in energy efficiency by as much as EUR 260 billion per year for the period 2021-2030 to meet their 2030 target of a 40% reduction in emissions from 1990 levels and an energy efficiency target of 32.5%,” it said in a 2022 academic paper titled “Leveraging Financial Mechanisms for Increased Investment in Energy Efficiency” by Gray Bender. “The potential for investments in energy efficiency globally is estimated at \$221 billion, which includes both core investment and green premiums.”

The study also pointed out that oil and gas superpowers US, EU, and China by themselves represented an estimated 70% of global incremental investment in energy efficiency in 2015. These players occupy even larger portions of global investments in that field in today’s market. Currently, most funds to enhance energy efficiency are invested in the building sector, especially with the EU’s construction sector taking up to 80% of all energy efficiency investments and Europe’s economic superpower, Germany, France, and the UK,

having up to 90%. Policy-makers are now looking to allocate efficiency investments in parts of their individual economies, especially the industrial (petrochemical) and transportation sectors.

Blended finance mechanisms have also had a long history of success in the oil and gas industry, particularly in reducing risk and mobilizing private capital into investments as part of a comprehensive and effective financial strategy. It combines funding from public and philanthropic organizations in order to boost self-sustaining markets. According to Bender’s study, these “instruments can include concessional debt or equity where public and/or philanthropic finance is junior to private coinventors, guarantees and insurance to protect against private capital losses, preparation and design funding to support projects in becoming bankable, and technical assistance grants to add to the capacity of private finance.” An effective blended finance strategy should seek to create a positive impact on the environment and society and boost private capital while pushing to achieve positive financial returns. This is essential in building a sustainable energy efficient market even when funds from public and philanthropic organizations prove to be ineffective or insufficient.

No economist can deny the benefits of on-bill financing (OBF), which involves third-party financial organizations in providing funds to an energy project to finance various energy efficiency reforms and promote renewable

energy projects. These funds can be compensated using regular payments (similar to installments). This solution carries a significant advantage in terms of risk management since it involves lower non-payment risk because of the low rate of default on energy bills. Oil and gas company owners and project managers working in the field will be able to dodge capital costs and enjoy the endless benefits of a simplified repayment system.

In addition, Energy Service Agreements (ESAs) are convenient pay-for-performance models for work to be done with energy efficiency. It helps financially all development and construction costs for energy projects. Functioning almost like a loan, funds are paid back by the customers via service charge payments when actual energy is saved through the various energy efficiency measures that took place during the project.

Finances have always been a fundamental part of the struggle to realize a greener future for the world economy because, without monetary sustenance, dreams about energy efficiency in the oil and gas industry would be considered fantasies. With the advent of more sophisticated tools and other investment technologies that made the market more inclusive, building a more energy-efficient future is something that is within humanity’s grip and will drive economic growth substantially for the years to come.



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ESCALATION ECHO: GAZA WAR SPREADS FIRE TO RED SEA

BY IHAB SHAARAWY

As Israel's war on Gaza pushes on, fears of regional escalation are growing, with multiple nations and armed groups targeting each other's territories and common waters, and the United States boosting its military assets in the region.

The escalation in the Gaza conflict has triggered a ripple effect of violence far beyond its borders. While the world watched in horror as Israeli airstrikes leveled Gaza, news about attacks and casualties linked to the conflict came from Lebanon, Syria, and Iraq.

However, another battlefield that emerged in the Red Sea is threatening the lifeblood of global trade. The Houthis, a Yemeni rebel group aligned with Iran, have declared war on Israel, deploying a devastating new tactic: targeting commercial shipping in one of the world's most crucial waterways.

The Red Sea, a narrow artery connecting Europe to Asia and East Africa, sees a daily flow of vital goods. At its southern tip lies the Bab el-Mandeb strait, a chokepoint barely 20 miles wide that serves as the gateway to the Suez Canal and beyond. This strategic bottleneck has become the Houthis' hunting ground.

Initially targeting vessels flagged for Israel, the Houthis have steadily broadened their scope, attacking ships from countries supporting Israel, which puts US and British ships, for example, under real threat.

The consequences are dire. US and British forces have retaliated with airstrikes, but experts fear the Houthis' resolve will hold. Their experience weathering five years of Saudi-led airstrikes suggests they are prepared for a long game of disruption supported by Iran's weaponry and their fortified geographical location.

This disruption in one of the most important waterways has global repercussions. The pandemic's port logjams and the Ukraine war have already strained supply chains and the Houthi attacks are another blow that can add insult to injury. According to Fitch estimates, prolonged conflict could see global goods inflation climb by 2%, adding fuel to the fire of rising prices.

The oil market is particularly vulnerable. While alternative routes around Africa exist, they add precious days to journeys, tightening supply and potentially driving up prices. Disruption to the Strait of Hormuz, another key oil artery, could have even more dramatic consequences.

The Red Sea is a critical route for oil shipments, accounting for about 12% of global oil seaborne trade. The attacks in the Bab el-



Mandeb strait have primarily impacted oil shipments bound for Europe and Asia. Some major oil companies, including BP, Shell, and QatarEnergy, have halted transit through the Suez Canal, forcing shippers to reroute around Africa. This temporary adjustment may slightly tighten the oil and gas markets, but it is not anticipated to have a significant impact on prices.

