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EGYPT LEADING
OIL & GAS EXCELLENCE

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TABLE OF CONTENTS

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ABOUT THIS SUPPLEMENT

Egypt's oil and gas sector, a cornerstone of the nation's economy, is poised for a remarkable resurgence. Despite facing numerous challenges, the sector has demonstrated resilience and a steadfast commitment to growth. This special supplement delves into the sector's promising future, highlighting the strategic initiatives undertaken by the Ministry of Petroleum and Mineral Resources and the contributions of leading international companies.

Minister of Petroleum and Mineral Resources Karim Badawi recently announced that the sector is achieving new milestones in production, with current outputs reaching 1.4 million barrels of oil equivalent per day (mmboe/d).

With 54 discoveries made in 2024 alone—comprising 40 oil and 14 natural gas finds—the sector's contributions are evident, as these discoveries add an estimated 71 million barrels of oil and 680 billion cubic feet of natural gas to Egypt's reserves.

Looking ahead, Minister Badawi outlined a strategic roadmap focused on enhancing production, optimizing refining capacities, advancing natural gas connections to households, and launching a digital platform for the mining industry. Egypt's oil and gas sector will continue to accelerate exploration and production activities, improve energy efficiency, and foster regional cooperation to attract investments and unlock the full potential of its resources.

Through insightful interviews with industry leaders and a comprehensive analysis of key developments, we will explore the factors driving the sector's transformation. From accelerated production and exploration activities to the optimization of refining capacities and the expansion of natural gas infrastructure, Egypt is taking significant strides to secure its energy future.

Join us as we shed light on the inspiring journey of Egypt's oil and gas sector, a testament to the nation's unwavering determination to overcome challenges and emerge as a regional energy powerhouse.

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EGYPT'S OIL AND GAS SECTOR

The road towards further Growth and Investment

Egypt's oil and gas sector has experienced a remarkable resurgence, driven by a combination of strategic investments, innovative exploration techniques, and favorable government policies. Despite challenges, the Egyptian oil and gas sector is promising further significant successes.

Egypt's Thriving Oil and Gas Sector

The Egyptian oil and gas sector has been thriving, attracting investments and showing good performance on the upstream level. The number of companies operating in the field of research, exploration and production is 57 companies, including 8 major international companies, six specialized Egyptian companies, and more than 12 international companies specialized in the field of petroleum and technological services.

Egypt's current oil and gas output has reached 1.4 million barrels of oil equivalent. Production added during the period from July to September is 30,000 barrels of oil per day (bbl/d) and 133 million cubic feet per day (mmcf/d).

This comes as the number of exploration wells and discoveries made from January to October 2024 recorded 77 drilled exploratory wells, and 54 verified discoveries that include 40 oil discoveries as well as 14 natural gas discoveries. Accordingly, the added reserves reached 71 million barrels of oil and 680 billion cubic feet (bcf) of natural gas.

The current exploration and production activities taking place from July to December 2024 include an exploration well drilling in the Western Mediterranean from November to December by Chevron and ExxonMobil; and 2,000 additional barrels of oil from mature fields at Suez Oil Company (SUCO). Additionally, these activities include the completion of regional seismic survey of 2185 km² west of the Mediterranean with a start date at September 28, 2024. Coordination is underway to start the third phase of the Gulf of Suez and the Red Sea region.

Production from the Sepia well started on October 3, 2024 at rates of 30-40 mmcf/d. Two other wells are expected to enter production by the end of this year within the tenth phase of the West Delta Deep Marine (WDDM) region, bringing the total output to about 160 mmcf/d with investments of $227 million.

Meanwhile, IPR succeeded in adding new quantities of production, targeting to reach about 15,000 bbl/d in production by the end of 2024.

Additionally, ADES succeeded in adding new quantities of production, targeting to reach about 5,000 bbl/d in production by the end of this year.

At the same time, Egypt has been assigning new areas for exploration. These areas include eight obsolete fields in the Gulf of Suez and the Eastern Desert; four exploration areas in the Western Desert and five exploration areas in the Gulf of Suez and the Western Desert within the Egyptian General Petroleum Corporation's (EGPC) bidding.

Attracting Investments and Optimizing Production

The Egyptian Ministry of Petroleum and Mineral Resources (MoPMR) has been ensuring an attractive climate for investments in the oil and gas sector. On August 26, 2024, Egypt launched an incentive package during the meeting with partners to boost production activities. Meanwhile, over 20 Egyptian investors were invited on September 30, 2024, to enter directly to invest in the field of developing brownfields to increase production from them. A number of them have expressed interest in these opportunities and the necessary steps are being taken to do so.

INITIAL PERFORMANCE INDICATORS

Production Activities

Current Production **1.4** mmboe/d

Crude Oil	Added Production (July – September)	Natural Gas
30,000 bbl/d		**133** mmcf/d

LOCAL PRODUCTION

25%	10%	Last Two Years
Natural Gas	Crude Oil	Duration

EXPLORATION WELLS AND DISCOVERIES (JANUARY – OCTOBER 2024)

Exploratory Well	Discoveries	Crude Oil	Natural Gas
77	54	40	14

Added Reserves	Crude Oil	Natural Gas
	71 mmbbl	680 bcf

INVESTMENT AGREEMENTS AND OPPORTUNITIES

Signed Agreements in 2024

7

$13.5 million	$367.5 million	min of 32 wells
Signature Bonus	Minimum Investments	Commitments to Drill

Investment Opportunities Announced in August 2024

Investments Opportunities **61**

Exploration Areas	Location	Investors have Expressed interest in	Affiliated with
12	The Mediterranean and North Delta	6 Areas	EGAS

Exploration Areas	Brownfields	Affiliated with
34	15	EGPC

Current and Planned Exploration Activities in 2024-2025

In-issuance Agreements	Signature Bonus	Minimum Investments	Commitments to Drill
15	$20 million	$748.5 million	min of 46 wells

At the same time, the ministry is working on attracting new parties from the Egyptian private sector to invest in the petroleum and mineral wealth sector.

In 2024, Egypt has signed seven oil and gas agreements, with $367.5 million minimum investments and $13.5 million signing bonus. Accordingly, 32 wells at least are being drilled.

In August 2024, Egypt announced 61 investment opportunities, including 34 exploration sites and 15 brownfields for the EGPC, as well as 12 opportunities in the Mediterranean and North Delta for the Egyptian Natural Gas Holding Company (EGAS). Investors have already expressed interest in six of the opportunities announced by EGAS.

