

# **CAPACITY BUILDING**

**GAINS MORE  
MOMENTUM IN  
EGYPTIAN OIL  
& GAS SECTOR**



# EDITOR'S LETTER

## Prioritizing Capacity Building

Developing human resources became on the top of the Egyptian oil and gas industry's priorities. The Ministry of Petroleum and Mineral Resources was knee to dedicate a full pillar in its modernization project to human resources management, which is the third pillar of the project. The international workers' day is taking place on the first day of May every year.

Due to the fact that May is the month of people, EOG's May issue highlights the recent developments in the Egyptian petroleum industry that enhanced the work environment and reflected on the sector's human resources. It also discusses the global trends in capacity building.

The overview section discusses Egypt's efforts in undertaking a series of investments, capacity building, and training programs which were closely followed up by the political leadership.

The Egyptian government has been considering green hydrogen seriously, holding talks with a number of international initiates

about establishing a local industry that has the potential to grow into a key part of the country's energy mix. Our Research and Analysis team prepared an analytical report about the prospects of green hydrogen industry in Egypt.

While our politics section is referring to the argument between experts about Iranian energy resources as a potential solution to the current energy crisis and a factor that can stabilize the fluctuated oil markets.

## Happy May Day!

### MAHINAZ EL BAZ

Acting Editor-In-Chief  
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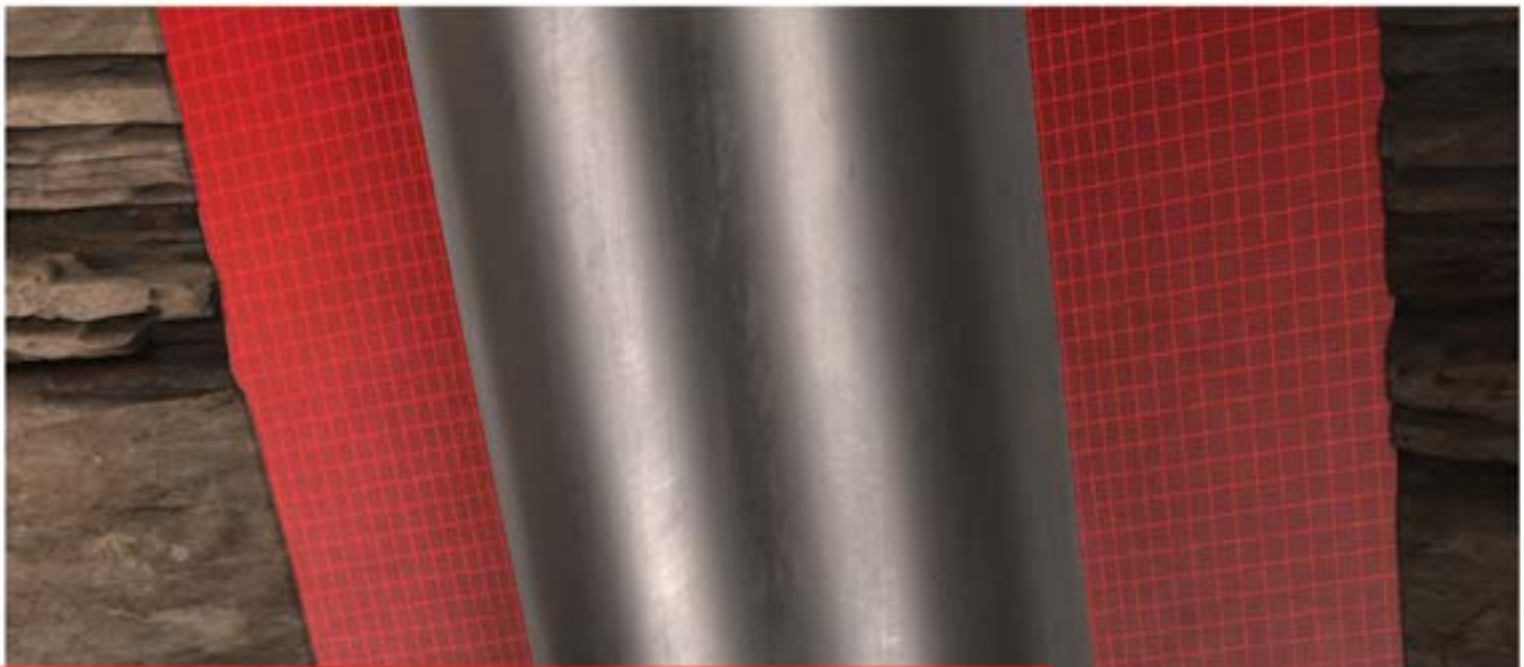
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## TOP 5

**FUEL PRICES INCREASED BY EGP 0.25 IN Q2 2022**

Egypt's Fuel Automatic Pricing Committee has adjusted the fuel prices and increased them by EGP 0.25 per liter for Q2 2022.

As of April 15, the prices per liter are as follows; octane 80 at EGP 7.50; octane 92 at EGP 8.75; and octane 95 at EGP 9.75. As for diesel fuel, its price remained at EGP 6.75 per liter. The price of industrial-use mazut increased by EGP 400 per ton, putting the of the ton at EGP 4,600. Mazut prices will remain unchanged for electricity generation and food industries.

This decision was driven by the average prices of Brent crude in the global energy market and the value of the Egyptian pound against the US dollar.

**ENPPI'S NET PROFITS INCREASED BY 22% IN 2021**

Engineering for Petroleum & Process Industries Company (Enppi) Chairman Mohamed Abdel Aziz announced that in 2021 the company achieved an increase in its net profit by 22%, compared to last year.

The company had designed, implemented, and operated many national projects at the highest levels of efficiency and quality, Abdel Aziz noted. He explained the most important projects it implemented, which culminated in the inauguration by President Abdel Fattah El Sisi of the gasoline production complex for the Assiut Oil Refining Company (ASORC). Enppi was the general contractor for the design and

implementation of the project, which it won in an international tender.

**PETROJET'S REVENUES REACH EGP 34.2B IN 2021**

Minister of Petroleum and Mineral Resources Tarek El Molla highlighted the ministry's interest in localizing the national industry for the local component in petroleum projects, explaining that Petrojet's distinction in this field during the past five years is a realistic and exemplary embodiment of this direction.

During the meeting, Walid Lotfy, Petrojet's Chairman, reviewed the most important indicators of business results, explaining its success in achieving an unprecedented volume of business, as its revenues amounted to EGP 34.2 billion during the year 2021, a 6% increase over the year 2020, and an increase in net profit by 11.6% compared to 2020.

The company also achieved an unprecedented volume of contracts worth EGP 60 billion during 2021, an increase of 13.2% from 2020, and the contracts included projects inside Egypt worth EGP 58.2 billion and contracts outside Egypt worth EGP 1.8 billion.

**ENI, EGAS TO INCREASE EGYPT'S GAS PRODUCTION, EXPORTS**

Prime Minister Mostafa Madbouly witnessed the signing ceremony of a framework agreement for cooperation in the field of natural gas and its export, between the Egyptian Natural Gas Holding Company (EGAS) and the Italian energy firm Eni.

The goal of the agreement is to achieve the optimal exploitation of the Egyptian gas reserves by maximizing the joint production between the two sides, in a way that contributes to the efforts of EGAS and Eni to identify new activities and opportunities in order to increase gas production rates in the short term.

The agreement also aims to exploit the great potential available in the field of research and exploration in Egypt, especially in the Nile Delta, the Eastern Mediterranean, and the Western Desert.

**MAJOR SOUTH AFRICAN INVESTOR EYES EGYPT'S GOLD MINING INDUSTRY**

Minister of Petroleum and Mineral Resources Tarek El Molla met with Peter Steenkamp, the Chairman of South Africa's largest mining company, Harmony Gold, to discuss the investment opportunities available in the field of mining and the search for gold, in light of the strong desire of the company to invest in Egypt.

During the meeting, El Molla reviewed the amendments that were made to the Mineral Wealth Law, which created an attractive investment climate in the field of mining.

El Molla stated that the last bid that was put forward to search for gold achieved great success despite the challenges imposed by the corona pandemic, noting that Egypt has integrated infrastructure, logistical facilities, ports, and airports, which provide an excellent working environment for international companies working in the field of mining.

**A BLAST FROM THE PAST**

In **May 2017**, Egyptian President Abdel Fattah A-Sisi inaugurated the first phase of gas production from the West Delta gas fields, which is the largest field in the Mediterranean Sea. The project is developed by bp company with a stake of 82.75% and Wintershall Dea which holds a stake of 17.25%. When completing all phases, the project is expected to produce 1.5 billion cubic feet per day (bcf/d) which represents about 30% of Egyptian production of natural gas in 2017. The project consists of developing five offshore fields in addition to two agreements in the two concessions; North Alexandria fields and West Mediterranean. It comprises three phases with reserves amounting to 5 trillion cubic meters (tcm) of natural gas and 55 million barrels of condensates.

The construction of the project's first phase started in February 2017 comprising the Taurus and Libra fields with investments worth \$12 billion. Nine production wells were drilled during the first phase. In 2019, the second stage of the project was started by producing gas from Giza and Fayoum fields. The second stage involved drilling 12 wells and two deep-water long-distance subsea tie-backs to the shore. While the third stage was completed in 2021 by developing Raven field which initially produced 900 million standard cubic feet per day (mmcf/d). The project has other fields to be developed in later phases including Maadi, Viper, Ruby, Polaris and Hodaa.

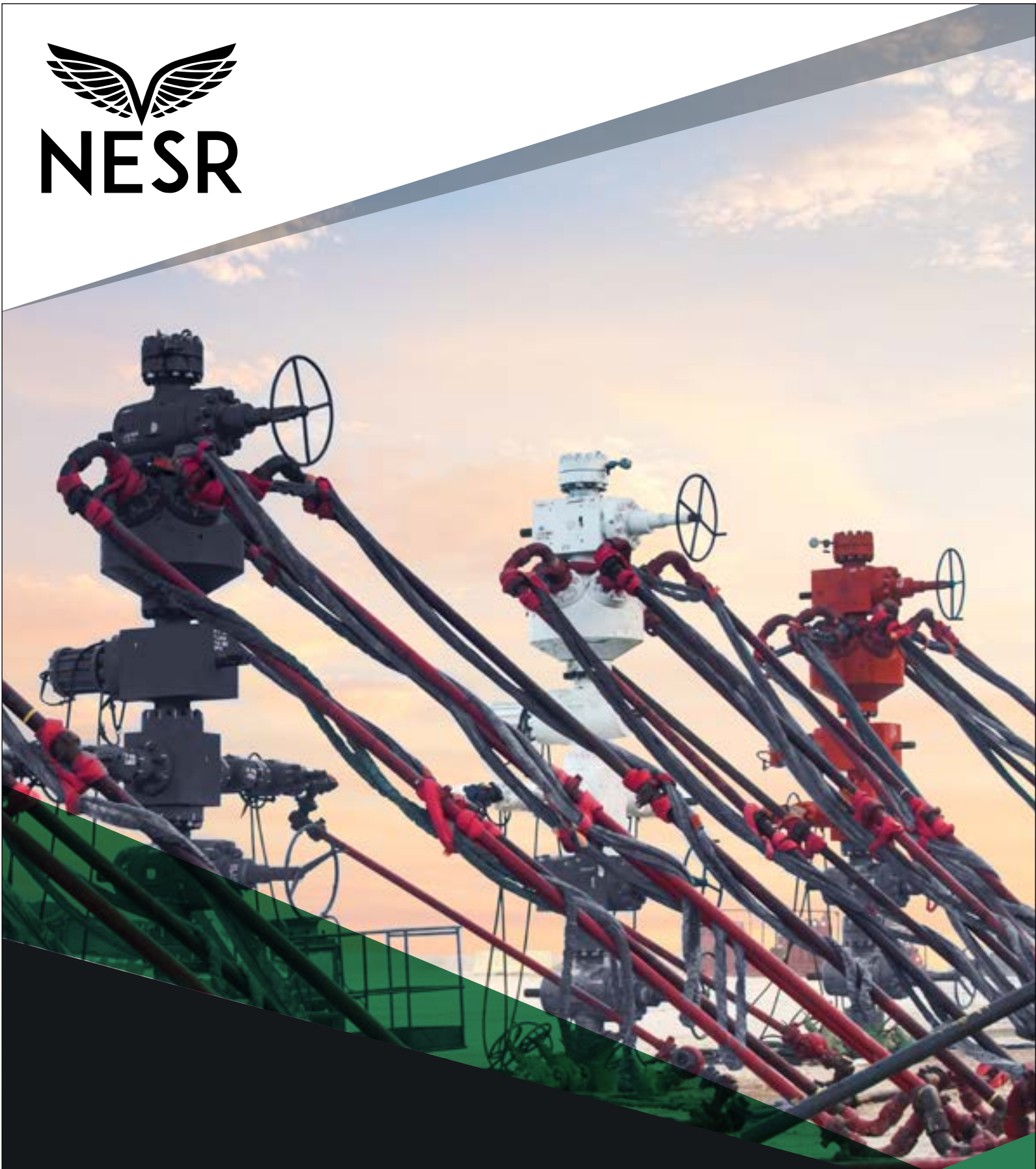
**NUMBER OF THE MONTH**

Increase in Egypt's Exports of Natural Gas & LNG



In February 2022, Egypt's exports of natural gas and Liquefied natural gas (LNG) outstandingly rose to reach **\$682 million**, compared to **\$184 million** during the same month of the previous year with a remarkable increase of **\$498 million**, according to the Ministry of Petroleum and Mineral Resources (MoP).