The domino effect can extend beyond oil. European chemical markets, already weakened by the economic slowdown, face further strain from delayed Red Sea shipments. Fertiliser exports, though largely unaffected by attacks so far, face higher freight costs, squeezing profits and potentially impacting food security.

News reports have already talked about idled car factories in Belgium and Germany while Spring fashion lines are delayed at a popular British department store due to Houthi attacks. Many companies around the world declared that they don't know when to expect parts from Asia.

One day after the United States and the United Kingdom, with the support of other countries, launched airstrikes across multiple parts of Yemen in response to Houthi attacks on vessels, UN Secretary-General António Guterres has urged countries to avoid an escalation in the situation in the Red Sea.

As the Secretary-General reiterates that attacks against international shipping in the Red Sea area are not acceptable, he stresses the need to avoid acts that could further worsen the situation in Yemen itself.

Many other countries adopted a similar stance including China, which called for an end to the harassment of civilian vessels to safeguard unimpeded global industrial and supply chains and international trade order.

However, Beijing noted at the same time that the UN Security Council has never authorized any country to use force against Yemen, adding that it is necessary to refrain from taking any actions that will "add fuel to the fire" in the Red Sea and raise the overall security risks in the region.

Russia, in the meantime, condemned the United States and Britain for their military strikes on Yemen, which Moscow said

amounted to an irresponsible adventure that risked sowing chaos across the entire Middle East.

Russia said it shared the concerns of Saudi Arabia and others in the region over the strikes. Riyadh called for restraint and "avoiding escalation" after the strikes and said it was monitoring the situation with great concern.

The Houthi attacks, born from the ashes of the Gaza conflict, are a stark reminder of the interconnectedness of our world. A seemingly distant war can have devastating consequences for lives and economies far beyond the battlefield. As the conflict drags on, the question remains: can the international community find a path to de-escalation before the Red Sea becomes a graveyard of global trade? The answer is offered by the Houthis themselves; stop the Israeli aggression on Gaza.

The Houthi attacks, born from the ashes of the Gaza conflict, are a stark reminder of the interconnectedness of our world. A seemingly distant war can have devastating consequences for lives and economies far beyond the battlefield.



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Baker Hughes 

ACCELERATING OIL AND GAS PRODUCTION

WITH THE DEPLOYMENT OF EARLY PRODUCTION FACILITY MODULAR



An Early Production Facility (EPF) serves as a modularized integrated solution for expediting oil and gas production, allowing customers to initiate production swiftly. The timely commencement is crucial for realizing commercial advantages. Many oil and gas operators favour EPFs for the development of marginal fields or to rapidly generate revenue from fields before establishing a permanent facility. This approach offers both financial and operational advantages in the realm of oil and gas production.

TAQA offers a comprehensive solution for an EPF package, encompassing various equipment categories:

- » **Gas Treatment:** This includes Gas Compression, Gas Sweetening units, Gas Dehydration units, Dew Point Control units, and Gas Metering systems.
- » **Oil Treatment:** The package involves Three Phase Separators, Crude Oil Heaters, Electrostatic Desalters/Heater Treaters, Crude Stabilization units, Crude Storage, Metering, and Pumping Units.
- » **Produced Water:** TAQA incorporates CPI Separators, De-oiler Hydro cyclones, Induced Gas Flotation (or DGF/DNF), and Nutshell Filters.
- » **E&I Package:** This features an Integrated Control and Monitoring system (PLC) and ESD system.
- » **Structural Modules:** Utilizing modularized skids for convenient transportation.
- » **Plant Utilities:** This includes power generation, instrument air packages, fire water systems, fire and gas detection, flare systems.

TAQA optimizes the process by sourcing process equipment from existing inventory,

configuring it offsite, and requiring minimal on-site construction for piping and ancillaries during installation.

Moreover, TAQA provides additional value by offering EPFs on either a lease or sale basis, showcasing over 30 years of experience with production facilities in more than 20 countries.

The standard scope of a TAQA Early Production Facility (EPF) project encompasses engineering, procurement, construction, commissioning, operation, and maintenance.

In terms of engineering, TAQA covers various disciplines, including process, instrument and control, electric, piping, mechanical, and civil. Throughout detailed engineering, TAQA delivers all necessary outputs to meet client expectations, ensuring that the facility complies with required product specifications. The engineering depth allows for detailed HSE studies (HAZOP, HAZID, SIL studies) to guarantee safe facility design and operation.

Regarding procurement, TAQA aims to maximize the use of available equipment to minimize facility delivery time for swift cash flow. Special process equipment follows a procurement cycle ensuring timely delivery meeting specified requirements.

The construction phase adheres to a modular concept, fabricating skids and pipings offsite

to reduce onsite construction and installation time. Minimal civil work is required, expediting construction for fast-track commissioning.

During pre-commissioning and commissioning, a detailed documented procedure is prepared. Following mechanical completion, activities commence based on the prepared procedures, with all involved parties signing off. Fluid flow begins, and operational activities ensure the delivery of the final on-spec product.

