

Optimizing Egypt's Oil and Gas:
**A STRATEGY FOR
SUSTAINABLE
GROWTH**



EDITOR'S LETTER

Dear Reader,

Welcome to this month's issue of Oil and Gas Monthly, where we turn our focus to one of the most pressing priorities for Egypt's oil and gas industry—production optimization amidst an evolving energy landscape. As global energy demand rises and market dynamics shift, the need to enhance efficiency and embrace sustainable practices has never been more urgent.

Egypt's oil and gas sector remains a cornerstone of the national economy, but it faces the ongoing challenge of maximizing production while ensuring environmental responsibility. In this issue, our writers dive deep into how the Egyptian government is spearheading efforts to raise efficiency across the board, supported by cutting-edge technologies and innovative practices that are transforming the way we approach production. These endeavors are crucial in addressing both the economic and technical aspects of optimizing output in the face of fluctuating global conditions.

A key highlight of this issue is our Research and Analysis department's comprehensive report, Greening Egypt's Petrochemicals Industry: Exploring Development Opportunities. This report sheds light on the mechanisms and investment costs involved in green petrochemical projects, while exploring the significant potential for CO2 emissions reduction. It's an insightful read for anyone interested in how sustainability can be woven into the fabric of Egypt's energy future.

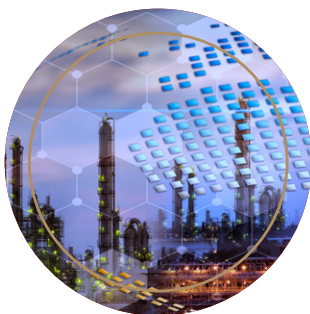
As we continue to explore ways to enhance efficiency and optimize production, we are confident that Egypt's oil and gas sector will meet these challenges with innovation and resilience. We hope this issue inspires thought, action, and a renewed commitment to driving the industry forward.

Thank you for joining us on this journey toward a more efficient, sustainable future for Egypt's oil and gas industry.

Happy reading!

Ihab Shaarawy
MANAGING EDITOR

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TOP 5

Khalda Petroleum Unveils Significant Oil Discovery in Western Desert

Khalda Petroleum Company, operating in the Kalabsha Development Area of the Western Desert, announced a new oil discovery in the West Fewebs-1 area.

The well was tested by drilling 270 feet into the Paleozoic sands, and the recovery on a 1-inch production opening was 7,165 barrels of oil per day with a quality of 44 degrees and 23 million cubic feet of associated gas.

Electrical logs of the well confirmed the presence of hydrocarbon indications in the Paleozoic component with a total net thickness of 462 feet.

Wintershall Dea's E&P Assets in Egypt, Other Countries Transferred to Harbour Energy

As of 3 September 2024, Wintershall Dea's E&P business, excluding Russia-related activities, has been transferred to Harbour Energy plc. The transfer includes production and development assets as well as exploration rights in Norway, Argentina, Germany, Mexico, Algeria, Libya (excluding Wintershall AG), Egypt and Denmark (excluding Ravn) as well as Wintershall Dea's carbon storage licenses (CCS), the company said in a statement.

In December 2023, Harbour Energy signed an agreement with BASF and LetterOne, the shareholders of Wintershall Dea, to merge the two businesses. Following receipt of the necessary regulatory approvals, the transaction has now been completed.

Wintershall Dea's remaining assets include stakes in the joint ventures in Russia, the ownership interest in Wintershall AG in Libya (Wintershall Dea share: 51%), in Wintershall Noordzee BV in the Netherlands (Wintershall Dea share: 50%) as well as the share in Nord Stream AG (Wintershall Dea share: 15.5%). The management of Wintershall Dea had announced its withdrawal from activities in Russia in January 2023. Upon completion of the transaction

with Harbour Energy, Wintershall Dea's main tasks will include the handling of claims related to the expropriation of the Russian assets, the sale of the remaining assets, the organizational restructuring, and ultimately, the closure of the headquarters' units in Kassel and Hamburg. Wintershall Dea will also provide transitional services to Harbour Energy for up to 12 months.

bp Announces Progress in Raven Field Development Amid \$700 Million Investment

Regional President of British Petroleum (bp) in the Middle East and North Africa, Nader Zaki, revealed the progress of the ongoing work in drilling two new wells to produce natural gas from the Raven Offshore Field, West Nile Delta, with investments of \$700 million, to produce 200 million cubic feet of gas per day (mcf/d), as part of the work to develop natural gas resources in the producing field in the Mediterranean Sea.

Zaki's statement came during a meeting with Karim Badawi, Minister of Petroleum and Mineral Resources, which was attended by Wail Shaheen, Regional Vice President of the company in Egypt.

During the meeting, Badawi was briefed on the British company's operation program in Egypt over the coming period, which aims to accelerate exploration, production and field development in its operating areas in the Mediterranean Sea to increase production rates, gradually.

Meanwhile, Zaki confirmed bp's commitment to the agreed plans in the field of implementing exploration programs and drilling new wells in the British company's concession areas in the Mediterranean Sea.

Petrojet Signs a \$100M Contract to Implement Coastal Protection Works at Dabaa Nuclear Power Plant

Petrojet Chairman Waleed Lotfy and Alexei Kononenko, Vice President of JSC Atomstroyexport, a subsidiary of the Russian Rosatom, has witnessed the signing ceremony of

the contract for implementing coastal protection works at the Dabaa nuclear power plant between the two companies.

The signing ceremony was attended by Amged El-Wakeel, Chairman of Egypt's Nuclear Power Plants Authority (NPPA); and Samy Soliman, Egyptian Nuclear and Radiological Regulatory Authority (ENRRA) Chairman.

El-Wakeel explained that it was agreed with the Russian side that the local participation rate would not be less than 20% in the first unit, reaching 35% in the fourth unit.

For his part, Lotfy expressed his happiness at signing the contract. The implementation of earthworks includes earthworks for approximately 2 million cubic meters, supply and installation of rocks in an amount exceeding 800,000 cubic meters, and the manufacture and installation of concrete breakwaters exceeding 91,000 pieces, Lotfy noted.

AngloGold Ashanti to Acquire Centamin Shares in \$2.5B Deal

AngloGold Ashanti will acquire Centamin, an Egypt-focused gold mining company, in a \$2.5 billion stock and cash deal. This acquisition will expand AngloGold Ashanti's operations in Africa, a region rich in gold resources.

Centamin shares value increased by about 24% to reach 148.10 pence in early trade, their highest level since October 2020. Shares in Centamin's London-listed peer Hochschild (HOCL), opening a new tab rose about 4%.

Under the terms of the deal, Centamin shareholders will receive 0.06983 new AngloGold shares for each Centamin share and \$0.125 in cash.

Following the completion of the deal, AngloGold Ashanti's shareholders will hold approximately 83.6% of the company's enlarged issued share capital, while Centamin's shareholders will own about 16.4%.

A BLAST FROM THE PAST

In October 2016, Egypt adopted the Integrated and Sustainable Energy Strategy until 2035. The strategy, endorsed by then Premier Sherif Ismail, focuses on three main axes: updating Egypt's energy strategy, restructuring the gas sector, and building national capabilities to promote energy efficiency policies and reduce greenhouse gas emissions in different sectors such as industry and transportation.

This strategy includes plans to gradually reduce the use of fossil fuels (petroleum and coal) from 96% to

81% by 2034/2035 as part of the energy mix strategy, focusing on environmental conservation.

Since then, the government has worked to create an attractive investment environment by taking important steps to reform the legislative framework of the electricity sector and issuing a law to encourage investment in renewable energy, along with allocating around 26,500 square kilometers for renewable energy projects to supply green hydrogen projects with an expected capacity of 128 gigawatts.

In agreement with the 17 UN Sustainable Development Goals, Egypt works to increase the share of renewable energy in generating electricity to 42% by 2030 and enhance energy efficiency measures to reduce consumption in all sectors by 18% by 2035.

UNDER THE LIMELIGHT



Egypt's Oil and Gas Projected Exports in FY 2024/25

\$9.4 BILLION

The Role of Oil and Gas Exports in Egypt's Economy

The International Monetary Fund's (IMF) Third Review of Egypt anticipates that in the fiscal year (FY) 2024/25, Egypt's total exports will reach \$35.9 billion, accounting for 10% of GDP.

Oil and gas exports are expected to contribute \$9.4 billion, representing nearly a quarter of the total exports. Recent efforts by the Egyptian authorities to stabilize the macroeconomy are expected to yield positive results.

Total exports are projected to reach \$39.2 billion in FY 2025/26, reflecting an annual increase of 9%. Oil and gas exports are anticipated to stabilize around \$9.3 billion.



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PRODUCTION

Egypt's Western Desert Oil Production Rises as Khalda Petroleum Increases Output

Khalda Petroleum Company Chairman, Saeed Abdel Moneim reviewed the most prominent performance indicators during 2023/24, explaining that the efforts of Khalda's work teams to maintain and boost productivity, and to face challenges, were able to boost average production of crude oil, condensates and natural gas from the company's fields in the Western Desert to 220,000 barrels of oil equivalent per day (boe/d). This comes as the company achieved an increase in crude oil production compared to FY 2022/23, which rose from about 113,600 barrels per day (b/d) to about 121,000 b/d, in addition to the production of condensates.

This is in light of the investments that were pumped in during the year, amounting to approximately \$1.3 billion, to support exploration, production and field development efforts.

Abdel Moneim reviewed the results of the exploration, development and growth programs of the producing fields, where Khalda succeeded in reaching 23 successful exploration wells during the year, while the activities of developing and growing the producing fields included drilling 92 wells to support production in addition to implementing 133 well completion operations to raise the efficiency of their production of crude oil, condensates and gas.

PhPC Achieves Average Production of 79,000 boe/d in 2023/24

Pharaonic Petroleum Company (PhPC) Chairman Hossam Zaki reviewed the most important performance indicators during the year, noting that the company succeeded in achieving 98.5% of the total approved production plan for 2023/24, with an average production rate of 79,000 barrels of oil equivalent per day (boe/d).

The company is also committed to achieving sustainability goals by rationalizing energy consumption properly applying HSE management systems and protecting the environment, as the company was able to achieve 32 million safe working hours without injuries.

Francesco Gasparri, General Manager of Eni in Egypt, emphasized the company's efforts to increase production while simultaneously reducing expenses without affecting the production process.

