

# EGYPT

## A LAND OF OPPORTUNITY FOR ENERGY INVESTORS





# EDITOR'S LETTER

Dear Reader,

Egypt is a trove of opportunities for energy investors, with a rich endowment of natural resources and a government that is committed to promoting the country's potential and attracting investments to the dynamic energy sector. The country has significant reserves of oil and natural gas, as well as abundant renewable energy resources, including solar, wind, and geothermal. Egypt is also strategically located at the crossroads of Europe, Africa, and the Middle East, making it an ideal hub for energy trade and transit.

In this edition, we shed light on Egyptian efforts to attract new investments and highlight some of the potential opportunities that make Egypt a perfect destination for energy investments. Our Research and Analysis team also offers an interesting overview of Egypt's IPO Program. We are also delighted to present the full coverage of a decarbonization workshop hosted by the East Mediterranean Gas Forum (EMGF) and organized by Egypt Oil & Gas Group (EOG).

We hope you enjoy this informative edition.

*Ihab Shaarawy*

MANAGING EDITOR

## CONTENTS

Carbon Neutrality Within Reach: EMGF Leads the Way



**14** | Egypt's IPO Program  
A Catalyst for the Oil & Gas Sector

**18** | Egypt: A Land of Opportunity for  
Energy Investors


**20** | Clean Transportation: The Time to  
Invest is Now

**22** | Additive Manufacturing:  
Revolutionizing the Oil and Gas  
Industry

**24** | How Technology Has Become a Key  
Catalyst for Energy Investments

**26** | BRICS Expansion:  
A New Game Changer in Global  
Geopolitics, Energy Dynamics

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

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

 (+20) 2 27498190

 info@egyptoil-gas.com

[www.egyptoil-gas.com](http://www.egyptoil-gas.com)

Proudly the Official Publication



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

General Manager

**Ayman Rady**

Research & Analysis Manager

**Dr. Mahinaz El Baz**

Managing Editor

**Ihab Shaarawy**

Senior Editors

**Rana Al Kady**

**Nader Ramadan**

Senior Writer

**Sarah Samir**

Staff Writer

**Fatma Ahmed**

Research & Analysis Supervisor

**Reham Gamal**

Research Analysts

**Jolly Monsef**

**Mariam Ahmed**

**Abdullah Mostafa**

Statistician

**Nada Abbas**

**Hagar Tarek**

Chief Reporter

**Wael El-Serag**

Marketing Specialist

**Shrouk Ihab**

Creative Art Director

**Omar Ghazal**

Senior Graphic Designer

**Merna William**

Motion Designers/ Video Editors

**Amira Hassan**

**Esraa Sherif**

3D Visualizer

**Tamer Gamal**

Photographer

**Hady Nabil**

CEO Executive Assistant

**Noha Zayed**

Web Master

**Olfat Kamel**

Web Developer

**Mohamed Elwakeel**

Administration

**Taghreed Mounir**

Senior Accountant

**Mahmoud Khalil**

Accountant

**Mohamed Nagy**

Distribution Officers

**Mahsoub Kenzi**

**Mohamed El-Sayed**

**Mahmoud Nabil**

**Osama Mohamed**

**Hesham Mohamed**

Publisher

**Mohamed Fouad**

All rights to editorial matters in the newspaper are reserved by Egypt Oil and Gas and no article may be reproduced or transmitted in whole or in part by any means without prior written permission from the publisher.



/EgyptOilandGas



/EgyptOilandGas



/Egypt-Oil-&-Gas



/EgyptOilandGas



/EgyptOilandGas



UNDER THE HIGH PATRONAGE OF **H.E. TAREK EL MOLLA**  
 MINISTER OF PETROLEUM & MINERAL RESOURCES - ARAB REPUBLIC OF EGYPT



# OPERATIONAL EXCELLENCE AWARDS

SPONSORED BY



OPERATIONAL EXCELLENCE AWARDS WILL BE HELD TO RECOGNIZE VALUE ADDED WORK AND OUTSTANDING PERFORMANCE OF COLLABORATIVE TEAMS WHO BROUGHT FORTH THE BEST OPERATIONAL PROJECTS DEVELOPED IN EGYPT'S FIELDS IN THREE CATEGORIES:



OPERATIONAL  
 EXCELLENCE IN  
 BROWNFIELD



HIGHEST IMPACT  
 DECARBONIZATION  
 PROJECT



BEST ECONOMICAL  
 DECARBONIZATION  
 PROJECT



**SUBMIT YOUR ENTRY**



ORGANIZED BY



TECHNICALLY PREPARED BY



## TOP 5

**Cheiron Makes Oil Discovery at Geisum, Tawila West Concession**

Cheiron has announced a new oil discovery in the Geisum and Tawila West concession area in the Gulf of Suez.

The operations in the field are managed by the joint venture PetroGulf Egypt, on behalf of the Egyptian General Petroleum Corporation (EGPC), owning 50%, and the partners Cheiron, PICO, and KUFPEC 50%.

The discovery was made through the exploration well of GNN-11, and the well encountered 165 feet of net vertical strata of high quality in the Nubian Formation dating back to the pre-Miocene era.

This is the first time that the Nuba Crude Oil-Bearing Formation was found in the

concession area, and the main producing reservoir of the field is located in the Nakhil Formation.

The well was drilled through the recently installed early production facility in the North Geisum field and the well was successfully put on production at a rate of over 2,500 barrels per day (bbl/d).

As a result of the new well and the successful drilling program, the total crude oil production has reached about 23,000 bbl/d compared to about 4,000 bbl/d per day before the development of the North Geisum field. The well is the fourth well to be completed through the early production facilities.

**IPR Energy Group Announces Major Find in Alamein, Western Desert, Egypt**

IPR Energy Group (IPR) has announced a major find in the Alamein/Yidma Concession, where IPR holds a 100% Working Interest.

This unprecedented find encountered 27 ft of net pay in the Lower Kharita reservoir, with an average production rate of 3,300 barrels per day (bbl/d) of oil at 36°API with less than 1% BS&W on a ½ in. choke.

Alamein 48-K was drilled to a depth of 8,960 ft utilizing the IPR-1 750 HP Drilling Rig, while testing and completion was carried out with the IPR-2 350 HP Workover Unit at a total cost of \$1.55 million. The well will be completed with an ESP and immediately put onstream through the existing Alamein/Yidma facilities, adding significant material production for IPR and EGPC.

**El Molla Announces New Petroleum Bid Round in 23 Areas via EUG**

Minister of Petroleum and Mineral Resources Tarek El Molla has announced a new international petroleum bid round by the Egyptian General Petroleum Corporation (EGPC) and South Valley Egyptian Petroleum Holding Company (GANOPE) via the Egyptian Upstream Gateway (EUG) platform.

The bid round aims to boost exploration and production in new 23 areas; 10 for EGPC and 13 for GANOPE including the Western Desert, Eastern Desert, Gulf of Suez, and Red Sea. The offers will be received until Sunday, 25 February 2024.

The Ministry of Petroleum and Mineral Resources said that the geological and

geophysical data of these areas are available on the EUG in addition to the technical and regional studies of all areas and technical support.

El Molla elaborated this bid round is prepared by using the latest digital tools. He affirmed that the proposed areas comprise diverse sectors including new positions in the Red Sea which witnessed a developed seismic survey that resulted in valuable geological data.

The minister said that this new bid round aims to help Egypt continue its track of increasing production of petroleum resources and increase its investments.

**Egypt Awards New Exploration Blocks to Eni, bp, QatarEnergy, Zarubezhneft**

The Ministry of Petroleum and Mineral Resources announced the results of the international bid round by the Egyptian Natural Gas Holding Company (EGAS) for the search and exploration of natural gas and crude oil in the Mediterranean Sea and Nile Delta regions, which closed in mid-July 2023.

Four exploration areas were awarded, three of which were in the Mediterranean

Sea (two for the Italian company Eni – and one for a consortium of Eni, bp, and Qatar Energy) and one area in the Nile Delta (for the Russian company Zarubgazneft). The minimum investment in the research periods is estimated at around \$281 million to drill a minimum of 12 wells during the exploration stages, in addition to \$7.5 million in signing bonuses.

**Zohr Natural Gas Production Records 2.4 bcf in FY 2022/23**

Belayim Petroleum Company (Petrobel) Chairman Khalid Mowafi announced that Zohr field production of natural gas reached 2.4 billion cubic feet (bcf) during the fiscal year (FY) 2022/23 in addition to about 3,700 barrels per day (b/d) of condensates.

Mowafi's remarks came during the general assembly meeting of Petrosheouk Company headed by the Minister of Petroleum and Mineral Resources, Tarek El Molla.

Mowafi noted that the 20th well is planned to come on stream by the end of October 2023 as one of the procedures to keep production rates on the same levels. Mowafi added that another project was executed to connect the processing unit of Zohr field to Al- Gameel compressors stations.

Furthermore, Mowafi said that there is preparation for drilling several new wells between 2024 – 2025 and going forward to study how to preserve the production rates.

**A BLAST FROM THE PAST**

**On October 10, 2017,** Egypt and Jordan signed two memoranda of understanding (MoUs) for cooperation in natural gas projects. The two MoUs were part of the two countries' efforts to boost and develop bilateral cooperation.

The first MoU aimed to establish a joint company to operate and maintain pipelines and natural gas networks in Jordan. This MoU was signed between The Jordanian Egyptian Fair Company, the Egyptian Natural Gas Company (Gasco), and Fajr Egypt.

The second MoU aimed to prepare feasibility and technical studies for projects to deliver natural gas to homes, households, commercial, and industrial consumers in the cities of Aqaba, Amman, Zaraqqa, and Irbid in Jordan. This MoU was signed between Fajr Jordan and Egypt Gas.

The cooperation between the two countries is still ongoing to complete these projects. Recently, the two parties signed an agreement to provide natural gas delivery facilities to the industrial city of Quweira in Aqaba, Jordan.

**126.85%****Petroleum Public Investments Growth in Q2 2022/23 (QoQ)**

The public investments in the petroleum sector doubled during Q2 2022/23 compared to the previous quarter. In Q2, the investments accounted for EGP 6.76 billion, while in Q1, they accounted only for EGP 2.98 billion.

The primary driver behind the rise in petroleum public investments is the notable increase in investments in petroleum refining activities. Investments in this sector experienced a substantial growth rate of 216.49%, reaching EGP 4,386 million in Q2, in comparison to EGP 1,386 million in Q1, according to Ministry of Planning and Economic Development.

NUMBER OF THE MONTH

## Achieve exceptional drilling performance with an advanced, integrated BHA

- Eliminates days of rig time to deliver significant savings
- Delivers superior hole quality to eliminate reaming runs
- Drills longer laterals with greater speed
- Accomplishes exact well placement with near-bit azimuthal gamma-ray measurements
- Attains superior wellbore quality with automated wellpath trajectory control

# Lucida™

Advanced rotary steerable service

### CASE STUDY: DELAWARE BASIN, UNITED STATES

Baker Hughes delivered superior wellbore quality and faster penetration rates

# 17%

improvement in drilling efficiency

# 39%

reduction in average dogleg saved

# 62%

saved in drilling costs

# 2.7 days

reduction in drilling time

# \$160K

reduction in maximum dogleg

### TECHNOLOGIES AND SERVICES

- Lucida™ advanced rotary steerable service
- Dynamus™ extended-life drill bit

**Baker Hughes** 



## INVESTMENTS

**Eni to Invest 7.7B in Egypt's Energy Sector Over 4 Years**

President Abdel Fattah El Sisi met with Eni's CEO Claudio Descalzi and a number of the company's senior officials, in the presence of Tarek El Molla, Minister of Petroleum and Mineral Resources.

During the meeting, El Sisi praised the distinguished Egyptian-Italian relations, the extended partnership with Eni, and the multiple activities the company carries out in Egypt in accordance with the highest international standards.

Meanwhile, Descalzi stated that Eni and its partners intend to make new investments in Egypt, during the next four years, at a value of \$7.7 billion, as part of the company's



keenness to enhance its successful projects in Egypt.

Eni's CEO expressed his pride in cooperating with Egypt in light of the close ties between Egypt and Italy.

**bp to Invest \$3.5B in Exploration, Development in Egypt in the Next Three Years**

President Abdel Fattah El Sisi met with Bernard Looney, CEO of bp, in the presence of Tarek El Molla, Minister of Petroleum and Mineral Resources, and Nader Zaki, the company's regional president for the Middle East and North Africa.

During the meeting, Looney presented the company's investment plans with its partners in Egypt throughout the next three years

in the areas of research, exploration and development, explaining that they amount to \$3.5 billion.

El Sisi praised the growing volume of the British company's activities and investments in Egypt, especially with its contribution to the exploration and production of oil and gas.

**Apache to Invest \$1.4B in Egypt in 2024**

Prime Minister Mostafa Madbouly and Minister of Petroleum and Mineral Resources Tarek El Molla have met with a high level delegation from Apache Corporation to review the company's plans and investments in Egypt during the coming period.

The meeting was attended by John Christmann, CEO of Apache Corporation; Stephen Riney, Chief Financial Officer of Apache; and David Chi, Vice President of Apache Corporation and Country Manager for Apache in Egypt

During the meeting, Christmann affirmed that Apache is committed to its investments in Egypt and looks forward to the government's support for the company's growth in the Egyptian market. He explained



that the company intends to invest about \$1.4 billion in Egypt over the next year.

He added that the company has important working relations with Egypt, explaining that it has implemented plans to modernize work mechanisms at its sites in Egypt, which enabled Apache to increase oil production capacity by 10% to more than 150,000 barrels per day.

## DEVELOPMENT

**Egypt, Partners to Develop 30 Offshore Discovery Wells over 2 Years: El Molla**

Minister of Petroleum and Mineral Resources Tarek El Molla stated that Egypt together with all its global partners will develop 30 offshore discovery wells over the coming two years.

El Molla said in an interview with CNBC that "it will take more than \$1.5 billion investments and commitment from our partners Shell, Eni, bp, Chevron, and ExxonMobil. So, this is very important for our Egyptian oil and gas resources."