In terms of operation and maintenance, a well-experienced, trained, and qualified personnel operate the EPF facility safely, adhering to all HSE rules and regulations. Scheduled product analysis and daily production reports are conducted, and planned inspection preventive maintenance follows the maintenance schedule, complying with company, client, and international HSE standards.

TAQA has successfully implemented EPFs across multiple countries in the MENA Region and East Africa, achieving a production rate exceeding 2 million barrels per month in specific countries. Notably, the TAQA EPF in Kenya marked a historic milestone as the country's first oil production facility. The inauguration ceremony was graced by the presence of the President of Kenya, underscoring the national-level benefits that EPFs can bring.

The EPF is adept at processing highly intricate well fluids, ensuring the attainment of final product specifications with minimal environmental impact and utilizing the least possible equipment. Particularly in fields dealing with heavy oil possessing an API less than 10, the EPF solution proves uniquely advantageous. This presents a financial gain, considering that such complex crude would necessitate a more extended timeline if produced through a conventional Engineering, Procurement, and Construction (EPC) project.

In certain scenarios, EPF projects boast an exceptional timeline, enabling oil production within a mere two months from contract award, all while upholding stringent Health, Safety, and Environment (HSE) standards. This rapid turnaround leads to swift cash flow from previously abandoned wells in remote areas.

In conclusion, the TAQA EPF concept is recognized for its simplicity and ease of implementation, resulting in immediate benefits like accelerated oil production and rapid cash flow upon adoption. As a leading global supplier, TAQA aims to expand its EPF capabilities to new markets.





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MASTER OF THE SEAS:

IMPRESUB MAKES THE NEXT GREAT LEAP IN MARINE SERVICES GLOBALLY AND IN EGYPT

With more than four decades of experience, Impresub's long history as a company that operates in Egypt has witnessed many achievements and milestones, marking the company's significantly positive contribution to the Egyptian economy. Yet, that only one part of an ambitious global expansion strategy.

For years, the company has established itself as a trusted provider of comprehensive subsea services. Their offerings span marine surveys, remotely operated vehicle (ROV) intervention, air and saturation diving, subsea construction, Non-Destructive Testing (NDT), Inspection, Maintenance & Repair (IMR), post-trenching stabilization and protection, positioning services with ROV assistance, dam and lagoon maintenance with intervention capabilities, asset integrity and life assessments, search and salvage operations, inventory management systems, and ship/vessel crewing, management, and chartering.

Beyond the breadth of services, the company boasts a high-quality inventory and advanced digital solutions. This includes digital twin technology and 3D cloud underwater imagery, providing clients with unparalleled insights into their subsea assets.

However, the company's most significant achievement lies in its adaptability and global reach. Its ability to effectively restructure and operate in diverse locations around the world sets it apart from competitors, ensuring clients receive the expertise they need, wherever their projects may be.

Its success in Egypt has further amplified its triumphant entry, expansion and rapid gain in market share in the global market could not have been possible without its adoption of world-class QHSE best practices to preserve the environment and ensure the safety of one of the most important assets, its employees. Adapting global standards as part of the way the organization works, its equipment, and procedures all have highly credible DNV certifications and are 100% compliant with IMCA Guidelines. This is in addition to the fact that the Quality Management System is also certified by DNV Germanischer Lloyd in accordance with ISO 9001:2015. On a global scale, the company has been operating through its affiliated bases and branches in the Mediterranean, North and West Africa, the Middle East, as well as Central and South America.

The company's trenching services have significant attention worldwide in many different locations, including Tunisia, Italy, Brazil, and the Dominican Republic. This is due to the fact that it has gained extensive

experience, particularly in the field of pipelines and cable trenching. With its flawless track record along with its well-trained team of seasoned engineers and project managers, excellence in trenching has become a core concept in the company's policy and a fundamental business strategy that gives the organization the momentum it needs to invest in underwater technology.

In this particular area, the company is proud to have a rich amount of resources and operational capacities that go along well with its exceptionally dedicated human cadres. Their equipment and capabilities include but are not limited to (1) submarine burial and trenching equipment that be customized to cater to customer needs and project requirements; (2) the ability to design and manufacture PTMs that are compatible with a variety of different projects conditions/requirements with a highly seasoned global R&D team; (3) cutting-edge equipment that enables efficient interventions in deep and shallow waters, (4) high-pressure water jetting machines for loosening soil as well as mechanical trenching machine useful for dealing with cemented soils and rock formations that can be adjusted to work effectively under a variety of geological conditions; (5) PTMs that are fit a myriad of different cutting-edge sensors, tools, and other state-of-the-art technologies. To date, the company has trenched more than 1000 kilometers of pipeline on a global scale and approximately 700 km in the Egyptian part of the Mediterranean Sea.

Marine surveys have also played a significant role in the company's success to this day. Impresub offers a variety of different services under this category, including desktop studies, analogue and digital well site surveys, geophysical route, and area surveys; pre-engineering, pre-lay, and post-lay pipeline, cable and umbilical route surveys; seabed inspection surveys, as-laid and as-built surveys; shallow geotechnical investigations (including Grab samples, Gravity Corer, Piston Corer, Vibro Corer, and CPT), land topographic survey, environmental and oceanographic measurements, and data evaluation & processing (online/offline).