Wail Shaheen, Vice President of bp Egypt, underscored the critical role of modern technologies in reducing



emissions, enhancing energy efficiency, and advancing research, exploration, and production.

Dalia El Gabry, Vice President and Country Chair for Shell Egypt, confirmed that efforts are underway to expedite the integration of discoveries into the production map.

Bapetco Production Exceeds 67,000 boe/d, Pumps \$295M in Investments During FY 2023/24

Ashraf Abdel Gawad, the Chairman of Badr El Din Petroleum Company (Bapetco) has revealed that production rates reached over 67,000 barrels of oil equivalent per day (boe/d), amounting to 217 million cubic feet (mmcf) of natural gas and 28,000 barrels of oil and condensates during the fiscal year (FY) 2023/24.

The Chairman added that his company has pumped investments estimated at \$295 million, noting that the project of re-processing the seismic data for an area of 2,000 kilometers square has been proceeded.

He also pointed to Bapetco's commitment to implement the planned program in the budget to drill five new exploratory wells, noting that three successful exploratory wells were reached and 20 wells were connected to the production lines in the company's concession areas and an expanded program was executed to maintain the wells.



Abdel Gawad discussed the efforts to establish a culture of health, safety and environment at the company's sites.

For her part, Capricorn Egypt's Managing Director Eleanor Rowley highlighted the company's commitment to drilling activities and programs. She also mentioned the company's efforts to add new wells to the natural gas production map in the coming period.

Rashpetco, Burullus Gas Average Production Reaches 222 mmcf/d of Natural Gas

Rashid Petroleum Company (Rashpetco) and Burullus Gas Company's Chairman Mohamed Samir stated that the companies have achieved average production of 222 million cubic feet per day (mmcf/d) of natural gas in addition to 4,000 barrels of condensates per day during the fiscal year (FY) 2023/24.

Samir shared this significant achievement during the companies' general assembly meeting, chaired by the Minister of Petroleum and Mineral Resources, to approve the operational results for FY 2023/24.

For exploration and production operations, Samir said that they focused on upgrading and rebuilding

the models of Burullus gas production fields to support a complete understanding of the reservoir characteristics and behavior as well as to determine the production strategy from them, especially the (Phase 9-B) fields, which contribute fundamentally to production.

As for the new opportunities (Eleventh Phase), the Chairman said that a comprehensive assessment of the reserves was conducted in cooperation with the partners, and the volumetric assessments and drilling plan were approved which will start immediately after the completion of the Phase 10 development project.

The production rates of Tenth Phase (three wells) are expected to reach 160 mmcf/d of natural gas, after overcoming the technical and commercial difficulties that faced the implementation of the project, by exploiting the available infrastructure and facilities.

This encouraged the partners (Shell and Petronas) to apply the same approach in the Eleventh Phase development project and accelerate its production at rates estimated at about 150 mmcf/d of natural gas, he added. The investments in the two phases are estimated at \$575 million.

WEPCO Reports Major Milestones at Al Hamra Port



Ibrahim Massoud, the Chairman of Western Desert Petroleum Company (WEPCO), operating Al Hamra Petroleum Port and Badr Petroleum Company, stated that about 81 million barrels were received through the storage facilities at Al Hamra Port, and about 27 million barrels were shipped through the marine facilities, in addition to supplying the refineries with about 54 million barrels through the onshore.

He explained the work that was implemented in the field of HSE. The assembly witnessed the presentation of the planned and ongoing projects.

Another expansion operations are underway in the framework of the general plan to fully exploit the northern expansions and the western region currently available at the port of Al Hamra to reach a total capacity estimated at 10.5 million barrels.

As for the southern expansion area, the integrated works are being carried out in two phases. The first phase is the construction of two warehouses for storing and trading diesel with a capacity of 20,000 tons for each warehouse, the electricity distribution station, and the rest of the facilities. The implementation of the second phase of the project has also begun, which includes the construction of three diesel warehouses with a capacity of 10,000 tons for each warehouse, two warehouses for jet fuel with a capacity of 20,000 tons for each warehouse, and a diesel warehouse with a capacity of 20,000 tons, in addition to the needed facilities and infrastructures.

For Badr Petroleum, Massoud elaborated that Badr X10 exploratory well was put into production at a rate of 15 million cubic feet (mmcf) of gas and 550 barrels per day (bbl/d). He mentioned that 1.5 million barrels of crude oil were produced while maintaining the lowest cost of production per barrel, in addition to the success in increasing proven reserves of oil and gas by about 2 million barrels of oil equivalent (mmboe), as the total remaining and extractable reserves reached 15 million barrels of crude oil.

This was confirmed by drilling seven exploratory wells and 20 development wells, in addition to maintaining and re-completing brownfields, with full commitment to all safety standards and considering all health, safety and environment measures noting that working hours without accidents reached about 5 million hours.

AGREEMENTS

ANOPC, EPROM Sign Services Contract for Trial Operation of Diesel Complex

Assiut National Oil Processing Company (ANOPC) and the Egyptian Company for Project Operation and Maintenance (EPROM) have signed an agreement to provide services for the preparation phases for the trial operations of the Diesel Complex in Assiut.

The contract includes providing skilled human resources to support the completion and delivery phases of construction, installation, and preparation for the operational trial phases of the new petroleum complex in Assiut, as the process of the complex implementation and construction has reached about 78% and the operational trials will begin in 2025.

Mohamed Badr El Din, the Chairman of ANOPC, stated that the complex is one of the vital strategic projects implemented by the petroleum sector in Upper Egypt. It will contribute to increasing the local production



of high-standard petroleum products and meet consumers' needs for diesel in Upper Egypt. In addition, it will open new horizons for investment opportunities and provide job opportunities, he added.

Helwan Fertilizers Assign Melamine Production Plant Consultant Work to Enppi

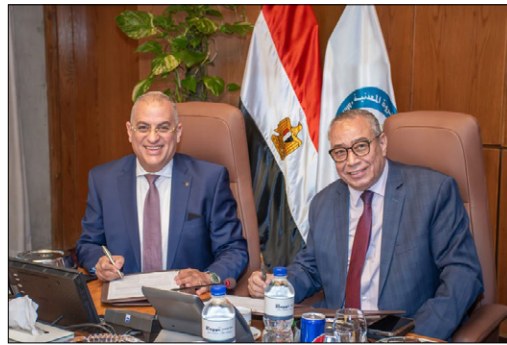
Helwan Fertilizer Company has assigned Enppi the consultant work to the project of establishing a melamine production plant with a production capacity of 60,000 tons annually.

Enppi will review and prepare the terms and conditions booklet, including the licensor's documents, present it to specialized contractors, and supervise the implementation of the project on a turnkey basis.

The agreement was signed by Hassan Abdel-Aleem, Chairman of the Board of Directors and Managing Director of Helwan Fertilizer Company, and Wael Lotfy Moustafa, Chairman of the Board of Directors and Managing Director of Enppi, at Enppi's headquarters in the presence of many leaders of the two companies.

Abdel-Aleem confirmed that the melamine production project is the first of its kind in Egypt and Africa and the second in the Middle East region.

Additionally, Abdel-Aleem explained that the new factory aims to cover the needs of the local market for



melamine and export the rest to increase the volume of exports.

Abdel-Aleem stated that establishing a factory to produce melamine will encourage the establishment of other complementary industries, which will strongly support the Egyptian national economy.

EOG CONVENTION

Egypt Oil & Gas Launches Technical Workshops Ahead of 2024 Convention

Under the high patronage of the Minister of Petroleum and Mineral Resources, Karim Badawi, Egypt Oil & Gas organized the first of three technical field workshops as part of the Egypt Oil & Gas 2024 Convention (the 10th edition).

The inaugural workshop took place on September 14th at the General Petroleum Company (GPC) Field in Ras Gharib, featuring technical presentations from GPC, Petrobakt, PetroNefertiti, and Amapetco.

Other participating companies delivering presentations included OSOCO, GEMSA, GUPCO, Petrogulf, and Eshpetco.

The workshop was attended by prominent figures in the oil and gas sector, including Tamer Edrees, EGPC Vice Chairman for Production; Mohamed Mohy, EGPC Vice Chairman for Exploration; and Mohamed Abdel Maguid, GPC Chairman.

The findings and outcomes from these workshops will be highlighted during the EOG Convention 2024, which is set to take place on September 29th-30th under the patronage of Minister Karim Badawi.

The workshop was supported by EGPC, technically prepared by Egypt Oil & Gas Committee and sponsored by United Energy Egypt (UEE).



GASTECH

Badawi Showcases Egypt's Role as a Major Energy Hub at Gastech 2024



During the opening of Gastech 2024, Minister of Petroleum and Mineral Resources Karim Badawi emphasized Egypt's pivotal role as a gateway connecting the East, West, and North in the trade of natural gas and hydrogen. He highlighted the country's strategic importance, citing its robust infrastructure, abundant natural resources, and renewable energy sources, including solar and wind.

These remarks were made during his keynote speech at the ministerial panel, titled "From Mitigation to Adaptation: Navigating Volatile Geopolitics in a Fragmenting Global Order."

Badawi affirmed that collaboration and collective efforts are essential for the optimal exploitation of resources. He also stressed the need to create a favorable economic environment to attract investments in the petroleum sector and secure the necessary funding for carbon reduction projects.

Furthermore, the minister highlighted the goal of increasing the share of renewable energy in Egypt's energy mix to approximately 42% by 2030, as part of the country's integrated and sustainable energy strategy.

MINING

Egypt's Rights in Sukari Gold Mine Unaffected by Centamin-AngloGold Deal, Says MoPMR

The Ministry of Petroleum and Mineral Resources (MoPMR) commented on the acquisition of Centamin, the sole owner of the Pharaonic Gold Mines Company, by AngloGold Ashanti. The Pharaonic Gold Mines Company is a partner of the Egyptian Mineral Resources Authority (EMRA) in the Sukari gold mine.

MoPMR clarified that the acquisition will not affect the Egyptian state's rights or revenues from the Sukari mine. The provisions of the commitment agreement, issued under Law No. 222 of 1994, remain fully in effect and continue to govern the relationship between EMRA and the Pharaonic Company.

Sukari Gold Mines Company will remain the joint venture and operating company as is without any change.

The Sukari mine is managed by the Sukari Gold Mines Company as the operating company in accordance with the provisions of the concession agreements. Whereas Sukari Company is a joint venture company with a 50% share for EMRA and a 50% share for the Pharaonic Gold Mines Company. Accordingly, this acquisition does not have any impact on the operating company.