**Egyptian Consortium, Palestine to Finalize Development Agreement for Gaza Marine Offshore Field**

Minister of Petroleum and Mineral Resources Tarek El Molla and Minister of Water Resources and Irrigation Hani Sweilem witnessed the signing of a joint cooperation protocol between the two ministries.

The protocol comes as the two ministries join forces to overcome the challenges facing investment and strategic projects implemented by the petroleum sector that achieve economic development in various governorates of Egypt.

Under this protocol, the Ministry of Water Resources and Irrigation will provide and meet the necessary water needs for a number of new petroleum projects implemented by the petroleum sector in Upper Egypt and the Nile Delta region to sustain the provision of petroleum products in these regions.

## ACHIEVEMENTS

**East Port Said Receives World's First Green Fuel Ship**

The Suez Canal Economic Zone has announced the arrival of the first green fuel container ship in the world.

The ship was received by East Port Said in the first voyage of the ship, belonging to the shipping line Maersk, to an Egyptian port overlooking the eastern Mediterranean. The ship is coming from Asia, passing by Africa, through Egypt, and then on to Europe.

The container ship arrived at the port of East Port Said, which is ranked among the ten most important ports in the world, according to a World Bank report.

This reflects the confidence of the shipping lines in the Authority's ports in particular due to the remarkable development witnessed in Egyptian ports.

## HYDROGEN

**Cabinet Approves PM's Draft Decision to Establish the National Council for Green Hydrogen and its Derivatives**

During its meeting, chaired by Prime Minister Mostafa Madbouly, the Cabinet approved the Prime Minister's draft decision regarding the establishment of the National Council for Green Hydrogen and its Derivatives.

The Prime Minister's draft decision stipulates that a council called the "National Council for Green Hydrogen and its Derivatives" be established. It will be chaired by the Prime Minister, and the membership of the following Ministers: Electricity and Renewable Energy; Petroleum and Mineral Resources; Justice; Planning and Economic Development; Environment; Housing, Utilities and Urban Communities; Transportation; Trade and Industry; Irrigation; and Military Production.

The National Council for Green Hydrogen and its Derivatives aims to unify the state's efforts to stimulate investment in the field of green hydrogen and its derivatives, in line with the requirements of sustainable development and the state's plans for economic and social development, and to ensure its competitiveness at the international and regional levels.

The Council undertakes a number of specializations and tasks, including following up the implementation of the national strategy for green hydrogen, proposing its updating in light of international and national developments, as well as approving policies, plans and mechanisms necessary to implement and update the strategy, and coordinating between ministries and concerned authorities.

## GENERAL ASSEMBLIES

**GUPCO Production Reaches 56,200 bbl/d of Oil in FY 2022/23**

Minister of Petroleum and Mineral Resources Tarek El Molla chaired a General Assembly meeting to approve the business results of the Gulf of Suez Petroleum Company's (GUPCO) for the fiscal year 2022/23.

During the meeting, Salah Abd El Karim, GUPCO's Chairman, reviewed the most important business results achieved by the company during the year.

Abd El Karim explained that the company's production rates amounted to about 56,200 barrels of oil per day (bbl/d) as a result of drilling five development wells, with a production rate of 6,500 bbl/d. This is in addition to repairing and completing six wells, and operations to improve the wells' productivity, which contributed to adding petroleum reserves amounting to 27 million barrels of crude oil, as well as 14.8 billion

cubic feet of gas. Modern seismic survey work was also carried out, seismic data processing, and the first well was drilled using modern seismic data.

Moreover, Abd El Karim stated that development work is underway for the North Safa project for crude oil production. Production there is expected to begin at a production rate of about 3,000 bbl/d, which will gradually increase until the maximum capacity of the field is reached, which is 12,000 bbl/d.

Abd El Karim explained that the total investments during the year amounted to about \$432 million, distributed among research, exploration and development activities, production projects, and infrastructure renewal.

**Khalda's Average Daily Production Reaches 220,000 boe in FY 2022/23**

Saeed Abdel Moneim, Chairman of Khalda Petroleum Company stated that the company's average production recorded 220,000 barrels of oil equivalent per day (boe/d) during the fiscal year (FY) 2022/23 after pumping new investments amounting to about \$1.2 billion.

During the meeting, Abdel Moneim reviewed the most important results of the work and activities carried out in the company's fields in the Western Desert during the fiscal year 2022/2023, which witnessed remarkable development after the merger between the Kekhalda and Qarun Petroleum companies under the Khaleda umbrella.



The chairman said that 91 wells were drilled to increase production and develop reserves, in addition to drilling and completing 37 exploratory wells. These efforts resulted in achieving 28 new discoveries during the year with a reserve of 35 million barrels of oil equivalent (mmboe), the most notable of which was the discovery achieved in the East Bravo X1 well, with a production rate exceeding 6,300 barrels and about 4 million cubic feet of natural gas (mmcf).

**Egyptian Petrochemical Company Achieves Its Highest Production Ever in 2022/23**

During the general assembly of the Egyptian Petrochemical Company in Alexandria for fiscal year 2022/23 chaired by Minister of Petroleum and Mineral Resources Tarek El Molla, Egyptian Petrochemical Company's Chairman Ahmed Mowakea stated that the company achieved its highest production ever since its founding, as it produced about 82,700 tons of PVC products as well as its planned production of caustic soda by about 70,000 tons.

Mowakea indicated that the company's various factories have been developed and their production capacity has been increased,

as the production capacity of the PVC production plant has increased from 23,000 to 80,000 tons and is being increased to 100,000 tons in the coming months.

The production capacity of the VCM production plant, or vinyl chloride monomer, also increased to 125,000 tons annually after introducing a new unit into service, pointing out that the company achieved total local sales worth about EGP 3.4 billion from caustic soda and PVC producers. It also exported to foreign markets worth more than \$28 million.

**GPC Produces 74,000 boe/d in 2022/23**

During the general assembly of the General Petroleum Company (GPC), Minister of Petroleum and Mineral Resources Tarek El Molla praised the development of the company's production and the projects that were implemented in exploration and development activities, occupational safety and health, and environmental compatibility. GPC's Chairman Nabil Abdel Sadiq reviewed the most important performance indicators that the company achieved during fiscal year 2022/23.

Abdel Sadiq explained that the company succeeded in achieving the highest production rate since its inception, amounting to about 74,000 barrels of oil

equivalent per day (boe/d), bringing the company's total production after adding its share from the participating companies to about 98,000 boe/d, with a development rate of about 100%.

He added that the company succeeded in drilling 46 exploratory and development wells, and was able to make six serious oil discoveries in its concession areas, with initial production rates amounting to about 7,200 boe/d, and adding a reserve stock estimated at about 38.3 million boe, which contributed to an increase in production rates and also opened new areas for exploratory and development drilling, and the total investments during the year increased to about EGP 3.6 billion.

## AGREEMENTS

**Fertiglobe, AD Ports Sign Collaboration MoU**

Fertiglobe announced that it has signed a non-binding MoU with AD Ports Group to explore logistics and supply chain opportunities for storing and shipping urea and ammonia at ports in Egypt and the UAE.

The two companies will explore opportunities to leverage AD Ports Group's state-of-the-art cargo handling and storage infrastructure, as Fertiglobe strengthens its urea and ammonia storage and shipping capabilities, reduces its greenhouse gas (GHG) footprint, enhances operational efficiency and further automates its logistical activities.

**KUFPEC, Shell Seal FOA in Egypt**

BG International Limited, subsidiary of Shell plc., signed a Farm Out Agreement (FOA) with KUFPEC Egypt Limited (KEL), subsidiary of Kuwait Foreign Petroleum Exploration Company (KUFPEC).

According to the agreement, KEL will acquire 40% stake in Block 3 (NorthEast El-Amriya) in the Egyptian Mediterranean Sea. This FOA is subject to government and regulatory approvals, without prejudice to pre-emption rights.

Shell will remain to be the operator in Block 3.

## APPROVALS

**Cabinet Approves EGPC, Lukoil Exploration Contract**

In its meeting No. 257, the Cabinet approved a draft law authorizing the Minister of Petroleum and Mineral Resources Tarek El Molla to contract with the Egyptian General Petroleum Corporation (EGPC) and Lukoil Overseas Egypt.

The contract aims to search for, develop and exploit oil in the West East Esh El Mallaha development area in the Eastern Desert, with the aim of continuing development operations and increasing production rates.

**Cabinet Approves Golden License for GASCO**

In its meeting No. 257, the cabinet approved granting a golden license to the Egyptian Natural Gas Company (GASCO), regarding a project to increase the capacity of the Western Desert Gas Complex with a fourth production line with a design capacity of 600 million cubic feet per day (mcf/d), on an area of about 33 acres in the Industrial Nahda Zone, in Amreya, Alexandria Governorate.

The Gasco project is scheduled to provide employment opportunities for about 2,500 workers, and its investment cost will reach about 380 million dollars. It aims to increase the production of natural gas derivatives and provide the needs of petrochemical plants with raw materials while providing butane and condensers to support the needs of the local market for these products.

## ARAMCO



### ARAMCO ENTERS SOUTH AMERICAN RETAIL MARKET WITH ESMAX ACQUISITION

Aramco has announced a 100% acquisition of Esmax Distribution SpA from Southern Cross Group in South America.

Esmax is a leading diversified downstream fuels and lubricants retailer in Chile. In 2022, Esmax, which also distributes Petrobas fuel in Chile, recorded revenue equivalent to \$2.5 billion and a profit of \$57.7 million.

Aramco's acquisition of Esmax, is the company's first downstream retail investment in South America. The transaction, subject to customary conditions and regulatory approvals, will provide Aramco access to retail fuel stations, airport operations, fuel distribution terminals and a lubricant blending plant.

This agreement would also enable Aramco to secure outlets for its refined products and help expand its retail business internationally.

The acquisition will further unlock new market opportunities for Valvoline branded lubricants, following Aramco's acquisition of the American retail automotive services Valvoline Inc. global products business for \$2.65 billion in February 2023.

## SONATRACH



### SONATRACH SIGNS EPC CONTRACT WITH TOTALENERGIES, ENGTP

Algeria's state-owned company Sonatrach has announced that it signed a new contract with its TFT group partners, French TotalEnergies and Algeria Entrprise Nationale de Grands Travaux Pétroliers (ENGTP), regarding the Tin Fouyé Tabankort II (TFT) gas field in Algeria.

The Engineering, Procurement, and Construction contract (EPC) covers the extension of the collection network of TFTII, for the purpose of connecting and putting on stream 11 new wells towards the existing processing center at the TFT gas field located in the Illizi Basin at 400 km South-East Hassi Messaoud.

With an amount of 8 billion Dinars (\$58.367mln), this EPC contract which will be completed within

24 months, should enable the GTFT to produce 9 million cubic meter per day (mmcm/d) in the first phase, according to the press release.

The services covered by the EPC contract include detailed engineering studies, equipment and materials procurement, collection network construction, flowlines, and construction of surface facilities for the connected wells.

In July 2023, Algeria's Sonatrach signed \$740 million contracts with TotalEnergies, including hydrocarbon deals related to the exploitation of the TFTII and TFT South fields in the desert in southeastern Algeria, in addition to contracts for liquefied natural gas and renewable energy, stated Sonatrach in another press release.

The TFT II contract provides for development investments of around \$332 million, making it possible to recover 43 billion cubic meters of gas, 4.3 million tons of condensate, and 5.7 million tons of LPG.

The development investments of the second contract, TFT Sud, are estimated at \$407 million, allowing the recovery of 11.5 billion cubic meters (bcm) of gas, 1.3 million tons of condensate, and 1.6 million tons of LPG.

The Combined production of the two perimeters TFT II and TFT South will exceed 100,000 barrels of oil equivalent per day by 2026 against a current production of about 60,000 barrels per day.

## DANA GAS



### ENERGEAN H1 2023 REPORT INDICATES POSITIVE RESULTS IN EGYPT

Energean announced half year results for the period ending up in June 30.

The company achieved positive results at the second and third NEA/NI development wells in Egypt. This helped reinforce the company's view that the results from NEA#6 would have no reach-across to the remainder of the field.

NEA#5 came onstream in July and is now producing in line with its pre-drill expectations, whilst PY#1 testing has delivered results in line

with expectations. The remaining two wells are expected to go onstream in 2023.

In Egypt, production in July averaged 26,500 barrels of oil equivalent per day (boe/d) following the start-up of NEA#5 in July. Production from NEA#5 has performed in line with expectations at 25 million standard cubic feet per day (mmscf/d) 4,300 boe/d.

The NEA/NI development reached first gas in March 2023. Two wells are currently onstream, NEA#5 and NEA#6, the former which was

brought online in July 2023. NEA#5 is producing in line with pre-drill expectations of around 25 mmscf/d. Of the remaining two wells, which are expected to come onstream later this year, PY#1 was completed and tested at 20 mmscf/d, in line with prognosis, in August 2023, and NI#1 is expected to spud in September 2023.

At 30 June 2023, net receivables (after provision for bad and doubtful debts) in Egypt were \$143.1 million (31 Dec 2022: \$116.5 million), of which \$107.8 million (31 Dec 2022: \$40.9 million) was classified as overdue.

## TOTALENERGIES



### TOTALENERGIES TO INVEST \$9B IN OIL, GAS PROJECT IN GUYANA

TotalEnergies has announced that it will begin studies for developing a \$9 billion oil and gas project at Suriname's most promising offshore area in Guyana.

The detailed engineering studies (FEED) will start by the end of 2023 and the Final Investment Decision is expected by the end of 2024 with a first production target in 2028 as the French company stated in a press release on the same day.

The discoveries will allow the production of up to 200,000 barrels per day of mostly crude, while associated natural gas initially will be re-injected to maintain crude output, and could be exported in further project stages, Patrick Pouyanné Chairman and CEO of TotalEnergies said.

TotalEnergies is the operator of Block 58, with a 50% interest, alongside APA Corporation holding the other 50%.

TotalEnergies has been present in Suriname since 2019 in Block 58 where five significant discoveries have been made and is also exploring Blocks 6 and 8 since 2023.