This significant increase is due to the restarting of the Damietta liquefaction plant in February 2022, which has a production capacity of about **5 million tons per year (mmt/y)**, after it was suspended for about **8 years**, in addition to the operation of Idku plant, which has a production capacity of about **7.2 mmt/y**.



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## ANNUAL RESULTS

## EPROM ANNOUNCES 2021 BUSINESS RESULTS

The Egyptian Projects Operation & Maintenance Company (EPROM) held a general assembly meeting in order to approve its business results for the year 2021.

During the meeting, EPROM's Chairman Mohamed Barakat reviewed the most important results of the company's business during 2021 through major petroleum projects that it manages and technically supports in several regions across Egypt, achieving the highest rates of production capacity.

The company further succeeded in launching trial operations and the regular operation of new projects in Suez and Assiut, Barakat added

EPROM was also able to operate the Egyptian Refining Company's (ERC) refinery in Mostorod with its full production capacity of high-quality products with EURO 5 standard specifications. EPROM also continued to support the production process of manufacturing petroleum products



at Alexandria Mineral Oils Company (AMOC) by supporting operations and maintenance plans.

In the field of petrochemical projects, EPROM achieved the highest performance rate for the Egyptian Linear Alkyl Benzene (ELAB) plant, while preserving assets and increasing production. EPROM was also able to maintain the equipment of the Egyptian Styrenics Production Company (Estyrenics) plant and production lines with high operational readiness until the plant was restarted and the necessary maintenance was carried out in a timely manner.

## TOWN GAS REVENUES RECORD EGP 3 B IN 2021

The Egyptian Company for the Distribution of Natural Gas for Cities (Town Gas) held a general assembly meeting to approve the results of its work during 2021.

The company's chairman Mohamed Fathy reviewed the most important business results in 2021, explaining that Town Gas achieved total revenues of EGP 3 billion and a net profit exceeding EGP 45 million, in a precedent that is considered the first for the company. He said that this came as a result of the increase in natural gas delivery rates to all customers in their various industrial, commercial, and domestic activities.

Town Gas delivered natural gas to 236,000 customers in Cairo, Giza, Alexandria, Ismailia, and Port Said, bringing the company's total customers



to 4.3 million customers, representing 33% of the total natural gas users in Egypt.

The company also contributed to the delivery of natural gas to 72 car refueling stations, as part of the initiative to use gas as fuel for cars.

Town Gas has placed great interest in the Hayah Karima ('Decent Life') project, as the company began delivering natural gas to 22 villages in Atfih, Giza Governorate.

## TANMIA PETROLEUM PROFITS INCREASE BY 50% IN 2021

Tanmia Petroleum Company held a general assembly to discuss business results for 2021. Tanmia Petroleum's Chairman and Managing Director Ahmed Bahgat reviewed the company's activity during 2021 and how it achieved a 50% increase over the year before despite the challenges that the company faced.

The company succeeded in contracting with the Egyptian Drilling Company to operate the Tanmia-1 drilling rig in the fields of Khalida Company, and work is expected to start in May, Bahgat noted.



Bahgat also confirmed that within the framework of the petroleum sector's policy of integrating its entities, the company's business in 2021 witnessed the maximization of its assets through the manufacture of Porsche equipment for Petrojet, with a value of more than EGP 25 million, and the entry of such equipment into service at various petroleum sites.

## MOPCO REVENUES INCREASE BY 40% IN 2021

Misr Fertilizer Production Company (MOPCO) announced that it has achieved total revenues of around EGP 10.3 billion in 2021, an increase of 40% over the previous year.

MOPCO's Chairman Ibrahim Mekky praised the efforts made by all employees leading to the achievement of the production plan despite the many challenges that the year witnessed, as it was able to fulfill its obligations and continue marketing its products internally and externally.

Mekky also explained the future plans for development, expansion, and raising production capacity. MOPCO is currently implementing three integrative projects to achieve the highest added value of natural gas and its products, achieve sustainability and preserve the environment. He

also discussed a project to establish a unit for the recovery of carbon dioxide from stacks (CO<sub>2</sub> Recovery).

He added that there is a project to increase the production capacity of urea and ammonia producers (UREA & AMONIAREVAMP) with a quantity of 109,000 tons per year of ammonia and 190,000 tons of urea. This is in addition to a project to establish a factory for the production of melamine used in adhesives for the manufacture of wood and high-resistance concrete.

The excess urea quantities will be used in value-added projects such as the methanol derivatives project of the Suez Methanol Derivatives Company (SMD), and the melamine project, Mekky added.

## AGREEMENTS

## MADBOULY WITNESSES GREEN HYDROGEN, RENEWABLES COOPERATION AGREEMENTS

Prime Minister Mostafa Madbouly witnessed the signing of a framework agreement for cooperation in renewable energy and green hydrogen projects in a number of African countries.

The cooperation agreement was signed by Sovereign Fund of Egypt Chairman Ayman Soliman and from the Norwegian side, Tellef Thorleifsson, the CEO of the Norwegian Investment Fund, and Raymond Carlsen, Scatec CEO.

Under the framework agreement, the Egypt Sovereign Fund, the Norwegian Investment Fund, and Scatec will enhance their joint cooperation to develop green energy, green hydrogen facilities, and infrastructure in a number of countries in Africa. This will include the Democratic Republic of Congo, Tanzania, Ghana, South Sudan, Rwanda, Sierra Leone, Burundi, Djibouti and Uganda in the first phase, with the aim of expanding the scope of cooperation to include other countries in the second phase.

The scope of cooperation further includes cooperation to promote diversification of energy supplies in order to enhance energy security as well as develop new, sustainable, and renewable forms of energy. The collaboration is also important for supporting access to renewable energy in more accessible ways and enhancing technology transfer. It further aims to produce sustainable energy, achieve energy efficiency, enhance capacity building, as well as facilitate investment in green energy in these countries.

## ABU QIR FERTILIZERS COMPANY, SAP SIGN DIGITAL TRANSFORMATION CONTRACT

Minister of Petroleum and Mineral Resources Tarek El Molla witnessed the signing of a digital transformation contract between Abu Qir fertilizers and Chemicals Company and SAP.

The two companies signed the contract in the context of keeping pace with modern technological developments and benefiting from them.

Under the contract, SAP will establish an integrated digital system in Abu Qir Company, in which the ERP system is integrated with the information management system so that the company's work is managed through a smart digital system. This facilitates speed and accuracy in decision-making based on instant data and information.

El Molla pointed out the importance of keeping pace with the value-added industries, which Abu Qir Fertilizers Company is a part of. He emphasized the importance of modern technological developments and the use of the latest global experiences and applications to implement the goals of digital transformation.

**NATURAL GAS**

**MODERN GAS ANNOUNCES GAS DELIVERY LEVELS IN 2021**

Modern Gas Company held a general assembly meeting to approve the results of its work during 2021, in the presence of Magdy Galal, Chairman of the Egyptian Natural Gas Holding Company (EGAS), and Alaa El Batal, Chairman of the Egyptian General Petroleum Corporation (EGPC).

During the assembly, the company's Chairman Mohamed Kandil reviewed the most important business results achieved by the company during 2021.

Kandil highlighted the increase in gas delivery rates to households, as a result of the easy installations initiative launched by the Ministry of Petroleum and Mineral Resources.

The company also contributed to the implementation of national projects such as the new city of El Alamein and the New Administrative Capital. He also highlighted the company's role in the Hayah Karima ('Decent Life') initiative by delivering natural gas to the Qena, Sohag, and Sharqia governates, where the natural gas works began in 36 villages. The service was delivered to 35,198 subscribers, in addition to the delivery of natural gas to subsidized municipal bakeries, Kandil said. He added that all bakeries located in the company's work areas were connected, reaching 713 bakeries, and gas refueling services were added to 69 stations in the various areas of the company's work.

**EL MOLLA INAUGURATES GASTEC'S SCADA SYSTEM**

Minister of Petroleum and Mineral Resources Tarek El Molla inaugurated the remote monitoring and control system (SCADA System) for the natural gas car refueling stations affiliated with Gastec.

The new system comes within the framework of the Modernization program's strategy, which aims to expand the applications of digital transformation in managing activities. This will raise the efficiency of car refueling stations with natural gas, which serve a large segment of car users, El Molla noted.

During the inauguration, Abdel-Fattah Farhat, Gastec's Chairman, made a presentation on the company's new system, which aims to automate the operations and link the stations to an advanced digital system.

After the inauguration, El Molla attended the company's general assembly meeting to approve the business results for the year 2021, where he praised the achieved results, which witnessed great growth in light of the current expansion in the use of natural gas as a fuel for cars across Egypt.

In 2021, Gastec was able to establish and operate 164 new stations in just one year, which represents an unprecedented record rate that



exceeds the number of stations established by the company since its establishment in 1996. This brings the total number of the company's stations to 317 stations, Farhat said, adding that this represents the highest prevalence rate of natural gas supply stations for cars on the level of national companies operating in this activity.

Sales of natural gas as fuel from Gastec stations increased to 406 million cubic meters, 47% of the total local market. The company also converted about 32,000 cars to work with gas and is one of the largest companies involved in vehicle conversion. It inaugurated seven new conversion centers and five integrated stations in partnership with the Italian company Eni for the sale of natural gas and all kinds of gasoline, Farhat noted.

**EGYPT, JORDAN DISCUSS POSSIBLE NATURAL GAS DELIVERY COOPERATION**

Minister of Petroleum and Mineral Resources Tarek El Molla met with Jordanian Minister of Investment Khairy Amr in Cairo to discuss increasing cooperation in implementing natural gas delivery projects inside Jordan with Egyptian expertise through specialized petroleum sector companies.

The meeting reviewed the Egyptian experiences in delivering natural gas to houses and their success in covering more than 13.5 million housing units with natural gas. This was achieved after doubling the delivery rate to 1.2 million housing units annually during the last four years in the presence of qualified companies, trained cadres, and the availability of technical and engineering capabilities.

Amr pointed out the importance of Egypt's participation with its long experience in implementing these projects in Jordan, which would contribute significantly to the success of their implementation by extending gas networks and connecting them in various



Jordanian cities. Amr added that a technical and economic study is currently underway by the European Bank for Reconstruction and Development (EBRD) on gas delivery projects in Jordan, on the basis of which the best vision for implementation will be determined.