The presence of AngloGold Ashanti, which is globally ranked fourth in the classification of gold producing companies, to work and invest in the Egyptian mining sector is a global testimony to the confidence of international companies in the investment climate in Egypt and conclusive evidence of the success of the state's policy in attracting foreign direct investment.

COMPANY OF THE MONTH

Harbour Energy was founded in 2014 in London, United Kingdom (UK) by private equity firm EIG Global Energy Partners. The company has significant activities across 10 countries. It completed four major acquisitions in the last seven years. The last acquisition was in September 2024 of Wintershall dea's assets in Norway, Germany, Denmark, Argentina, Mexico, Egypt, Libya and Algeria in addition to Wintershall dea's Co² Capture and Storage (CCS) licences in Europe with \$11 billion, this acquisition pushed the total production to 500,000 barrels (bbl) and the market cap to \$4.85 billion from \$2.5 at the previous year.

Harbour Energy Activities in Egypt

Harbour Energy started its work in Egypt after an acquisition of Wintershall Dea's assets in 2024. Consequently, Harbour has stakes in several offshore concessions (West Nile Delta and North -West Abu Qir) and onshore concessions (Disouq and East Damanhur). The company also has shares with bp in the North-West Abu Qir offshore block.

Source: Harbour Energy's Website

HARBOUR ENERGY'S MAIN ACQUIRED ASSETS IN EGYPT



Asset	Harbour Equity	Date
Disouq	100%	Nile Delta
East Damanhur	40%	
West Nile Delta (WND)	17.25%	Mediterranean Sea
North West Abu Qir	17.25%	

ADNOC ENGAGES A PARTNERSHIP WITH EXXONMOBIL TO DEVELOP LOW CARBON HYDROGEN PROJECT IN TEXAS



ADNOC has announced that it has entered into an agreement with ExxonMobil Corporation to develop a low-carbon hydrogen and ammonia production facility in Baytown, Texas.

The signature ceremony was witnessed by Sheikh Khaled bin Mohamed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Chairman of the Abu Dhabi Executive Council.

Under the agreement, ADNOC will acquire a 35% equity stake in ExxonMobil's proposed project. The agreement

represents a significant investment in the United States' (US) energy production and the global energy transition.

It will help reduce greenhouse gas emissions across hard-to-decarbonize sectors, including industry, energy and transportation, meet rising demand for lower-carbon fuels, and accelerate a net-zero future.

The facility is expected to be the world's largest of its kind upon startup, capable of producing up to 1 billion cubic feet

(bcf) daily of low-carbon hydrogen, which is virtually carbon-free with approximately 98% of carbon dioxide (CO₂) removed and more than 1 million tons of low-carbon ammonia per year. A final investment decision (FID) is expected in 2025 with anticipated startup in 2029.

Also, it is expected to leverage advanced carbon capture and storage technologies to reduce emissions associated with hydrogen production.

SAIPEM SECURES TWO OFFSHORE CONTRACTS COSTS \$1B IN SAUDI ARABIA



Saipem has announced that it has been awarded two offshore contracts including Saudi Arabia under its existing long-term agreement with Saudi Aramco with investments estimated approximately at \$1 billion.

According to the first contract, Saipem's Scope of work involves the engineering, procurement, construction, and installation (EPCI) of three production deck modules (PDMs),

33 kilometers of subsea rigid pipelines with diameters of 12 inches and 16 inches, and 34 kilometers of subsea power cables. The infrastructures will be installed in the Marjan oil and gas field.

Additionally, the second contract involves the EPCI of three jackets, five PDMs (Production Deck Modules), 22 kilometers of subsea rigid pipelines with a diameter of 16 inches, five

kilometers of subsea flexible pipelines, and 35 kilometers of subsea power cables. The infrastructures will be installed in the Zuluf and Safaniyah oil fields.

For the offshore component of the two projects, Saipem will deploy its construction vessels that are operating in the region.

CNOOC STARTS PRODUCTION AT LIUHUA 11-1/4-1 OILFIELD SECONDARY DEVELOPMENT PROJECT



CNOOC Limited has commenced production at the Liuhua Oilfield Secondary Development Project located in the eastern South China Sea.

The project consists of two oilfields, Liuhua 11-1 and Liuhua 4-1, with an average water depth of approximately 305 meters.

The main production facilities include a new deepwater jacket platform "Haiji-2" and a cylindrical FPSO "Haikui-1".

A total of 32 development wells are to be commissioned, according to CNOOC. It holds 100% operating interest in this project.

The company stated in a press release on Thursday that the project is anticipated to achieve a peak production of approximately 17,900 barrels of oil equivalent per day (boe/d) in 2026.

The oil property is heavy crude.

CHEVRON TO BOOST OIL, GAS PRODUCTION FROM TWO FACILITIES IN MEXICO



Chevron Corporation has announced that it started water injection operations at two projects at its Jack/St. Malo and Tahiti facilities in the deep water U.S. Gulf of Mexico, to boost oil and natural gas recovery.

Chevron achieved its first water injection at the St. Malo field, the company's first waterflood project in the deepwater Wilcox trend. The project was delivered under budget, with the addition of water injection facilities, two new production

wells, and two new injection wells. It is expected to add approximately 175 million barrels of oil equivalent (mmboe) to the St. Malo field's gross ultimate recovery.

Since the fields started production in 2014, Jack and St. Malo together have cumulatively produced almost 400 million gross barrels of oil equivalent.

At the Tahiti facility, Chevron started injecting water into its first deepwater Gulf producer-to-injector conversion wells.

The project included the installation of a new water injection manifold and 20,000 feet of flexible water injection flowline.

After multiple development projects, the Tahiti facility recently surpassed 500 million gross barrels of oil-equivalent cumulative production.

TOTALENERGIES TO SUPPLY 1.5MT OF SAF TO AIR FRANCE-KLM



TotalEnergies has signed an agreement with Air France-KLM for the supply of up to 1.5 million tons of more sustainable aviation fuel (SAF) to Air France-KLM Group airlines over a 10-year period until 2035, marking one the largest SAF purchase contracts signed by Air France-KLM to date.

This contract builds on a memorandum of understanding (MoU) signed in 2022 for the supply of 800,000 tons of SAF.

Air France-KLM aims to reduce its CO₂ emissions per passenger/km by 30% By 2030 compared with 2019 levels.

The Group aims to achieve this goal through a combination of fleet renewal, operational measures such as eco-piloting, and the incorporation of at least 10% of more sustainable aviation fuel on all its flights.

Notably, the SAF supplied to Air France-KLM will be made from waste and residues from the circular economy and will be produced in TotalEnergies' French and European biorefineries and refineries by coprocessing.

This SAF will be used to fuel flights operated by Air France-KLM's airlines on departure from France, the Netherlands, and other European countries.

Air France-KLM has implemented a strict sourcing policy, purchasing only second-generation SAF that does not compete with global food production, and that is RSB or ISCC+ certified for its sustainability.

BAKER HUGHES LAUNCHES CARBONEDGE™ DIGITAL SOLUTION FOR CCUS PROJECTS

Baker Hughes has launched CarbonEdge™ powered by Cordant™, the first end-to-end, risk-based digital solution for CCUS operations that provides comprehensive support for regulatory reporting and operational risk management.

CarbonEdge integrated dashboard delivers precise, real-time data and alerts on carbon dioxide (CO₂) flows across

CCUS infrastructure, from carbon capture and compression to pipeline transportation, as well as subsurface storage.

Notably, CarbonEdge is applicable to any CCUS infrastructure applied across multiple industries.

This connectivity across the entire CCUS project lifecycle enables customers to identify and manage risk, improve decision-making, enhance operational efficiency, and simplify regulatory reporting,



ENI, SNAM KICK OFF ITALY'S FIRST CCS PROJECT

Eni and Snam have announced the launch of Ravenna project, the first carbon capture transport and permanent storage of CO₂ in Italy created for exclusively environmental purposes.

This came within the framework of the equal joint venture set up for the purpose.

According to a statement published by Eni, the commencement of CO₂ injection activities started in the reservoir for Phase 1 of Ravenna CCS

Phase 1 of the project will capture, transport and store CO₂ emissions from Eni's natural gas treatment plant in Casalborgorsetti, in the municipality of Ravenna, estimated at approximately 25,000 tons of per year. Once captured, the carbon dioxide is transported to the offshore Porto Corsini Mare Ovest platform through reconverted gas pipelines. The CO₂ will then be injected and stored at a depth of 3,000 meters in the depleted Porto Corsini Mare Ovest gas field.

The project is already delivering a reduction of over 90% in CO₂ emissions from the Casalborgorsetti plant's chimney, rising to

peaks of 96%. Additionally, the facility is fully powered by electricity from renewable sources, avoiding further CO₂ emissions,

The fabrication related to the projects will be executed at Saipem's Saudi fabrication yard, Saipem Taqa Al-Rushaid Fabricators Co. Ltd., aiming to increase and develop the capabilities of local industry.



HALLIBURTON SECURES SERVICES CONTRACT OFFSHORE BRAZIL

Halliburton has been awarded a contract by Petrobras to provide a full range of services in Brazil for integrated well interventions and plug and abandonment for offshore wells.

The deal entails Halliburton to provide fluids, completion equipment, wireline, slickline, flowback services, and coiled tubing.

This contract, which covers nearly two-thirds of all interventions and plug and abandonment work for Petrobras,

HALLIBURTON

reinforces Halliburton's strategic position in the Brazilian market, Halliburton stated i

PETRONAS ACHIEVES REVENUES OF RM 171.7B IN H1 2024

Petronas announced that it has recorded revenues estimated at RM 171.7 billion during the first half (H1) of 2024, recording a slight increase from RM169.0 billion during the same period last year.

The company backed this minor increase to the impact from foreign exchange noting that this was partially offset by lower

average realized prices, especially for LNG in tandem with declining benchmark prices.

However, the company revealed that the Profit After Tax (PAT) decreased by 19% to RM32.4 billion, primarily attributable to the deconsolidation of subsidiaries and higher taxation during the period.

Additionally, the Group recorded Earnings Before Interest, Tax, Depreciation and Amortisation (EBITDA) of RM64.1 billion, lower by RM6.4 billion or 9 per cent, in line with lower profits.