## BP



### BP TO INVEST \$11B IN GERMANY'S ENERGY TRANSITION

bp to invest up to €10 billion (\$10.7 billion) in low-carbon fuels and renewables in Germany by the end of this decade.

Germany is one of a handful of countries BP is targeting to build up its strategy to shift away from fossil fuels towards low-carbon fuels and electricity.

As competition over the energy transition of Europe's largest economy intensifies, bp aims to increase its investments in electric vehicle (EV) fast chargers, decarbonize its refineries, and develop wind power. It is also considering establishing a local hub to import low-carbon hydrogen.

The €10 billion euros are new investments, including a €678 million payment BP must make after winning two licenses in Germany's last offshore wind auction in July.

Between 2023 and 2030, bp plans to invest \$55 billion to \$65 billion in its new transition businesses, which will match its investment in oil and gas.

## EQUINOR

Equinor's Johan Castberg Oilfield Project Cost Estimate Surges to \$1.2B

Norway's Equinor and its partners announced that they have raised the project cost estimate for their joint Johan Castberg oilfield in the Arctic Barents Sea by close to 13 billion Norwegian crowns (\$1.20 billion).

The updated project cost estimate is now 80 billion Norwegian crowns, an increase of close to 13 billion since last year and up from 57

billion originally projected when the Castberg development was launched in 2017, Equinor said in a press release.

Johan Castberg is a subsea field with 30 wells distributed on 10 templates and two satellites tied back to a floating production, storage, and offloading vessel (FPSO). It is located around 100 km north of the Snøhvit field in the Barents Sea, 150 km from Goliat, and almost 240 km from Melkøya in Hammerfest. The water depth is 360-390 metres.

Proven volumes in Johan Castberg are estimated at between 450 and 650 million barrels of oil. The vessel is designed for a daily production of close to 190,000 barrels.

The project is a joint venture between Equinor Energy as an operator holding 50% stakes, Vår Energi ASA holding 30%, and Petoro AS holding the remaining 20%.



## SHELL

### SHELL TO PUT GERMANY'S SONNEN UP FOR SALE

Shell plans to sell German solar energy storage manufacturer Sonnen, which it acquired 100% in 2019 for €500 million.

Some experts believe that the Bavarian company could be valued at 1.35 to 1.8 billion euros, which is three to four times its expected 2023 sales of €450 million (\$482.36 million), according to Reuters.

The reason behind this decision is yet unclear, however, Shell had indicated at its Capital Markets Day in June that it intended to divest its home energy retail business in Europe.

On the first of September, the British oil and gas giant announced that it would sell its home energy business in the UK and Germany to British energy supplier Octopus Energy Group.

Sonnen, which provides storage batteries for rooftop solar systems, said last month that it has connected 25,000 homes to the grid, amassing 250 megawatt hours (MWh) of capacity.

While 250 MWh is a tiny fraction of power demand in Western countries, it puts Sonnen in the top league of European electricity storage providers, and it sees potential for more.



## ENI

### ENI WINS SECOND CO2 STORAGE LICENSE IN UK

Eni announced that it has obtained a second Carbon Dioxide Appraisal and Storage license (CS License) in the UK.

The new license, for the depleted Hewett gas field, which is located 20 kilometers (12.4 miles) offshore Bacton in the British North Sea's southern sector, will contribute significantly to the UK's ambition of storing 20-30 million tons per annum (mtpa) of CO<sub>2</sub>.

Given its existing infrastructure, and its proximity to the Bacton industrial cluster, Hewett, which has a significant total storage capacity of around 300 million tons, is an ideal site to permanently store carbon dioxide from industries in the south-east

of England and the Thames estuary area, near London.

It also has the potential to promote blue hydrogen production and distribution in line with the UK's decarbonization plans and targets.

The CCS technology removes from the atmosphere carbon dioxide (CO<sub>2</sub>) produced by industrial processes or captures it at the point of emission and stores it underground.

The Bacton Thames Net Zero initiative has attracted 13 industrial partners through a cooperation agreement in the energy, waste disposal, and manufacturing sectors.

The initial CO<sub>2</sub> storage capacity is estimated at around 6 mtpa at the end of this decade and will progressively increase to over 10 mtpa after 2030.

This new license in the Bacton Area comes in addition to the one obtained in the Liverpool Bay Area in 2020, where Eni is the carbon dioxide transport and storage operator for the HyNet Northwest Project.

Moreover, implementing other initiatives such as the Dogger Bank offshore wind farm will further strengthen Eni's leading role in contributing to the decarbonization process of the United Kingdom.



## BAKER HUGHES

### BAKER HUGHES, SHELL ENERGY ENTER INTO AGREEMENT TO SUPPLY RENEWABLE ENERGY

Baker Hughes announced that it signed an eight-year-long power purchase agreement (PPA) with Shell Energy Italia to supply renewable energy for Baker Hughes' Industrial & Energy Technology (IET) Italian facilities.

The source of this energy will be generated from Shell's solar photovoltaic farm currently under construction in the Apulia region, in southern Italy. The agreement aims to achieve a reduction of 6.8 Kilotons (Kton) of CO<sub>2</sub> equivalent (CO<sub>2</sub>e) per year across the sites, resulting in 13% less emissions – equivalent to 1,200 fewer light duty

gasoline cars on the road per year, Baker Hughes said in a statement.

This came following the signing of memorandum of understanding (MoU) 2021 to enhance collaboration between the two companies to achieve respective commitments for emissions reduction.



# CARBON NEUTRALITY WITHIN REACH: EMGF LEADS THE WAY



**B**uilding on its commitment to promote regional cooperation in decarbonization, the East Mediterranean Gas Forum (EMGF) hosted a decarbonization workshop organized by Egypt Oil & Gas Group (EOG) under the theme 'Leveraging Technology to Accelerate a Decarbonized Future for the East Med'.

## Opening and Roundtable

Taking place on September 18<sup>th</sup> at the Royal Maxim Palace Kempinski, the event attracted many leading industry experts from the East Med and beyond to mainly focus on technologies and advances that could accelerate and enable the energy transition and abate emissions.

One of the key highlights and themes of the event was the emphasis on the close relationship between energy security and energy transition, an important area in which the EMGF plans to play a vital role, as EMGF Secretary General Osama Mobarez most eloquently put it during his opening speech, "One of our main objectives is that we are trying to strike the right balance between energy security and energy transition."

The workshop featured a highly interactive roundtable that witnessed the attendance of Minister of Petroleum

and Mineral Resources Tarek El Molla himself. During this part of the workshop, El Molla emphasized the importance of enhancing cooperation on a global scale in the face of climate change. "Facing global warming is a commitment, not only for each country but for each sector and each industry." He also highlighted that fossil fuels will continue to play a vital role in providing societies and markets with their energy needs.

In the discussion, Mobarez also reiterated the role of fossil fuels, notably natural gas, in giving the energy transition the momentum that it needs to achieve its objectives saying, "Gas has an important role in the energy mix and will continue to play a significant role in it. So, what we need to do is supply more gas in a responsible way with low carbon emissions at a low cost."

Focusing on the East Mediterranean as a region of great potential, EOG Founder and CEO Mohamed Fouad said "The East Mediterranean gas industry has experienced significant growth and development in recent years, positioning our region as a key player in global energy last year."

Coming from a company that has excelled in decarbonization and climate action, Wintershall Dea Senior Vice President and Egypt's Managing Director Sameh Sabry outlined the importance of having close cooperation not only between governments, but corporates and other major stakeholders in the region. "There is a great potential for collaboration in Carbon Management within the East Med region between IOCs, Service companies, and the governments of the region."

Apart from the importance of natural gas and cooperation, financing was a subject of much discussion during the event, particularly for Apache Egypt's Country Manager David Chi who said, "In order for us to get where we need to get to (in decarbonization), we need both financial resources and know-how."

Energear CEO Mathios Rigas concurred saying, "The second more important thing after collaboration, probably more important than collaboration, of course, is money. Everyone wants to talk about decarbonization and nobody wants to pay for it."





The event also featured several decarbonization presentations delivered by representatives from various oil and gas companies that are actively working in the East Mediterranean region.

### Wintershall Dea, Chevron, and Baker Hughes

Representatives from Wintershall Dea, Chevron, and Baker Hughes used this workshop as an opportunity to share their innovative ideas on decarbonization as well as their companies' remarkable achievements in that field.

At the beginning of the presentations, Titkoon Gok, VP of Reservoir Management, Development & Engineering at Wintershall Dea delivered a presentation titled "Wintershall Dea Decarbonization Pathway", shedding light on the company's remarkable emissions reduction efforts and innovative approaches.

The presentation explained Wintershall Dea's net carbon intensity ambitions, which are divided into exploration and production (E&P) ambitions and carbon management & hydrogen (CM&H) strategy. The company's E&P ambitions include reducing Scope 1 & Scope 2 greenhouse gas emissions of upstream activities to net zero\* in 2030; maintaining a gas-weighted portfolio; reducing methane emission intensity to below 0.1% by 2025; and maintaining no routine flaring commitment. Meanwhile, the CM&H strategy includes a focus on CCS and low-carbon H2, starting in NW Europe; building up a business abating 20-30 Mtpa CO2 by 2040, and phased investments directed at maturing a wide range of opportunities.

During the presentation, GOK remarked on CCS solutions for individual emitters or clusters; establishing a CO2 storage portfolio; CO2 injection green sand project; CCS evaluation in Egypt; and GHG emission reduction initiatives in BU Egypt. Wintershall Dea's presentation further tackled Leak Detection and Repair (LDAR) solutions.

The discussed solutions include identifying high-risk areas & leak definitions; quantifying leaks; repairing/replacing worn components, and tightening connections; as well as post-repair measurements and yearly campaigns. Gok's presentation also stated that the total number of sources identified at Disouq is 23,000++ with 36 registered leaks. All were repaired in 2022.

After GOK's Presentation, Jonathan Lilien, Health Safety Environment & Regulatory Manager at Chevron Mediterranean Limited, made a presentation entitled 'Chevron's Approach to Methane Management' addressing the company's methane highlights.

Chevron believes that addressing methane emissions is a key part of being a responsible producer of oil, products, and natural gas. Therefore, the company has set an action plan, which is to design and operate facilities to prevent methane emissions to the greatest extent possible. Moreover, the plan includes deploying technologies to validate performance, inform repairs, and improve inventories; as well as integrating direct measurement into inventories.

Meanwhile, the presentation reviewed Chevron's goal to pursue the 2028 target of 20 kg CO<sub>2</sub>e/boe for upstream; end routine flaring; and deploy advanced detection in all upstream operations.

In 2021, the company's methane emissions recorded 4.5% of Chevron's reported global equity Scope 1 emissions. Lilien's presentation reviewed the outcome of Chevron's methane program, which includes a 50% reduction in methane intensity since 2016; 13 advanced detection technologies trialed since 2016; 950 methane flyovers planned in the US in 2022, including 100% of Permian central facilities; 22 million components surveyed in Rockies business unit in 2020, detecting 0.01% of components leaking; and 85% lower methane intensity than US upstream production sector averages of 2020 for Chevron US upstream operations.

The presentation explained that methane management is a holistic approach to addressing methane emissions performance across multiple dimensions. This approach includes actions to reduce methane emissions



“Facing global warming is a commitment, not only for each country but for each sector and each industry.”

### H.E. TAREK EL MOLLA

Minister of Petroleum and Mineral Resources



“One of our main objectives is that we are trying to strike the right balance between energy security and energy transition.”

### H.E. OSAMA MOBAREZ

EMGF Secretary General



“The East Mediterranean gas industry has experienced significant growth and development in recent years, positioning our region as a key player in global energy last year.”

### MOHAMED FOUAD

EOG Founder and CEO

intensity through facility design and operational best practices; deployment of advanced technology to detect, measure, and quantify site- and source-level emissions; and development and assurance of methane emissions inventories for reporting and disclosures.

This comes as Chevron supports the global methane pledge, in which over 100 countries have joined the effort to reduce global man-made methane emissions by at least 30% from 2020 levels by 2030.

As Lilien's presentation came to an end, Matt Boerlage, Global Director Emissions Reduction & Carbon Monetization at Baker Hughes, focused on emissions reductions, particularly on routine flaring and technological innovations for cost-effective gas production in the East Med, during the presentation entitled 'Solutions for Decarbonization for an Efficient and Cost-Effective Gas Production in the Eastern Mediterranean'.

Boerlage showed that Baker Hughes is committed to lowering emissions as the company has an ambition to reach net-zero carbon emissions by 2050. Baker Hughes further aims to lead in energy transition and digitalization and be a critical decarbonization partner; as well as deliver the highest efficiency, and productivity outcomes for broader energy and industry.

The presentation explained different technologies for decarbonization, from de-risking subsurface to efficient and cost-effective gas production.

Boerlage highlighted that many technical solutions are readily available, which allows the challenge to move to bespoke analysis and prioritization – the Marginal Abatement Cost Curve (MACC) helps. Moreover, Boerlage explained that hard-to-abate projects become unstuck through new collaboration models and transferrable incentives.

All the presentations at the 'Leveraging Technology to Accelerate a Decarbonized Future for the East Med' workshop witnessed productive and informative Questions and Answers (Q&A) sessions, as a part of the presentation sessions. During the Q&A, industry professionals got to engage and have an open discussion about carbon technologies and approaches.

**SLB and Worley**

With the world's continuous dependence on and need for fossil fuels, the urgency to decarbonize energy production has grown exponentially to lessen climate change and global warming. In this regard, SLB, a global technology company, works on assisting its partners with modern technologies for decarbonization.

"Decarbonization is a paramount objective for us, not only for the oil and gas industry but also for challenging sectors like cement and steel. It's crucial to demonstrate that a collaborative approach is the key,"



said Karim Badawi Director of SLB in the Middle East and North Africa during the East Mediterranean Gas Forum's workshop. He highlighted the company's cooperation with Zero Emission Greenfield (ZEG) and Genvia companies in developing compact clean hydrogen plants that produce hydrogen without emitting greenhouse gases.