For his part, El Molla indicated that Egypt is fully prepared to participate in projects to deliver natural gas to homes in Jordanian cities. The two ministers agreed to send a team of Egyptian natural gas delivery companies to Jordan to cooperate and review capabilities and learn about project details.

**DOWNSTREAM**

**EL MOLLA INAUGURATES FLARE GAS-TO-ELECTRICITY PROJECT**

Minister of Petroleum and Mineral Resources Tarek El Molla inaugurated a project to generate electric power from flare gas using a gas generator station in the Kalabsha fields in the Western Desert.

This project is the largest of its kind in terms of size in Egypt and North Africa, with a capacity of about 10 megawatts, in addition to about 5 megawatts as a reserve.

It will directly provide nearly 80,000 liters of diesel per day, which will contribute significantly to reducing carbon emissions resulting from burning diesel to generate power from diesel generators, in addition to what it provides for the purchase of diesel.

**SCA AMENDS PETROLEUM PRODUCTS CARRIERS FEES**

The Suez Canal Authority (SCA) published amendments of Circular No. (2/2022) regarding petroleum derivatives tankers, Category 2 of the transit fee schedule (loaded/empty), transiting the Suez Canal in both directions.

The additional fees imposed on laden petroleum products carriers, Category 2, in the schedule of transit fees, transiting the Suez Canal in both directions shall be amended to become 15% of the normal transit fees.

According to the amendments, the SCA will continue to impose additional fees on petroleum derivatives tankers, Category 2, in the empty transit fee schedule, transiting the Suez Canal in both directions at 5% of the normal transit fees.

The amendments are set to be effective on May 1st, 2022.

**EGYPT'S PUBLIC TREASURY BEARS EGP 405M FOR GREEN INCENTIVE**



Minister of Finance Mohamed Maait announced that Luxor and Aswan governates have been included in the first phase of an initiative to replace aging cars (twenty years old or older) with newer ones that run on natural gas.

This was to implement presidential mandates to expand the base of beneficiaries of the initiative. The move will also contribute to facilitating citizens' ownership of new cars that run on natural gas and are economically efficient, through large credit facilities, despite the unprecedented challenges the global economy is witnessing.

Egypt's public treasury bore EGP 405 million, the value of the green incentive, for about 17,900 new cars allocated to citizens who completed their procedures on the website, including 16,750 cars, as well as 1,150 taxis and minibuses, Maait noted.

The ministry received about 38,000 requests on the initiative's website, and more than 17,000 aging cars that had been manufactured twenty years ago or more were scrapped Amjad Mounir, First Undersecretary of Minister and Chairman of the Vehicle Replacement Fund, said.

## SDX

### SDX MAKES GAS DISCOVERY AT SOUTH DISOUQ

SDX Energy Plc announced a gas discovery at the exploration well SD-5X, in the South Disouq development concession.

After completing the SD-5X well, the rig will be moved to start the second well in the company's three well campaign. The second well is SD-12-

East, located in the Sobhi Field, and planned to spud in mid-April. The campaign's third well is set to be the MA-1X well, which is targeting the Mohsen prospect and is planned to start mid-to-late May.

The SD-5X well targeted the Warda prospect. The well spudded on March 4th and reached TD at 7,855ft MD on March 16th. The primary basal Kafr El Sheikh target was encountered at 6,973ft MD and discovered 55.5ft of net pay gas sand with an average porosity of 26.3%, all of which were in line with pre-drill estimates.



## ENI

### ENI MAKES NEW DISCOVERIES IN THE EGYPTIAN WESTERN DESERT

Eni announced making new oil and natural gas discoveries in the Egyptian Meleiha concessions, located in the Western Desert. The newly made discoveries add approximately 8,500 barrels of oil equivalent per day (boe/d).

The new oil and gas discoveries have been connected to production, which comes in line with the infrastructure-led exploration strategy. This helps maximize exploration opportunities close to the existing infrastructures.

The results, which were added to the discoveries for a total of eight exploration wells in 2021, give a 75% of success rate. This rate confirms the great potential in the Meleiha area. The company is continuing other exploration activities within the Meleiha concession with promising indications.



### SISI MEETS WITH ENI DELEGATION

President Abdel Fattah El Sisi received a delegation from the Italian oil company Eni headed by Claudio Descalzi, CEO of the company, in the presence of Tarek El Molla, Minister of Petroleum and Mineral Resources.

During the meeting, the President valued the existing partnership with Eni, and the various activities that the company implements in Egypt according to the highest international standards.

El Sisi expressed his aspiration for the company to continue its activities in the field of exploration

and discovery with the aim of achieving optimal utilization of Egypt's resources from the energy sector. He directed to continue intensive cooperation with the company and to overcome any obstacles that may face its business.

## QATARENERGY

### QATARENERGY TO ACQUIRE 40% OF OFFSHORE BLOCK IN EGYPT

QatarEnergy entered an agreement with ExxonMobil to obtain a 40% working interest in an offshore exploration block in Egypt. The agreement is pending governmental customary approval.

According to the agreement, QatarEnergy will acquire 40% of the contractor's stakes in the North Marakia Offshore Block, located in the

Mediterranean Sea, while ExxonMobil will hold 60% stakes as the concession's operator.

"This agreement represents an important new step in strengthening Qatar Energy's presence in the field of exploration and exploration in the Arab Republic of Egypt, and in enhancing our international growth strategy," Saad Sherida Al-Kaabi, Minister of State for Energy Affairs,

Managing Director and CEO of QatarEnergy, commented.

"We are pleased to sign this agreement and to work with our valued long-term partner ExxonMobil to explore exciting prospects in the promising region," he added.



## TRANSGLOBE

### TRANSGLOBE RELEASES OPERATIONAL UPDATE FOR Q1 2022

TransGlobe Energy Company has published its operational update for Q1 2022 for its operations in Egypt and Canada.

According to the company's production summary, TransGlobe's production from Egypt reached 10,045 barrels of oil equivalent per day (boe/d) in its year-to-date (YTD) average. "In Egypt

production was impacted by poor weather in February and higher water cuts than anticipated at South Ghazalat," the company said.

In the Eastern Desert, TransGlobe continued using the EDC-64 drilling rig in its campaign, in which the company managed to case and drill three

development wells located in K-Field, Arta Field, and NWG-Field during Q1 2022.

Moreover, the K-68 well in the Asl-A reservoir, which started being drilled at the end of 2021, was completed in January. Its current production rate is 156 bbl/d (heavy crude, field estimate).



## CHEVRON

### EL MOLLA, CHEVRON DISCUSS BOOSTING PARTNERSHIP

El Molla met with Rochna Kaul, Chevron's Vice President of Fuels and Lubricants for Europe, Africa, Middle East, South Asia, and Global Marine, along with her accompanying delegation, the ministry said in a statement.

The meeting discussed the company's activity in the field of manufacturing base oils in Egypt and its future plans in light of the company's strong desire to expand its activities and increase areas of cooperation with oil marketing companies.

During the meeting, El Molla said that Chevron has great experience in marketing oils in the Egyptian market, as it has been operating in Egypt for 83 years, and that there are great opportunities to increase cooperation with the petroleum sector and benefit from the expertise that the company possesses.





## EXXONMOBIL



### EXXONMOBIL EXPANDS FUEL STATIONS NETWORK IN NEW CAIRO

ExxonMobil, the leading company in providing high-quality fuels and petroleum products in Egypt, has opened new services and fuel supply stations in New Cairo City. The latest addition was Mobil Madinaty station in East Cairo which came shortly after the opening of the Concord Plaza station in the Fifth Settlement.

Currently, the company is finalizing another three stations in New Cairo to be opened soon, according to the press release. These inaugurations came in line with the company's goal to meet the daily needs of its consumers and boost their trust through providing developed services across Egypt.

ExxonMobil offers its services through 350 Mobil fuel stations in addition to 200 Mobil 1 and Mobil Autocare services stations.

## RUHRPUMPEN



### EL MOLLA REVIEWS RUHRPUMPEN'S EXPANSIONS IN EGYPT

El Molla received Ruhropumpen Chairman and CEO César Elizondo Campuzano and his accompanying delegation.

The meeting reviewed the company's activity in Egypt in light of the new expansions that were recently inaugurated at the Egyptian German

Pumps Company's factory in Suez and the company's plans for the coming period.

During the meeting, El Molla stated that the petroleum sector attaches great importance to increasing the local manufacturing base of petroleum equipment and tasks necessary for

oil and gas activities. This is because of their important role in the implementation of important and vital projects within the framework of the strategy of transforming Egypt into an oil and gas regional trading hub.

## UOG



### UOG COMMENCES PRODUCTION FROM ASD-2 IN ABU SENNAN

United Oil & Gas has announced that it started production from the ASD-2 well at an initial rate of c. 2,100 barrels of oil equivalent per day (boe/d) gross and c.462 boe/d net.

The company said that this production rate came above the pre-drill expectations, adding

that it took just six days from well completion to production and revenue generation for United.

It noted that it will start drilling the second well in its 2022 drilling program, ASV-1X, during the upcoming days. "A rig has been mobilized to drill

the second well in the 2022 drilling program," the company said.

UOG declared that it added a fifth firm well to its 2022 drilling program after the completion of technical work and a sustained high oil price.

### UOG'S ABU SENNAN PRODUCTION AVERAGED 1,567 BOE/D IN Q1 2022

United Oil & Gas PLC (UOG) announced that quarterly production for the first quarter (Q1) of 2022 averaged 1,567 boe/d.

This includes 1,267 bbl/d oil and 300 boe/d gas in line with H1 2022 guidance of 1,500-1,650 bbl/d.

The ASD-2 development well, the first well in the drilling campaign for 2022, started producing toward the end of March.

Drilling has begun on the ASV-1X exploration well, being the second of five wells planned for the 2022 drilling campaign.

During the period, UOG's production came exclusively from its 22% operating interest in the Abu Sennan license in Egypt, which is operated by Kuwait Energy Egypt (KEE). As development, appraisal, and exploration activities continue, this data will vary from quarter to quarter.

## SHELL



### SHELL, TOTALENERGIES, 3R WIN OIL CONTRACTS IN BRAZIL'S AUCTION OF 59 OIL BLOCKS

The Brazilian government granted 59 exploration permits for oil and natural gas fields to 13 companies on Wednesday, among them Shell, TotalEnergies, and 3R Petroleum.

Brazilian oil regulator ANP reported that the auction generated 422.4 million reais (\$90.10

million) in signature bonus, registering a premium of 854.84%.

With the sold areas located in six Brazilian states, the exploration phase of the contract will result in investments worth 406.3 million reais.

Shell Brasil was awarded six blocks in the Santos Basin in a consortium with Colombia's Ecopetrol, while TotalEnergies won two blocks. 3R Petroleum has acquired six areas in the Potiguar Basin.

## ROSNEFT



### RUSSIAN OIL COMPANY ROSNEFT ACQUIRES 37.5% OF GERMAN PCK REFINERY

As part of its pre-emption rights, Rosneft exercised its right to acquire 37.5% of the PCK (Schwedt) refinery from Shell. Regulatory approval is required for the deal.

Through this acquisition, Rosneft will increase its ownership in PCK from 54.17 % to 91.67%.

The fact that Rosneft has increased its participation in PCK refinery underlines the strategic importance of the German market for the company, according to Chief Executive Officer Igor Sechin.

He added that by securing this acquisition, the company is building long-term partnerships with its German partners, providing timely and

uninterrupted crude supplies, in addition to successfully modernizing key refinery units.



# PROSPECTS OF GREEN HYDROGEN INDUSTRY IN EGYPT





BY JOLLY MONSEF, MARIAM AHMED & YOUSINA MOUNIR

Egypt is among the countries that have already started preparing a hydrogen strategy and began the first steps of producing and exporting green hydrogen. Egypt's current policies and plans are aimed at the reduction of its emissions and the long-term transition to a greener economy. With this regard, Egypt's energy strategy 2035 will be updated to include green hydrogen as a source of energy.