The country has several planned exploration activities for 2024 and 2025, including 15 agreements currently being finalized to drill at least 46 wells. These initiatives involve a minimum investment of $748.5 million and a $20 million signing bonus.

The MoPMR has revealed the insights for performance in 2025. This includes accelerating the pace of production activities, which will help compensate for the natural decline, increase production, and reduce the import bill and its burdens. The plan for 2025 further includes accelerating exploration activities, leading to the rapid addition of new reserves; and maximizing the utilization of capacities in refineries such as the Middle East Oil Refinery (Midor) and petrochemical plants to maximize added value and increase export revenues.

In terms of production, Egypt will resume drilling operations in the Zohr field with the arrival of a drilling rig in December 2024. The plan includes drilling two wells with expected production rates of approximately 220 mmcf/d, aiming to return to the production levels achieved before the cessation of drilling activities. Meanwhile, Agiba Petroleum Company has already reactivated three drilling rigs, along with two repair drilling rigs, to commence drilling operations.

The year 2025 is set to witness accelerating the implementation of the second phase of the Raven field on production at rates of about 200 million cubic feet per day during January 2025 by pumping additional investments; as well as drilling of King Field to start in early 2025. Moreover, four exploration areas have been awarded in the Western Desert for the purpose of quickly placing them on the production map. On the other hand, an agreement was reached on the proposed incentive package and pricing of the produced gas, and production will gradually increase to reach 80 mmcf/d by the end of the year 2025.

As Egypt continues to prioritize its energy sector, the future of its oil and gas industry appears promising. By implementing strategic initiatives, attracting foreign investment, and fostering domestic partnerships, the country is well-positioned to capitalize on its vast hydrocarbon resources.

CHEIRON'S SECRET TO SUCCESS:
REVITALIZING MATURE FIELDS AND EMBRACING INNOVATION

An interview with **Alan Linn,**
Chief Executive Officer, Cheiron

Cheiron has significantly grown its working-interest production in recent years. Can you highlight some of the company's most notable achievements in Egypt and internationally?

We've been very successful in Egypt, based upon our operating experience and the quality of technical work we produce, while maintaining an efficient cost base. We have productive relationships with joint venture partners and work closely with the government and service providers looking for win-win outcomes. This reputation has been built over several years and was key in making us a strong candidate to acquire the Bapetco assets when Shell chose to divest. The transaction materially increased the size of the business and, today we are the second-largest oil producer in Egypt and the fourth largest producer of hydrocarbons. We currently operate in the Western Desert, Gulf of Suez, and Mediterranean with a compelling mix of oil and gas assets.

Cheiron aims to double its production. Could you share more details about how you plan to achieve this, both within Egypt and in your international markets?

We doubled our operated production with the successful acquisition of Bapetco in 2021 and, as with all major transactions it takes time to integrate new and existing businesses. Today we are a stable business on a growth trajectory and, whilst Egypt is our core operational area, we have also been successful in building an operational business onshore in Mexico, where we are working to maximise recovery from mature fields.

How do you see the current global oil and gas market dynamics affecting Cheiron's strategy, especially with the increasing volatility in oil prices and the shift toward natural gas?

The oil and gas business has always had to manage swings in commodity prices. In our business we look for cost-effective technical solutions to keep both capital and operating costs in control. Keeping costs down and deploying efficient solutions is an effective hedge against low oil prices. With gas we tend to be in longer term contractual relationships which help to balance price swings.

With Cheiron deeply rooted in Egypt, how do you view the recent developments and opportunities in Egypt's oil and gas sector? How is the government's support helping companies like yours grow?

We've been encouraged by the introduction of the new incremental incentive launched by the government and have signed up to participate across our asset base. It will take some time to work through the details and get everything moving, however, we are further encouraged by the pace with which the processes are progressing. These initiatives combined with the regular cash payment, recently announced, will help to build sector confidence, encourage new investors to enter the Egyptian market and accelerate the development plans for mature fields.

The Egyptian government has introduced several incentives for oil and gas companies. How can Cheiron benefit from these initiatives, and what additional support could help further boost production and exploration efforts?

Egypt is a mature oil and gas province. Whilst there is a lot of excitement being generated targeting deep water gas in the Eastern Mediterranean, we focus closer to home. In our on-shore oil fields, we are studying the best routes to improve recoveries from our producing oil fields, and we have identified Rapid EOR as a technology capable of delivering exceptional EOR

> "We've been very successful in Egypt, based upon our operating experience and the quality of technical work we produce, while maintaining an efficient cost base."

results. We also see the potential for unconventional gas development in the Western desert, although some of the Geology is challenging. These opportunities require considerable investment and smart technology to bring them to commercial maturity. We are discussing with the government to develop agreements which actively encourage the introduction of new technologies and reward the companies prepared to take risks designed to build the country's long-term resource base.

The energy transition is becoming increasingly critical worldwide. How does Cheiron plan to adapt to the global shift toward cleaner energy, and what role do you envision for natural gas in this transition?

We see energy transition as a natural extension of our business. It makes good environmental and economic sense to make use of products which have been historically flared to generate the power we need to run our fields. We are progressively introducing projects designed to reduce fuel costs, replacing diesel with a combination of gas and solar generation. This approach both reduces our environmental impact and our cost base. As new sustainable technologies emerge, we will look for opportunities to deploy them within our operations. The world needs hydrocarbons for many years to come and our job is to produce them efficiently and maximise the recovery of hydrocarbon for existing reservoirs whilst minimising our environmental impact.

Cheiron is known for its ability to revitalize mature fields. Can you tell us more about the recent technological advancements you have adopted to optimize production and extend the life of these fields?

Secondary and Tertiary recovery techniques deployed in Egypt offer an excellent opportunity to boost production and extend the productive life of fields for many years to come. Most of the technology is established, the secret lies in deploying it successfully and being able to take a long-range view. We are talking with the government about commercial relationships which will support the development of these valuable resources and incentivise companies, working with the government, to maximise field recovery factors. Several discovered fields also have unconventional gas development potential, which is another new area where we need to establish contracts designed to encourage investment and manage risk.

With Cheiron's strong focus on ethical business practices, how does your corporate governance framework contribute to achieving your operational and expansion goals while ensuring sustainability and transparency?

Yes. We have governance structures in place which are similar in nature with those you'd expect to see in a listed company. Being privately owned allows us a little more flexibility, so we have less paperwork, but the paperwork we have serves a purpose. We try not to have documents on a dusty shelf which are never used.