Referring to the company's new logo, Badawi noted that it meant to express the SLB's commitment to net zero emissions.

"Being a global technology company, SLB is meant to strengthen its position as a driving energy innovation for a balanced planet. Our company is committed to assisting our partners around the world to decarbonize and meet the net zero targets and beyond for a better future," he noted.

Like many other companies, SLB works to reach net zero by 2050. But what is more important is to continue removing megatons of CO2 going into the environment as Badawi stated.

"Obviously, oil and Gas will remain part of the energy mix in the future. Hence, the focus of technological innovation would be on the oil and gas of lower carbon footprint.

"Decarbonization strategies have multiple elements, the CCUS is part of it. Our role is to help each organization identify the idealist pathway with different sources and the best solution in terms of decarbonization through digital monitoring and modeling before going into the deployment of idealist technologies.

**He pointed out that SLB has decided to focus on five key areas;**

- 1-providing CCUS solutions to industrial partners,
- 2- Commercializing an efficient solid oxide electrolyzer technology to produce clean hydrogen,







3- Deploying a reliable long duration and cost-effective energy storage system,

4- Deploying a sustainable direct lithium extraction and production process for faster, on-demand, and scalable battery-grade lithium production,

5- Providing low carbon, high-efficiency systems to heat and cool buildings via geo-energy and geothermal technology.

Another strategy to expedite decarbonization is Carbon Capture and Storage (CCS), a strategy that is extensively discussed by Worley, an Australian energy service company.

Nathon Smith the Director of Engineering Technology at Worley made a presentation during the EMGF Workshop in which he reviewed some of the contemporary carbon capture technologies, delving into intricate details such as feed quality, capture costs, and the factors influencing the overall cost of implementing these technologies.

In the presentation entitled "Carbon Capture Technology Routes and Projection of Future Abatement Costs", Smith noted that Worley aims to strike a balance between cost-effectiveness and the environmental impact of carbon capture technologies. The Australian company explored the factors that influence the cost of carbon capture and provided insights into potential cost reductions that could be achieved through technological advancements and increased Technology Readiness Levels (TRLs).

"We will discuss how costs can vary depending on the maturity of the technology partner you engage with. It is important to recognize that not all CO2 sources are the same, and it's crucial to address highly concentrated CO2 sources early on your abatement journey," he explained.

Smith emphasized the significance of immediate implementation of such technology, as the benefits of carbon capture outweigh the waiting period for further cost reductions.

"Some forums are waiting for tomorrow's technology for carbon capture. The point I'd like to raise is that there are numerous costs beyond the inside battery level (ISBL), and the subtleties associated with the technologies you choose have minimal impact on the total cost of abatement," stated Smith.

"When you think about the price of technology, there's going to be some OPEX wins and there's going to be some CAPEX wins, but they're going to be largely around the ISBL rather than things like CO2 compression, dehydration, some of the heat harvesting associated with the process. So, we need to be mindful of waiting for tomorrow for technology to save us. Because there's so much cost locked up outside of the ISBL that you may never get the job done," he continued.

While it is understandable to consider potential cost reductions before implementing carbon capture technology, waiting for such reductions may not always be advantageous, he added.



“There is a great potential for collaboration in Carbon Management within the East Med region between IOCs, Service companies, and the governments of the region.”

### SAMEH SABRY

Wintershall Dea Senior Vice President and Egypt's Managing Director



“In order for us to get where we need to get to (in decarbonization), we need both financial resources and know-how.”

### DAVID CHI

Apache Egypt's Country Manager



“The second more important thing after collaboration, probably more important than collaboration, of course, is money. Everyone wants to talk about decarbonization and nobody wants to pay for it.”

### MATHIOS RIGAS

Energiean CEO



“Decarbonization is a paramount objective for us, not only for the oil and gas industry but also for challenging sectors like cement and steel. It's crucial to demonstrate that a collaborative approach is the key.”

### KARIM BADAWI

Director of SLB in the Middle East and North Africa

# EGYPT'S IPO PROGRAM

## A CATALYST FOR THE OIL & GAS SECTOR

BY JOLLY MONSEF, MARIAM AHMED & ABDULLAH MOSTAFA

In 2023, the Egyptian government resumed the initial public offerings (IPO) program following the State Ownership Policy Document which builds a roadmap to determine the state's presence in economic activities. The main objective is to enhance and promote the participation of the private sector in public investments to increase from 30% to 65% of the total implemented investments over the coming three years, explained by Prime Minister Mostafa Madbouly at a press conference in May 2023.

The energy companies, in any listing, come at the forefront of being listed on the EGX, as stated in a permit of the Minister of Petroleum and Mineral Resources to Media in February 2023. Within the 2023 IPO program, one-fifth of the total companies set to be listed on the EGX or sold for strategic investors belong to the energy sector.

This report sheds light on the performance of energy companies listed in the EGX as well as the status of the energy sector's companies within the IPO program.

### THE IPO PROGRAM HIGHLIGHTS

The Egyptian Cabinet announced, on February 8, 2023, the offering of 32 state-owned companies and banks either for sale to strategic investors, or offerings on the EGX or a mix of both. This program was set to be implemented starting from the first quarter (Q1) 2023 to the end of the first half (H1) 2024, and was divided into three main phases.

In August 2023, the government announced three new companies to be included in the government offering program, bringing the number to 35 companies. These 35 companies were attributed to 19 economic sectors and activities. In the meantime, the government also announced the completion of the first and the second phases of the program.

### Flashbacks

Egypt's IPO program has been a cornerstone of the economic reform programs over different periods. For instance, in 1991 Egypt launched the Economic Reform and Structural Transformation Program (ERSAP) to address dire economic conditions. Privatization was one of the main pillars of the ERSAP and as a result of this program, 382 State Owned Enterprises (SOEs) were fully or partially-privatized, according to World Bank Blogs.

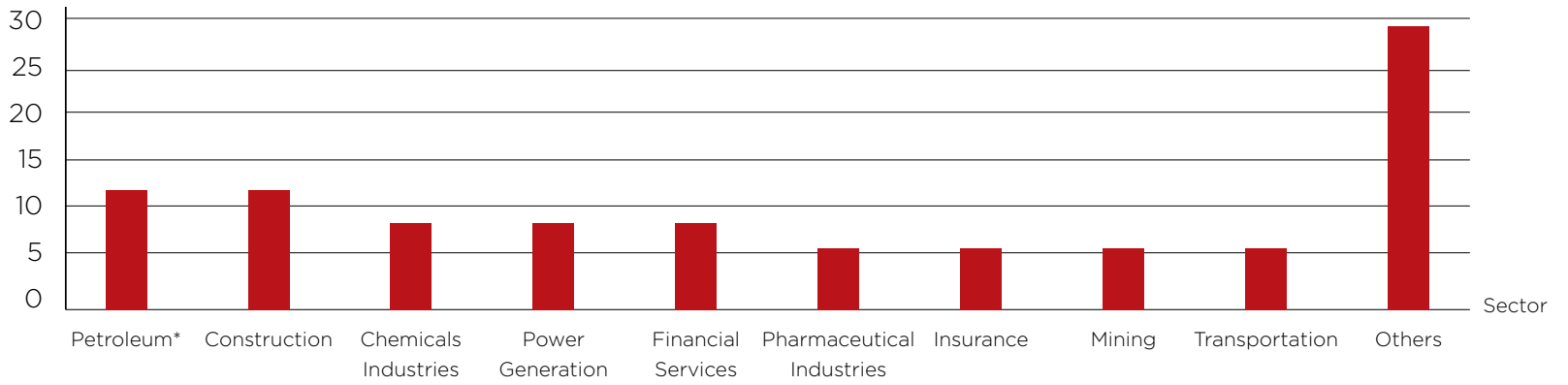
The roots of the 2023 IPO program go back to 2016 when the government officially announced its plan to sell state-owned assets and companies as a part of the economic reform program under the \$12 billion International Monetary fund (IMF) loan, according to IMF country report No. 17/17. The government, in 2018, announced its plan to offer 23 public companies on the EGX to raise around EGP 80 billion for the state coffers. However, this step was postponed several times with the unfavorable global economic conditions.

Through the program, the Egyptian government defined three main paths, including the government's withdrawal from activities, maintaining or decreasing its presence, and maintaining or increasing its presence, according to the State Ownership Policy Document Implementation Follow-up Report by the Egyptian Cabinet's Information and Decision Support Center (IDSC).





TOP 10 SECTORS WITHIN THE PROGRAM (%)



\*Including oil refinery and oil extraction activities

The Energy Sector within the Program’s Phases

The energy sector companies constitute a sizable share of the program’s second and third phases; in which, the government’s role revolves around maintaining or decreasing its presence in power generation companies. This also includes maintaining

or increasing its presence in oil refining and oil extraction companies by offering investment opportunities for the private sector, according to the State Ownership Policy Document Implementation Follow-up Report by the IDSC.

ENERGY COMPANIES IN THE PROGRAM

Gabal El Zeit Wind Farm
Zafarana Wind Farm
Siemens Beni Suef Power Plant
Watanya Petroleum Company
Egyptian Drilling Company (EDC)
The Egyptian Ethylene and Derivatives Company (ETHYDCO)
Egyptian Linear Alkyl Benzene (ELAB)

ENERGY COMPANIES WITHIN THE 2<sup>ND</sup> PHASE

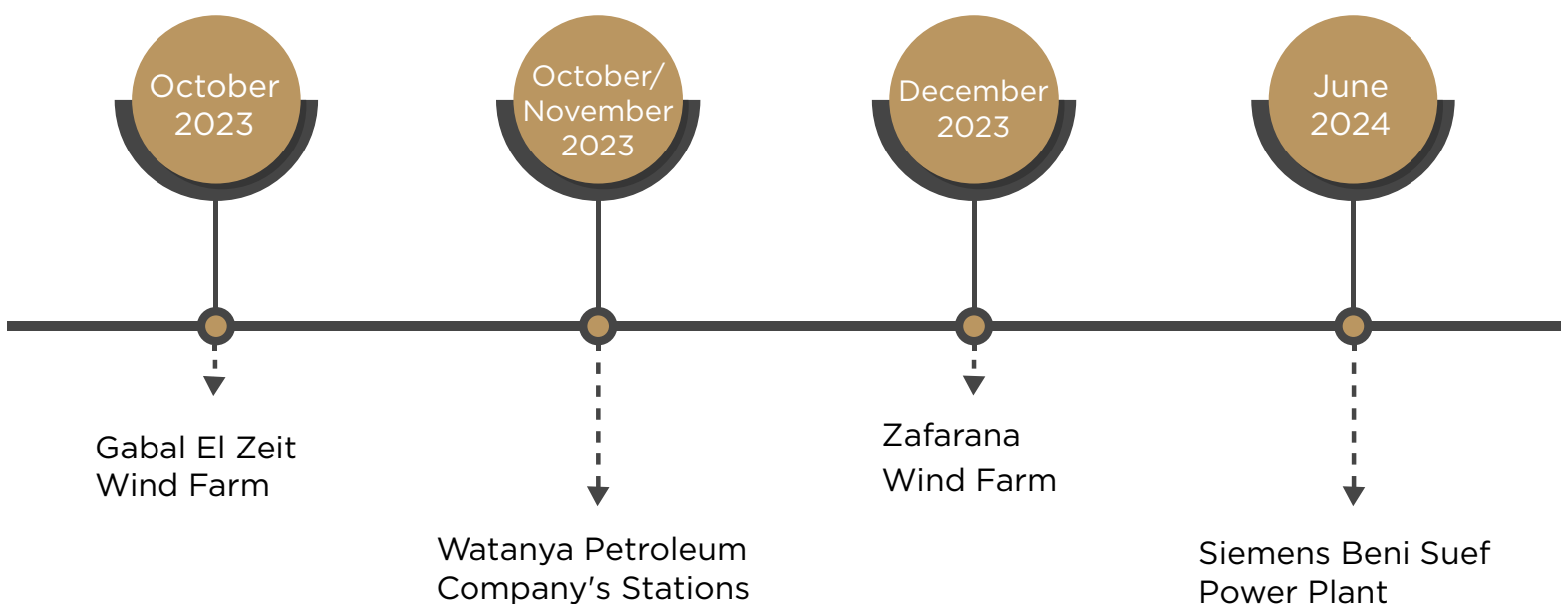
Phase Duration

August 2022-July 2023

Offering Shares in

EDC, ELAB, and ETHYDCO

ENERGY COMPANIES PLANNED TO BE OFFERED DURING (OCTOBER 2023-JUNE 2024)



## PETROLEUM SECTOR IN THE EGX

### Listed Companies Overview

The oil, gas, and petrochemicals companies are at the primacy of the companies that attract Arab and foreign investors. These companies enjoy strong performance indicators and high profitability and are the most traded Egyptian companies in the EGX.

There are five energy companies already listed in the EGX. National Drilling Co. (NDC) is a quality provider of oil and gas drilling services and has been the benchmark of drilling operations in the region since 1981. Sidi Kerir Petrochemicals Co. (SIDPEC) has taken the first step towards integration in the petrochemicals industry in Egypt. The company is capable of producing Polyethylene using Ethylene.

Furthermore, Alexandria Mineral Oils Co. (AMOC) specializes in the production of essential mineral oils, paraffin wax and its derivatives, naphtha, and butane, as well as distributes and markets them in Egypt and abroad. The Natural Gas & Mining Project (Egypt Gas) has been for years the major operating corporation in Natural Gas Distribution EPC-based Projects. However, TAQA Arabia, the fifth company, has been listed in the EGX in H2 2023.

#### COMPANIES PERFORMANCE IN THE EGX IN H1 2023\*

Company	Currency	Highest Price	Lowest Price	YTD Change (%)	P/E**
NDC	USD	5.62	3.8	0	4.84
SIDPEC	EGP	24.17	12.75	▲ 68.98	31.32
AMOC	EGP	11.08	6.06	▲ 28.48	8.61
Egypt Gas	EGP	40.9	27	▼ 13.95	10.19

\*Year Until June 26, 2023

\*\*P/E: Price-earnings ratio

### A New Listing in H2 2023

TAQA Arabia, a comprehensive energy and utility provider in Egypt, has announced that its shares will start trading in the EGX on July 9, 2023. The EGX listing committee approved TAQA Arabia's shares to be listed in the 'Utilities' sector, to be the first private company in the energy sector on the Egyptian Stock Exchange.