## HYDROGEN INDUSTRY IN EGYPT

### 1. POLICIES & PLANS

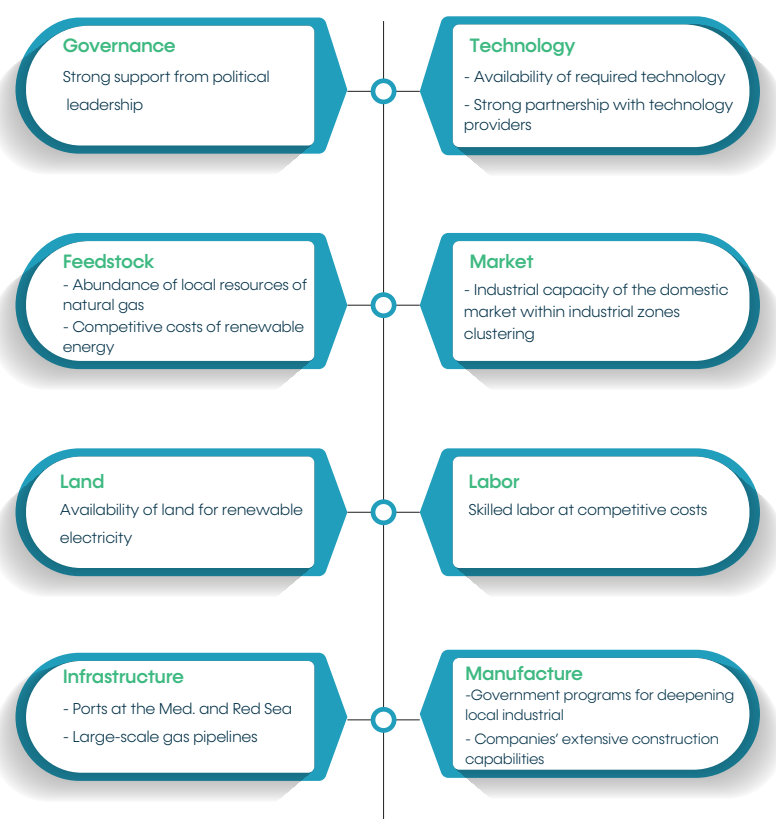
#### POLICIES

	<b>Focusing on</b>	<ul style="list-style-type: none"> <li>- The energy mix &amp; the contribution of natural gas as a greener fuel</li> <li>- Increasing the share of renewable energy to generate electricity</li> <li>- The role of renewable energy in Egypt's energy mix</li> </ul>
	<b>Allocating</b>	<ul style="list-style-type: none"> <li>- <b>15%</b> of its total public investment in FY 2020/21 for green investment projects</li> </ul>
	<b>Developing</b>	<ul style="list-style-type: none"> <li>- Low carbon hydrogen projects</li> </ul>
	<b>Revising</b>	<ul style="list-style-type: none"> <li>- "Integrated Sustainable Energy Strategy" and expanding it to 2040</li> </ul>

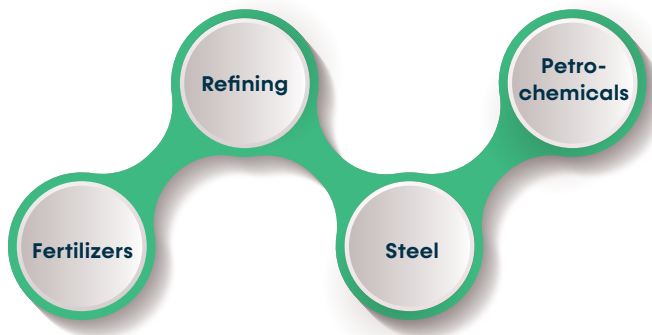
#### PLANS

	<b>Implementing</b>	Mitigation policies to reduce its level of greenhouse gas (GHG) emissions
	<b>Transiting from</b>	Carbon-based energy source to green & clean energy
	<b>Reducing</b>	Emissions from the Energy Sector

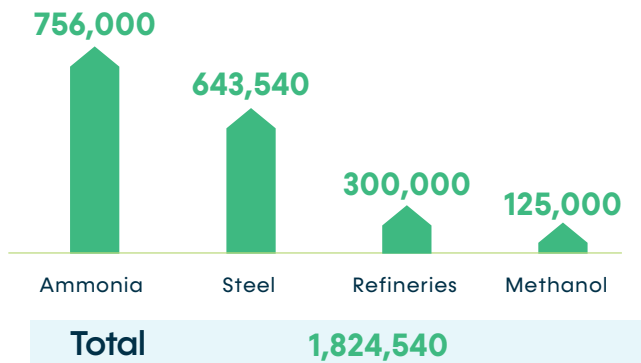
### 2. COMPARATIVE ADVANTAGE OF USING HYDROGEN



### 3. MAIN CONSUMING INDUSTRIES

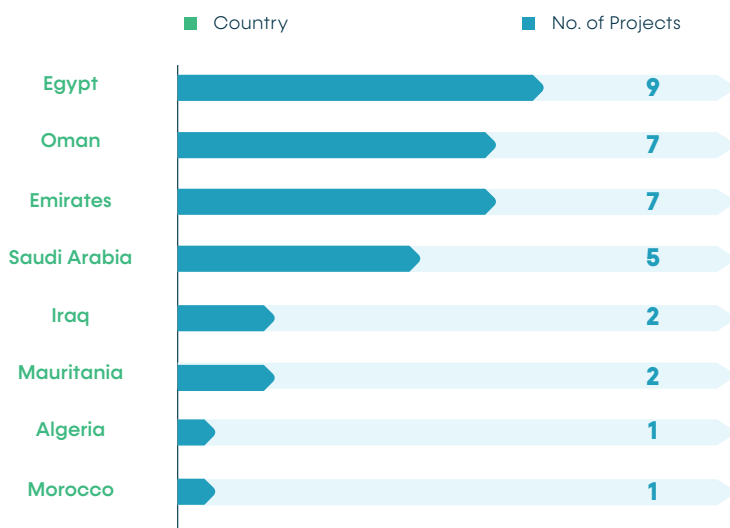


### 4. ESTIMATED HYDROGEN PRODUCTION/CONSUMPTION PER INDUSTRY IN 2019 (tons)



### 5. EGYPT LEADS ARAB COUNTRIES IN HYDROGEN INDUSTRY\*

**34** PROJECTS FOR PRODUCING HYDROGEN IN ARAB COUNTRIES



### HYDROGEN PROJECTS PER TYPE IN EGYPT\*



\*Announced in Mar, OAPEC Report.

## DEVELOPMENT OF GREEN HYDROGEN INDUSTRY

### 1. MAJOR PARTNERSHIPS

#### A. SIGNED AGREEMENTS WITH EGYPT

Company	Signing Date
Siemens	Jan 2021 Aug 2021
ThyssenKrupp Co.	Mar 2021
European bank for Reconstruction and Development (EBRD)	Mar 2021
Belgium's Deme Co.	Mar 2021
Eni	Oct 2021

#### B. FUTURE COOPERATIONS

Company	Meeting Date
Snam co.	Jul 2021
Emirati Energy Co. AMEA	Feb 2022
City Group Co.	Mar 2022

#### C. LEADING PROJECTS

EGYPT, GERMAN'S H2 INDUSTRY CO. TO ESTABLISH THE WORLD'S FIRST "WASTE TO GREEN HYDROGEN" PLANT

Expected Date	(2025-2026)
Green Hydrogen production	300,000 t/y
Location	East Port-Said
Cost	\$3 billion
Amount of Organic Waste & non-Recyclable Plastic	4 mmt/y

#### D. THE SFE'S PARTNERSHIPS

##### 1. EGYPT'S FIRST GREEN HYDROGEN PRODUCTION FACILITY

Agreement Date	Nov 2021
Partners	SFE, Orascom Construction PLC, Scatec, and Fertigllobe
Aim	Developing the first electrolyzer in Egypt and the largest independently owned facility in the world
Facility Capacity	Has 100 MW PEM* electrolyzer
Production	Up to 90,000 tons of green ammonia by EBIC**

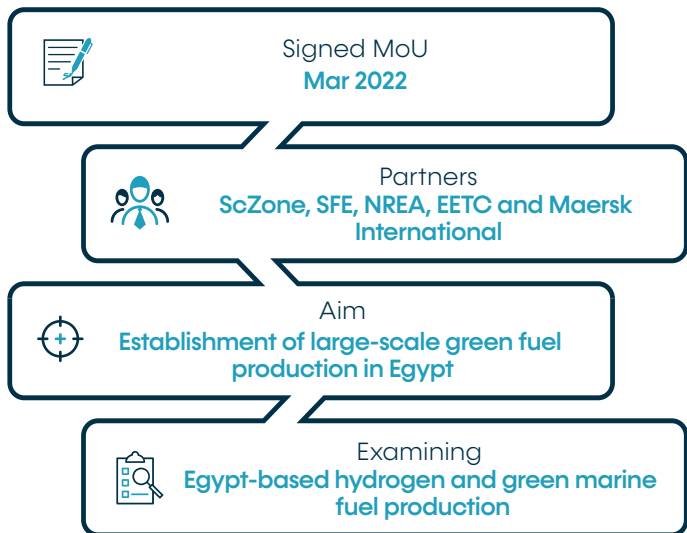
\*Polymer Electrolyte Membrane

\*\*Egypt Basic Industries Corporation, Fertigllobe's ammonia production facility in Ain Al Sokhna

2. PROJECT OF PRODUCING GREEN AMMONIA IN SCZONE

MOU Signing Date	▶ Mar 2022
Partners	▶ SCZONE, SFE, EETC, NREA, and the Norwegian Scatec Renewable Energy Co.
Aim	▶ Producing green ammonia from green hydrogen
Investment Cost	▶ \$5 billion
Production Capacity	▶ 1-3 mmt/y
Expected Starting Date	▶ 2025
Phases	▶ 2

3. NEW PARTNERSHIP TO ACCELERATE GREEN FUEL PRODUCTION



GOVERNMENT & PRIVATE SECTOR ROLES

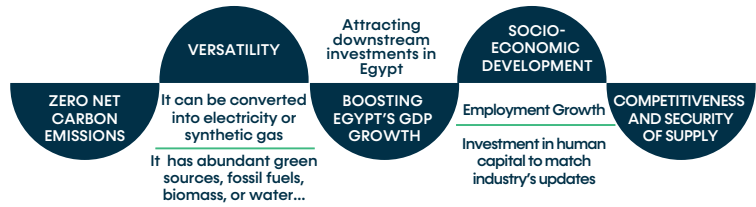
1. GOVERNMENT ROLE



2. PRIVATE SECTOR ROLE



BENEFITS OF ADOPTING GREEN HYDROGEN IN EGYPT



CHALLENGES VS. SOLUTIONS FOR GREEN HYDROGEN INDUSTRY



Egypt sets its sights on playing a pivotal role in producing hydrogen as a clean fuel as well as exporting it globally especially for European markets. The country has great competitive opportunities represented in the strategic location, infrastructure, natural gas sources, and renewable energy, in addition to political will, which can support it to serve as a regional center for energy trading.



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# EMPLOYEE RETENTION IN THE OIL & GAS INDUSTRY

BY RANA AL KADY

To begin with, the oil and gas sector, like most other sectors, faces challenges with employee retention. Training in the oil and gas sector may be costly, and professionals need years of professional experience. If these experienced individuals depart their companies for any reason, it proves to be hard to replace them.

Although retirement plans are unavoidable, some changes may be avoided by determining why exceptional people depart for other employment. Resignations may be explained in some circumstances by generational differences; in others, by the limitations of climbing the work hierarchy progress or work environment.

## GENERAL OVERVIEW

Oil corporations are financing future initiatives, but expansion is being stifled by a "diminishing pool of young and qualified expertise" as well as an aging workforce. These two factors have produced an ideal combination in the business, with corporations having the funds to invest in unconventional oil and gas activities but being unable to find skilled personnel to manage these projects.