Can you provide insights into Cheiron Energy's long-term vision and strategic priorities for growth and success in the Middle East region and beyond?

We are continental shelf operator and onshore operator which generates value from mature fields and shallow water developments, ideally with near field exploration potential. We are an expert in Egypt, understanding the Geology and challenges which must be managed to be successful. We are entrepreneurs and always looking for value growth, but we target areas where we have a strong skill set.

> We are continental shelf operator and onshore operator which generates value from mature fields and shallow water developments, ideally with near field exploration potential. We are an expert in Egypt, understanding the Geology and challenges which must be managed to be successful.

BUILDING MOMENTUM: EGYPT'S OIL & GAS AT THE HEART OF GROWTH AND TRANSITION

Egypt's oil and gas sector stands out as one of the most effective economic sectors in Egypt, driven by noteworthy discoveries of crude oil and natural gas. The foundation of the oil and gas sector lies in the continuous efforts in research and exploration, contributing to economic development and ensuring energy security.

This development has also been fueled by the sector's tendency to increase the involvement of international partners in various activities. In this context, multiple bid rounds have been initiated to attract research, exploration, and production endeavors in fields, utilizing cutting-edge technologies. Alongside that, the oil and gas sector has a substantial role in delivering net zero and the energy transition. It has adopted a vision and a solid plan to convert to low-carbon energy sources and reduce carbon emissions through strategic pillars which are known as energy security, financial sustainability, and governance of the sector.

Leading Economic Growth

Egypt's oil and gas sector plays a crucial role in driving economic growth within the country. The sector serves as a significant source of government income, supporting various initiatives such as infrastructure projects, social welfare programs, and job creation.

Sector's Contribution to GDP

In fiscal year (FY) 2023/24, the oil and gas industry contributed around 9% to Egypt's overall gross domestic product (GDP). Notably, crude oil extraction activities accounted for the largest portion of about 44% of the sector's total GDP, while comprising approximately 4% of Egypt's total GDP achieved during this fiscal year, according to the Ministry of Planning, Economic Development and International Cooperation.

SECTOR'S GDP

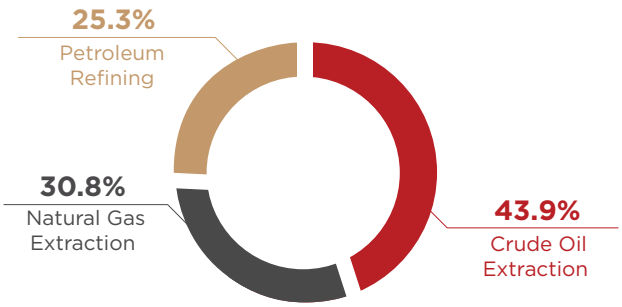
Total **EGP 1.178** trillion

YoY Growth **23%**

GDP PER PETROLEUM ACTIVITY (EGP BILLION)

Crude Oil Extraction	Natural Gas Extraction	Petroleum Refining
517.2	298.1	362.7

PETROLEUM ACTIVITIES SHARES IN SECTOR'S GDP



Petroleum Exports Highlights

In FY 2023/24, Egypt exported 3.56 million tons (mmt) of crude oil. Egypt has enhanced its capacity to transport liquified natural gas (LNG) domestically and internationally thanks to possessing two of the largest LNG terminals, the Damietta LNG (DLNG) and the Egyptian LNG (ELNG) plants with a total capacity of about 12 million tons per year (mmt/y).

In FY 2023/24, Egypt exported quantities of LNG amounting to 1.52 mmt to several Arab and non-Arab countries, mainly Jordan, the United Kingdom, France, Turkey, and Italy, according to the Central Agency for Public Mobilization and Statistics (CAPMAS).

Sector's FDI Dynamics

The MoPMR is actively looking to enhance its partnerships and engage in extensive discussions with international oil companies (IOCs) to explore opportunities for more cooperation and investment. Consequently, numerous companies have expressed their interest in investing in drilling new wells, developing existing fields, and enhancing production.

Foreign direct investment (FDI) inflows pumped into the oil and gas sector increased from $5.6 billion in FY 2022/23 to $5.7 billion in FY 2023/24, driven by new investments from IOCs, according to the Central Bank of Egypt (CBE).

Share in Total FDI Inflows 12.4%

Catalyzing Growth in E&P Activities

Bid Rounds Highlights

As part of Egypt's efforts to attract more investors across various regions, 8 international bid rounds were launched through the Egypt Upstream Gateway (EUG) platform, where 25 blocks have been awarded along with a minimum Investment of $1 billion, according to EUG. The most recent bid round in 2024 was launched by the Egyptian Natural Gas Holding Company (EGAS) to offer 10 new offshore blocks and two onshore blocks, according to EGAS.

BID ROUNDS SUMMARY

2024 International Oil & Gas Bid Round

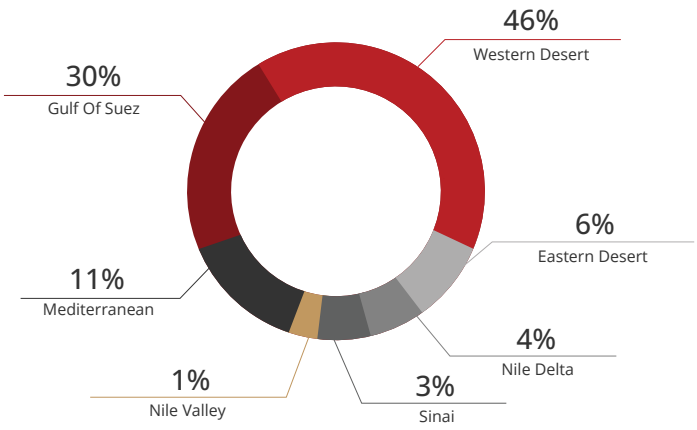
Date	Blocks	Location
August 2024	12	Nile Delta & Mediterranean

Agreements

In 2024, the Egyptian petroleum sector signed seven petroleum agreements with a signature bonus totaling $13.5 million and a minimum committed investment of $367.5 million, resulting in commitments to drill at least 32 wells.

As of October 2024, Egypt's petroleum sector maintains a total of 113 active agreements, supporting efforts to boost exploration and production (E&P) activities, increase crude oil and natural gas output, and attract further investment. The Western Desert holds the largest share of active agreements, followed by the Gulf of Suez, according to the Egyptian General Petroleum Corporation (EGPC).