METHANEX TO ACQUIRE OCI'S METHANOL BUSINESS IN \$2.05B DEAL

Canadian methanol producer has Methanex has signed a \$2.05 billion deal to acquire Dutch green fuel-maker OCI Global's methanol business.

The transaction includes OCI's interest in two world-scale methanol facilities in Beaumont, Texas, one of which also produces ammonia, as Methanex said in a press release.

Moreover, the transaction includes a low-carbon methanol production and marketing business and a currently idled methanol facility in the Netherlands.

Methanex expects to achieve approximately \$30 million of annual cost savings from lower logistics costs and lower selling, general and administrative expenses.

The deal includes \$1.15 billion in cash, the issuance of 9.9 million shares of Methanex valued at \$450 million. Methanex is taking on about \$450 million in debt and leases.

Meanwhile, OCI will become the second-largest shareholder of Methanex, with about 13% of the company. The deal is expected to close in the first half of 2025.



SINOPEC'S EAST CHINA SHALE OIL FIELD PUMPING AT 1,600 TONS A DAY

Sinopec, China's state-owned oil and gas giant, has announced that it is now pumping 1,600 metric tons per day (mmt/d) of shale oil at its pilot project in Jiyang, east China, an increase from the 100 tons it was producing in 2021.

Herein, Sinopec is well on track to achieve its 2022-set target of producing 500,000 tons a year by 2025 at the Jiyang field, according to Reuters. This field, located in Shandong province

and spanning an area of 7,300 sq km (1.8 million acres), is a key part of Sinopec's strategy to enhance domestic energy security.

In response to the central government's call to boost domestic energy security, China's national oil companies are intensifying their efforts to tap into hard-to-extract

shale deposits, compensating for the rapid depletion of older, conventional oilfields.

Currently, the Jiyang field has 36 wells, each pumping more than 100 tons a day. The Fengye 1-1HF well holds the record for the highest daily output, producing 262.8 tons.



ALGERIA'S SONATRACH PARTNERS WITH INTERNATIONAL FIRMS TO DEVELOP INTEGRATED GREEN HYDROGEN PROJECT

Sonatrach has signed two memorandum of understanding (MoU) with some international companies to jointly conduct the necessary studies to assess the viability and profitability of an integrated project to produce green hydrogen in Algeria aimed to supply the European market.

One agreement was signed at the Oran Convention Center (CCO) with Algerian Sonelgaz, VNG, Snam, SeaCorridor, and VERBUND Green Hydrogen. This agreement will enable the parties to jointly examine the opportunity to implement an integrated multi-stakeholder project, across the entire green hydrogen value chain, via the SouthH2 Corridor.

During the same event, Sonatrach also signed a MoU with Spanish CEPSA to jointly conduct a feasibility study for the development of an integrated project for the production of green hydrogen and derivatives in Algeria.



ADES RENEWS ITS ONSHORE RIGS CONTRACTS IN SAUDI ARABIA

ADES Holding Company has secured a \$252.2 million contract renewal for its ADES 13 and ADES 14 onshore rigs, which will continue operating in Saudi Arabia for an extended period of 10 years. This renewal will commence immediately upon the expiry of the rigs' current firm tenor.

"We are very pleased with Aramco's decision to renew contracts for ADES 13 and ADES 14 for a longer-term tenor of 10 years. These rigs have been operating in the Kingdom since 2019, during which they delivered a robust operational and safety performance, and the new long-term renewals will allow us to continue providing our

valued client with ADES' best-in-class service," said Mohamed Farouk, CEO of ADES Holding.

"These onshore awards strengthen the sustainability of our business in KSA and providing the Group with long-term revenue visibility, while strengthening the Group's outlook for its business in the Kingdom," he added.



GREENING EGYPT'S PETROCHEMICALS INDUSTRY: EXPLORING DEVELOPMENT OPPORTUNITIES



BY MARIAM AHMED & NERMEEN KAMAL

Key Takeaways

Investment Cost of Green Petrochemical Projects

 | **\$2.63 billion**

Co2 Emissions Reduction from Major Green Petrochemical Projects



 Poly-lactic Acid Production Project  **Co2 Reduction**
1.2 mmt/y

 Bioethanol Project  **Location**
Damietta

 **Co2 Reduction**
0.3 mmt/y

 MDF Project  **Location**
Beheira

 **Co2 Reduction**
0.36 mmt/y

 SAF Project  **Location**
Alexandria

 **Co2 Reduction**
400,000 mmt/y

The Egyptian Petroleum sector has a clear vision to maximize the added value of the petroleum resources through developing the petrochemicals industry. The industry is witnessing a huge influx of investments to implement plans to increase production capacity and creating a surplus for export in light of the growing global demand.

Despite the importance of petrochemicals, the industry has a substantial contribution to global environmental pollution. It involves energy-intensive procedures, leading to notable carbon emissions,

land degradation, and water pollution. Therefore, the growing global interest in achieving net-zero emissions and transitioning to green energy has extended to the petrochemical sector, encouraging the development of sustainable petrochemicals such as chemical recycling. This will effectively reduce the environmental impact of petrochemicals by reducing greenhouse gas emissions (GHG).

In the same context, the Egyptian Ministry of Petroleum and Mineral Resources (MoPMR) declared its intention to expand the

green petrochemical industry announcing a package of green petrochemical projects. This came within the framework of Egypt's updated national petrochemicals plan 2020-2040.

The report throws light on the Egyptian petrochemicals production and the key producers in the market. Moreover, it shows the state's tendency toward greening the petrochemical sector to limit its environmental impacts by establishing several projects and adopting more sustainable solutions.

PETROCHEMICALS PRODUCTION

Egypt put a framework to update the national plan for the petrochemical industry until 2040, to widely expand petrochemical projects, contributing to increasing total production, meeting the local needs, and exporting the surplus.

This is in addition to initiating several new petrochemical projects which were accompanied by the development of the existing factories. The most significant is the development operations

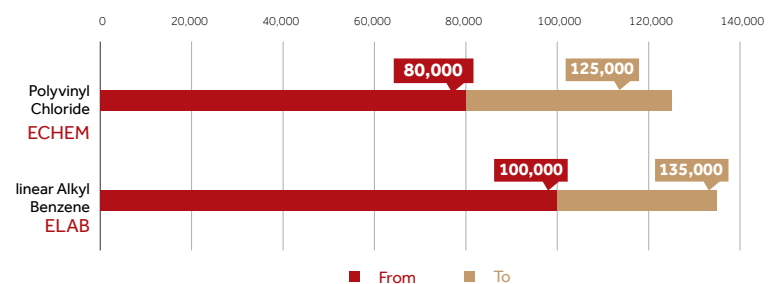
and increasing the production capacities of the Egyptian Petrochemicals Company (ECHEM) and the Egyptian Linear Alkyl Benzene Company (ELAB), according to the MoPMR.



>4.3 mmt

Petrochemicals Production in FY 2022/23

Increase in Petrochemicals Product Capacity (t/y)



SCALING UP GREEN PETROCHEMICALS

Egypt is working to accelerate the pace of decarbonization and diversifying energy sources in commitment to the "Sustainable Development Strategy (SDS): Egypt's Updated Vision 2030" and the "Integrated Sustainable Energy Strategy 2035", which was launched in 2015, by the Egyptian oil and gas sector.

In this regard, the sector works to enhance decarbonization activities and energy transition by introducing new green and environmentally friendly petrochemical products that would increase total production.

Green Petrochemicals Adoption

Bioethanol

Egypt pioneered bioethanol production through local sugar companies and used it in producing bioethylene with a capacity of 60,000 tons per year (t/y). It aims to produce polyvinyl chloride by the Indian company TCI Sanmar Chemicals S.A.E in Port Said, according to the Organization of Arab Petroleum Exporting Countries (OAPEC).

Low Carbon Petrochemicals

Egypt made a strategic decision over 20 years ago to use carbon-free natural gas as a cleaner, less carbon-intensive, and more environmentally-friendly fuel. In this regard,

it works to expand the production of new petrochemical projects using natural gas to preserve the environment, according to the MoPMR.

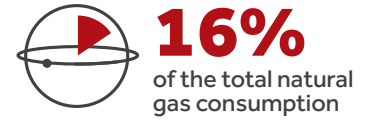
Egypt's Investments in Green Petrochemicals

Egypt is actively seeking to reduce methane gas emissions and use it in green petrochemicals production to produce methanol. In alignment with the emissions reduction roadmap, Egypt joined the Global Methane Pledge (GMP) within the Oil and Gas Track of the Major Economies Forum on Energy and Climate Change (MEF). Egypt executed a comprehensive methane gas measurement campaign across six gas facilities and one tank farm. Building upon this progress, a second methane gas measurement campaign

was successfully implemented at more than 25 facilities, according to the Information and Decision Support Center (IDSC).

Egypt has actively participated in boosting investment in green petrochemicals projects such as metallic silicon and sodium carbonate (soda ash) production complexes in New Alamein, and green ammonia and green methanol projects in Damietta, in addition to projects to produce Medium-density fibreboard

Natural Gas Utilization in the Petrochemical Sector in FY 2022/23



panels (MDF), methanol derivatives, and bioethanol from molasses, according to the Cabinet.



Major Green Petrochemicals Projects

The oil and gas sector has continued its pivotal role in advancing and implementing a comprehensive suite of new green petrochemical projects.

The MoPMR has developed an investment plan to initiate ventures aimed at enhancing the production of high-value products and fostering domestic manufacturing of diverse raw materials and finished goods. These products are poised to be utilized across various sectors, contributing to the reduction of imports and generating surplus quantities for export, thereby boosting foreign currency reserves.

Polylactic Acid Production Project (Biodegradable Plastic)

The project is designed to produce polylactic acid and lactic acid by utilizing agricultural waste and raw sugar as feedstock. The project is anticipated to reduce CO2 emissions by 1.2 million metric tons per year (mmt/y). The estimated investment cost for this project amounts to \$600 million. The project is in the preliminary study phase and is anticipated to commence operations in 2026, the IDSC stated.

Polylactic Acid _____



75,000 t/y

Lactic Acid _____

40,000 t/y

Bioethanol Project in Damietta Port

The project seeks to produce bio-ethanol and vinasse by utilizing molasses sourced from local sugar companies. The primary objective is to satisfy a portion of the local market demand while exporting surplus.