The listing of TAQA Arabia aims to advance its strategy of delivering optimal solutions to its customers and driving projects in the field of

clean and green energy across various governorates. The company aims to align its efforts with Egypt's sustainable development strategy, known as "Egypt Vision 2030."

Furthermore, on August 31, 2023, EGX announced the execution of a significant volume deal using the large-volume deal mechanism. The deal involved 154.84 million shares of TAQA Arabia, with a total value of EGP 1.2 billion, according to the TAQA Arabia website.

#### TRADING OF TAQA ARABIA SHARES IN THE EGX

Nominal value	<b>EGP 0.5 /share</b>
Issued capital	<b>EGP 676.18 million</b>
No. of shares	<b>1.352 billion</b>

#### TAQA ARABIA PERFORMANCE\*

Currency	Highest Price	Lowest Price	YTD Change	P/E
EGP	500	8.11	▲ 2,172%	15.71

\* Until August 31, 2023



## PROJECTED DEALS WITHIN THE PETROLEUM SECTOR

### - SIDPEC Approved the Acquisition of ETHYDCO

On July 16, 2023, the Board of Directors of SIDPEC approved the acquisition of ETHYDCO through a share exchange. As part of the deal, the capital of SIDPEC will be increased to a maximum of 876.9 million shares.

The ETHYDCO acquisition by SIDPEC brings cost savings, expanded market share, and improved competitiveness for both companies. ETHYDCO shareholders benefit from converting their shares to publicly traded stock in SIDPEC, providing increased flexibility and exit options. The deal enhances Sidi Kerir's market value through a capital increase tied to the acquisition's expected value, thereby boosting overall stock liquidity, according to SIDPEC's disclosure to EGX.

### - TAQA Arabia Submitted Non-Binding Offer for Watanya Petroleum Stations

Following the government's IPO listings, which involved the offering of Watanya Petroleum stations to investors, TAQA Arabia company has

submitted a non-binding offer to acquire a stake in the stations. The company has successfully advanced to the second stage in the list of applicant companies, which has granted them the opportunity to commence due diligence procedures. However, the specific financing methods for the acquisition have yet to be determined at this time, according to TAQA Arabiya's disclosure to EGX.

### - The Sovereign Fund of Egypt (TSFE) Initiated Strategic Investor Offering for ETHYDCO, EDC, and ELAB

In July 2023, TSFE offered three companies (ETHYDCO, EDC, and ELAB) to a strategic investor for a total of EGP 800 million, benefiting the Abu Dhabi Holding Company. Subsequently, the government announced an agreement between the two parties to sell minority stakes ranging from 25% to 30% in these companies, according to the State Ownership Policy Document Implementation Follow-up Report by the Egyptian Cabinet's IDSC.

The Egyptian government successfully collected \$5 billion through the sale of offered stakes and companies during the two phases spanning from March 2022 to July 2023. This achievement aligns with the broader objective of the IPO program in Egypt, which aims to generate approximately \$70 billion in additional dollar revenues over the next three years. By doing so, the program is expected to significantly contribute to Egypt's economic growth, stability, and sustainable development goals. With the goal of reaching a total of \$191 billion in hard currency revenues by 2026, the IPO program attracts investment, increases market capitalization, and positions Egypt as an appealing investment destination for both domestic and international investors.

The energy sector has indeed played a crucial role in driving the growth and diversification of EGX. The petroleum sector, in particular, has made a significant contribution to the Egyptian economy through the IPO program. Not only does it attract investment and enhance market performance, but it also promotes sectoral diversification, increases liquidity, and strengthens the economy's growth prospects.

The incorporation of energy companies into the IPO program strengthens Egypt's ability to tap into the potential of its petroleum sector for sustainable economic progress. By offering shares of these companies, Egypt is moving towards an economy that is more receptive to Western investment.

The continued execution of the IPO program, along with the inclusion of energy companies, creates opportunities for private sector enterprises to achieve their growth objectives and expand their operations. The energy sector demonstrates its dynamism and potential for further expansion and consolidation through anticipated deals such as acquisitions and non-binding offers for petroleum-related assets. These developments highlight the overall growth prospects and investment potential within the sector.

# EGYPT: A LAND OF OPPORTUNITY FOR ENERGY INVESTORS

BY SARAH SAMIR

**E**gypt is a hub for energy trading and investments, with potential and opportunities in different energy sectors. The Egyptian government is cognizant of the need for a sustainable energy mix to both address increasing demand and to move to a more environmentally-sustainable and diverse electricity sector. Not only in terms of its rich oil and gas resources, but the country also has an abundance of land, sunny weather, and high wind speeds, making it a prime location for renewable energy projects. Egypt is further working on developing several hydrogen projects to secure a sustainable energy mix.

## Oil and Gas Sector

Egypt is a significant player in the oil and gas industry. In 2022, the total production of petroleum wealth during 2022 reached around 79.5 million tons, which is divided into about 27.8 million tons of crude oil and condensate, around 50.6 million tons of natural gas, and 1.1 million tons of butane, in addition to butane produced from refining and manufacturing refineries, the Ministry of Petroleum and Mineral Resources (MoPMR) said in a statement about 2022 achievements and milestones.

The MoPMR has taken it upon itself to modernize the methods of attracting foreign investments to search for oil and gas in Egypt and follow the best international practices. This contributed to attracting more investments to Egypt.

In July, Minister of Petroleum and Mineral Resources, Tarek El Molla announced an annual plan, with investments worth \$8 billion targeted to the oil and gas sector during the fiscal year. These investments are planned for research, exploration, development, and operating expenses.

An ambitious plan has been set for drilling work to explore natural gas in Egypt, most of which will be offshore, mainly in the Nile Delta, East Mediterranean, and the economic zones in the western Mediterranean, with investments reaching \$1.8 billion over two years, for 35 large exploration wells.

Moreover, Egypt has been attracting investments into the refining and petrochemicals sector. In July 2023, the Ministry announced that it is implementing and accelerating new refining projects with around \$7.5 billion in investments. When it comes to petrochemicals, the sector is accelerating the implementation of new projects with investments of about \$1.4 billion.

To encourage petroleum exports, the Egyptian Finance Minister, Mohamed Maait, issued a decree in August to amend some provisions in the executive regulations of the Customs Law. Accordingly, the amendments are set to exempt petroleum companies from fines and boost exports.

Meanwhile, Egypt is working on becoming a natural gas trade hub as Egypt has become one of the main countries providing the

European Union (EU) with liquified natural gas (LNG).

## Egypt's renewable energy sector

In May 2022, Egypt released its 2050 National Climate Change Strategy, which does not include an overall emissions reduction goal. In its second Nationally Determined Contribution (NDC) update, Egypt pledged to have 42% of its power produced from renewable energy in its energy mix by 2030. In 2021, renewable energy generation in Egypt amounted to only 12% of total generated power, according to the Climate Action Tracker website.

This comes as the total installed capacity of renewable energies (solar and wind) will reach about 7,000 megawatts, representing about 18.5% of the expected maximum load (38 gigawatts) by the end of 2025, Minister of Electricity and Renewable Energy, Mohamed Shaker, announced in September 2023.

Shaker referred to the efforts to communicate with specialized companies to implement wind energy projects with large capabilities, explaining that the areas of West Aswan, West Sohag and Sidi Barrani have been allocated to establish renewable energy projects, and parts of them have already been made available to companies that will implement wind energy projects. The Minister explained that 4 memoranda of understanding (MoUs) were signed with investors in the field of renewable energy projects with a capacity of 28 gigawatts, for the purpose of getting the sites to conduct the measurements and studies required to implement projects with a total investment estimated at \$35 billion.

Moreover, on September 20<sup>th</sup>, the Cabinet approved the offer submitted by AMEA Power Company, one of the companies of the Emirati AlNowais Investments Group, to implement additional projects in the field of renewable energy. The projects include adding a capacity of 1,000 megawatts to the solar energy project in Aswan, and implementing a wind energy project with a capacity of 500 megawatts in Ras Gharib.

## Hydrogen Sector

Egypt is keen to develop green hydrogen and supports its projects. In this regard, Prime Minister Mostafa Madbouly chaired the first meeting of the National Green Hydrogen



Council to present the executive status of green hydrogen projects in September 2023.

The country is expected to attract foreign investments in the green hydrogen industry. Total foreign direct investments (FDIs) are forecasted to record \$81.6 billion by 2035, according to Al-Ahram Weekly.

Accordingly, the General Authority of the Suez Canal Economic Zone (SCZONE) is adopting a strategy that is based on the localization of the green hydrogen industry on three main axes, which are manufacturing green fuel from green hydrogen, green ammonia, and methanol; providing complementary industries to this type of fuel such as electrolyzers, solar panels, turbines, and water desalination stations; in addition to providing ships with green fuel services through their ports.

Egypt aims to be a competitive exporter of green hydrogen. The geographical proximity between Egypt and Europe is very important, especially with the expectations of an increase in the European continent's dependence on clean energy and green hydrogen in the near future, Prime Minister Mostafa Madbouly said in August, stressing in this context that Egypt has the necessary infrastructure to produce green hydrogen and then export it to Europe.

Egypt has succeeded in signing over 20 MoUs with major companies developing green hydrogen, 10 of these partnerships have been developed to the level of framework agreements to implement investments worth about \$83 billion, to produce 15 million tons annually of green ammonia and manufactured green methane.

With green hydrogen, renewables, and hydrocarbon Egypt has a promising mix of energy, attractive for investors. The country's energy mix is moving towards a greener future, which ensures the commitment to climate action, and supports the partners' decarbonization goals.

**The MoPMR has taken it upon itself to modernize the methods of attracting foreign investments to search for oil and gas in Egypt and follow the best international practices. This contributed to attracting more investments to Egypt.**





**“TOGETHER, YOUR PARTNERS IN EGYPT”**



## PAN MARINE GROUP

YOUR ONE-STOP SERVICE PROVIDER

**PAN MARINE GROUP** is a ONE-STOP service provider to our clients in Egypt through the following four companies:

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

Our customers are our greatest asset; we aim to provide them with a one-stop service in the most economical way through understanding their needs, solving their problems, and being a supportive consultant.

ALEXANDRIA | CAIRO | DAMIETTA  
PORT SAID | RAS GHAREB | SAFAGA  
ABU QIR | SUEZ | SOKHNA



## VROON OFFSHORE SERVICES

...CONNECTING MARKETS

**VROON OFFSHORE SERVICES** excels in the provision of diverse services and solutions for key offshore-support needs, including platform supply, emergency response and rescue, anchor handling tug supply, walk to work, crew transfer and subsea support. In addition, Vroon Offshore Services offers a wide range of complementary offshore services.

A highly qualified and professional team of on-board crews and shore-based colleagues handles the full management scope of our own modern and versatile fleet. Our portfolio also includes the provision of value-adding services to other ship owners, with expertise covering commercial, ship-management and operational matters.

ABERDEEN | DEN HELDER | GENOA | SINGAPORE



[www.pan-marine.net](http://www.pan-marine.net)

[www.vroonoffshore.com](http://www.vroonoffshore.com)

### Alexandria Head Office

Marhaba Tower, Fouad Street, Off Horeiya Road, Alexandria 21131, Egypt

+2033913820 (10 Lines) +2033913829 Offshore@pan-marine.net



# CLEAN TRANSPORTATION: THE TIME TO INVEST IS NOW

BY RANA AL KADY

To begin with, the most underestimated contributor to global warming emissions worldwide is oil, which has dominated the transportation energy market for over 50 years. Beneath the pump lies a global oil supply chain that is undergoing changes that have significant effects on the climate. The oil industry is progressively seeking to ever-riskier sources of oil and more polluting production techniques as the conveniently accessible fuels that characterized the oil booms of the previous century are diminishing.

## General Overview

First of all, it has become a universally-acknowledged fact that a significant decrease in the proportion of high-emitting carbon-intensive fossil fuels used for the primary generation of energy is necessary to reach the target of net-zero greenhouse gas emissions by 2050. According to an International Energy Agency (IEA) situation, the need for coal, natural gas, and oil would all decline significantly by 2050, by a combined 75%. To prevent a chaotic transition, scaling down fossil fuels to this extent while ramping up sustainable energy technologies would require meticulous planning.

Clean mobility initiatives that minimize diesel-related pollution by swapping them out for zero-emission cars should be prioritized in regions that are most severely affected by air pollution. We should also provide incentives for buying and installing the essential fuelling infrastructure.

So, the private sector will be crucial to filling the financial deficit. Index suppliers and managers of assets have created an entirely new variety of specialized solutions in the past few years to assist shareholders in directing capital towards companies pursuing the climate transition. Thematic tactics represent a few of the most focused techniques among them.

## Incentives and Solutions

There are a multitude of solutions that could be implemented to encourage the use of cleaner transportation to transport oil and gas products in order to be able to cut greenhouse gases and reduce the overall carbon footprint.

Over the past two decades, biofuel use has increased significantly, reducing oil use in the transportation sector. For example, the share of oil used for transportation has fallen by approximately 10% due to the growing use of biofuels, particularly maize ethanol. However, food-based biofuels have trade-offs and limitations, which have been highlighted by

the rapid increase in the use of maize for fuel. Advanced biofuels produced from non-food sources can help us reduce oil use and pollution even further.

Consequently, by drawing their energy from the grid instead of from a petrol station, EVs reduce their need on oil. Hence, the electrical system that charges them determines the amount of pollution it reduces that contributes to global warming. Approximately half of the greenhouse gas emissions from an electric vehicle (EV) that is charged using a typical U.S. grid come from gasoline-powered vehicles. Yet the grid is significantly less polluted in many areas of the nation as a whole.