Using the company's world-class ROVs, it has attracted many clients with its ROV intervention services including subsea

structure, pipeline, cable, and umbilical inspection and monitoring; inspection repair & maintenance (IRM) of underwater pipelines, cables, platforms, and subsea structures; NDT, including Pulse Eddy Current (PEC); bathymetric and geophysical survey; as-laid and as-built surveys; providing trenching support and assistance for pipelines & cables to ensure seabed stabilization, free span correction, and sufficient protection; wreck inspection; seabed cleaning and removal of debris.

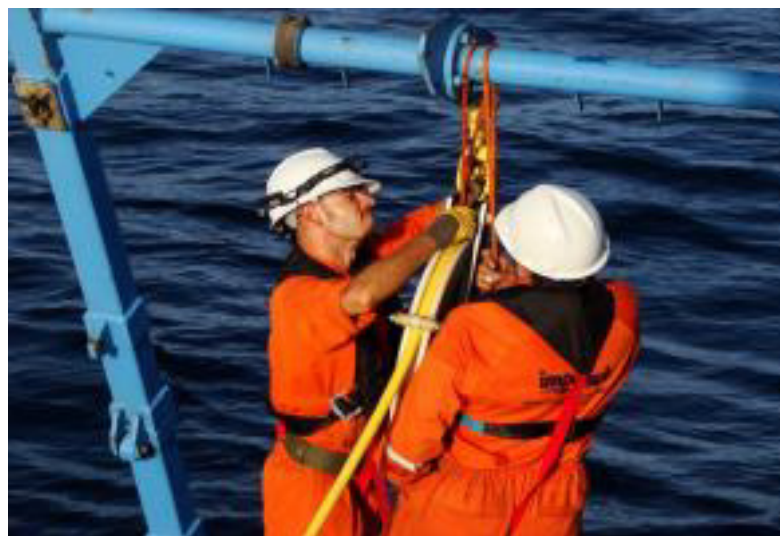
Air and saturation diving services are also undeniably one of the company's strong points as well, offering nondestructive testing (CVI, MPI, FMD, WTM, CP and much more), construction and installation of risers and "J" tubes; fiber optic and power cable installation; free-spans correction; protection features installation; redundant flowlines & SBM (SPM) recovery and maintenance; as well as FPSO Turret maintenance and hose changes.

Clients from around the world will also enjoy the rich variety of subsea construction and installation services offered at Impresub, which support flooding operations; the installation and removal of concrete mattresses/sand bags; platform jacket appurtenance installation (Spool, Risers, J-Tube, anodes, clamps and much more); installation of subsea pipeline features (anode, Smart Flange, clamps etc...); preparation and installation of hot-tapping umbilical installation; assistance with platform/template installation; assistance with subsea structures Installation (SSIV, PLEM, PLET etc...).



Regarding the Non Destructive Tests (NDT), the company is also proud to have its own patented tool the Subsea-PEC, to monitor corrosion status and it can also conduct average wall thickness measurements of inspection structures. the Subsea-PEC has the ability to take measurements without cleaning and removing the protective coating. For NDT, the company offers General Visual Inspection (GVI) Close Visual Inspection (CVI), Marine Growth Measurement (MGM), Magnetic Particle Inspection (MPI), Cathodic Protection Measurement (CPM), Wall Thickness Measurement (WTM), Flood Member Detection (FMD), Alternating Current Field Measurement (ACFM), and Underwater Inspection in Lieu of Dry-Docking (UWILD).

As a company that is constant restructuring to excel and expand globally, Impresub has also gained importance around the world for its innovative asset integrity cycle which always works in the client's interest to maintain asset integrity while saving the client money. The company's standard cycle includes monitoring, survey, assessment, actions, and evaluation. Asset managers and engineers around the world would also be impressed with its advanced digital twin and 3D cloud-based technology which is sure to give the company the momentum it needs to gain an even greater market share in other international markets in the years to come.





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SOLAR ENERGY SYSTEMS LAWS

Solar energy is the rays of light and heat emanating from the sun, and humans have exploited and benefited from it since ancient times using technological means that are constantly changing. Techniques for using solar energy include the use of thermal energy from the sun, whether for direct heating or as part of an automated conversion process for movement or electrical energy, or for generating electricity through photovoltaic phenomena using photovoltaic panels, in addition to architectural designs that depend on exploiting solar energy. These are technologies that can contribute significantly. In solving some of the world's most pressing problems today.

Nowadays Solar energy is considered to be one of the important solutions in the search for renewable and sustainable energy sources. As its popularity grows, so does the legal framework for its development, deployment and use. To control and regulate those energy systems some laws were established, covering land use, energy production, financial incentives and environmental considerations.