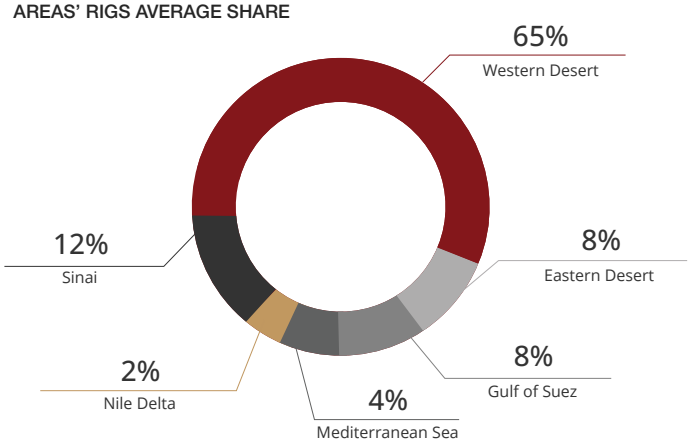
ACTIVE AGREEMENTS PER REGION



Drilling Rigs

In the fiscal year 2023/24, Egypt averaged a total of 118 drilling rigs across all producing regions. The Western Desert held the highest average with 77 rigs, followed by Sinai with 14 rigs. Land workover rigs were the most frequently utilized, averaging 55 rigs throughout the year, according to the Egyptian General Petroleum Corporation (EGPC).

AREAS' RIGS AVERAGE SHARE



Petroleum Discoveries

During the first ten months of 2024, the MoPMR's ongoing efforts to increase production and support exploration led to 54 oil and gas discoveries as a result of drilling 77 exploratory wells. Notably, crude oil accounted for most of these discoveries with a share of 74%, with natural gas making up the remaining 26%, according to the MoPMR.

DISCOVERIES PER PRODUCT

Crude Oil	40	Natural Gas	14

ADDED RESERVES

Crude Oil ▸ 71 mmbbl

Natural Gas ▸ 680 bcf

Petroleum Production

The Egyptian Ministry of Petroleum and Mineral Resources (MoPMR) spares no efforts to increase production rates to achieve self-sufficiency and reduce imports. Current petroleum production reaches around 1.4 million barrels per day of equivalent oil (mmboe/d) in the first quarter (Q1) 2024/25.

It is worth noting that the MoPMR has taken several measures to address current challenges, like introducing investment incentive packages coupled with more flexible pricing of products while working to attract new investors; which results in reducing the import gap and reducing costs, according to the MoPMR.

ADDED PRODUCTION

Crude Oil — 30,000 bbl/d

Natural Gas — 133 mmcf/d

Significant Fields Production Updates

As announced in October 2024, Giant Zohr Field average production reached approximately 2 billion cubic feet per day (bcf/d) of natural gas during FY 2023/24. In August 2024, the Gulf of Suez Petroleum Company (GUPCO) announced putting two new wells on the production stream at the North Safa petroleum field contributed to achieving initial production of 7,000 barrels per day (bbl/d). Furthermore, the North Geisum field witnessed a large increase in production, with the current output exceeding 20,000 bbl/d, compared to the pre-development level of 4,000 bbl/d, as reported in July 2024, according to the MoPMR.

Production Plans

Several oil and gas fields and wells will add to the sector's production over this year and 2025. The drilling operations in the Zohr field will be resumed in December 2024 to drill two new wells and return to the actual production plan. Moreover, starting production from the Sepia well in October 2024, with expectations to add another well to the production map of the 10th phase of the West Delta Deep Marine Project (WDDM) by the end of 2024. By January 2025, the 2nd phase of the Ravin field will be brought online to add to the current production. Moreover, five new wells are planned to be drilled in the North Safa petroleum field to raise the field's production to 15,000 bbl/d during H2 of 2025, according to the MoPMR.

Decarbonization & Emission Reduction Efforts

Egypt exhibits a commitment to reducing emissions and has embraced an ambitious plan within the international framework, although it has minimal contribution to global greenhouse gas (GHG) emissions, as outlined by the United Nations Development Programme (UNDP).

The Egyptian government, in collaboration with relevant agencies, has demonstrated significant dedication to emission reduction through the implementation of low-carbon infrastructure projects. The Egyptian oil and gas sector has successfully lowered emissions by 5.4 mmt/y of CO2 equivalent, with ongoing initiatives projected to further reduce emissions by 1.4 mmt/y. The MoPMR announced the potential for a cumulative reduction of 6.8 mmt/y in June 2023.

Oil & Gas Sector's Efforts

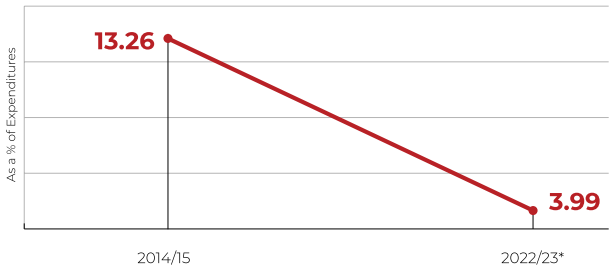
Energy Transition & Emissions Reduction Program

Egypt's oil and gas sector has made significant advancements in the realm of energy transition and bolstering energy efficiency. It has implemented a strategic plan that outlines objectives for enhancing energy efficiency and reducing carbon emissions, by focusing on six key pillars. The following section will feature the most crucial pillars for achieving energy transition.

1. Energy Policy Reforms

The Government has launched a comprehensive subsidies reform program. The program comprised energy subsidy phase-out and comprehensive reforms for electricity and oil and gas sectors that were initiated in July 2014 and expected to be completed in FY 2024/25.

ENERGY SUBSIDIES



*Projected

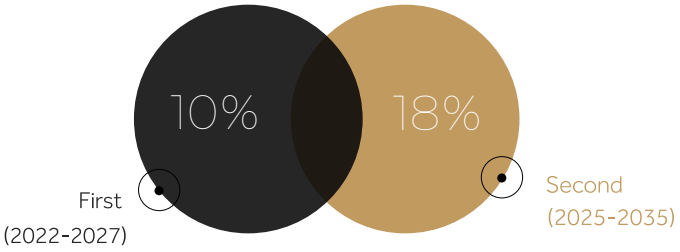
Source: The Ministry of Finance (MoF)

2. Energy Efficiency Improvement Activities

Egypt's oil and gas sector launched in 2016 its 7-pillars Modernization Project where the fourth pillar focuses on improving the energy efficiency within the sector and adopting an action plan that includes goals for improving energy efficiency over a short- and long-term period. Further, the sector announced the Energy Efficiency Strategy (2022-2035) during COP27, to improve the energy efficiency activities in the sector and contribute to supporting energy security and reducing emissions, according to the MoPMR.