Although reducing gasoline-related emissions during manufacturing and usage is crucial, a transportation system with a low carbon footprint must gradually transition away from oil in favour of cleaner fuels. It is absolutely essential that these clean fuels grow cleaner as time passes in order to maximise the climatic advantages of this shift. This entails switching from traditional biofuels to cutting-edge biofuels generated sustainably and at the right scale, as well as purifying the system by using more renewable sources of energy. As suggested by Eng. Mohamed Sherwali, Renewable Energy and Environmental Specialist, "In my view, the renewable energy and energy efficiency sector holds immense potential and will dictate the future of our world. It is poised to not only ensure secure access to energy, but also encourage development and prosperity for numerous countries."

In conclusion, given more fuel-efficient cars, better options for transporting people and goods, cleaner fuels, and continuously declining oil usage, the clean transportation tomorrow needed is within grasp. Everyone must play a part in realizing this future's promise, especially fuel producers. Reducing emissions from the energy system will reduce emissions from EV operation. By generating biofuels from trash and sustainable crops on a scale that supports farming and safeguards forests, we can avoid challenging compromises while drastically reducing



oil usage and pollution. Furthermore, it is crucial that we carefully oversee oil production even as global oil consumption drops.

*There are a multitude of solutions that could be implemented to encourage the use of cleaner transportation to transport oil and gas products in order to be able to cut greenhouse gases and reduce the overall carbon footprint.*

*Given more fuel-efficient cars, better options for transporting people and goods, cleaner fuels, and continuously declining oil usage, the clean transportation tomorrow needed is within grasp.*



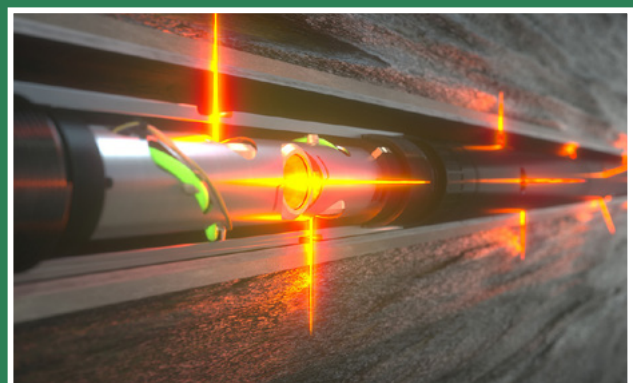


# Hydraulic Fracturing

We supply engineering solutions to reservoirs that increase productivity and enhance oil and gas recovery.

We perform efficient and effective fracturing treatments using our exceptionally experienced and motivated teams.

Our diverse team provides operational efficiency, safety and optimum productivity to our clients and their wells.



[www.nesr.com](http://www.nesr.com)



# ADDITIVE MANUFACTURING: REVOLUTIONIZING THE OIL AND GAS INDUSTRY

BY FATMA AHMED

**A**dditive manufacturing, also known as 3D printing, is a recent innovative solution that is playing a crucial role in the growth and development of the oil and gas sector.

As oil and gas production needs increase, so too do operators' demand for efficiency and sustainability. Additive manufacturing is a valuable tool that enables the faster and more efficient manufacturing of spare parts, equipment, and components, while reducing downtime and maintenance costs. This technology can help to lead to an increase in investments and achieve sustainability at the same time.

## Additive Manufacturing: Bring to the Fore

An article published in ScienceDirect, defined additive manufacturing technology as a process used to fabricate a physical object from a 3D digital form by laying down and tying a large number of thin layers of materials. Also, it can realize complex prototypes and parts on site by using various materials, such as metals, polymers, ceramics, and composites. According to GE Additive, one of the additive manufacturing developers, this technology uses data computer-aided-design (CAD) software or 3D object scanners to create an object in precise geometric shapes. This data directs the print head precisely to deposit material upon the preceding layer.

Additive manufacturing passes through various types of processes depending upon the type of materials and the way used in manufacturing. These processes include powder bed fusion, binder jetting, direct energy deposition, material extrusion, material jetting, sheet lamination and vat polymerization.

## Additive Manufacturing to Change Oil and Gas Industry

The oil and gas sector is one of the major untapped markets for additive manufacturing although it is important for the industry as it can help in boosting productivity and reduce operational costs. The need for cost reduction is highly needed within the industry due to the current challenges such as price instability of the transitions towards alternative energy sources. According to the World Economic Forum, Additive manufacturing can make oil and gas companies save cost and time worth up to \$30 billion. It is expected to revolutionize the way of designing, manufacturing, and distributing the products, DNV stated. However, this technology is still limited in its use in the oil and gas sector.

## Impacts of Additive Manufacturing on Oil & Gas

This emerging technology has a lot of benefits for the oil and gas sector. First, it has the ability to accelerate, update, and develop the product, and make it more flexible at lower costs. This advantage could detect any potential hazards during the design phase and before production, which would save

both money and time. Second, it can help in reducing lead times, such as delivery of specific parts needed in the operation as it can take days instead of weeks, for example, in lowering production costs. Additionally, additive manufacturing can reduce the time of maintenance and costs, consequently, especially on remote or offshore sites. Moreover, some of its types such as Direct Energy Deposition can be used in fixing or remanufacturing old equipment.

The fourth benefit is that it can enhance the supply chain by enabling the transition to have digital stocks, in addition to creating on demand spare parts in remote and offshore sites where spare parts supply is limited or have logistical difficulties, taking too much time. So, this new technology can provide the needed parts on site which would save time and costs.

## Additive Manufacturing Applications in Oil & Gas

There are many trials by the oil companies to deploy 3D printing within their operation as well as generate solutions supporting this technology to be used in the sector. For example, in 2016, Shell used 3D printing to prototype oil and gas drilling buoy for the Stones gas and oil drilling station, an article published by Falcon Technologies International reported. Additionally, an article released by 3D Natives mentioned some other companies' applications. It stated that Shell has collaborated with 3D Metalforge to provide 3D printed heat exchanger parts to be used in manufacturing heat exchanger tube components at lower time.

Furthermore, ExxonMobil has announced entering a project with AML3D, an Australian manufacturer of metal 3D printers, to design a metal pressure vessel using 3D printing and it is expected to be the largest commercially available 3D printed vessel in the market. AML3D also created a metal oil & gas high-pressure piping component using 3D printing in a hybrid approach in 2021.

In addition, Chevron has cooperated with Lincoln Electric, a company specialized in manufacturing production tools by using 3D printing, to provide the needed on demand parts. Moreover, additive manufacturing is used in hydraulic block subassemblies by GKN. Also, TotalEnergies has partnered with Vallourec, in 2021, to install 3D printed waterbushing in the North Sea which is used in drilling operations to block hydrocarbon surges from wells during their construction.

According to an article by Am Chronicle, the Arab world also has shown a great interest in applying additive manufacturing. For example, the Jordanian government announced the establishment of the 3D Printing Center at the Jordan University of Science and Technology in 2018.



**Additive manufacturing is a valuable tool that enables the faster and more efficient manufacturing of spare parts, equipment, and components, while reducing downtime and maintenance costs.**

Additionally, the UAE launched, in 2016, "Dubai 3D Printing Strategy" aiming to use 3D additive manufacturing for resolving critical challenges of oil and gas industry. Furthermore, Saudi Arabia included in its "Vision 2030" plan, the development of a 3D printing industry to foster innovation and capabilities. Petroleum Development Oman (PDO) cooperated with Spare Parts 3D (SP3D), a French startup, to assess the capability of using 3D printing in manufacturing 150,000 unique spare parts.

Egypt's government has launched several initiatives to promote 3D printing, especially in the oil and gas industry, such as the establishment of the Egyptian British Bureau for Additive Manufacturing Services in 2019. Additive manufacturing is already being applied in several industries in Egypt, such as medical and dental devices, and is poised to revolutionize the country's oil and gas industry.



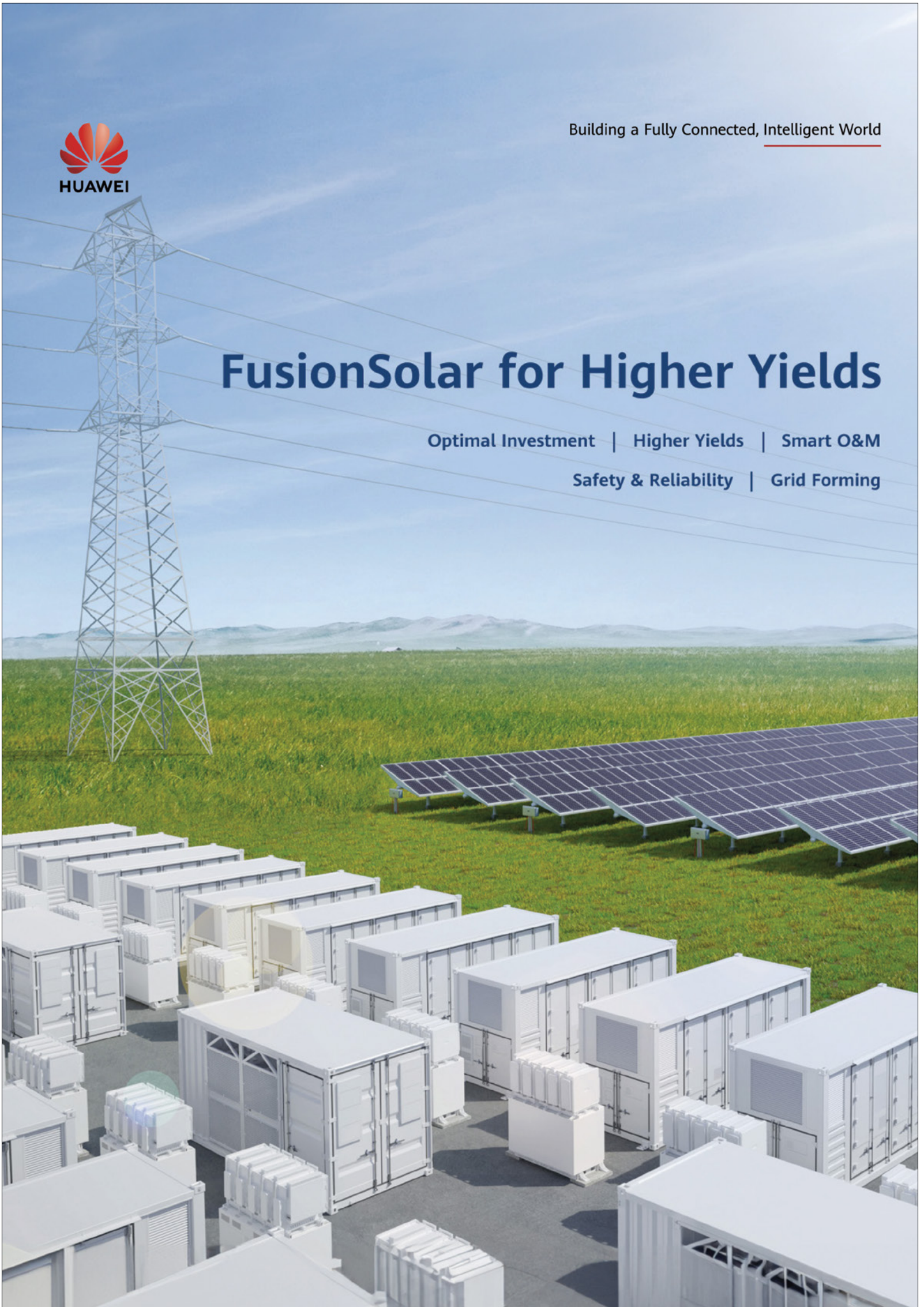


Building a Fully Connected, Intelligent World

# FusionSolar for Higher Yields

Optimal Investment | Higher Yields | Smart O&M

Safety & Reliability | Grid Forming





# HOW TECHNOLOGY HAS BECOME A KEY CATALYST FOR ENERGY INVESTMENTS

BY NADER RAMADAN

**M**any have spoken about the energy transition, but few talk about what it will take to accomplish it. Never have the issues of energy security, energy transition, and energy efficiency been as closely intertwined as they are today. With production cuts, price hikes, and global inflation creating a tumultuous global economy and an atmosphere of uncertainty within energy markets around the world, nothing better can remedy economic volatility than increased investment.

Recent years have witnessed the outbreak of the first major European war since World War II and the endurance of energy markets has been pushed to its ultimate limits, with skyrocketing global price hikes only being alleviated by frequent and widespread interest rate hikes. But this is nothing more than an economic painkiller that central banks have employed as a temporary solution. It is conclusive that ensuring energy security through the stabilization of oil and gas markets is the only way to remedy the current turbulence that markets are experiencing. Energy security has become a priority for energy experts who insist that markets will not be out of the woods until there are guarantees on the sustainability of global petroleum supplies through increasing investments in production.

Effectively fitting digitalization within energy investment mechanisms can substantially increase the volume of investments in the global oil and gas industry. Digital solutions have demonstrated that they have the potential to streamline the entire oil and gas investment process.

With Egypt being a trendsetter, the Egypt Upstream Gateway (EUG) is an ideal platform that makes all the required data that investors need to make an informed investment decision easily available, accessible, and understandable. Through this, Egypt has successfully been promoting investments in its oil and gas assets through organizing bid rounds. As one of the first countries to use digital platforms to promote investment opportunities, EUG has successfully created an investment climate that upholds transparency is what can lure the key funding the opportunities that every sector needs to build the momentum for growth. Seeing the success that EUG has enjoyed, many other countries are following similar trends and are expected to try to emulate the model that

Egypt has put in place to secure investments using effective and informative digital platforms.

Turning data into more than just a program, but a tool that thinks for itself will always have numerous economic benefits in creating an influx of investments. In the investment scenery in the energy sector, AI is yet to take its effect in attracting the attention of potential investments. “The most recent innovation in the world of investing is Robo-advisory which is aimed at automating the entire investment advisory process by replacing human intervention. Transparency and error-free unbiased advisory are the hallmarks of Robo-investing. An ideal Robo-advisor not only calculates the amount you need to invest for a financial goal but also decides the asset allocation and investment products for you. Further, it also guides you about the entry into or exit from a particular stock or fund at the appropriate time, unaffected by emotions attached with investment decision making,” says Rahul Jain in his article titled “Digitizing has led to an increase in investments”.