Data suggests that COVID-19 is changing employee values in ways that might pose a significant recruiting and retention issue throughout the oil and gas industry. The significant impact of COVID-19 on minority groups was discovered to have pushed diversification further up the current employee plan. Even before the outbreak started, approximately 2 million women have pondered abandoning or changing the direction of their employment, with minority groups bearing the brunt of the virus's toll. Over 60% of staff have already left their current firm for a more comprehensive one, providing a hurdle for the oil and gas industry with only 7% ethnic minority and 22% female inclusion. As suggested by a Human Resources Manager in the oil and gas field who preferred anonymity, "employee retention is all about how to make the staff commit by making sure that the work environment encourages [employees] to develop their skills and to develop themselves to a higher level in their career ladder."

## EMPLOYEE RETENTION METHODS

Collectively, recent shifts have shaped a culture of respect that drive employees' needs that are inconsistent with the recognized features of the oil and gas sector. This occurs at a time when there is a digital literacy deficit and escalating rivalry for an increasingly disgruntled labour pool, upping the bar for employee retention substantially. To retain this emerging generation of employees, the oil and gas sector will need to rethink it all from work procedures to performance indicators.

Consequently, networking is a technique for oil and gas firms to find talented employees. According to a recent study, 62% of oil and gas managers "intend to explore flexible hours possibilities after leaving the job." Oil and gas firms can profit from scooping up skilled professionals who are looking for far more flexible work schedules, better benefits packages, or higher compensation through networking at company events and digitally. In other words, as a result of individuals enjoying additional time with their families throughout most of the lockdown, oil and gas companies may rethink workplace incentives and reorganize corporate values

towards family and flexible work hours. Traditional perks like commuting charge refunds as well as on-site meals should be augmented with family-friendly perks like parental assistance and flexi-time. Companies should give perks to employees who choose to stay near to their family rather than only financial incentives for migration. The Human Resources Manager stated that, "it is hard these days to make flexible choices for employees because companies are trying to go back to work as usual before the pandemic, but I think that when we make flexible decisions for employees, they become more satisfied and become committed to the company." She continued to say that, "companies should make some compromises so that employees can also feel like they can compromise for the company."

The oil and gas companies face another dilemma. Its innovative online transition has put it in competition with other digitally savvy businesses for recruiting and retaining talent. This implies that businesses are now fighting for a more diversified, family-oriented, ethically and environmentally sensitive workforce that is progressively becoming more value-driven in their workplace selection. As a matter of fact, as the oil and gas sector shifts away from conventional fuels and toward a more sustainable energy balance, the characteristics of its staff will alter to represent this. Organizations which can tailor their offerings to match the irreversible transformation in the nature and principles of their personnel that is currently beginning will be able to recruit and retain their employees.

Personnel want to think about how they can advance their careers and have possibilities with the organization. Oil and gas firms should analyze themselves to see what particular characteristics must be tackled in order to help guarantee that this is an actuality for personnel. Career paths that recognize both engineering and technological accomplishments, as well as management progress, are critical. In this sector, there is a propensity to build executives out of the greatest specialists or engineers. That technique is frequently not in the best interests of the firm or the individual. The organization must organize training activities that encourage and permit professional progression along both paths. The importance of focusing on growth and employee retention strategy has now become increasingly apparent.

In conclusion, the main way to attract and retain top people is really about dedication and follow-through. Establishing a procurement plan that relies on the precise roles you require to be competitive is crucial. Simplifying the hiring process to minimize the time it takes to employ is essential. Moreover, it is necessary to enhance skill development by providing people with compelling reasons to stay. After all, it is absolutely essential for human resources to consider implementing programs that collaborate to create a unified talent strategy integrated with the organization's strategy.



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# BIOFUEL ECONOMICS: EGYPT'S PROFITABLE PATH TOWARDS ENERGY TRANSITION

BY NADER RAMADAN

In being the host for COP 27 this November and a leading country in Africa, Egypt stands for the interests of the entire African continent in seeking a feasible vision for energy transition. As climate scientists express increasing concerns about emissions, energy transition has become a prerequisite for a prosperous future. Biofuel has been proposed by many as an effective route to escape a global climate cataclysm, but economists have been left to ponder whether it is an economically feasible component to the energy mix that will stimulate growth and boost profits.

Biofuel is a source of energy that uses biomass as an alternative to using fossil fuels. Biomass is renewable organic material that comes from either an animal or plant source. There are many types of biofuels, including biodiesel, biogas, bioethanol, and others. With the wide variety of different biofuels out there, many types of businesses in the public and private sectors could get involved in this new and emerging field.

From an economic perspective, assessments indicate that biofuel could have substantial contributions to growth, which include greater job creation in opening up lucrative opportunities for those working in the agricultural sector or in rural areas. Being an agricultural country, Egypt's ability to supply the biofuel industry with the needed feedstock is a proven advantage. Since scarcity is not an issue in terms of feedstock because it is readily available in nature, biofuel opens up the possibility of turning the economic tables.

A 2012 study titled "Economics of Biofuels: An Overview of Policies, Impacts, and Prospects" by Gian Carlo Moschini, Jingbo Cui, and Harvey Lapan further reinforces this point by saying, "One of the obvious economic impacts of biofuels is to increase the demand for agricultural output, beyond the traditional uses for food and feed. The resulting price effects positively impact incomes and returns in agriculture, and thus biofuels can play a positive role in the longstanding perceived need (especially in developed economies) to support agriculture. In particular, there is interest in the potential of biofuels to help with rural economic development, by spurring investment and employment in rural areas with sluggish economic activity."

With the importance of its agricultural sector, Egyptian biodiesel in particular has witnessed substantial growth with a number of different local producers working in the private sector. For a long time, the Egyptian government has invested in the potential of the *Jatropha* crop as a possible source for producing biodiesel. *Jatropha* has been used for the production of some of Egypt's jet fuel, even though some experts point out its relatively high cost of production. According to SciDiv. Net, researchers have noted that the lowest price of biofuel is 90% higher than the average fuel.

A 2015 study titled "The Potential of *Jatropha* Plantations in Egypt: A Review" written by economic experts Waleed Mahmoud Soliman from the Agricultural Economics Research Institute in Egypt and Xirong He from the China Agricultural University's College of Economics & Management also examined the key economic benefits of this crop. "By our rough assumption for the Egyptian model, 1 million hectares of *Jatropha* plantation is expected to produce 1 million ton of BDF (biodiesel fuel). This 1 million ton of BDF usage would reduce 2 million tons of CO<sub>2</sub> emission. Annually, a value of \$28 million market would be delivered. The Egyptian actual profits from the carbon trading would be one-half or one-third of the expected value." It cited figures from the Japan Bio-Energy Development Corp.'s 2007 Projects Report. The study added that the establishment of *Jatropha* plantations could contribute to improving living standards for lower-income areas of Upper Egypt.

It is the power of pricing that really gives Egypt a competitive edge in the biofuel market. As the Executive Manager of BioRotterdam Cleantech, a biodiesel and energy consultancy firm, Dr. Ibrahim Farouk asserts that Egypt has the ability to produce biofuel at a lower rate than other markets, citing a Swedish study that found producing biofuel in Europe is six times more costly than production in Egypt and a number of Arab countries. This advantage makes Egypt an attractive prospect for buyers overseas. "There is a strong opportunity [for biofuels in this market] based on figures that show that there is a large supply of feedstock in Egypt because of high population and there is also high demand for biofuel as a result of EU mandates as well as other types of green energy in both Egypt and Europe," said Farouk. "Egypt has a lot of experience in the field of producing vegetable oils for food uses and the oleochemicals' industry since the 1950s. At one time, we had large plantations for sunflower, cotton, and soybean oils. Our vast experience in this field has given us a technological advantage in the production of biofuels. Now we can melt our experience with market requirement and play a good role in planting vegetable oils for nonfood uses, biofuels being one of them."

Catching the eye of willing investors remains the key to boosting this industry. Farouk asserts that COP 27 would be an ideal platform to lure all the essential investments, financing, strategic partnerships with international companies to benefit from. "We have a great opportunity at COP 27 to introduce ourselves as a country and as operating companies to show that we have the expertise, excellent infrastructure, and experience in producing vegetable oils. We need to introduce ourselves as an attractive location to invest in the production of biodiesel. According to the given data, Egypt can be easily become a regional hub for biofuels by 2030 whenever the investments are available."

Above all, Egypt's mere geography could play in its favor with its close proximity to the European market, which is considered the world's largest for biofuel. Combined with the need for environmentally responsible fuel options, current regional developments may even create more demand and push the Europeans to tap into nearby markets where biofuel production is cost-effective, the know-how is available, and there is a reliably sustainable supply of feedstock. No country in the region would fit this description more than Egypt does, making it an attractive biofuel exporter to Europe.

Though there have been accomplishments in this field, there is still yet more to be done in Egypt for the local biofuel economy to be considered a force to be reckoned with. Nonetheless, with Egypt's commitment to The Paris Agreement, it is not far-fetched that the Egyptian economy will witness major developments in this field soon enough, especially considering its export potential.

As much as biofuels are the more environmentally responsible path for a prosperous future, it also represents an economic opportunity that, if managed properly, can contribute to paving the way for Egypt's energy transition. The potential that biofuels have is an inspirational reminder that even the most complex problems can be tackled with the simplest solutions. In this case, it is the biosphere itself.





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# USING OIL BARGAINING CHIP ON IRAN NUCLEAR DEAL NEGOTIATION TABLE

BY IHAB SHAARAWY

**A**s the Ukraine crisis is increasing the West's need for energy from other sources than Russia. Many experts refer to Iranian energy resources as a potential solution to the current energy crisis and a factor that can stabilize the fluctuated oil markets.

There are also analysts who predict that the oil factor has given Iran an edge in its nuclear talks with the so-called P5+1 (China, France, Russia, the UK, and the US plus Germany). The confidence that Iran is now enjoying has prompted more bold Iranian demands, which stood as stumbling blocks on the way to reaching the final deal. One of the controversial demands by Iran is the removal of its Islamic Revolutionary Guard Corps (IRGC) from the US list of foreign terrorist organizations. Iran is also asking for guarantees that the pact will not be annulled if Republicans come to power at any time.

The US administration is torn between its desire to reduce oil prices and the political dangers of reaching a deal that doesn't do enough to limit Iranian proliferation or the country's destabilizing activities.

As news reports suggest that the signing of a new deal is imminent, critics of the deal are highlighting their doubts about the ability of the deal to end Iran's destabilizing behavior in the region. They also expressed their doubts about the Iranian ability to replace Russian production and their desire to do anything that can upset Russia.

## HARD TALKS

When US President Joe Biden came into office in January 2021, restarting negotiations with Iran over reviving the nuclear deal was on top of his foreign policy agenda for the Middle East.

The Comprehensive Plan of Action (JCPOA), or what is commonly known as the Iran nuclear deal, is a landmark 2015 pact that offered Iran relief from nuclear-related sanctions in exchange for accepting constraints on its nuclear program, ensuring it could not pursue a nuclear weapon in the near term.

Former US President Donald Trump withdrew from the deal in 2018 and imposed additional sanctions on Iran, which gave Iran a chance to take a further step towards its aim to develop nuclear arms.

The new deal would require Iran to stop operating its new advanced centrifuges, which progressively enrich uranium from the levels needed for energy generation to the levels needed for warheads.

Nevertheless, a deal is facing big political opposition inside the US as it's seen as much weaker than the original one as it would leave Iran in possession of a new generation of advanced centrifuges that it began operating after Trump pulled out of the deal.

The request of Iran to remove IRGC from the terrorist list raises concern from Republican lawmakers and US allies in the Middle East, that it would empower a wing of the regime that is at the heart of fomenting terrorism and instability in the region and elsewhere.

### The Oil Card

Following the start of the Russia-Ukraine crisis, a majority of Iranian lawmakers have suggested that Iran should use the opportunity provided by instability in the global energy markets and push its demands in nuclear talks in Vienna.

Iran may have up to 90 million barrels of crude and condensate stored on land in its territory, at sea, and in tanks, enough to add about 1 million barrels per day to the market for three months.

Experts expect it would take Iran only a few months to gear up to the full pre-sanctions crude output of 3.8 mb/d, of which around 2 mb/d would be available for exportation.