Energy Efficiency Strategy Phases

Saving Energy Consumption



3. Expanding the Use of Natural Gas

In line with Egypt's vision to diversify its energy mix, and enhance the transition towards green fuels, the oil and gas sector works continuously on sustaining the use of gas as a substitute for diesel in electricity generation, vehicles, houses, and industries. In this regard, 15 million households are currently connected to natural gas, and around 800,000 cars were converted to compressed natural gas (CNG), according to the MoPMR.

4. Supporting Carbon Emissions Reduction Projects

From its side, the government makes great efforts to reduce the oil and gas sector's emissions by 65% as well as controlling the routine flaring by 2030. This is in addition to developing the internal regulations for methane emissions in the sector by the end of 2024.

IMPLEMENTED ZERO FLARE PROJECTS

24

$200 million
Annual Savings

1.4 mmt equivalent
Annual Co_2 Emissions Reduction

METHANE EMISSIONS

Preparing a Detailed Roadmap

Reducing
30% in 2030 compared to 2020 levels

5. Renewable Energy & Green Petrochemicals Projects Expansion

Egypt is accelerating efforts to decarbonize and diversify its energy sources, with a strong focus on expanding renewable energy projects. In line with this vision, the Egyptian oil and gas sector is advancing decarbonization initiatives and supporting the energy transition by introducing new green, environmentally friendly petrochemical production projects aimed at boosting overall production more sustainably.

IMPLEMENTED RENEWABLES PROJECTS

24

~$1 million
Annual Savings

50,000 tons equivalent
Annual Co_2 Emissions Reduction

GREEN PETROCHEMICALS PROJECTS

~$1.2 billion
Investment Cost

2.1 MMPTA
Annual Co_2 Emissions Reduction

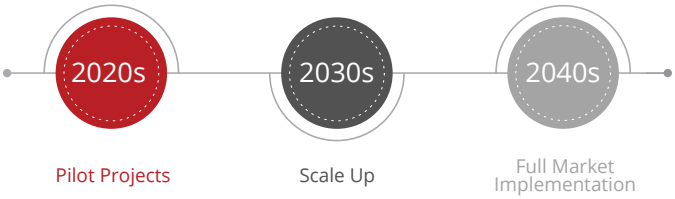
6. Hydrogen

Low-carbon hydrogen is positioned to transform the global energy system shortly by replacing carbon dioxide-emitting sources in heavy industries. Egypt is actively prioritizing the production of low-carbon hydrogen, especially green hydrogen as part of its efforts to diversify the country's energy mix. In collaboration with international companies, Egypt is commencing pilot projects to produce and export green hydrogen and green ammonia.

In mid-August 2024, Egypt officially launched its National Low Carbon Hydrogen Strategy in cooperation with the European Bank for Reconstruction and Development (EBRD). The strategy states that Egypt plans to leverage its

competitive advantages to achieve ambitious goals for its hydrogen sector, aiming to capture a significant share of the tradable market. This initiative will require around $60 billion in investment and is expected to significantly increase the share of renewable energy in electricity production to 42%, according to the Egyptian Cabinet.

EGYPT WILL CEMENT ITS POSITION AS A WORLD LEADER THROUGH A PHASED APPROACH



Green Hydrogen Production

Egypt is positioning itself to emerge as a global hub for green hydrogen production. It has ambitious plans to become a regional center for green hydrogen production by 2026, and a global hub by 2030.

TARGETED ANNUAL PRODUCTION

5.8 mmt by 2040

CONTRIBUTION TO THE GLOBAL MARKET BY 2040

8%

Hydrogen Incentives

Egypt is implementing pioneering incentives for green hydrogen projects based on Investment Law No. 72 of 2017, Cabinet Decrees No. 981 of 2022, and No. 104 of 2022. These initiatives mark Egypt's leadership as the first country to introduce production cost-reducing incentives of this nature.

5 years exemption from stamp tax, some notarization and registration fees	**2%** fixed customs tax rate for imported equipment required for project's construction and operation
The Egyptian government may finance, partially or fully, utilities connection to the projects	The Egyptian government may partially finance technical staff training
VAT exemption on equipment and raw material and all transportation assets	Zero VAT on the project's exports of green hydrogen and its derivatives
A corporate tax rebate of **30-50%** of the investment value is available for a duration of seven years from the project's start of operations	

Investment Collaboration in Green Hydrogen

Egypt works to facilitate the rapid development of the hydrogen economy, through launching low-carbon hydrogen projects and accelerating the deployment of hydrogen technologies.

COOPERATION & INVESTMENTS IN GREEN HYDROGEN

Signed MoUs ~23

Framework Agreements 15

Egypt's oil and gas sector is not only vital to the country's economic stability but is also pivotal in driving its transition towards a sustainable energy future. The sector's significant contributions to GDP and FDI highlight its role as a cornerstone of economic growth. As Egypt seeks to enhance its energy landscape, the ongoing partnerships with international oil companies and the launch of various bid rounds are expected to bolster exploration and production activities.

Moreover, the commitment to achieving net-zero emissions and embracing low-carbon technologies positions Egypt as a proactive player in the global energy transition. Through strategic initiatives aimed at improving energy efficiency, expanding natural gas usage, and investing in renewable energy and hydrogen production, Egypt is setting the stage for a diversified energy portfolio. As the nation navigates the complexities of energy demands and climate goals, the successful implementation of these strategies will not only ensure energy security but also enhance its standing as a key player in the regional and global energy markets.

CHEIRON

CHEIRON'S Commitment to
SUSTAINABILITY AND ENERGY TRANSITION

At Cheiron, sustainability isn't just a buzzword; it's a commitment that drives our actions and decisions every day. Through comprehensive policies and plans, we are spearheading a transformation toward a greener and more sustainable future, with tangible actions spanning short, medium, and long-term horizons.

Our Sustainability and Energy Transition Plans are meticulously crafted to address critical issues while aligning with global standards and initiatives. From reducing emission intensity to eliminating routine venting and flaring, we are dedicated to making a measurable impact on the environment.