The conditions and controls for the exchange of electricity generated from solar cells are stipulated by producers and electricity distribution companies, after the approval of the Electricity Utility and Consumer Protection Regulatory Agency on the new terms and controls for the exchange and use of electrical energy produced from solar energy, known as the net metering system. The following are the new controls:

- The location of the station project that is contracted under the net metering system must be within the boundaries of the client's property.
- The contracting customer with a net metering system must not be licensed to distribute electricity for the same project.
- The total installed capacity of the solar energy stations connected to the network of one distribution company and contracted with a net metering system shall not exceed 1.5% of the maximum load of the distribution company registered with the metering meters during the fiscal year preceding the contract.
- Setting a maximum limit for the total capacity of solar energy projects that will be contracted under the net metering system throughout the Republic after the entry into force of these rules (provided that the total capacity does not exceed 300 megawatts, including the currently existing capacities) as follows: 125 megawatts for capacities less than or equal to 500 kilowatts.

100 megawatts for capacities greater than 500 kilowatts and up to 20 megawatts.

- The installed capacity of the station

- contracted under a net metering system - shall not exceed the maximum customer consumption load during the fiscal year preceding the date of commercial operation of that station.
- The total solar capacity contracted under the net metering system and owned by any licensed entity or one of the distribution company customers and linked to the distribution networks shall not exceed 25 megawatts, with a maximum of 20 megawatts for one project.
- In the case of connection to the medium voltage network, an additional study must be conducted by the distribution company or with the help of a third party to evaluate the impact on the network at the customer's expense, provided that it is ensured that there is no reverse current feeding the transmission networks of the Egyptian Electricity Transmission Company or one of its customers in any area. In any case.
- The surplus energy produced from the contracted solar station with a net metering system is accounted for annually, after settling the customer's consumptions at the end of June of each calendar year, at the energy purchase price (piaster/kWh) according to the last contracted purchase price between the Egyptian company. To transmit electricity and produce solar energy.
- The customer pays a fee to integrate the produced energy (in exchange for integration), which represents the cost of integrating renewable energies into the network (according to its voltage), determined by the agency and reviewed and adjusted periodically.

Documents required to connect a solar power station owned by a qualified company with a capacity greater than 500 KW and up to 20 MW:

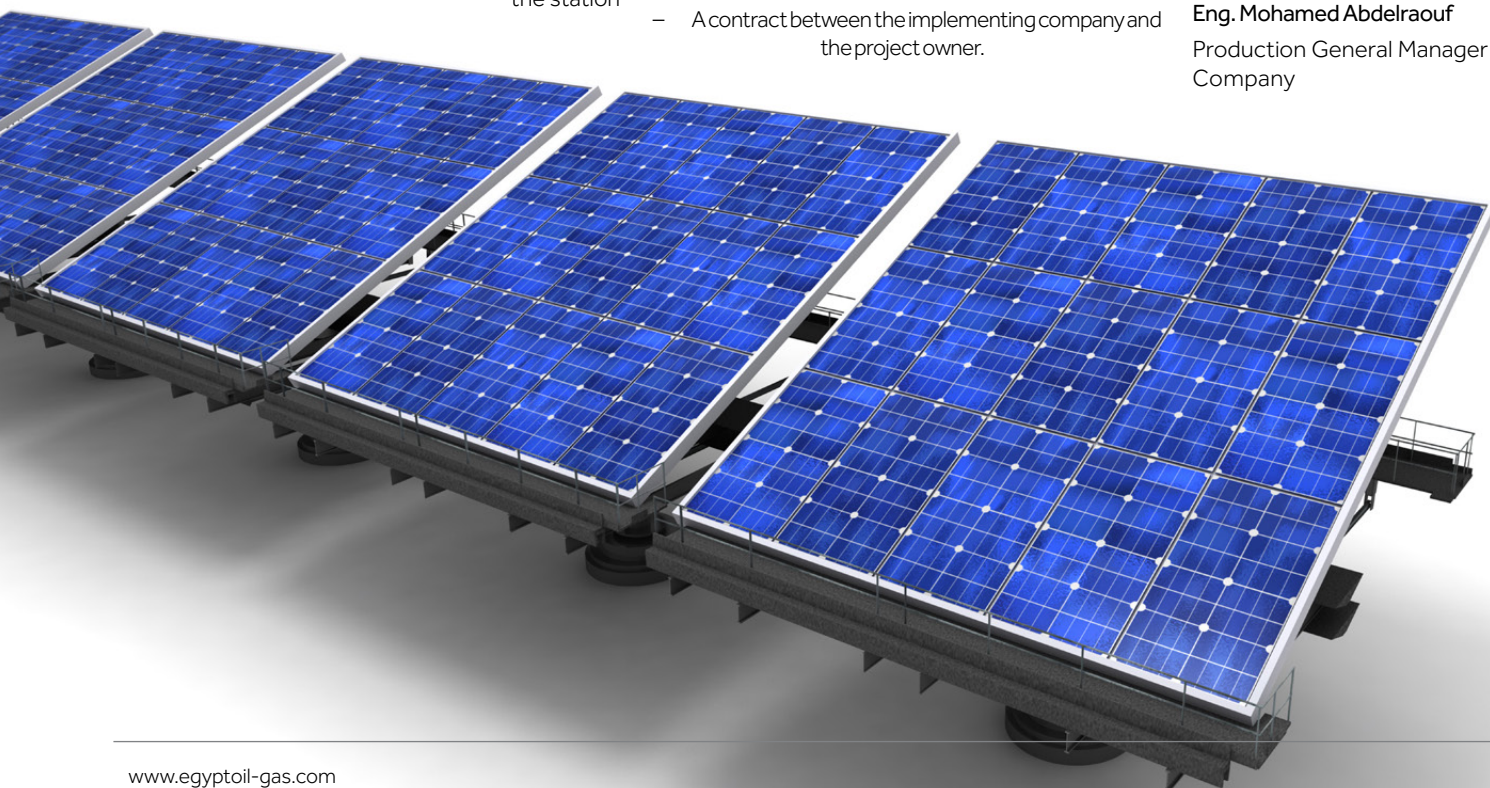
- The company's qualification certificate should be issued by the New and Renewable Energy Authority.
- Electricity production license issued by the Electricity Utility and Consumer Protection Regulatory Authority.
- A contract between the implementing company and the project owner.