Although Iran's full return would not fully offset Russian supplies, it would be a significant contribution. Lifting sanctions would also help Iran's gas sector in eliminating restrictions on the marketing of condensate and allow the purchase of compression equipment, badly needed at the colossal South Pars field, where production will otherwise decline rapidly after 2023 as the pressure in the reservoir depletes due to extraction of the gas.

Iran is already shifting more oil onto ships in a move to speed exports should talks succeed in ending its exclusion from global energy markets at any time soon; and there was no wonder to find oil markets reacting to any positive news of the deal.

However, several analysts doubt the ability of Iran to interfere in the oil markets in a way that can annoy Russia, one of its important allies, especially with the growing untrust between Tehran and Washington.

Iran has been using the oil factor in a carrot and sticks policy where it's not only able to send more contributions to the oil market but also able to disrupt important supplies from the Gulf Countries through terrorist acts by its proxies in Yemen and Iraq.

### A Dangerous Deal

A total blockade of Russian oil and gas could be the best scenario for Iranians today as European governments with dire needs for energy may go for a deal on their own. If the energy crisis on the European continent worsens, some European countries will be even willing to break out of the current US-EU cooperation fold on the Iranian issue.

At the same time, Saudi Arabia and the UAE are displeased with the prospects of a new deal. They are worried about Iranian adventurism and the lack of an explicit US security provision, possibly with more serious attacks against oil and gas infrastructure in the Gulf states.

The expected deal also risks a nuclear-arms race in the Middle East and more strikes against Iran that could escalate out of hand.

In mid-April, around 50 retired US military officers wrote an open letter to the Biden administration indicating that the new nuclear agreement with Iran is likely to "instantly fuel explosive Iranian aggression."

The signatories of the letter indicated that the deal "will enable the world's leading state sponsor of terrorism to cast its own nuclear shadow over the Middle East".

In another letter, Senator Joe Manchin, a top Democratic senator, warned the Biden administration against turning to Iran for oil as the White House continues to eye a new nuclear deal with the country.

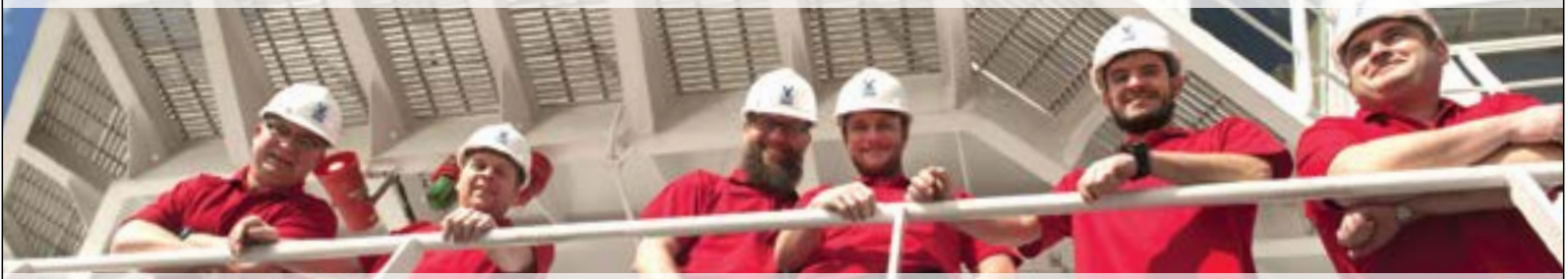
"While I support President Biden's commitment to reengaging the Government of Iran in diplomacy, we should not reward Iran with sanctions relief before they demonstrate verifiable efforts towards curbing their malign influence holistically," Manchin said.

"Let me be clear, the IRGC is a terrorist organization. We must not be shortsighted in the use of sanctions relief to mitigate our present energy challenges", Manchin added.

Still, we have to wait and see if the west going to prioritize its energy needs over its concerns regarding Iran's nuclear program.



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## E-LEARNING: THE ADVANCED LEARNING SOLUTION FOR OIL & GAS CORPORATE GROWTH

BY FATMA AHMED

**C**ontinuous learning and training for employees in any organization are crucial to encourage competitiveness. The importance of continuous learning has even increased recently, especially in light of the use of advanced technology and the huge amount of data. In the oil and gas, continuous learning is a key factor for boosting developments and raising efficiency.

Training in the oil and gas industry is essential for the workers' safety and guarantees a safe working environment. Also, providing training and learning can nourish the employees' loyalty feelings towards their organizations. Lately electronic learning (e-learning) emerged as one of the most effective tools for essential training, especially in the light of the technology available and the emergency circumstances imposed by the COVID pandemic.

### LEARNING BECOMES EASIER

According to an article published by Market Business News, E-Learning refers to the delivery of any learning material through internet means using an electronic device. It identified e-learning as "a network that can provide knowledge and skills to one or more individuals." E-learning can be provided through several methods for corporate training such as Web E-learning, which is based on website content in which the employees are able to access this website through personal devices or through the company's internet, an article issued by VPlegacies stated.

Another method is the virtual classrooms in which instructors can be reached via video conference while the learners are physically present. Also, video modules are another method; this refers to educational videos that are made in advance for the employees and are accessible to them at any time. Specialized e-learning is also a method in which the organization can customize trainings for every employee or group of employees who have similar needs.

Moreover, while e-learning has been introduced through social media, microlearning refers to preparing short-focused modules. Mobile e-learning allows employees to access the needed information anywhere. To facilitate providing e-learning materials, several platforms were developed for various fields, principally the oil and gas industry. Such platforms for oil and gas sector include PetroEd, PetroKnowledge, and PetroSkills.

### WHY E-LEARNING?

E-learning proved its efficiency to the oil and gas industry employees rather than traditional methods. Digital learning enables employees to schedule their courses at the time that suits them. It also allows the training to be delivered to any employees anywhere with the same content and standards so that employees can access to their courses easily at remote wells, oil rigs and gas lakes at any time.

Unlike traditional methods, e-learning is cost-efficient for both employees as well as the organization. For employees, e-learning saves on travel expenses and additional accommodation. While for employers, it enables them to offer trainings for an unlimited number of employees with higher quality and at a more affordable cost.

The most significant advantage of the e-learning is that it fills in the skills gap in the workforce. Immediate access to knowledge and information ensures that workers could be trained on how to deal with potential risky situations and environments. Meanwhile, it lets them cope with the advanced technologies, which makes exploration and production activities more efficient and improves the performance of employees as well as organization's performance.

### CASE STUDY

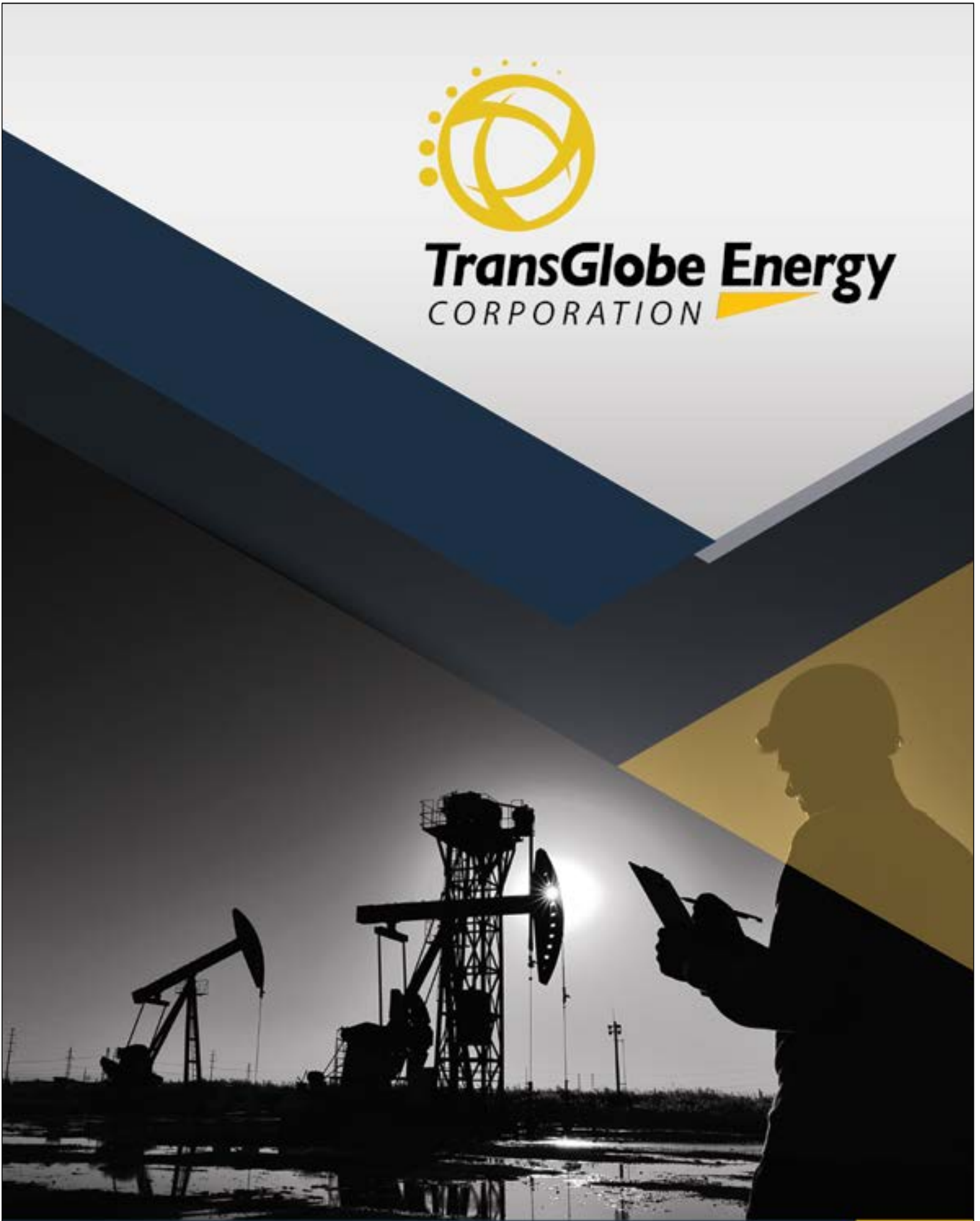
Nowadays, oil and gas companies started to adopt the "Lifetime learning" concept to make their organization alive amid the sector's volatility due to prices change or even unpredictable circumstances like the pandemic. So, the most suitable and affordable method is online training and e-learning.

This has been proved in a study conducted by Farha Mohd, Sheikh Annuar Sh A Rahim and Yu Hock Oo entitled "An Analysis of Oil and Gas E-Learning Culture Pre-Covid-19, During and Post- COVID Era". The study showed that the oil firms should have a digital learning platform to be the heart of the organization as it facilitates the collaboration of knowledge management. It stated that digital learning platforms provide the basis of a robust resource management.



# TransGlobe Energy

CORPORATION



**GROWTH WITH ENERGY**

# CAPACITY BUILDING GAINS MORE MOMENTUM IN EGYPTIAN OIL & GAS SECTOR

BY SARAH SAMIR

**C**apacity building as well as developing effective and efficient human resources were on top of Egypt's agenda while preparing for vision 2030. In this regard, the Egyptian government is undertaking a series of investments, capacity building, and training programs which were closely followed up by the political leadership.

Throughout the past years, the Egyptian petroleum sector was a pioneer in adopting capacity building initiatives. Capacity building was at the heart of the modernization program launched by the ministry, which aims to develop the sector. Launching a Middle Management program and an Energy Efficiency Capacity Building program was part of the continuous efforts by the ministry to ensure equipping its cadres with the necessary capabilities. On its way to build the capacity of its cadres, the Egyptian petroleum sector was keen to establish several fruitful partnerships with international partners including the European Union and a number of international oil companies (IOCs).

This tendency towards partnerships with IOCs in capacity building initiatives gained new momentum this year during the Egypt Petroleum Show (EGYPS 2022), which not only witnessed the seal of middle management deals but also the signing of several memoranda of understanding (MoUs) for capacity building.