APACHE CORPORATION - A PROUD HISTORY AND BRIGHT FUTURE IN EGYPT

An interview with Greg McDaniel, Vice President Apache Egypt Assets and Country Manager

Can you elaborate on the most significant achievements Apache Egypt has made in the past year, particularly in terms of exploration, production, and environmental initiatives?

Apache has significantly increased investment, activity and production in Egypt since the start of 2022 and the execution of our agreements to merge our many concessions and two joint ventures into one. Since this agreement, Apache has invested over $3.5 billion in Egypt – bringing on new volumes through exploration, development and improved recovery activities. Aligned with our ESG strategy, Apache sets challenging targets and executes on actionable projects that make an impact. These principles have manifested into significant activities and improvements in our Egypt business over the past few years, where we've focused on reducing upstream flaring and absolute CO2 emissions eliminations through a variety of optimizations and projects. Projects in these areas have underpinned many of Apache's corporate goals over the past few years.

How is Apache working to maintain and increase its production levels, and what are the company's strategies for replenishing reserves?

Apache's drilling program in Egypt continues to be robust. In 2024, we right-sized our drilling and workover activity, allowing us to increase efficiencies and improve base production. We've also been enhancing our focus on improved recovery, and executing on water injection opportunities in a variety of our operating areas. Our portfolio in Egypt allows us to balance exploration, development and base production investments. Our expansive infrastructure allows us to typically bring discoveries on quickly, which is a significant advantage.

How is Apache Egypt adapting to the global energy transition? What are the company's plans for diversifying its energy portfolio and reducing its carbon footprint?

We believe energy expansion is better way to describe the changes underway as society innovates rather than eliminates much needed sources of energy to meet demand. Apache is committed to responsibly producing oil and natural gas. We set environmental goals that are intentionally challenging and focused on immediate actions so that we can drive immediate and impactful results.

What role does technology play in Apache's operations? Can you discuss any recent technological advancements or innovations that have improved efficiency or reduced costs?

The application of the latest technologies is crucial to success in our industry. For example, by leveraging artificial intelligence (AI), Apache more accurately monitors, analyzes and reports emissions data, optimizes supply chain logistics, and makes better informed decisions about reservoir management, ultimately enhancing operational efficiency and sustainability. Apache's partnership with service and high-tech partners underscores the company's commitment to utilizing AI and other technologies to help solve critical operational challenges.

What is your outlook for the future of the oil and gas industry in Egypt, and how does Apache plan to position itself to capitalize on future opportunities?

Access to reliable, affordable energy is critical for Egypt's people and for its substantial and expanding economy. We commend Egypt's Minister of Petroleum and Mineral Resources, H.E. Karim Badawi, for his vision to modernize Egypt's oil and gas industry. Modernization will open countless opportunities as it drives increased investment and production in the country. Oil and gas support Egypt's continued growth, serving as much-needed fuel sources in both established and emerging markets.

How has Apache Egypt's partnership with the Egyptian government evolved over the years? What are the key benefits of this collaboration?

Apache has been a committed partner to Egypt and Egyptians for more than 30 years, and we continue to see tremendous opportunities here. Public-private partnerships are essential to fostering future investment and meeting growing energy demand. Apache's longstanding partnership with the Egyptian government is a great example of how the right relationship can generate value for all stakeholders.

How does Apache Egypt contribute to the social and economic development of the communities where it operates?

Apache believes in building lasting relationships with the communities we work with. We are committed to investing in Egypt's future by supporting our communities with education, healthcare and other programs, including our employees' health and safety. Over the years we've carried out numerous programs to support our communities, such as our Springboard Girls Schools founded more than 15 years ago to provide educational opportunities for girls living in rural areas of Egypt. Through Springboard we have built and supported 201 one-room schools where more than 15,000 girls have learned to read and write. Apache's partnership with She Leads was kicked off in 2023 with employee participation in employee participation in the Youth Leaders Foundation She Leads Program judging panel of proposed business plans brought forth by budding female entrepreneurs.

In 2023, Apache began a partnership with the Ibrahim Badran Foundation (IBF), an Egyptian nonprofit organization founded in 2014 with the objective of bridging the gap between much-needed health care and patients who lack access by expanding medical convoys and mobile clinics to remote areas. Our partnership will allow for the medical care of more than 25,000 patients living in the governorate of Matrouh and will act as the first model of sustainable health support in this region.

With Apache serving as Chair of the U.S.-Egypt Business Council, how do you see the company's influence in strengthening bilateral business relations?

The U.S.-Egypt Business Council is the only American organization exclusively committed to advancing the bilateral economic relationship of these two great nations. The Council has remained a true friend of Egypt's and vice-versa, and Apache is honored to continue to chair this organization and lead this effort. We will continue to work with the Council to support the partnerships that will grow the economy and deepen and expand our trade and investment ties that have put Egypt on a path of sustained economic progress and prosperity.

UNITED ENERGY EGYPT: IGNITING THE SPARK OF A BRIGHTER ENERGY FUTURE

An interview with **Kamel Al-Sawi,** President, United Energy Egypt

United Energy Egypt has made remarkable achievements in increasing production and exploration success. What key factors have contributed to this success, and how do you plan to build on these achievements moving forward?

Indeed, UEE has made significant strides in production and exploration, driven by several key factors:

One of the most important factors is the strategic partnerships. UEE has greatly benefited from robust support and collaboration with the Ministry of Petroleum and Mineral Resources, as well as the premier digital platform for upstream activities. This alliance has been instrumental in enabling us to commence drilling in the newly awarded block WWN B-11 shortly after the concession agreement approvals. Such support allowed us to declare our first commercial discovery in the WWN within just six months of CA legalization, marking an outstanding achievement for UEE.

In addition, part of the significant factors includes the expansion and investment. UEE has strategically expanded its footprint in the Western and Eastern Deserts, enhancing both production and sustainability. Our investment approach focuses on balancing exploration and development activities. Beyond drilling new wells, we are also channeling resources into seismic acquisition and processing for both new and mature assets, maximizing the potential returns from these fields.

With Egypt's goal to increase its production and export capabilities, how does United Energy Egypt align its strategy with the country's long-term energy objectives?

UEE is firmly committed to supporting Egypt's national energy strategy and production goals as outlined by the Ministry of Petroleum and Mineral Resources (MoPMR). Our approach includes a robust investment plan that focuses on both enhancing oil and gas production and leveraging advanced recovery techniques to maximize output from existing fields. By applying state-of-the-art technologies and investing in increased efficiency, we are working to make a substantial impact on Egypt's production capabilities.