- A copy of the national ID card, tax card, or commercial registry of the project owner.
- A copy of the tax card and commercial register of the implementing company.
- A copy of an electricity receipt
- A diagram for installing solar cells at the project site is required to be approved by a union engineer.
- Technical specifications of the project and a copy of the catalogs.
- Test certificates for project components.
- A study of the effect of the solar cell station on the grid voltage during times of no or low loads.
- A study of the effect of a solar cell station on the short-circuit current of the electrical network.
- A study of the maximum load of the solar cell station, which will be exported to the network in times of no or low loads.
- A study of the effect of a solar cell station on the short-circuit current of the electrical network.
- A study of the maximum load of the solar cell station, which will be exported to the network in times of no or low loads.
- Electrical diagram of the project and the proposed connection point.
- A declaration that he did not violate the Unified Building Law and that he bears civil and criminal liability for violating the building requirements for this project.
- Power purchase agreement between the eligible company and the customer.

Laws and regulations vary from one country to another. There is a wide variety of national regulations and laws depending on the conditions of each country. Most countries provide policy support for renewable energy, including solar, typically in the form of feed-in tariffs, tax incentives and net metering policies.

Eng. Mohamed Abdelraouf

Production General Manager at Khalda Petroleum Company



EGYPT STABILIZES ENERGY MARKETS AMID REGIONAL CONFLICT

Russia's invasion of Ukraine had both political and economic motivations, exacerbated by heightened tensions with the US and Europe. In response, severe economic sanctions have been taken against Moscow.

In response, the Russian government has decreased natural gas flows to the European Union (EU). However, Russian gas flaring did not increase, despite Russia being considered one of the top gas flaring countries with around 4.34 million cubic meters of gas being burned every single day according to the analysis by Rystad Energy.

As a result, in 2022, the EU significantly increased its liquefied natural gas imports from the United States, Angola, Norway, Qatar, and Egypt, and via pipeline from Azerbaijan and Norway.

Hence, Egypt became one of the EU's top natural gas suppliers, in addition, Egypt, alongside other countries, continued to reduce flaring in 2022.

On the other hand, Israel's 1,087 bcm of gas reserves in 2022 yielded 21 bcm of production, 9 bcm was exported to Egypt with a doubling of exports to Israel's main market, Egypt. This enabled Egypt to re-export about 6 bcm of LNG to Europe, helping it remain to be one of the EU's top LNG suppliers.

Since Israel's war on Gaza began, Tamar gas field's production significantly decreased, reaching around 350 million cubic feet per day (MMcf/d), down from over 850 MMcf/d before the eruption of hostilities, according to a report by the Egyptian Natural Gas Holding Company.

Nonetheless, Egypt is still struggling to provide the EU with the required LNG shipments, especially during the winter seasons to compensate for Russian gas cuts.

Moreover, Israeli gas flaring, methane, and CO₂ emissions started to extensively increase, which explicitly contradicts the world's vision of Net Zero Emissions by 2050 (NZE) Scenario.

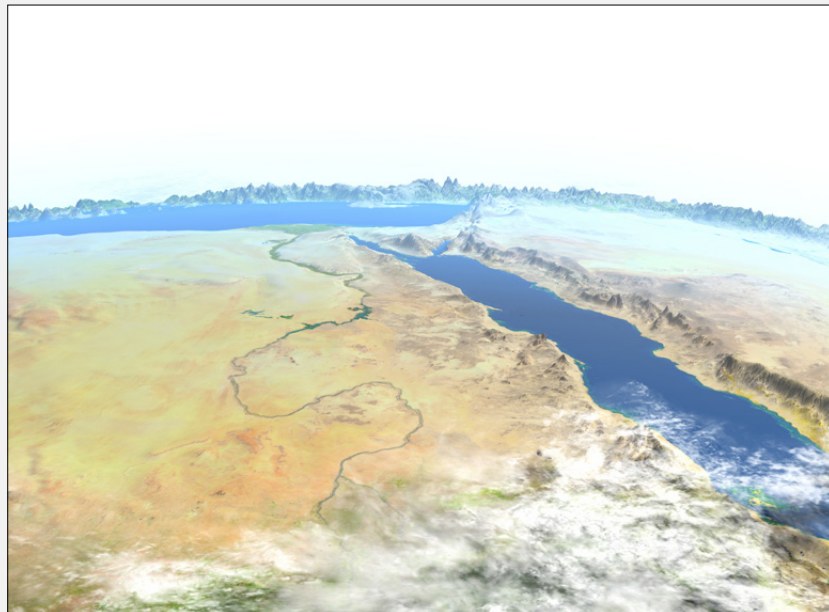
In conclusion, Israel's current military operations have significantly and negatively affected the natural gas market, especially LNG shipments to the EU, in addition to increasing the risk of CO₂ and methane emissions.