This initiative is anticipated to reduce CO2 emissions by an estimated 300,000 t/y. The Egyptian Bio-Ethanol Company (EBIOL) is spearheading the project, with the petroleum sector contributing 85% and sugar companies contributing 15% with a total investment of \$120 million and it is planned to start operating in 2024, according to MoPMR.

Bio-Ethanol _____



100,000 t/y

Vinasse _____

130,000 t/y

Project for the Production of MDF

The project was established in Idku, to produce MDF panels based on 250,000 t/y of rice straw. This initiative is intended to partially fulfill local market demand and replace imports. By reducing the practice of rice straw burning, the project is anticipated to decrease Co2 emissions by 360,000 t/y.

The EICHEM, in collaboration with the Egyptian General Petroleum Corporation (EGPC), Petrojet, and Sidi Kerir Petrochemicals Company (SIDPEC), is undertaking the project with a total investment of €351 million, according to the MoPMR.



Silicon Production Complex Project in El Alamein

The project aims to produce metallic silicon utilizing Egypt’s abundant ultra-pure quartz ore reserves with an investment cost estimated at \$172 million. This strategic initiative will shift the country’s focus from raw material exports to value-added manufacturing, thereby addressing local demand

for metallic silicon and generating a surplus for exports.

The project’s energy requirements will be met through renewable solar power sources. The project includes four different phases. A detailed feasibility study for the first phase has been completed, according to MoPMR.

Metallic Silicon



Capacity (t/y)

45,000

Microsilica



Capacity (t/y)

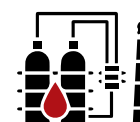
19,000

Red Sea Petrochemical Complex Project

The project seeks to transition from the production of conventional petrochemicals to specialized value-added petrochemicals, catering to both domestic demand and generating surplus for export. Strategically located within the Suez Canal Economic Zone (SCZONE).

The project is being undertaken by a collaborative alliance between ENPPI and Petrojet with a total investment of \$11.7 billion per phase. A preliminary agreement has been secured with Aramco to ensure a reliable supply of crude oil to support the project’s operations, according to the MoPMR.

Petrochemical Production Capacity



3.5 mmt/y

The Soda Ash Production Project

The projects were established in El Alamein with an estimated total investment of approximately \$684 million. It aims to produce soda ash and its derivatives, which contributes to maximizing added value and reducing imports of soda ash, according to the MoPMR.

SAF Production Project

This project focused on the hydroprocessing of used cooking oil, to convert it into Sustainable Aviation Fuel (SAF). This initiative contributed to a significant reduction in CO2 emissions of approximately 400,000 t/y. The project is slated for development in Alexandria and carries an estimated investment cost of \$380 million, according to NERA.



120,000 t/y
Production Capacity

Soda Ash Production Capacity

600,000 t/y

Green Naphtha Production Project from Algae

ECHEM has entered into a Memorandum of Understanding (MoU) with Riga Green Energy of the United Arab Emirates (UAE) to collaborate on the production of algal oil within the New Alamein City development. This biofuel feedstock will be utilized in manufacturing bio-jet fuel and green naphtha, offering a sustainable and environmentally friendly alternative to traditional petrochemical raw materials, according to MoPMR.

Projects Serving the Green Petrochemical Industry

Projects	Green Methanol	Methanol Derivatives Production	Ammonium Nitrate Fertilizer Production
Capacity	40,000 t/y potential to increase to 200,000 t/y	140,000 t/y	1,200 t/d of ammonia 1,830 t/d of nitric acid 2,400 t/d of ammonium nitrate
Investments	\$450 million	\$120 million	EGP10 billion
Partners	ANRPC & EBIOL	ECHEM, local banks & companies	AFC, EGPC & ECHEM



The petrochemicals industry has experienced a significant expansion, contributing approximately 3% of the gross domestic product (GDP) and 12% of the industrial sector. In alignment with the MoPMR’s objective to increase CO2 reduction endeavors, the ministry has endeavored to produce green petrochemicals to elevate added value and fulfill the demands of the domestic market for green petrochemical products, thereby

reducing the import bill and bolstering foreign exchange reserves.

Green production initiatives in petrochemicals have been realized through a series of green projects concentrated in the El Alamein and Damietta regions. Furthermore, a group of projects have been implemented to support this industry in achieving a blend of clean and renewable energy.



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OPTIMIZING EGYPT'S OIL AND GAS: A STRATEGY FOR SUSTAINABLE GROWTH

BY SARAH SAMIR

The Egyptian oil and gas industry, a cornerstone of the nation's economy, faces the constant challenge of maximizing production efficiency while ensuring sustainability. In an era marked by increasing global energy demands and fluctuating market prices, the ability to optimize output is paramount. Technology and innovative practices have emerged as crucial catalysts in driving this efficiency. With innovation and commitment, the Egyptian government is leading the path towards energy efficiency in the oil and gas sector.

Egypt's Energy Efficiency Route

The Egyptian oil and gas sector is adopting the Energy Efficiency Strategy 2022-2035. This initiative reflects the Ministry of Petroleum and Mineral Resources' (MoPMR) commitment to enhancing the sector's efficiency, competitiveness, and sustainability. The strategy prioritizes energy efficiency measures to decarbonize the oil and gas industry and strengthen Egypt's energy security.

The strategy consists of two integrated and overlapping phases. The first phase (2022-2027) aims to achieve a 10% energy savings by 2027. The second phase (2025-2035) is implemented in parallel with the first phase to reach 18% energy savings 2035 (the national goal).

According to the Oil and Gas Modernization Program, energy efficiency in the petroleum sector can be achieved through various components, including the adoption of energy-efficient technologies to reduce costs and improve production.

Furthermore, innovation and advanced technologies play a key role in accelerating development processes and controlling costs in the energy and fossil fuel sectors. Egypt's plans for CO₂ emission reductions, supported by these advanced technologies, are also on track to be achieved on time. Additionally, innovation is essential for optimizing Egypt's brownfields, ensuring maximized production and improved field operations.

Egypt's Commitment to Energy Efficiency

The Egyptian government is committed to achieving energy efficiency and is taking action on multiple fronts to enable this goal. In September 2024, Minister of Petroleum and Mineral Resources, Karim Badawi, emphasized the importance of energy efficiency in generating significant savings that benefit both the state and its citizens, while also contributing to the achievement of sustainable development goals.

Badawi highlighted the petroleum sector's efforts to strengthen cooperation with the private sector in executing key strategic projects. He also reiterated the ministry's prioritization of energy efficiency initiatives aimed at reducing diesel and petroleum

product consumption, which positively impacts the environment and helps lower the import bill for these products.

Accordingly, in October 2022, Egypt inaugurated the Center of Excellence for Energy Efficiency and Operational Performance. The center offers a comprehensive range of services, from conducting technical reviews of energy efficiency and economic feasibility studies to implementing energy consumption measurement processes. Additionally, it provides theoretical training and hands-on experience using equipment models, simulation programs, and virtual reality in various energy sectors.

In the meantime, MoPMR announced in July 2022 that it will implement an integrated program for improving energy efficiency in 31 petroleum companies, which saves EGP 813 million annually.

Egypt's unwavering commitment to energy efficiency is a testament to its vision for a sustainable and prosperous future. By embracing innovative technologies and fostering collaboration between the public and private sectors, the country is poised to optimize its oil and gas industry. The Energy Efficiency Strategy 2022-2035, coupled with the establishment of the Center of Excellence, demonstrates a comprehensive approach to achieving these ambitious goals.

According to the Oil and Gas Modernization Program, energy efficiency in the petroleum sector can be achieved through various components, including the adoption of energy-efficient technologies to reduce costs and improve production.



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PRODUCTION OPTIMIZATION: BETTER PERFORMANCE FOR ENHANCED OUTPUTS

BY RANA AL KADY

When it comes to the oil and gas industry, there are always new and innovative ways to enhance output and efficiency. In the end, production optimization increases asset value by reducing expenses and increasing operational efficiency. Enhancement techniques improve well production by reducing a wide range of operational obstacles.

Nevertheless, production optimization may be defined as "production control" in which the production of gas, oil, and perhaps water is targeted, maximized, or minimized. For instance, it is simple to target or maximize the generation of gas and/or oil while reducing the amount of water, or to run the gas-oil ratio (GOR) and oil production to predetermined levels in order to save reservoir energy. A plethora of substitute production goals exist. Because every well, platform, and field is unique, there is a flexible way to manage production.

General Overview

First of all, how to sustain and grow output in current fields is a recurring challenge for oil and gas businesses. Oil and gas resources that are mature naturally deteriorate over time. Conventional production optimization approaches for modelling, simulation, and analysis take a lot of time and are frequently erroneous. In oilfields with reservoirs that are physically complicated, the issue is very severe. For all upstream production and service firms, choosing the best operating settings for artificial lift systems and other equipment is a challenging task.

Upping the Ante

There are many production optimization techniques that could be implemented to achieve an enhanced overall output. For instance, emulsion treatment is an essential method used to enhance efficiency; this includes choosing from a variety of demulsifier treatments to

lower equipment and storage requirements, increase vessel efficiency, reduce the generation of skim oil, and lower overall facility expenses.

Additionally, well stimulation treatments go way back and remain a popular method in ameliorating processes. As a matter of fact, well stimulation treatments are a tried-and-true method to lessen production decreases and wellbore skin damage caused by paraffin, scale, and asphaltene deposition.

Moreover, chemical automation services are among the more underrated techniques, despite providing excellent results. In fact, it is beneficial in reducing chemical waste and site visits by implementing automated chemical treatments that provide a precise dose independent of well conditions.

Oil and gas companies should constantly persist and strive to create an optimization procedure that increases production rates and reduces operational expenses through a series of enhancement techniques.

Thus, with significant global advancements in the use of clean technology, the shift away from fossil fuels and towards renewable energy sources is gathering steam. Even with the present success, faster growth is needed, and global leaders in industry and government will be crucial in determining the pace as a result of pressure from sustainability targets and improvement needed by the government.

However, substantial growth is constrained by lethargic infrastructure development, inadequate investment in new technologies, and subpar grid optimization. While international cooperation is important, the current state of world tensions and conflicts has proven to be a hindrance. Similar to the US-China trade spat, these tensions have accelerated the transition to renewable energy, but they have also broken up global supply chains, which may be bad for advances in clean technology. As said by an Energy Efficiency Expert, "The trick is not to rush too fast and only have renewable energy and say that [oil and gas products] are bad and harmful, but we should try and reduce risk while at the same time improving [the industry]."