We are active participants in the Egyptian General Petroleum Corporation (EGPC) and Egyptian Natural Gas Holding Company (EGAS) bid rounds for exploration and development areas, facilitated through Egypt's premier digital platform, EUG. This platform enables us and other International Oil Companies (IOCs) to expand and diversify portfolios effectively, aligning with Egypt's vision for a stronger and more resilient energy sector.

In addition to our focus on oil and gas, UEE is also committed to diversifying Egypt's energy mix by entering the renewable energy sector. We have recently signed two Memoranda of Understanding (MOUs) with the Suez Canal Economic Zone (SC Zone): one for green hydrogen production and another for a potassium chloride production complex. These initiatives represent UEE's proactive role in supporting Egypt's transition to a sustainable energy future.

Through these combined efforts in both traditional and renewable energy sectors, UEE is well-positioned to be a pivotal partner in advancing Egypt's long-term energy objectives, driving growth, and supporting the country's aspirations to become a regional energy hub.

The Egyptian government recently introduced incentives for the oil and gas sector. How do you plan to leverage these incentives to enhance your operations and growth in Egypt?

Starting in 2021, UEE redefined its strategic focus to achieve balanced growth through both organic portfolio development and inorganic expansion via partnerships and acquisitions. This shift led to a major milestone in early 2022 when UEE was awarded a substantial exploration acreage block (WWN/B-11) as part of the EGPC 2021 international bid round.

The recent government incentives, which include regular bid rounds, open block acquisition programs, and an updated production-sharing model with more attractive service terms, create a fertile environment for investment and exploration. These policies offer IOCs, including UEE, a unique opportunity to explore expanded growth options, from diversifying portfolios to driving increased oil and gas production.

These incentives further encourage us to actively pursue portfolio diversification, streamline operations, and adopt advanced technologies for recovery, enhancing our capacity to meet production targets. They also strengthen our commitment to supporting Egypt's energy vision, positioning UEE as a vital contributor to Egypt's long-term growth in the oil and gas sector.

You have a proven track record of revitalizing under-performing assets. What innovative technologies or strategies have been key in transforming these fields, and what's next for your ongoing projects?

Revitalizing under-performing assets is crucial in today's competitive landscape. We have successfully tackled this challenge by leveraging innovative technologies and strategic initiatives, transforming assets into high-performing entities.

Key to our success is the use of advanced Enterprise Resource Planning (ERP) systems like SAP and Operations Management Systems (OMS), which enhanced our decision-making with real-time data and analytics. Additionally, our transition from diesel to gas for power generation and centralized power stations, alongside the integration of SCADA systems, has improved efficiency and reduced environmental footprint, reflecting our dedication to sustainable practices.

In addition to energy management, we have placed a strong emphasis on recycling management, optimizing resource use to minimize waste and improve sustainability. This not only aligns with our environmental goals but also contributes to reducing operational costs. We recognize that the foundation of our success lies in our people, which is why we prioritize knowledge sharing and have established talent development programs. By fostering innovation and enhancing our workforce's skills, we ensure that we remain competitive in a rapidly evolving industry.

Looking ahead, we are committed to further integrating these strategies and technologies into our ongoing projects, with a focus on enhancing operational efficiency and sustainability while driving performance excellence.

What are your key expectations from your participation in Adipec, and how do you see this event contributing to United Energy Egypt's growth and networking opportunities?

Our key expectations from participating in ADIPEC include gaining insights into the latest technologies and sustainable practices shaping the energy sector, establishing strategic partnerships, and exploring growth opportunities in new markets. We are eager to engage with thought leaders and industry experts, which will provide fresh perspectives and drive innovation within our operations in Egypt.

As United Energy Group "UEG" Gold Sponsor at ADIPEC, we see this event as an invaluable opportunity to expand our network beyond Egypt and connect with industry peers worldwide. ADIPEC enables us to showcase our contributions to the energy industry and reinforces our commitment to operational excellence and sustainable energy solutions.

This event serves as a gateway for collaboration and aligns with ADIPEC's mission to foster industry resilience and sustainability. We are excited about the potential partnerships and knowledge-sharing opportunities that will emerge from ADIPEC, further supporting United Energy Egypt's growth and reinforcing our global presence.

In terms of sustainability and corporate social responsibility, what initiatives is United Energy Egypt undertaking to minimize its environmental footprint and contribute positively to local communities?

At UEE, our approach to sustainability and corporate social responsibility (CSR) is comprehensive, focusing on both environmental stewardship and community development.

On the environmental front, we are implementing strategic initiatives to integrate green technologies and practices into our operations. This includes Infrastructure Imperatives for Carbon Management, green energy projects, beneficial recycling, and energy efficiency programs aimed at reducing fuel consumption.

Our CSR and community investment efforts are designed to empower and uplift the local communities where we operate. We prioritize initiatives that focus on education, healthcare, and skills development, ensuring that communities benefit from quality education, vocational training, and accessible healthcare.

One of our flagship community development programs, the Tamkeeny Learning Center in Ras Gharib, that is dedicated to empowering women through sustainable entrepreneurship. This initiative encourages eco-friendly practices by promoting the production of goods made from sustainable materials, aligning with our commitment to environmental responsibility and economic empowerment.

Another notable initiative is the launch of a Green Transition Project in collaboration with YouthinkGreen. This mega project, located in Burg Al Arab and Wadi Al Natron, encompasses a comprehensive 360-degree approach to fostering a green community including The Green Institutes, awareness campaigns in Schools, Technical Applied Schools & Universities, The Green Communities phase by Strengthening the Local Economic in addition to Environmental Ecosystem and Sustainable business opportunity identification and finally "The Green Future" tackling a Green Entrepreneurship Program.

Additionally, our partnership with Misr El Kheir through the GESR project supports local startups that tackle environmental challenges in Ras Gharib, encouraging innovation and sustainability-driven solutions at the community level.

Through these efforts, UEE strives to build a sustainable future, minimizing our environmental footprint while promoting economic resilience and quality of life within our communities. Our CSR and sustainability initiatives reflect our core commitment to people, the environment, and responsible growth.