On the other hand, Egypt is sincerely committed to supplying the EU's need for LNG to satisfy their shortage in Russian gas supplies. This is in addition to its commitment alongside many other countries to reduce gas flaring in 2022 according to the World Bank's Global Gas Flaring Reduction Partnership (GGFR) Reports.

Dr. Mohammed Kamal Gaber

Process Section Head at PETROJET

EXPLORING THE REMAINING HYDROCARBON POTENTIAL OF THE GULF OF SUEZ



There are excellent publications on Egypt's geology without much industrial input regarding the remaining petroleum resources. This made our objective to integrate the industrial base with the geology to continue exploration efforts, protect the environment, and sustain the tourist industry. The Gulf of Suez has considerable remaining potential, the intent can be reached through integrated studies of petroleum geology with relevant academic studies. The Gulf of Suez has been the Crown Jewel of Egypt's petroleum production since 1886, after the Gemsa field discovery. Today, it is referred to as "An Ultra Mature Basin". We refute this nomenclature which does a disservice to Egypt and the foreign companies.

The Syrian Arc play and Wadi Araba extension: a similar in age plays of the Western Desert discoveries, the Upper Cretaceous reservoirs present at Abu Gharadig and Alemein fields are not found in the Northern Gulf, but the Jurassic and older reservoirs are likely to be present as seen in Gebel Maghara on Sinai. The Northern Gulf "Darag basin" has all the elements that made the giant Morgan field. Darag yielded only three onshore fields that have been in production since the 1950s; this is a strong indicator of an active petroleum system. The offshore part of the basin has potential volumes and may contain a giant Morgan.

The onshore Gebel Zeit sub-basin: The basin has four marginally economic onshore fields, several smaller offshore fields and the Hurghada field. The basin has a functioning petroleum system, and yet there is no serious exploration going on there. The Hurghada field was abandoned in 1967, produced 41 million barrels of oil, through primary depletion, is subject to more exploration. The Northern Red Sea has witnessed recent studies of the Gulf of Aqaba junction with the Gulf of Suez also suggest petroleum elements required for new discoveries are present in this area.

The conflicts between Egypt's petroleum activities in the Gulf of Suez, and the expanding tourism sector should not exist. Sharm El Sheikh and Hurghada are currently well known; similar sites are being developed further south in the Red Sea. In addition, high domestic interest is growing in the development of beach resorts such as El Gouna, Ras Sudr and Ain Sokhna. With the New Administrative Capital, the rate of domestic use will rapidly increase. Therefore prudent to begin the policy level of discussion regarding the legitimate requirements of both vital economic sectors. The Los Angeles Basin of California is a working model for future mixed development of these two economic sectors.

The Metropolitan Los Angeles area has 13 million people, multiple beaches, excellent ocean views and mountains with extremely wealthy neighborhoods. It has been producing oil since 1890, currently producing 1.5 million barrels of oil/day and has 3.1 billion barrels of reserves. Clearly, the city has grown around its oil fields can be taken as a model.

Thomas E. O'Connor - New Venture & Business Development Advisor
Hany M. Helmy - Exploration Manager

Thomas Petroleum Associates; Cairo, Egypt (TPA)



QUARTERLY INDICATORS

Egyptian Remittances



Share of Remittances from Foreign Cash Flow in FY 2022/23



Egyptian remittances dipped 2.17% in the first quarter (Q1) in the fiscal year (FY) 2023/24, compared to Q4 of FY 2022/23, reaching \$4.5 billion. This follows a sharp 29.9% decline compared with Q1 of the previous year. Remittances, the heaviest contributor to current private transfers, accounted for 100.7% in Q1 of FY 2023/24. This is in addition to being Egypt's second primary source of foreign cash flows following exports in FY 2022/23.

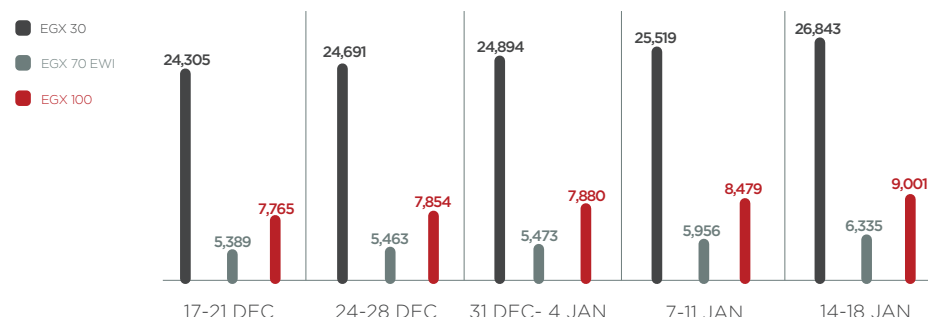
EGX HIGHLIGHTS

Performance of Listed Petroleum Companies December 2023

<p>Close Price EGP 13.45</p> <p>YTD Price Change ↑ 2,590%</p> <p>P/E* -</p>	<p>Close Price USD 4.69</p> <p>YTD Price Change 0%</p> <p>P/E* 4.84</p>	<p>Close Price EGP 9.86</p> <p>YTD Price Change ↑ 56.01%</p> <p>P/E* 9.28</p>
<p>Close Price EGP 40</p> <p>YTD Price Change ↑ 7.53%</p> <p>P/E* 12.74</p>	<p>Close Price EGP 29.07</p> <p>YTD Price Change ↑ 121.57%</p> <p>P/E* 41.07</p>	