Finally, it is worth noting that significant distortions in the global energy markets are caused by inefficient subsidies for the use of fossil fuels. These subsidies give an unfair advantage for the switch to clean energy technology, promote the wasteful and excessive use of fossil fuels, and produce imprecise price signals for fuel efficiency.

The immediate financial impact of these subsidies is significant, but the effects on the environment and human health are far more significant. To level the playing field, reorient market dynamics towards sustainable energy usage, and ease the transition for economies and consumers used to subsidized energy costs, a planned and progressive phase-out should be put into place.



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FLARE-TO-HYDROGEN IN OIL AND GAS INDUSTRIES

BY DOAA ASHRAF

Since the start of oil production more than 160 years ago, gas flaring, the process of burning natural gas associated with oil production, continued to cause air pollution. Worse, this process proved wasteful as the amount of gas currently flared worldwide (around 148 billion cubic meters in 2023) could power the whole of sub-Saharan Africa, as the World Bank recently stated.

Fortunately, many studies have been conducted to best utilize the flared gas (FG) instead of wasting it in the air. One of these studies is a joint American-South Korean study titled "Flare-to-hydrogen in oil and gas industries: Techno-economic feasibility of a net-negative alternative" which proposes an innovative solution to convert FG into hydrogen and utilize captured CO₂ for enhanced oil recovery (EOR).

Environmental impacts of gas flaring

Notably, Flaring is a major source of CO₂ emissions, methane, and black soot, all of which contribute to climate change.

Assuming a 'typical' associated gas composition, a flare combustion efficiency of 98%, and a Global Warming Potential for methane of 28, each cubic meter of associated gas flared results in about 2.6 kilograms of CO₂ equivalent emissions (CO₂e), resulting in over 350 million tons of CO₂ equivalent emissions annually. The study conducted by Moosazadeh et al. focused on the development and analysis of a multigeneration system that utilizes FG from the oil and gas industry. The researchers sought three FG-to-hydrogen production scenarios: autothermal reforming with CO₂ capture (AACP), autothermal reforming with CO₂ capture and enhanced oil recovery (EOR) utilization (AACPE), and autothermal reforming.

The study's results showed that the AACPE scenario is a promising carbon-reduction alternative, as it achieves a 72% CO₂ rate at 32.84 \$/kg CO₂ capture, sequesters it in an oil reservoir, and produces 1.28 Mbbbl of oil per year at 14.66 \$/bbl.

Besides, AACPE has the lowest economic and environmental costs of hydrogen production with 1.69 \$/kg H₂ and 3.91 kgCO₂/kg H₂.

AACPE process

The process begins with the capturing of flared gas, which is then prepared for conversion into hydrogen.

The flare gas is fed into an Autothermal Reforming (ATR) reactor along with oxygen and steam. The reaction takes place over a nickel catalyst, producing syngas, which is a mixture of carbon monoxide (CO), carbon dioxide (CO₂), hydrogen (H₂), and other gases.

The syngas is then passed through high and low-temperature WGS reactors to convert CO into CO₂ and produce additional hydrogen. The goal is to achieve a final CO content below 0.2%.

The shifted gas is sent to a carbon capture unit where an amine solution, such as monoethanolamine (MEA), is used to absorb CO₂. The CO₂ is then separated from the MEA solution in a desorber column.

The hydrogen-rich gas is sent to a PSA system to purify the hydrogen to 99.9%. Then pure hydrogen is compressed and made ready for transportation to the market. While, the captured CO₂ is compressed to 40 bar and injected into an oil reservoir for EOR.

Throughout the process, a pinch technique is used to recover waste heat, improving the system's thermal efficiency. Heat exchangers are employed to transfer heat between streams, minimizing the need for external utilities.

Is it economically feasible?

According to the researchers' analysis, this process has the highest initial investment cost compared to ATR and ACCP processes due to the expenses associated with drilling new injection wells for CO₂ injection. However, it generates additional revenue through increased oil production, which can offset the extra capital costs and contribute to the overall profitability of the system. Furthermore, the AACPE process implementation would vary across different countries depending on some factors like natural gas prices, hydrogen prices, carbon taxes, and government policies.

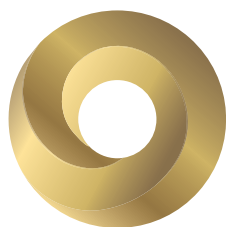
The study found that AACPE process could produce significant amounts of hydrogen from FG in OPEC-plus regions, generating 12.62 million tons of hydrogen per year at an average cost of 0.94 \$/kg of H₂. It also could significantly reduce carbon emissions by up to 138.72 mtpa.

Meanwhile, in non-OPEC countries, the AACPE system could produce 2.3 million tons per year (mtpa) of hydrogen at a cost of 2.91 \$/kg of H₂ and could reduce emissions by up to 25.27 mtpa.

This study was supported by the National Research Foundation of Korea (NRF) grant funded by the South Korean government (MSIT), and the Brain Pool Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Science and ICT.



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EGYPT'S ENERGY EFFICIENCY AMBITIONS: AN EFFECTIVE ECONOMIC PROGRAM FOR AN OIL, GAS RENAISSANCE

BY NADER RAMADAN

Egypt Vision 2030 was a strategy that sought to build a nation from the grassroots level up, and a critical part of realizing this vision was to realize ambitions to make a regional energy hub. To accomplish this, national production needs to be improved and production efficiency must be enhanced to appropriate levels, taking into consideration commitments to decarbonization and global competition. Improving energy efficiency is the step that needs to be taken for the nation's objectives to be fully realized.

For this reason, the Ministry of Petroleum and Mineral Resources took a balanced approach in introducing the Egyptian Petroleum Sector Energy Efficiency Strategy 2022-2035, which is a roadmap that involves a two-stage approach. The first stage sought to solidify the foundations for effective energy management to address current challenges and stimulate development in the market for energy efficiency services. At this stage, this strategy would also support mainstream energy efficiency within corporate culture throughout the sector while evaluating the energy efficiency potential of major energy consumers. Once the necessary foundations are built, the second stage would seek to enhance and intensify energy efficiency operations within the sector while using an innovative energy management approach to impactful energy savings. The second stage would also focus primarily on how energy efficiency can be enhanced to benefit the transport sector, a sector part of the market that is currently undergoing massive reform due to the transition to natural gas. Both stages have a significant amount of overlap.

A critical part of boosting energy efficiency was ensuring that the appropriate economic reforms were put in place and this Egyptian government has launched an ambitious, yet challenging reform program to minimize energy subsidies over the course of five years. The initiative was executed in three phases: the first in 2014, the second in 2017, and the third in 2018. As a result, the fuel subsidy percentage decreased from 70% of the state budget's total government expenses in 2012–2013 to an expected 50% of all government expenses in 2017–2018. Later on, the Egyptian government gradually worked to eliminate fuel subsidies within the following years after that.

In addition, it is important to note that one of the main market obstacles to energy efficiency would be removed if market prices for energy products were used to increase the economic sustainability of energy efficiency initiatives. In Egypt, the petroleum products market follows an automatic pricing mechanism, where prices are mainly derived from fluctuations in global oil prices, financial indicators, exchange rates, and a variety of other variables.

Moving to factors relating to Associated Petroleum Gas (APG), an official government report about Egypt's energy efficiency strategy titled "Egyptian Petroleum Sector Energy Efficiency Strategy 2022-2035" states "Associated Petroleum Gas (APG) flared, vented or used in the upstream operations and off-gas flared in downstream processes have no shadow prices. In the absence of any regulatory measures, the zero-pricing APG is a major factor leading to increased gas flaring. A key component to successfully achieving gas flaring reductions is the use of incentives for APG utilization. The most obvious incentives are related to gas markets and the ability of upstream producers to sell recovered gas & products at a competitive gas price and to several different off-takers."

Promoting energy efficiency from a financial perspective requires an innovative approach to investment. The government has adopted various policy frameworks, strategies and approaches to be implemented due to the high initial cost of energy efficiency solutions and the risks that users must take. Therefore, Third Party Financing (TPF) and, more recently, the Global Climate Fund (GCF) are the most often utilized funding tools for these kinds of initiatives. These strategies need to be adapted due to financial challenges to energy efficiency related to the high initial cost, the financial, technological, and performance risks, and the lack of investment resources, which financially impede the promotion of energy efficiency. Due to the unique characteristics of these projects and the risks involved, investors and funding institutions find it challenging to get their money back.

Energy efficiency in Egypt has the potential to not only drive sustainability but also boost production to the levels required for the country to achieve its vision of becoming a regional energy hub. Maximizing energy consumption efficiency is essential for Egypt to fully capitalize on its production capabilities. Studies have shown that the state's current strategy has been effective thus far and is expected to remain so in the coming years.

Energy efficiency in Egypt has the potential to not only drive sustainability but also boost production to the levels required for the country to achieve its vision of becoming a regional energy hub.

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THE DAY THE PAGERS EXPLODED: A NEW ERA OF CONFLICT

BY IHAB SHAARAWY

The ongoing conflict between Israel and Gaza, now in its second year of escalation, has caused unprecedented humanitarian suffering, heightened regional tensions, and significant economic consequences. The relentless violence has taken a heavy toll on civilian lives and infrastructure, prompting international concern. However, a new dimension of conflict may be emerging with the recent pager attack in Lebanon, which has introduced a paradigm shift in the nature of warfare. Beyond its immediate impact on Hezbollah forces and the potential for open war between Israel and Lebanon, the attack has sparked a global debate on the legal implications of cyber warfare. It has also heightened fears of the weaponization of personal devices and Internet of Things (IoT) technology, marking the dawn of a new era where everyday tools can be exploited for warfare, with far-reaching consequences that extend beyond the battlefield.



On September 17, pagers used by hundreds of Hezbollah members exploded almost simultaneously in Lebanon and Syria. The attack killed at least 12 people, including two young children, and wounded thousands more. Just one day later, a second wave of electronic devices detonated in Lebanon, signaling a coordinated and sophisticated operation targeting an extraordinary number of people. According to Lebanon's caretaker minister of health, at least 37 people were killed, including children and healthcare workers, and nearly 3,000 others were injured. The casualties included not only the device owners but also innocent bystanders. The already strained healthcare system struggled to cope with the influx of wounded, and fear spread rapidly among the civilian population, who worried that more explosions could occur at any time, in any place.