Not only are there promising economic outlooks with the introduction of AI into energy investment mechanisms, but there are also prospects that smaller investors will have the opportunity to take part in the action. Crowdfunding could become a source of investments that could empower the oil and gas industry as well as open the door for “the small guy” to play a role in a field that is sometimes widely perceived to be exclusive to big investors. It could be part of an economic strategy that could make investing in oil and gas more inclusive, in addition to substantially increasing the volume of investments.



“Unlike the [traditional] methods, oil crowdfunding platforms provide smaller operators with a turnkey platform that puts the fundraising process on autopilot and requires smaller operators to use very few internal resources,” said Financial Strategist Nick Perzhanovskiy in his article titled ‘How Viable is Crowdfunding for the Oil and Gas Industry?’

Perzhanovskiy added, “Crowdfunding creates room for more participants in the investment pool and facilitates some investment procedures. As a result, all investment dollars poured earlier into administrative tasks, now work for project development and scaling up.”

Digitalization has not only played a role in simplifying investment mechanisms, but its general role in improving the overall performance of global energy markets has been remarkable. The incorporation of advanced technological solutions and AI into the operations of any energy market goes beyond just being a means for improving energy efficiency. It creates an environment where the investor has a user-friendly to access all the data that they need to make a well-informed decision in a market that is transparent and dedicated to ensure that he/she will get their money’s worth.

**Turning data into more than just a program, but a tool that thinks for itself will always have numerous economic benefits in creating an influx of investments.**





# FUGRO KOBİ RUEGG MULTI-PURPOSE SURVEY VESSEL

Kobi Ruegg is a multipurpose, 59 metre, DP1 survey vessel with a small carbon footprint. Based in Abu Qir Port, Egypt, it can be easily deployed to the Mediterranean, the Black Sea and the Red Sea.

## VERSATILE AND QUICKLY MOBILISED

Kobi Ruegg is a highly versatile vessel that can be mobilised quickly and easily, reducing overall project timescales. It is ideal for geotechnical surveys, 2D seismic surveys, high-resolution geophysical surveys and seafloor mapping activities. It can be deployed on engineering projects ranging from offshore drilling sites and wind farms, to as-built pipelines. Its surveys are also used to identify geohazards, detect seep, plan cable routes and more.

## INNOVATIVE REMOTE SOLUTIONS

The vessel is equipped to provide remote solutions, enabling land-based Client Representatives to make swift decisions based on the same near real-time, high-quality information as their onboard

colleagues. Solutions include the 24/7 Remote Client Support service and real-time video broadcasting. Remotely operated autonomous underwater vehicle (AUV) can also be provided for survey activities.

## ONBOARD SURVEY EQUIPMENT

The vessel comes with a high-precision acoustic positioning (HiPAP) and long-range transducer, plus a Fugro Starfix survey-grade global navigation satellite system (GNSS) and L-Band combined receiver for tracking which includes GPS, GLONASS, Galileo and BeiDou. Its dual stern A-frames facilitate fast, efficient surveys, as do its gondola-mounted sensors, which also eliminate surface noise. Its multibeam sensors are suitable for shallow and deep-water surveys and sub-bottom profilers are also available.

## BENEFITS

- Provides accurate, long-range dynamic positioning
- Can perform a variety of surveys
- Survey operations can be mobilised quickly and easily, reducing project timescales
- Low fuel consumption makes it cost-efficient, with a small carbon footprint
- Remote operations reduce HSE risks and increase project efficiency and flow
- Compatible with a wide range of geotechnical systems

FUGRO.COM



# BRICS EXPANSION: A NEW GAME CHANGER IN GLOBAL GEOPOLITICS, ENERGY DYNAMICS

BY IHAB SHAARAWY

The recent enlargement of the BRICS group, which now includes Saudi Arabia, Iran, Ethiopia, Egypt, Argentina, and the United Arab Emirates, is widely seen as a significant development that will have far-reaching implications on the world's geopolitical and economic scene. It is also seen as a new game changer in the world's energy dynamics.

BRICS is a bloc of emerging economies that was originally founded in 2009 by Brazil, Russia, India, China, and South Africa. The group has since become a major player in the global economy. However, the recent accession of another six emerging economies marks a significant milestone in the evolution of global dynamics.

Of course, the BRICS expansion is expected to enhance the group's clout and influence to shape the course of global affairs as the world can expect renewed collaboration, innovation, and cooperation among the member states, fostering a multipolar environment that strives for equitable development, sustainable growth, and mutual prosperity. As the BRICS alliance continues to grow and evolve, its impact on global affairs is poised to become increasingly transformative.

## Balancing Powers

Some observers believe that the enlargement of the BRICS group would reshape the global geopolitical landscape. Traditionally dominated by the G7 and Western powers, this expansion signifies a shift in the balance of power towards emerging economies. BRICS nations now possess more leverage to influence global policies, challenge existing norms, and advocate for their interests. This shift could foster multipolarity and greater cooperation among nations, leading to a more equitable and inclusive world order.

For example, the expansion of BRICS could lead to the emergence of a new global financial system that is less reliant on the US dollar and Western banks. It could also lead to increased cooperation between BRICS countries on energy issues, which could have a major impact on global energy prices and markets.

BRICS members have already begun to coordinate their positions on issues such as climate change and energy security. They have also called for the reform of the United Nations Security Council and other international institutions to give them greater representation. They have established their own development bank and other financial institutions.

According to the United States Institute of Peace, with the addition of these six new members, BRICS now represents 42% of the world's population and 36% of global GDP. The primarily economic bloc now has a greater chance to control of global financial systems, offering growing countries in the Global South a counterbalance to Western institutions.

The newcomers were largely motivated by the idea that the group would give them the chance to diversify their business opportunities and become less dependent on Western countries and their rules as they were promised preferential trade terms between members and other incentives to increase trade and cross-border investments. However, many experts believe that the possibility of

introducing a unified currency between the members will not be likely at least in the coming decade, but they expect they will be able to have special trade ties.

For Egypt, BRICS' alternative payment systems, and non-dollar financial systems, increasing trade with domestic currencies, and the longer-term possibility of creating a common currency represent a great chance. Membership in BRICS can help Egypt develop alternative supply chains, promote economic growth, diversify the economy, minimize costs, develop e-commerce and market integration, and cooperate with the other BRICS countries.

According to experts, BRICS can be a potential source of foreign direct investment (FDI) in Egypt and can be an important option for hedging against Western-oriented institutions such as the World Bank and the International Monetary Fund.

## Shaping New Energy Dynamics

The expansion of BRICS could have important implications for the world's energy dynamics as it brings together large mineral resource holders and major oil producers, as well as some of the fastest-growing energy consumers.

A recent analysis published at VisualCapitalist.com finds that the new, expanded BRICS will now collectively represent 43% of global crude oil production, more than OPEC, which according to recent estimates controls 38% of global crude oil.

Since the first BRIC Summit in Yekaterinburg, Russia in 2009, BRICS countries have expressed the need for cooperation in the field of energy and energy efficiency. In the Delhi Declaration 2012, the leaders mentioned the need for multilateral energy cooperation within the BRICS framework.

Today, the expansion of the BRICS could lead to increased cooperation on energy issues. The BRICS countries could work together to develop new energy technologies, invest in renewable energy projects, and improve energy efficiency. This could help to reduce global greenhouse gas emissions and promote sustainable energy development.

In spite of the potential of the BRICS group to play a positive role in the global energy sector, some analysts see a number of potential risks as it could lead to increased competition for energy resources.

However, it remains to be seen how the group will use its new influence, but it is clear that BRICS will be a major player in global energy markets for many years to come.

There are some analysts who insist that the expansion of the BRICS also poses a number of potential challenges. They believe that the bloc's internal divisions and divergent interests could make it difficult to reach a consensus on important issues. However, the BRICS could also become a forum for challenging the existing global order, which could lead to increased instability and conflict.

Overall, the implications of the BRICS enlargement on world order, geopolitics, and conflicts are complex and uncertain. The bloc has the potential to play a positive role in the world, but it also poses a number of potential risks. It remains to be seen how the expanded BRICS will evolve and what its impact will be on global affairs.

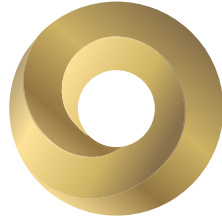
*Membership in BRICS can help Egypt develop alternative supply chains, promote economic growth, diversify the economy, minimize costs, develop e-commerce and market integration, and cooperate with the other BRICS countries.*







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



**EGYPES**  
EGYPT ENERGY SHOW

SUPPORTED BY



19 - 21 FEBRUARY 2024 | EGYPT INTERNATIONAL EXHIBITION CENTER

DRIVING ENERGY  
**TRANSITION,  
SECURITY AND  
DECARBONISATION**

**35,000+**  
INTERNATIONAL  
ATTENDEES

**2,200+**  
CONFERENCE  
DELEGATES

**500+**  
EXHIBITING  
COMPANIES

**300+**  
INFLUENTIAL  
SPEAKERS

**120+**  
PARTICIPATING  
COUNTRIES

**28+**  
NOCS, IOCS  
& IECS

**BOOK YOUR STAND**  
[egypes.com/exhibit](http://egypes.com/exhibit)

**GET YOUR DELEGATE PASS**  
[egypes.com/delegate](http://egypes.com/delegate)

**REGISTER AS A VISITOR**  
[egypes.com/visit](http://egypes.com/visit)

SUPPORTED BY



STRATEGIC PARTNER



DIAMOND SPONSORS



ORGANISED BY



## THE EFFECT OF ADDING ETHANOL TO GASOLINE

It can have positive and negative effects on a car engine. These effects depend on various factors, including the engine's design, the ethanol blend that is used, and the vehicle's age. Here are some key points to consider:

- ✔ Octane Rating: Ethanol has a high octane rating, which can help prevent engine knocking or pinging, particularly in high-performance or turbocharged engines designed for higher-octane fuels.
- ✔ Improved Combustion: Ethanol's oxygen content promotes more complete combustion, potentially leading to cleaner emissions and improved fuel efficiency.
- ✔ Corrosion and Sealant Issues: Ethanol can corrode certain materials like rubber, plastic, and some metals. Older vehicles may experience problems with degraded fuel lines, seals, and gaskets.
- ✔ Fuel System Compatibility: Ethanol can absorb water from the atmosphere, potentially leading to fuel system issues. Modern vehicles are designed to handle ethanol, but it's crucial to use fresh fuel and avoid moisture exposure.
- ✔ Less Energy Content: Ethanol contains less energy per unit volume than gasoline, resulting in reduced fuel economy. However, this may not be noticeable in low-ethanol blends like E10.
- ✔ Cold Weather Performance: Ethanol can make engine starting more challenging in extremely cold temperatures, though this is typically not an issue with lower ethanol blends and definitely will not be an issue in Egypt.
- ✔ Fuel System Cleaning: Ethanol has cleaning properties that can remove deposits but may also cause clogs in fuel filters or injectors if not properly maintained.
- ✔ Vapor Lock: Ethanol's lower boiling point can contribute to vapor lock issues in hot weather. Proper insulation and heat management in the fuel system can help minimize this problem.
- ✔ Fuel Stability: Ethanol-blended gasoline can be less stable, leading to fuel degradation over time.
- ✔ Altered Fuel Mixture Requirements: Ethanol has different combustion characteristics, which may require adjustments to optimize engine performance.
- ✔ Environmental Impact: Ethanol is considered a renewable and lower-emission fuel, primarily produced from renewable sources like corn and sugarcane. It can reduce greenhouse gas emissions and air pollutants compared to gasoline. However, it can also have negative implications, such as land use conflicts, water usage, and biodiversity concerns.

In terms of the environmental impact of ethanol as a renewable and lower-emission fuel, there are several key considerations:

- ✔ Renewable Fuel Source: Ethanol is primarily produced from annually renewable crops, offering a potentially sustainable energy option compared to finite fossil fuels.
- ✔ Reduced Greenhouse Gas Emissions: Ethanol generally has lower net greenhouse gas emissions due to the carbon dioxide absorption by plants during growth, creating a closed carbon cycle. Emissions reduction depends on feedstock, production methods, and logistics.
- ✔ Air Quality Improvements: Ethanol can reduce emissions of certain pollutants like carbon monoxide, volatile organic compounds, and particulate matter compared to gasoline.
- ✔ Land Use and Biodiversity: Ethanol production can impact land use and biodiversity if unsustainable practices like deforestation are involved. Sustainable practices and non-food feedstocks can mitigate these concerns.
- ✔ Water Usage and Pollution: Ethanol production requires substantial water, potentially straining resources and contributing to water pollution if not managed properly.
- ✔ Energy Balance: The energy balance of ethanol production is debated, with some studies suggesting that the energy input may exceed the output. Advancements in production can improve this balance.

In summary, adding ethanol to gasoline for cars is a double-edged sword. The environmental impact of ethanol as a renewable and low-emissions fuel depends on factors such as feedstock, production methods, and sustainability practices. To maximize the benefits of ethanol while minimizing its negative effects, it's crucial to consider these factors and implement sustainable practices throughout the supply chain.

By: Wael Essam El Rayes  
GPC Vice Chairman

## ENERGY PRODUCTION FROM RECOVERED GASES, DECARBONIZING PETROLEUM SECTOR

One of the safe and pressure-relieving systems in oil and gas refineries as well as petrochemical complexes is the relief header with the flare stack being the last component. The impact of gas flaring is one of the most pressing global and local concerns. It earns the reputation of being the most challenging energy and environmental issue facing the world today, being an environmental catastrophe, a multi-billion-dollar waste, and a global energy problem that has persisted for decades, considering gas flaring is the largest single loss in many industrial operations.