## Functional simulation

Functional simulation is an effective way of learning in the oil and gas sector. This training provides true-to-life experience and environments similar to real-life work. To make use of this effective way of learning to enhance the capabilities of human cadres in the Egyptian oil and gas sector, several public sector companies signed a multilateral MoU with Shell. Through the MoU with Shell, the trainees will receive comprehensive training that includes a number of sessions that feature potential job simulations with Shell's experienced employees. This simulation is set to provide participants with expertise that enhance their capabilities. Moreover, the MoU provides training programs targeting selected participants and provided by Shell employees inside the company itself.

The training will also include programs that are provided by foreign experts in different locations across Egypt or abroad. The MoU provides additional training and learning units that are set to be developed by the parties based on the needs

and benefits decided by the chosen participants. Accordingly, the Shell MoU will prepare the sector's workforce to be ready for any challenging situation across their career path.

## Youth and Middle Management

The capacity building programs conducted in the Egyptian oil and gas sector assimilate the Middle Management program, which is part of the MoP's Modernization Program. In line with the capacity building program, the MoP signed a strategic MoU with Kuwait Energy Company for supporting young leaders and middle management.

"Kuwait Energy Egypt continues the sustained commitment towards the support of the modernization program that has been initiated by H.E. Eng. Tarek El Molla two years back. It comes out of our belief that this will help Egypt to achieve its major target of being a regional energy hub which requires different mentalities and challenging capabilities, and our responsibility is to build these capabilities together with the ministry," Kuwait Energy's President, Kamel Al Sawi, previously commented.

Accordingly, the MoU ensures the launching of the second phase of the training program in its new edition as a resumption of the success of the first phase, which was sponsored in 2019 by Kuwait Energy Egypt. The program supported 10 high potential talented participants with six months of intensive developmental training, taking around 2,500 learning hours per participant.

Through the different types of training and the support of prominent partners, Egypt is walking the capacity building path smoothly as it reaches its goals. The capacity building program is set to enhance the knowledge and performance of the sector's employees to give them the needed mindset to ensure the sector's efficiency and success.

# TOWARDS MEETING THE ENERGY NEEDS OF AN UNSTABLE WORLD

**International energy laws as tools for dealing with energy providence challenges in critical and abnormal conditions**

By Mohsen Ahmed Farhan Ali - Drilling Department Head - General Petroleum Company (GPC) - Kuwait Oil Company (KOC) Consultant

International energy law has been legislated as an essential legal discipline since 1970 and during the last fifty years has undergone a remarkable expansion and transition, which is still ongoing. International energy law is a part of the quick expansion of international law in general that also witnessed the creation of other new areas such as environmental law, international trade law, human rights law, the law of the seas and international energy law. The new areas of international law represent a form of multi-level governance by adopting standards for national legislation and a framework for international trade and trans-border cooperation related to energy services.

The traditional theoretical concept of the relationship between international and national energy law of different countries is ill-suited to handle the complicated relationship and interplay between international and national energy law due to the special nature of the international energy market, which tends to be more globalized.

International energy law is not based on one major international agreement, but it depends on a segmented regulation of many issues, based on treaties as well as international practices by different countries, companies, as well as "soft law" or non-strict law directives. International energy law has determined the sovereignty of energy resources onshore and offshore worldwide. "Shared energy resources" in the form of transboundary oil and gas resources and watercourses is a particular problem that has specific agreements under an international legal framework to avoid geopolitical conflicts just like what took place in the past. Transboundary infrastructure for the transportation of energy also raises sovereignty issues and private international law issues, but these concerns can be included in special accredited international agreements. Legal frames like international environmental law, climate law, and international bilateral or multilateral investment treaties regulate different aspects of international energy activity.

Several geopolitical events and security disturbances are occurring in the world, which in turn threaten economic progress and prosperity in many countries and may directly threaten people's lives.

One of the most important influences on the global economy is energy, which is greatly affected by the various turbulent events that occur anywhere on the planet. Thus, the impact of energy is reflected in different aspects of living for most countries of the world, especially since energy is a key player in various economic and life activities for all.

International energy laws and legislations must be developed in line with the changes of the current time which have been characterized by more complicated challenges and crises such as wars and natural disasters. Development of international laws should be done in a way that does not negatively affect economic activities and works to secure food and clothing for the people around the world, especially in the poor countries that are severely affected by these geopolitical conflicts and disasters.

One of the most effective ways for securing the energy in critical, abnormal conditions, or natural disasters is by supporting renewable energy sources, technologies and applications. Therefore, in the past decade, many countries in the world have expanded renewable energy capacity as a tool for those countries to secure energy independence and greater energy security through the diversification of energy sources, expand electricity access in rural and remote areas, and contribute to international efforts to reduce growth in carbon emissions.



While many countries in the world already had renewable energy sources before the past decade.

The development of new laws and legislation is considered a roadmap for securing the energy needs from both traditional and renewable energy sources. These legislations have to aim at regulating the oil & gas energy market worldwide to get good benefits for both the hydrocarbon producers and consumers at the same time regulating supply and demand to achieve the economic targets of oil & gas producers and consumers.

On the other hand, the new energy legislation has to support and encourage increasing dependence on the new renewable or green energy sources like hydrogen and solar energy as a solution for stabilizing the oil & gas energy market and supporting the environment conservation by using clean/green energy for reducing carbon emission and control the serious climate changes.

Critical climate changes have created a new concept of "climate justice" which relates to the impact of energy activities and projects on local communities and people in most countries in the world. This impact may be very dangerous in the future if pollution and carbon emissions continued increasingly. International energy law influences the content of national energy law by setting up rules that must be reflected in domestic law, and by establishing legal tools, frameworks, and models for regulating the energy activities by formulation difficult for states to deviate from in a globalized world.

The international legal rules affecting renewable alternative energy resources are amongst the most important legal and environmental issues of the near future. As traditional energy sources are depleted, new technologies are being developed to harness the potentials of wave, current and tidal energy, coastal wind power, offshore geothermal, polar energy resources and space-based solar collection. The legal rules governing the alternative energy resource potential of all international common areas - the high seas and the polar zone should have a detailed, but precisely analyzed text; also, the international environmental rules affecting exploration, exploitation and use of internationally situated energy resources, besides energy resources located offshore under national laws have to be taken into consideration.

These laws and regulations have to be directed for a critical look at the connection between efforts to control greenhouse gases and the growing interest in non-polluting alternatives found in the international "common". The result is a work of unprecedented value for environmental and international law organizations and those interested in environmental resource economics and politics.

## INTEGRATING SEISMIC DATA AND OUTCROPS TO UNDERSTAND THE PUZZLING PETROLEUM POTENTIAL IN THE RED SEA



I believe that the current generation of explorationists is very fortunate as they are experiencing a new era of exploration in the Egyptian Red Sea through acquiring new 2D and 3D seismic data. However, still a large number of people do not rely on fieldwork to understand petroleum systems, especially in frontier areas with scarcity of data.

I believe that the most effective approach for oil and gas exploration in the Red Sea basin is to understand the regional tectonic evolution of this giant basin from a margin-to-margin approach. This should go in hand with the fieldwork since it provides a wealth of information about the hidden rocks in the subsurface. It offers good visualization of the sedimentary layers that trap petroleum accumulation in a certain structure. So, we can expect the facies variation and distribution of certain petroleum-bearing reservoirs.

I was exposed to the newly acquired 2D seismic data (in 2018) over the Egyptian Red Sea and the surface geology of the surrounding areas. Interpretation of this large 2D grid (12-km offset, 14-s record length) broadband seismic survey has improved our understanding of the subsurface structural elements affecting this Late Oligocene-Early Miocene rift basin.

The Subsurface evaluation is complemented with surface geology, Landsat knowledge, and compilation of vertical stratigraphic sections from field excursions to the Gebel Duwi and Safaga-Quseir districts along the Egyptian Red Sea coast. Surface analogues of these areas offer a distinctive model for the syn- and pre-rift structural and stratigraphic pattern which has significant control on equivalent successions in the offshore.

Integration of surface and subsurface geology provided a coherent pattern of the fault complex, the comprehensive relations of fault linkage, and transfer zones affecting the Precambrian basement rocks. Seismic sections and subsurface mapping of the top basement show large rotated fault blocks bounded by NW-SE master faults and dissected by NE-SW fault system parallel to Aqaba trend. The syn-rift sedimentary section attains an average thickness of 14,000 ft in offshore penetrations. The pre-Miocene potential source rocks are proven from the tunnels, mines, and cores along Red Sea onshore area in Egypt's Eastern Desert. These source rock intervals are sporadically cropping out in the Gebel Duwi area.

Equivalent successions in the offshore are anticipated to be preserved in the depocentres and minibasins as observed in seismic data. This exploration approach is supported by seismic reflection data and offshore penetrations. The Miocene source rocks have been proved by drilling the crests of offshore rotated fault blocks. The thick Middle Miocene reefal and shelf carbonates exposed in Ras Benas area, or their offshore marine equivalents, may act as additional good source rocks. However, the recently acquired long offset 2D seismic data enables insights into the structural and stratigraphic framework.

Attaining a detailed understanding of the subtle stratigraphic traps and facies distribution in the pre-salt section will be possible by evaluating enhanced 3D seismic data which will be acquired by modern acquisition techniques. This data will help to resolve the existing subsalt seismic imaging challenges. This is the next step toward the successful exploration of the Egyptian Red Sea basin.

**AHMAD MOSTAFA**  
Exploration Department manager  
South Valley Egyptian Petroleum Holding Company (GANOPE)

## ENERGY EFFICIENCY IMPROVEMENT IN EGYPTIAN PETROLEUM SECTOR - THE ROAD TO COP 27



In a world full of troubles and crises in the last three years, there is a need to focus on the long-term objectives rather than stick with the short-term ones. Global efforts should not miss the necessary mobilization for taking the required actions towards the future of the next generations based on the 2030 global agenda that should promote the measures needed for achieving the 17 sustainable development goals. Among these goals, goal number 13 stated that climate action has a very high impact on the future of the planet.

Experts in the oil and gas industry are not satisfied with their representation in the last Conference of the Parties (COP 26) to the United Nations Framework Convention on Climate Change (UNFCCC) which was held in Glasgow, Scotland, UK last November 2021. This is because in COP 26 it was clear that the global initiatives view the oil and gas industry as the enemy of all global efforts for climate action due to their vast carbon emissions.

However, there is a push to change this situation by the oil and gas industry which includes work in two areas. The first area is related to the fact that should be recognized worldwide which is that the use of fossil fuels cannot realistically stop before 2050 or later and any transition to renewable energy will gradually be achieved so that the oil and gas industry is still important for human beings. The second area is the role of oil and gas companies in climate action which could be demonstrated by improving energy efficiency in all related processes.

As COP 27 will take place in Sharm El-Sheikh next November, the Egyptian oil and gas sector should use the opportunity to showcase viable models for energy efficiency improvement, even though Egypt contributes little to the global carbon emissions footprint. Egypt ranks 27<sup>th</sup> on a list of the world's emitters with a share of 0.61% of global emissions, compared to China which ranks as the world's top emitter contributing 29.18% followed by the United States which ranked second with a share of 14.02%.

The efforts exerted by many Egyptian oil and gas companies should gain the respect of the world at COP 27. In my own experience, I admit that the amount of energy savings should be appreciated and that there is a high potential for energy efficiency improvement based on the cooperation with some reputable International Organizations like the United Nations Industrial Development Organization (UNIDO) and the Japan International Cooperation Agency (JICA) where many projects are funded and realized tangible benefits. In addition, some companies had good records where the Energy Management System (EnMS) was in compliance with ISO 50001, which was effectively implemented with the assigned budget for investment in some high Capex energy efficiency projects alongside no-cost/low-cost opportunities which realized a reasonable amount of energy savings. The good news is that all energy efficiency improvement projects are not only related to the reduction of CO2 emissions but also realize that optimizing cost-effectiveness could improve the economic positions of companies in the industry.