Although Israel has not officially claimed responsibility for the attack, an anonymous American official revealed to the media that Israel had briefed the U.S. on the operation, which involved detonating small amounts of explosives hidden in the pagers. Israeli Defense Minister Yoav Gallant, while addressing troops after the attack, made no direct mention of the device explosions but praised the military and security agencies, declaring that "we are at the start of a new phase in the war." The Lebanese government and Iran-backed Hezbollah were quick to blame Israel for the deadly explosions, a claim supported by Israel's long history of sophisticated operations behind enemy lines.

International outrage followed the attack, with U.N. human rights experts suggesting that the detonation of thousands of personal electronic devices "could constitute war crimes" and calling for countries to "bring to justice those who ordered and executed these attacks." They demanded a prompt, impartial investigation into the events. Lebanese Prime Minister Najib Mikati urged the U.N. Security Council to take a firm stance to stop what he called Israeli aggression and a "technological war" being waged against Lebanon.

Technical experts believe that the explosions were likely the result of supply chain interference, in which small explosive devices were embedded into the pagers before their delivery to Hezbollah and then remotely triggered, possibly via a radio signal. This theory aligns with the information shared by the American official. International humanitarian law prohibits the use of booby traps—objects that civilians are likely to use in their daily lives—precisely to avoid putting noncombatants at risk. Setting off explosives in thousands of personal devices without the ability to distinguish between civilians and combatants is seen as unlawfully indiscriminate.

According to U.N. experts, "These attacks violate the human right to life, absent any indication that the victims posed an imminent lethal threat to anyone else at the time." The experts warned that such attacks "could constitute war crimes of murder, attacking civilians, and launching indiscriminate attacks," urging for accountability and justice.

Global Implications of the Attack

While espionage, disinformation, and other nonmilitary activities have long been components of warfare, modern technology has drastically multiplied their potential. Advances in satellite technology, computing power, and the global nature of supply chains have created unprecedented vulnerabilities that can be exploited for military purposes.

The pager attack not only raises questions about its legality under international law but also sets a dangerous precedent for future conflicts. Israel's use of mass pager explosions may establish a new model that other countries could adopt. The world now faces the possibility that undetectable explosives could be planted in everyday items like cell phones or vehicles. Even conservative American supporters of Israel have expressed concerns, with one U.S. think tank speculating whether this tactic could be replicated using cell phones or other commonly used electronics.

The incident demonstrates how seemingly devices, such as pagers, can be weaponized through remote execution techniques. Experts believe Israeli intelligence may have tampered with the supply chain to embed explosives within the pagers, which were then activated via electronic signals, such as text messages.

This method underscores the vulnerabilities of connected devices and highlights the broader implications of remote execution for national security. Devices equipped with receivers or communication modules, like IoT-enabled gadgets, are susceptible to external manipulation.

The attack also emphasizes the risk of compromised supply chains. Securing the supply chain for enterprise hardware and software is critical to ensure that no malicious modifications are introduced during production or delivery. Strong encryption, authentication mechanisms, and continuous monitoring are necessary to safeguard IoT and other connected devices.

The pager explosions have opened the world's eyes to the growing complexity of cybersecurity threats, particularly as more devices become connected and vulnerable to remote manipulation. Governments and organizations must now prioritize securing the supply chain, ensuring encrypted communications, and preparing for increasingly sophisticated remote threats. In the wake of these attacks, it is clear that much has changed, and many aspects of global security will never be the same.

The pager attack not only raises questions about its legality under international law but also sets a dangerous precedent for future conflicts.

Egyptian-Cypriot Cooperation in the Eastern Mediterranean: NEW HORIZONS, PROMISING STRATEGIC PARTNERSHIPS

The Eastern Mediterranean has long been a geopolitical and geoeconomic focal point for major world powers. Recent massive gas discoveries in the Eastern Mediterranean, coupled with increasing regional demand, have created a new impetus for cooperative frameworks to exploit these reserves, not only in exploration and development but also in export and marketing.

Cyprus's Pivotal Role in the Natural Gas Industry:

With the discovery of the Aphrodite field in its territorial waters in 2011, Cyprus turned a new page in its history, emerging as a central hub in the Eastern Mediterranean. 13 years have passed since the discovery of Cyprus's first and largest offshore gas field, Aphrodite, followed by four other discoveries between 2018 and 2022, made by some of the world's largest energy companies. However, Cyprus has not yet produced or consumed any natural gas.

There are two primary options for transporting natural gas from Cyprus across the Mediterranean Sea, given the island's geography. The first is via ships transporting liquefied natural gas, and the second is through subsea pipelines. Both options require significant capital investment, especially the latter which necessitates regional cooperation among Eastern Mediterranean countries.

The Egyptian Role in Developing Cyprus's Gas Industry:

Egypt and Cyprus are considering constructing an approximately 90-kilometer subsea pipeline to connect the Aphrodite gas field to the offshore production facilities of the Zohr field in Egypt's territorial waters. According to the announced data, this will allow for the injection of Cypriot gas into Egypt's national gas network. Egypt aims to utilize the excess capacity in the Zohr field's pipeline and onshore gas processing plant. The Cypriot Aphrodite field holds an estimated 3.6 trillion cubic feet of natural gas and is located in Block 12, about 170 kilometers off the coast of Limassol, Cyprus. Cyprus plans to send natural gas extracted from the Aphrodite field to Egypt between 2027 and 2028. Connecting approximately 1 billion cubic feet per day (expected production) from the Aphrodite field to Egypt's national gas network will contribute to developing Cyprus' natural gas reserves by utilizing Egypt's existing infrastructure. It will facilitate the transportation of gas from Cyprus' exclusive economic zone to Egypt for liquefaction and export to global markets. Cyprus' lack of infrastructure hinders its ambition to become an energy hub in the Eastern Mediterranean, leading it to rely on Egypt to export the gas discovered in its offshore fields to Europe.

In summary, the issue of energy has become a strategic pivot in the relations between the countries of the Eastern Mediterranean region. Optimally utilizing the natural gas resources in the Eastern Mediterranean requires a degree of cooperation among all countries in the region. This can be gradually achieved through each bloc individually. True benefit from the region's gas resources necessitates the Eastern Mediterranean countries to adopt a realistic approach to managing this crucial file, by overcoming political differences and seeking common ground to facilitate negotiations, especially in both production and export processes.

Dr. Ahmed Sultan.

Chairman of the Energy Committee / Cairo Engineers Syndicate
Member of the Board of Directors of the Cairo Engineers Syndicate

EGYPT'S MINISTRY OF PETROLEUM FUELS THE DIGITALIZATION OF THE NATION'S ENERGY SECTOR

Based on the efforts of the Egyptian State Institutions and their Organizations to achieve the objectives of Egypt Vision 2030, the Ministry of Petroleum and Mineral Resources was one of the first ministries and institutions to prioritize swiftly achieving the key objectives of digital transformation.

Nearly five years ago, the agencies and companies affiliated with the Ministry of Petroleum and Mineral Resources began to apply the system of governance and digital transformation, whether at the level of companies and agencies or the level of the Ministry as a whole, trying to link all companies to one system or at least link companies with one specialization to one system to achieve optimal integration between them.

At the company level, companies have used internal servers for each company through which personal emails are created for all employees to ensure that correspondence and communications are carried out through these emails instead of traditional paper correspondences, which contributes to saving time and rationalizing expenses.

To make the most of principles of governance and digital transformation, some companies have also made applications on mobile phones to ensure that employees can obtain all services without the need to go to administrative affairs in these companies such as medical, entertainment, administrative services, in addition to the publications and news of these companies.

Companies have also used programs such as IBM Maximo Application Suite or System Analysis Program (SAP) software to contribute to the ease of managing their assets, achieving maximum benefit from them, and performing maintenance and operation works easily and without wasting time and effort.

As for the level of the Egyptian General Petroleum Corporation (EGPC) and its role in linking the sector companies to a unified system, EGPC linked refining companies by using some programs such as Linear Programming and Enterprise Resource Planning (ERP) that enable the EGPC can monitor the production of these companies and their strategic stock moment by moment and overcome any problems or obstacles one by one.

The EGPC also trained employees of these companies on how to use these programs in the presence of representatives of companies that own licenses of these programs and held workshops among employees of petroleum sector companies.

All these efforts contribute not only to achieving digital transformation which saves time and money, but also help in realizing efficient governance. This is an essential component of the sustainable development goals (SDGs) and contributes to eradicating corruption and achieving transparency and justice.

Eng. Ahmed Ezz Eldeen Elhenawey

Director of Operations and Oil Processing Department
General Petroleum Company (GPC)

WILL THE TIME OF COAL RETURN AGAIN?

Coal is a black or brown rock that is often flammable and combustible. It is found in ground layers or veins. It consists mainly of carbon, in addition to varying proportions of other elements (mostly hydrogen, sulfur, oxygen, and nitrogen).

Coal is indispensable because it is used in most industrial fields, and its most important uses can be explained in the following points:

- Steel production: Coal is used in the iron industry through the formation of coke, which in turn converts iron ore into steel.
- Local use: It is used in some developing countries and extremely cold regions as fuel for cooking food and as a source of heat as well.
- Liquefaction: This is the process that converts coal into industrial gas, consisting of a mixture of carbon monoxide and hydrogen, so that it can be converted into methanol gas and urea fertilizer.
- Odor absorption: It is used as a repellent of unpleasant odors, so it is recommended to put a piece of it in the refrigerator to absorb unpleasant odors that may result from some goods.

Medical uses: It can be used to remove dental tartar.

- It is used as fuel for trains: In previous decades and in developing countries, coal was used as fuel for trains.
- Construction: Coal can produce carbon fibers, which are important in the construction process and are also used in the manufacture of tennis rackets.

The benefits of coal can be stated in the following points: It is a continuous fuel source, unlike intermittent energy sources, such as wind and solar energy. There are huge reserves of coal that can be used for a future period of up to 200 years and the reserves are estimated at 1 trillion tons. It is characterized by low costs, as it is a non-renewable energy source that does not require high extraction and conversion costs, unlike other non-renewable sources. The possibility of converting it to other less harmful products, such as converting it into a liquid or gas, which limits the production of ash due to combustion processes.

As the most polluting types of fossil fuels approached the finish line, coal returned to power plants again, as a result of increased energy consumption, due to the lack of generating capacity and the Russian-Ukrainian crisis, at a time when some countries around the world began to establish new generating stations. In light of the continuing energy crisis affecting many European countries announced that they will resume their operations to generate electricity using fossil fuels, to face the upcoming winter.