Although gas flaring is necessary at some plants or facilities of the chemical process industries, more and more efforts are underway to reduce flaring not only to reduce emissions of air pollutants, noise, and light but also to save both energy and raw materials, which translates into potentially millions of dollars. Flare gas recovery units provide many benefits, including a reduction of plant fuel and steam consumption, an increase in flare tip life, a rapid return on investment, a decrease in plant emissions, and a reduction in continuous flare operation.

One of the petroleum sector companies was used as a case study representing flaring, as the flared gas mixture consists of a wide spectrum of gases with a huge quantity flared to the environment. In coordination between industry and the university, a study was conducted in one of the petroleum sector companies, in which step-by-step calculations were conducted to generate the best design for the flare gas recovery unit by applying the best application techniques and clarifying the economic and environmental viability of the unit.

The energy conserved from the new flare gas recovery unit and the heat content of the flared gases were calculated which showed the heat content of the flared gases is 82,704,817.35 BTU/hr. and contain power of 24.233 MW/hr. From the flared gases quantity of 1199.5 Kg/hr., the flare gas recovery unit best fits to serve a gas turbine capable of generating 12MW of electricity with an efficiency of 50%.

A simple economic study was applied to the flare gas recovery unit. The existing flare unit emissions were calculated, which showed that emissions of the existing flare are 3138031.7 kg/year CO<sub>2</sub>, 137.6 kg/year N<sub>2</sub>O, and 27.5 kg/year methane. Water or steam injection, selective catalyst reduction, regulating the fuel-to-air ratio into the combustor, carbon monoxide catalyst, and dry low NO<sub>x</sub> combustors were techniques proposed to reduce the emissions from combustion in the gas turbine to the environment through the exhaust gases as the main source of emissions in the new flare gas recovery unit is the gas turbine.

From this study, we recommended that flare gas recovery units should be applied throughout the petroleum sector as the project proved its viability from the economic, environmental, and social aspects. Countries should expand their efforts to reduce gas flaring by creating a conducive investment environment that will achieve that goal. The government may pass more laws to promote the recovery of the flared gases to protect the environment and benefit from its economic viability.

Dr. Chem. Hassan El-Nagar Hassan Ibrahim

Assistant General Manager of Operations  
Alexandria National Refining and Petrochemicals Co.  
(ANRPC), Alexandria, Egypt



# MONTHLY MONITOR

**INSIGHT-DRIVEN  
SOLUTION  
FOR MORE  
INFORMED BUSINESS  
DECISIONS**

- Oil and Gas News Summary
- Production, Rigs and Drilling Updates
- Transfers and Reassignments
- Egypt's Economic Summary
- Investors Insight
- Political and Foreign Affairs Review
- Statistics and Facts
- Opinions and Expectations
- Global Energy Dynamics
- Energy Security
- Global Economic Briefing

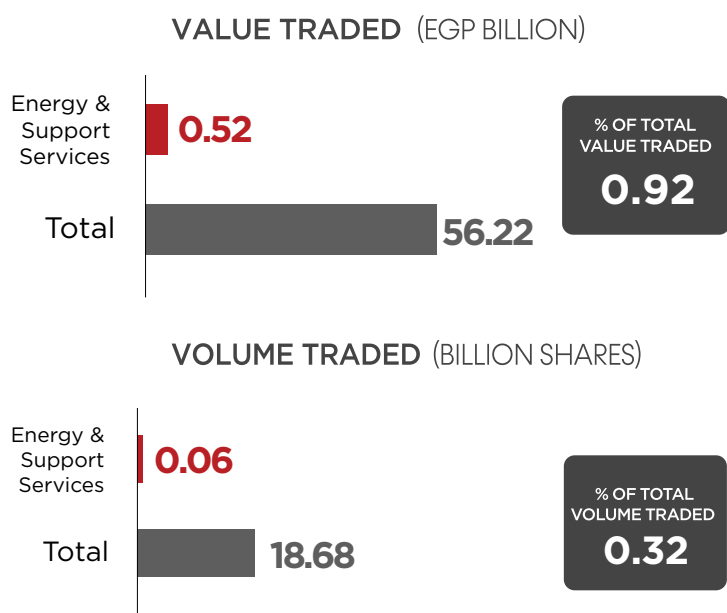


**SUBSCRIBE**  
TO OUR UPCOMING ISSUES!





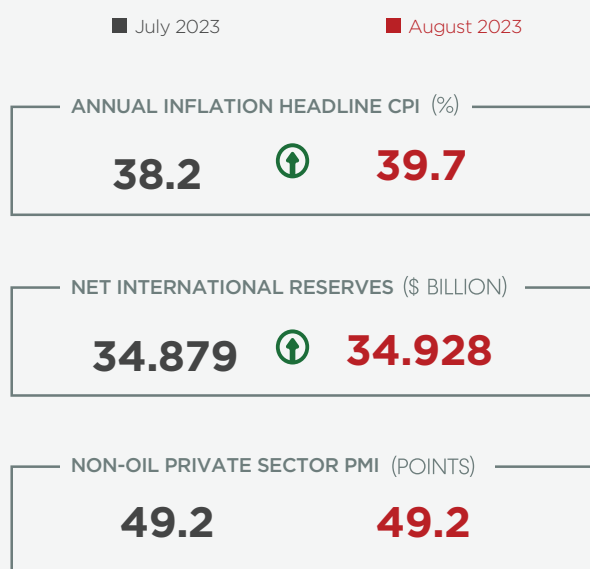
### 01 VALUE AND VOLUME OF SHARES TRADED FOR ENERGY & SUPPORT SERVICES SECTOR IN AUGUST 2023



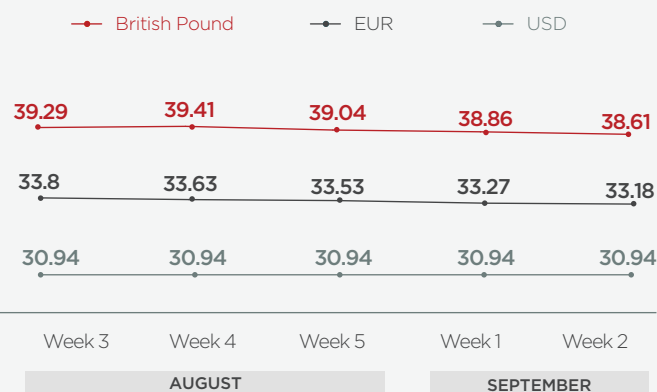
### 02 PERFORMANCE OF PETROLEUM COMPANIES IN THE EGYPTIAN EXCHANGE IN AUGUST 2023

Taqa Arabia		EGP <b>11.36</b> Close Price	↑ <b>2,172%</b> YTD Price Change
National Drilling		USD <b>4.69</b> Close Price	0% YTD Price Change
Alexandria Mineral Oils Company		EGP <b>8.27</b> Close Price	↑ <b>30.85%</b> YTD Price Change
Egypt Gas		EGP <b>31.05</b> Close Price	↓ <b>16.53%</b> YTD Price Change
Sidi Kerir Petrochemicals		EGP <b>25.12</b> Close Price	↑ <b>91.46%</b> YTD Price Change

### 03 MAIN ECONOMIC INDICATORS

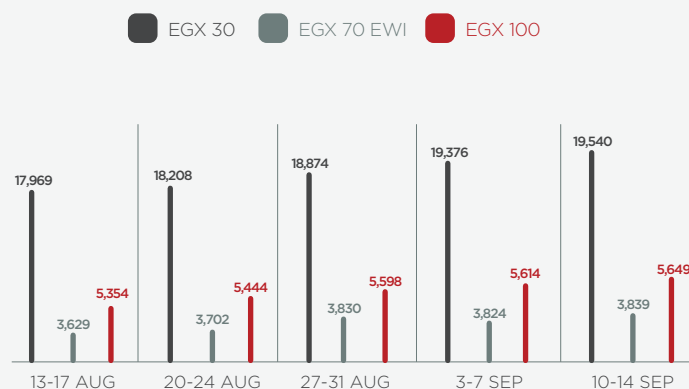


### 04 EXCHANGE RATES\*



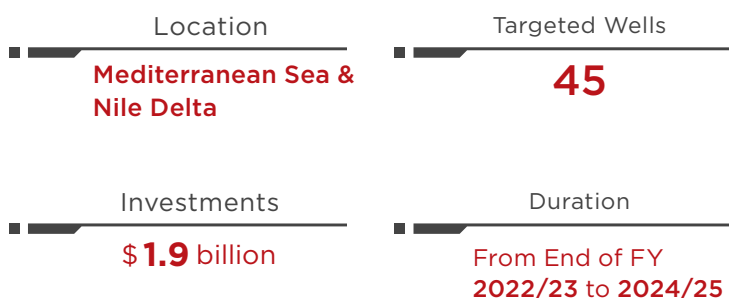
\*Sell Prices

### 05 CAPITAL MARKET INDICATORS

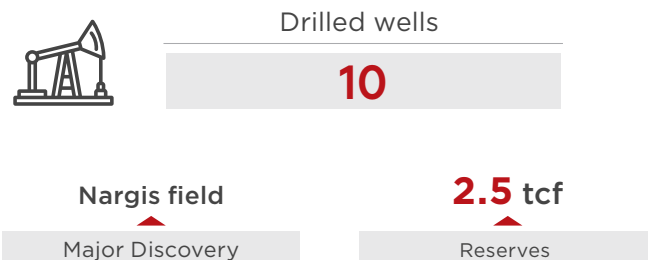


Source of Raw Data: CBE, CAPMAS, Egyptian Exchange, PMI by S&P Global

## 01 NATURAL GAS DRILLING PLANS



### ACHIEVEMENTS IN FY 2022/23



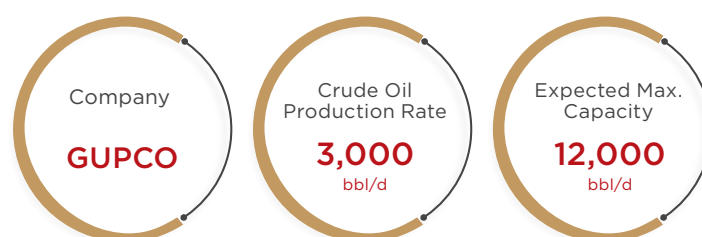
## 02 ZOHR FIELD HIGHLIGHTS

Wells	<b>20*</b>
Production**	<b>2.4 bcf/d</b>
Planned Wells in 2024	<b>5</b>

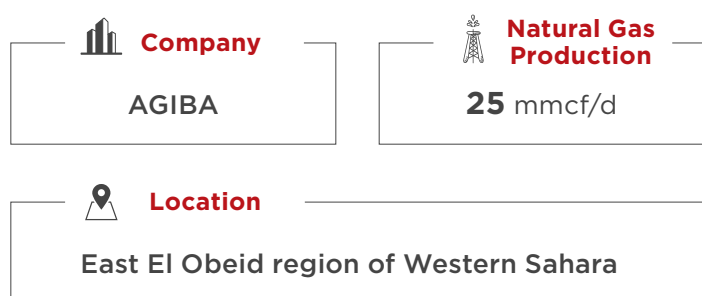
\*The 20<sup>th</sup> well is planned to enter production in October 2023

\*\*Announced on September 18, 2023

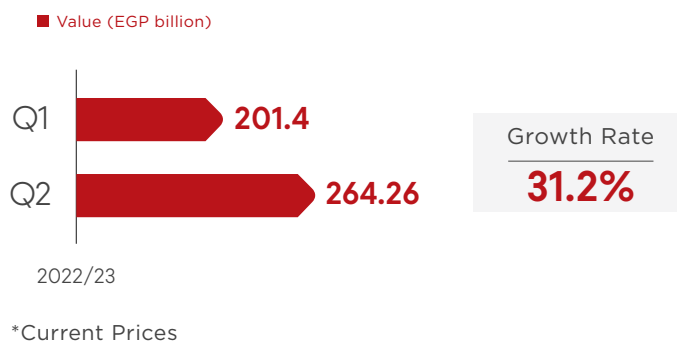
## 03 DEVELOPMENT OF THE NORTH SAFA PROJECT



## 04 PLACING VERAMIDE FIELD ON THE PRODUCTION MAP



## 05 GROWTH IN PETROLEUM SECTOR GDP\* IN Q2 2022/23



## 06 INTERNATIONAL OIL PRICES

	BRENT PRICES (\$/BBL)	OPEC BASKET PRICES (\$/BBL)	NATURAL GAS PRICES (\$/MMBTU)
10 July	<b>77.69</b>	<b>79.09</b>	<b>2.669</b>
28 July	<b>84.99</b>	<b>85.37</b>	<b>2.638</b>
09 August	<b>87.55</b>	<b>88.2</b>	<b>2.959</b>
31 August	<b>86.86</b>	<b>88.44</b>	<b>2.768</b>
06 September	<b>90.6</b>	<b>92.3</b>	<b>2.51</b>
14 September	<b>93.7</b>	<b>95.7</b>	<b>2.708</b>





UNDER THE HIGH PATRONAGE OF **H.E. TAREK EL MOLLA**  
MINISTER OF PETROLEUM & MINERAL RESOURCES - ARAB REPUBLIC OF EGYPT



# NINETH EOGC "23

## EGYPT OIL & GAS CONVENTION

📍 InterContinental Citystars Cairo Hotel 📅 5-7 November, 2023

PART OF  
**THE MODERNIZATION  
PROGRAM**

Driving Sustainable  
Growth in Egypt's Oil  
and Gas Industry

ORGANIZED BY



TECHNICALLY PREPARED BY



OFFICIAL RESEARCH PARTNER



SUPPORTING ORGANIZATION



PLATINUM SPONSORS



GOLD SPONSORS



SILVER SPONSORS



ROUNDTABLE SPONSOR



OPERATIONAL EXCELLENCE  
AWARDS SPONSOR



TECHNICAL WORKSHOP SPONSOR



DELEGATE BAG  
& NAME TAG SPONSOR



HEALTH & SAFETY SPONSOR



LUNCH SPONSOR



COCKTAIL RECEPTION  
SPONSOR



FOR MORE INFORMATION, PLEASE VISIT OUR WEBSITE AT:  
**CONVENTION.EGYPTOIL-GAS.COM**