**MOHAMED SALAHELDIN**  
Energy Expert  
Sidpec- Quality General Manager





تحت رعاية فخامة الرئيس عبد الفتاح السيسي رئيس جمهورية مصر العربية  
HELD UNDER THE PATRONAGE OF HIS EXCELLENCY ABDEL FATTAH EL SISI, PRESIDENT OF THE ARAB REPUBLIC OF EGYPT



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13 – 15 FEBRUARY 2023 | EGYPT INTERNATIONAL EXHIBITION CENTER

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Upstream: Exploration of Unconventional Resources (UNCONV)	Geoscience: Upstream Technology Developments (GEOT)	Oil and Gas Field Development (FD)
Drilling (DR)	Completions (COMPL)	Gas/LNG Processing, Operations and Technology (GAS)
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THURSDAY 23 JUNE 2022

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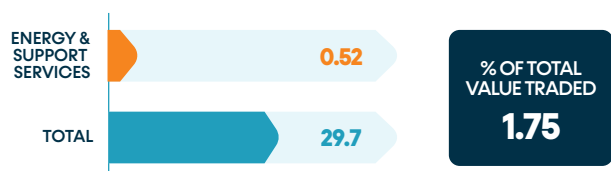
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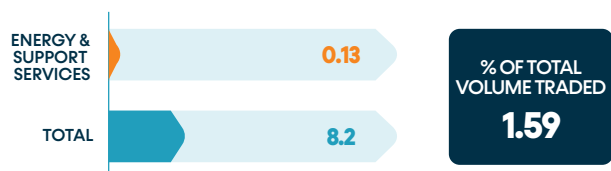


### Value and Volume of Shares Traded for Energy & Support Services Sector in March 2022

#### VALUE TRADED (EGP BILLION)



#### VOLUME TRADED (BILLION SHARES)



### Performance of Petroleum Companies in the Egyptian Exchange in March 2022



#### NATIONAL DRILLING

CURRENCY	CLOSE PRICE	YTD PRICE CHANGE (%)
USD	4.69	-



#### ALEXANDRIA MINERAL OILS CO.

CURRENCY	CLOSE PRICE	YTD PRICE CHANGE (%)
EGP	3.92	▲ 7.1



#### EGYPT GAS

CURRENCY	CLOSE PRICE	YTD PRICE CHANGE (%)
EGP	35.01	▼ 2.99

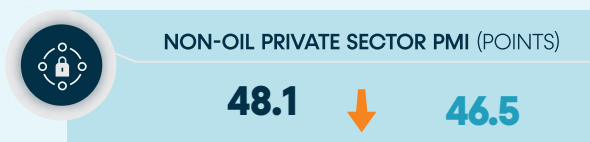
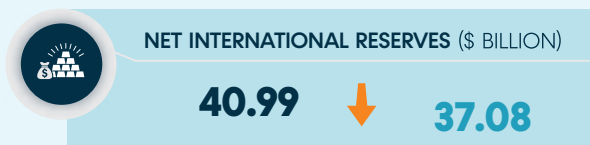


#### SIDI KERIR PETROCHEMICALS

CURRENCY	CLOSE PRICE	YTD PRICE CHANGE (%)
EGP	8.7	▲ 11.54

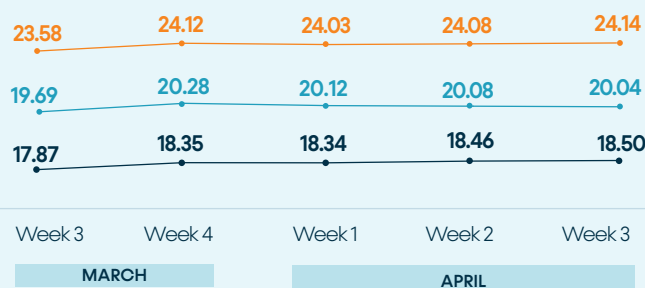
### MAIN ECONOMIC INDICATORS

February 2022 ■ March 2022



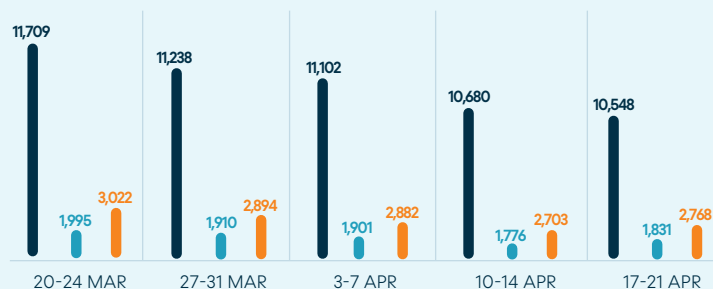
### EXCHANGE RATES

British Pound — EUR — USD —



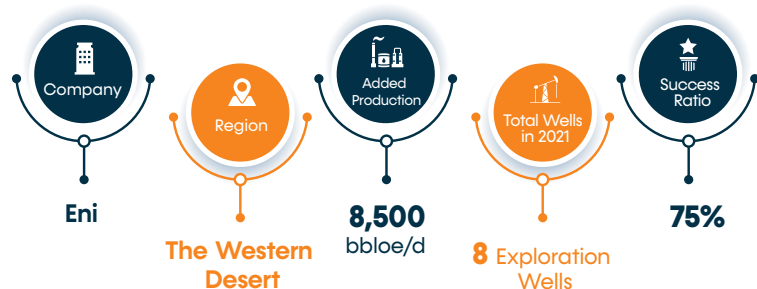
### CAPITAL MARKET INDICATORS

EGX 30 ■ EGX 70 EWI ■ EGX 100 EWI ■



Source of Raw Data: CBE, CAPMAS, Egyptian Exchange, IHS Markit

### ACHIEVING OIL & GAS DISCOVERIES IN MELEIHA CONCESSION



■ Drilled Wells    ■ Net Hydrocarbon Pay (m)

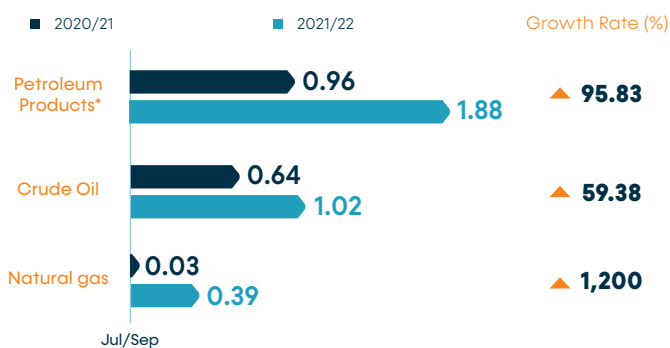


### SIGNING FRAMEWORK AGREEMENT TO INCREASE EGYPT'S GAS PRODUCTION & EXPORTS



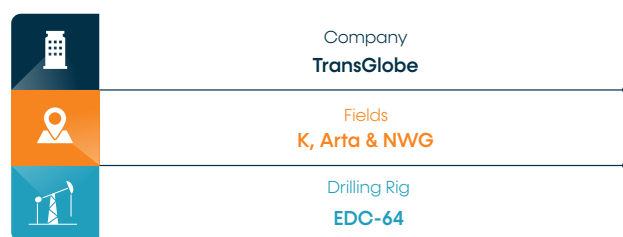
\*With the one signed for the restart of Damietta liquefaction plant

### PETROLEUM SECTOR EXPORTS (\$ billion)



\*Including natural gas & bunker and jet fuel

### DRILLING 3 WELLS IN THE EASTERN DESERT'S CAMPAIGN IN Q1 2022

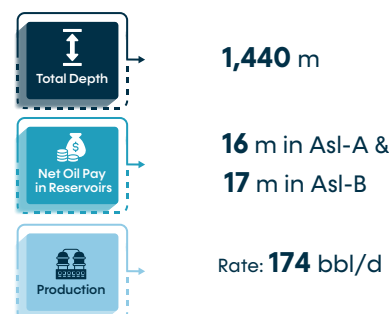


### DRILLED WELLS

#### K-68



#### K-67



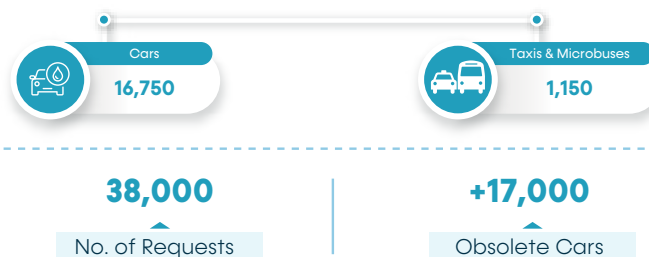
#### K-71



### "GO GREEN" INITIATIVE FOR CARS CONVERSION INTO NATURAL GAS\*

Treasury Spendings **EGP 405 million**

### CONVERTED VEHICLES



\*Updates announced in Apr 2022

## INTERNATIONAL OIL PRICES

### BRENT PRICES (\$/BBL)

04 February	93.27
28 February	100.99
02 March	112.93
23 March	121.60
01 April	107.67
18 April	113.16

### OPEC BASKET PRICES (\$/BBL)

04 February	92.59
28 February	98.96
02 March	112.01
23 March	116.79
01 April	104.93
18 April	110.54

### NATURAL GAS PRICES (\$/MMBTU)

04 February	4.57
28 February	4.40
02 March	4.76
23 March	5.23
01 April	5.72
18 April	7.82

# i-Trak drilling automation services

Get safe, efficient, and predictable drilling performance

**i-Trak™ drilling automation services** from Baker Hughes reduce operational risk and well delivery costs by integrating and automating drilling systems.

In today's complex drilling environment where surface and downhole real-time systems must deliver according to plan in a predictable, efficient, and safe manner, automation of drilling systems is crucial. The drive to reduce HSE risks by moving personnel from wellsite red zones to remote centers is simplified and supported through the integration and automation of drilling systems.

Baker Hughes's i-Trak drilling automation services improve drilling performance, wellbore quality and trajectory; extend bit life; reduce nonproductive and invisible lost time (NPT, ILT) to deliver wells faster and more economically while reducing operational risk to enable de-manning at the rigsite. These benefits are achieved by aggregating real-time surface and downhole data and annular pressures, and using hybrid physics-based and data-driven models, in combination with automated standardized operating procedures and checklists.

Our i-Trak drilling automation services manage well construction via fully closed loop-control of Baker Hughes rotary steerable assemblies, wellbore

hydraulics, and drilling optimization services.

i-Trak services offers two levels of automated control:

- **Advisory mode:** recommended actions or parameters are displayed to the driller who can accept or reject them
- **Closed-loop mode:** parameter changes and instructions are automatically downlinked to downhole tools or transmitted to rig automation platforms to control surface parameters.

In closed-loop mode, the human driller can start/stop the system at any time to make any desired adjustments to the drilling path or operational parameters.

The i-Trak service is a fully integrated extension of Baker Hughes' digital well planning software and ecosystem. This allows i-Trak to monitor and control drilling and reservoir navigation operations based on a continuously updated digital twin of the reservoir and downhole environment.

Contact your Baker Hughes representative to learn how i-Trak drilling automation services can help you achieve safer, more efficient, and more predictable performance on your next well.

## Applications

- Wells with inefficient, or inconsistent or unpredictable drilling performance
- Wells with hole cleaning issues, stability issues, or challenging pressure windows
- Wells that must be consistently and repetitively drilled
- Wells using decision-making remote operations or leveraging integrated operations personnel models

## Benefits

- Improved safety, lower risks
  - Openhole pressure regime monitoring with automated alerts
  - Swab/surge NPT protection
  - Reduced personnel risks
- Superior drilling and reservoir navigation efficiency
  - Improved hole cleaning
  - Optimized tripping speeds
  - Guaranteed average-excess dogleg severity limits (AEDLS) <1°/100 ft. (30m)
  - Increased hydrocarbon recovery
- Predictable drilling performance
  - Increased gross ROP
  - Fewer stuck pipe incidents
  - Reduced NPT and ILT