*Price-Earnings Ratio (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 (%)



Egypt's inflation rates continued to decline in December 2023, falling 3.3% from November 2023. This decline was primarily driven by a slowdown in the annual rate of food inflation for the third consecutive month. Notably, the price of meat and poultry decreased by 1.5%, while fruits and vegetables declined by 3.5% and 4.7% respectively.

Net International Reserves (\$ billion)



Egypt's net international reserves increased slightly by 0.13% in December 2023 compared with November 2023. Foreign currencies are the largest component of Egypt's international reserves, accounting for \$26.745 billion in December.

Non-Oil Private Sector PMI (Point)



Despite the slight increase in December 2023 to 48.5, Egypt's PMI stayed below 50. This was due to worsening conditions for businesses across the non-oil private sector, driven by slowing demand that led to sharper falls in activity and new orders. New orders decreased at the sharpest rate since May 2023, with firms in the wholesale & retail sector reporting a particularly steep decline.



New Oil Discovery in the Western Desert

The exploration well "West AY-1X" was discovered by IPR Energy Group as announced on January 8. This is in addition to the successful testing and production from the new formation, Kharita, in Alamein-44, within the Yidma-Alamein Western Desert Development Lease.

- Added Production **2,850** bbl/d
- Well Depth **13,166** ft
- Drilling Rig **1500** HP

Approving a Draft Law on Oil Exploration

On January 17, the Egyptian cabinet approved a draft law authorizing oil exploration companies to boost investments to continue development operations and increase production rates in the Western Desert.

Location **Ras Qattara Development Area**

Partners **The MoPMR, EGPC, Apex International Energy, and INA-Industrija nafte, d.d.**

Oil & Gas Sector Plans by 2030

The oil and gas sector has set forth prominent targets for the period spanning from 2024 to 2030. These targets encompass expanding exploration activities to enhance production capacities and promote exports,

as well as achieving the net zero emission targets. Furthermore, the sector aims to attract more investors by developing efficient bidding systems and creating an attractive investment climate.



Signing a New Green Hydrogen MoU

The MoU aims at supplying green hydrogen and renewable electricity needed to produce green ammonia, to be raw material for the production of the north Abu Qir Fertilizers Company project.

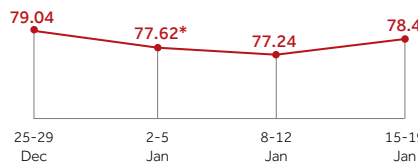
Date
January 2

Partners
Abu Qir Fertilizers Company (AFC), ABB International Group, MPS Infrastructure Company, and Petrojet

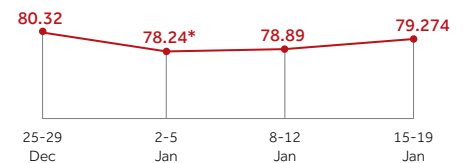
PRICING HIGHLIGHTS

Average International Prices

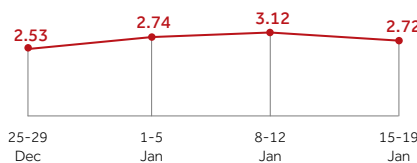
BRENT (\$/BBL)



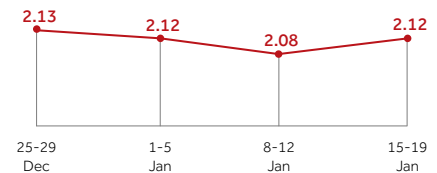
OPEC BASKET (\$/BBL)



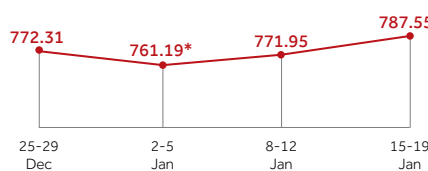
NATURAL GAS (\$/MMBTU)



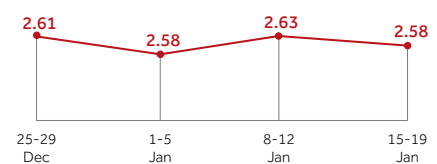
RBOB GASOLINE (Nymex) (\$/GAL)



GAS OIL (Nymex) (\$/MT)



HEATING OIL (Nymex) (\$/GAL)



*Published on January 2 due to Public Holidays

The first week in each figure is in December 2023, and the following weeks are in January 2024

50 YEARS IN EGYPT

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We're finding solutions.
For a strong, secure, sustainable energy future.
For Egypt and beyond. Together.

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