News about the expansion of the use of coal to generate energy is considered "alarming" by environmental organizations, which describe generating energy from coal as "the dirtiest and most polluting method for the environment. The use of coal leads to an increase in carbon dioxide emissions by about 70% compared to natural gas, and this contradicts the state's declared policies and legal frameworks, which visualize an economic development program that is less dependent on carbon and the use of cleaner production technologies.

Coal pollutants are responsible for lung cancer, blood leukemia, immune system damage, all respiratory system diseases, fetal deformities, and persistent nervous system diseases. It is the fuel of the bygone era, and countries have dropped it from their calculations despite the oil and gas crisis. Coal extraction is considered dangerous at all stages. Treating it when extracted, during its transportation and storage, and before and after burning it, and making it environmentally friendly is an unattainable dream. The price of coal continues to decline despite the rise in the prices of other types of fuel.

Coal usage poses numerous hazards, from mining operations to its final consumption. It is typically transported by trucks from mines to steel casting factories and power stations. However, coal is transported in solid form rather than ground to avoid the risk of dangerous gases being released, which could cause explosions or fires during transit. Ground coal poses a higher risk of gas escalation, leading to conveyor capsule explosions. Additionally, transporting ground coal is more technically expensive.

It is important to address a common misconception: coal is often viewed as a passive raw material, simply a mass with physical weight. In reality, coal is a chemically active substance, and its activity continues even after burning. Its components are not chemically stable, making it highly hazardous. The dangers of coal are comparable to toxic substances such as mercury, lead, sulfur, cadmium, cesium, carbon, copper, and others, all of which pose significant risks to the surrounding environment during transport.

The process of grinding coal is one of the most dangerous for both the environment and human health. It is considered one of the most sensitive stages of coal usage due to its significant impact on workers throughout all phases of transportation and processing. The danger lies in the difficulty of performing the grinding in closed environments, as the high temperatures and the release of gases can lead to rapid explosions and combustion. A major risk is the elevated temperature of the coal, caused by burning, which generates active gases and vapors that are difficult to control in a confined space isolated from the surrounding environment.

Demand for coal remains strong, driving economic development in emerging markets. However, in the pursuit of a more sustainable future, many countries are taking steps to reduce dependence on fossil fuels, especially coal. Overcoming obstacles in this transition has proven challenging, particularly due to the reliance of coal industry workers on the sector for their livelihoods. Nonetheless, with the right policy tools and legal measures, these efforts can be supported. Green investment, technological advancements, and appropriate legislation will help curb coal use and accelerate the shift to cleaner energy sources as economic activity normalizes. Well-crafted policies can also ease the burden of transition for coal miners and others dependent on the industry.

Eng. Mohamed Abdelraouf
Southern Area Gen Mgr
Khalda Petroleum co

UNLOCKING THE POTENTIAL OF

EGYPT'S Oil & Gas Production

& EVALUATE YEARS OF DEVELOPMENT



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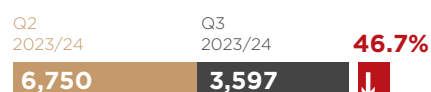
www.egyptoil-gas.com



QUARTERLY INDICATORS

Suez Canal Navigation Statistics

Vessels



Net Tonnage (mmt)



Suez Canal's Revenues in H1 2023/24

\$4.8 billion

The Suez Canal experienced a significant decline in vessel traffic during the third quarter (Q3) of the fiscal year (FY) 2023/24. The number of transiting vessels dropped by 46.7% compared to the previous quarter, and net tonnage decreased by 61.6%. This decline was primarily attributed to the Red Sea Crisis, which prompted many shipping companies to divert their vessels around the Cape of Good Hope rather than using the Suez Canal. Despite this, the canal's revenues increased by 20.7% in the first half (H1) of FY 2023/24 compared to the same period in the previous year.

EGX HIGHLIGHTS

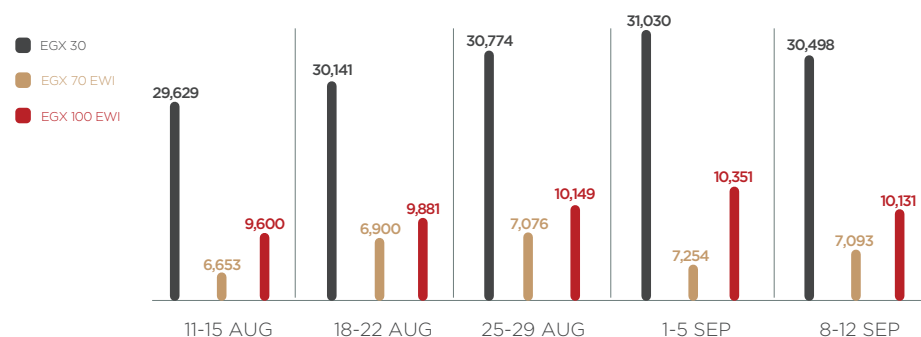
Performance of Listed Petroleum Companies

August 2024

 Close Price EGP 14.45 YTD Price Change ↑ 7.43% P/E* 30.46	 Close Price - YTD Price Change 0% P/E* 2.01	 Close Price EGP 9.35 YTD Price Change ↓ 15.70% P/E* 6.84
 Close Price EGP 28.23 YTD Price Change ↓ 29.43% P/E* 23.87	 Close Price EGP 28.4 YTD Price Change ↓ 2.3% P/E* 8.73	

*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 annual inflation increased in August to 25.6%. This increase in inflation was mainly driven by the rise in prices of many products and services, including an increase in the transportation services prices by 14.9%, the vegetables prices by 14.3%, the postal services group by 6%, and the electricity, gas and fuel materials group by 0.4%.

Despite the fluctuations in inflation rates trend, it remains significantly above the Monetary Policy Committee (MPC) upcoming inflation targets at 7% (± 2%) on average by the fourth quarter (Q4) of 2024 and 5% (± 2%) on average by Q4 2026.

Net International Reserves (\$ billion)



Egypt's net international reserves recorded a slight increase of 0.23% to reach \$46.597 billion in August compared with July. This marked a significant increase from the previous months of around \$110 million. It is worth mentioning that the International Monetary Fund (IMF) completed its 3rd review of Egypt's Extended Fund Facility (EFF) in September, the IMF raised their prejections by 40.9% from \$47.2 billion in FY 2024/25 to \$66.5 billion in FY 2028/29.

Non-Oil Private Sector PMI (Point)



Egypt's PMI has increased to 50.4 in August from 49.7 in July. As a result, a fresh expansion in the non-oil private sector economy in August, as businesses raised their output levels for the first time in exactly three years. The rise came amid further reports of a recovery in demand, as companies expanded their inventories and hired additional employees. Several companies remarked on the market's recovery in light of improving macroeconomic conditions and growing export activity. However, high costs pressures were impeding growth.



Egypt Boosts Digital Transformation in Petroleum Fields

Minister of Petroleum and Mineral Resources Karim Badawi has met with a delegation from Weatherford to enhance cooperation in digital solutions and services for well drilling. During their meeting, Badawi reviewed the ongoing project of digitizing oil and gas wells and fields at Khalda Petroleum Company sites.

Digitization Project Details



Aim

Adopting the latest digital technologies in wells to measure and analyze production data in real-time

Allowing more efficient management and operation of production wells, sustainability, and enhancing safety



Location

Western Desert



Included Wells **100**

Phases

1st Phase

Connected Wells **30**

2nd Phase

Targeted Wells **70**

By **2025**

Developing the Operation of Raven Offshore Gas field

In line with developing natural gas resources in the Mediterranean, the work is undergoing to drill two new wells to produce natural gas from the offshore Raven field west of the Nile Delta.



200 mmmcf/d

\$700 million

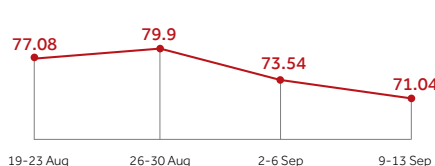
Targeted Gas Production Investments

PRICING HIGHLIGHTS

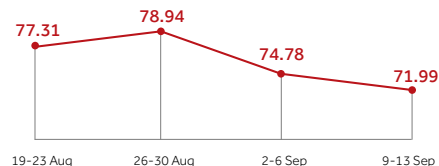
Average International Prices



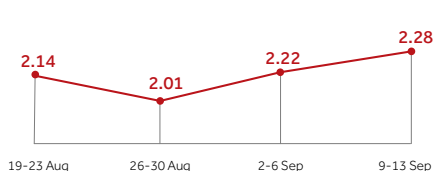
BRENT (\$/BBL)



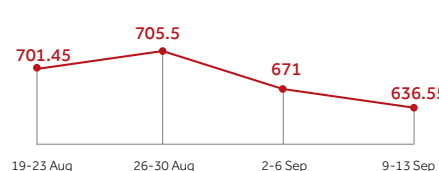
OPEC BASKET (\$/BBL)



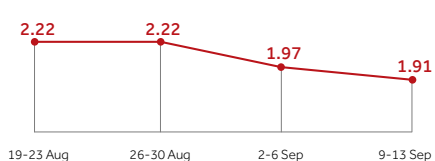
NATURAL GAS (\$/MMBTU)



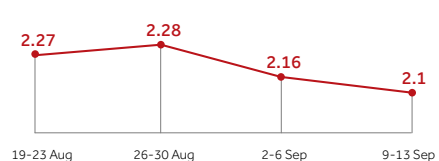
GAS OIL (Nymex) (\$/MT)



RBOB GASOLINE (Nymex) (\$/GAL)

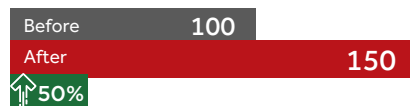


HEATING OIL (Nymex) (\$/GAL)

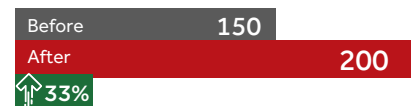


Local Butane Gas Cylinders Prices (EGP)

Residential



Commercial Uses



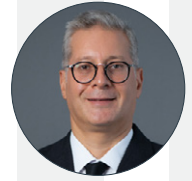
Mazut Supplied to Power Plants (EGP/t)



Prices Changed on 15/9/2024



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