VAALCO'S GROWTH STRATEGY IN EGYPT: BALANCING PRODUCTION AND SUSTAINABILITY

An interview with Iman Hill, Country Manager & Director, Vaalco Energy Egypt

A new chapter has begun for Vaalco in Egypt. Following the successful acquisition of TransGlobe, we spoke with Country Manager and MD, Iman Hill, to learn more about the company's strategic vision for the region.

What are Vaalco's current plans for expansion in Egypt, and how do these align with the company's broader strategic goals?

Vaalco Energy Inc, headquartered in Houston, Texas, is an African-focused Exploration and Production Company. We aim to create sustained shareholder value by maximizing our reserves and production performance across our portfolio and then growing by leveraging our in-house talent, operational infrastructure, and technical expertise.

Egypt represents a strategic and core country for us. The deal with TransGlobe was planned as the first stepping stone to further acquisitions and farm-ins to grow a substantial business. The company aims to expand activities in its concession areas in the Eastern and Western Desert while improving operational efficiency and reducing production costs using the latest technologies in the sector.

The Egyptian government has recently introduced new incentives to boost production. How is Vaalco benefiting from these initiatives, and what impact do you foresee for the sector?

We welcome the initiatives announced by H.E. Eng. Karim Badawi, and congratulate him. It is very clear that a lot of work and thought went into developing the specifics of these initiatives. The aim is very simple, necessary and clear, and that is to encourage and incentivize increased production, the more that Egypt can meet its energy demand from home-produced oil and gas the better it is for everyone. For our part, we have already begun to increase our drilling activity so that we can participate and benefit from these incentives.

Balancing energy security and environmental obligations is a key challenge for the industry. How can oil companies like Vaalco strike this balance effectively?

We recognize the importance of Environmental, Social and Governance (ESG) initiatives in our corporate strategies, and we take our responsibilities for sustainability very seriously as can be seen in our annual Sustainability report.

We'll remain an energy company but with a conscious and purposeful approach to the management of our emissions and carbon footprint. For example, here in Egypt. We are currently assessing and scoping an electrification project that has the potential to save circa 6 million liters of diesel consumption annually, reducing Opex significantly, and with an annual CO2 reduction of 21,500 tons of Scope 1 and 2 emissions.

Throughout our operations globally, stewardship of the Environment as part of our license to operate is a must-do for us.

In practical terms in our operations in Egypt, this means that we are always seeking energy efficiency opportunities, being compliant with flaring regulations, and taking individual responsibility to moderate our own habits around energy demand.

With oil producers taking a more active role in climate discussions, what outcomes do you expect from such involvement?

It is essential that Oil and Gas producers are part of the solution. This is why it was encouraging to see with COP 27 in Egypt and COP 28 in Abu Dhabi, that oil and gas companies were an integral and critical part of the debate. This is because our sector is uniquely placed to invest in the scaling up of the crucial technologies needed for the clean energy transitions. In fact, according to the IEA, circa 30% of energy use in 2050, in a decarbonized energy system, comes from technologies that need our industry's skills and resources. This includes carbon capture, offshore wind, hydrogen, and liquid biofuels.

As a sector, if we are aligned with the Paris Agreement goals, then what I suspect we may see is a significant shift in how we allocate our capital over the next decade. We will also continue to see innovative partnerships and new business models as companies from different sectors grasp the opportunities to collaborate to drive clean energy transitions.

What should always be front of mind for all of us is how to measure and manage our own operations' emissions.

What strategies does Vaalco employ to increase efficiency in its operations, and how do these contribute to better overall performance?

Our starting point is our people, we value technical, commercial and leadership skills. As important is attitude and the soft skills, proactive finding of solutions and collaboration is an integral part of the Vaalco way.

The right technology application at the right time and a watchful eye on the integrity and efficiency of our operational infrastructure. Understanding the chokes in our system, asset integrity and safety critical maintenance are all part of our approach to ensuring safe and efficient operations.

As the global energy landscape shifts, what are the biggest challenges facing oil producers, and how can companies prepare for a more sustainable future?

The energy transition is a global phenomenon which has to be looked at through a regional lens. We all have a responsibility to minimize our impact on the environment. At the same time, we cannot presume to tell, e.g., Africa, that it cannot develop its own fossil fuel resources for the economic development of its nations and people, when this has been going on in the developed world for a century. Especially when Africa's contribution to greenhouse gas emissions in 2023 at 3-4%, is half of Europe's, a quarter of the US's and an order of magnitude less than China's.

The question that every oil and gas company is answering is how to clean up existing production, prioritize the development of the cleaner assets in its portfolio economically, and what is its strategy towards investment in clean energy. Well thought out and planned re-invention, as demand for fossil fuels finally begins to wane will be important.

How are advancements in technology, such as digitalization and automation, transforming your operations, and what role does innovation play in optimizing production?

Our industry is a mature industry with long-life assets. The Middle East, in particular, has a high potential for transformation through digitalization and automation, as 35% of all oil and gas production comes from legacy fields that have been operating for over five decades.

The advent of Covid-19 focused our minds on the need for digital transformation as we had to rely on technologies like remote monitoring and robotics when people couldn't be mobilized.

No one would disagree that the oil and gas industry is not a first mover in embracing digital transformation and automation. But we can utilize digitalization technologies in Exploration, Production, Processing and Refining, Corporate and Back office, Safety, and Compliance. These technologies optimize exploration, drilling, production, and maintenance processes by enabling real-time monitoring, predictive maintenance, and data-driven decision-making.

Looking at Exploration and Production specifically, advanced data analytics and AI can minimize the risks of exploration and safeguard the company's investment. For production, data analytics on 'big data', as well as a number of AI techniques are used to maximize wells' performance while maintaining cost discipline.

As the industry shifts towards more advanced technologies, how is your company addressing the need for reskilling and retaining talent in a competitive market?

As leaders our discussions around talent are converging on a theme: we are finding it increasingly difficult to attract and retain employees.

It's seemingly simple on paper but difficult in practice. People who feel valued, empowered, seen and heard will not leave you. That means that when we say 'people are our most valuable assets' we have to behave as if they are. Our actions, our policies, our culture, our development opportunities and our remuneration and reward. In a nutshell, this is the holistic approach of developing the Employee Value Proposition.

As a sector, we have some of the world's best brains and most capable people, and have you heard anyone say that they don't want to be developed? So, the issue of reskilling should be a given. However, if we are being honest about it, and I don't include Vaalco in this, there are too many companies paying lip service to reskilling and development. At Vaalco we take the development part of the annual performance cycle very seriously and every employee has a personal development plan. Personally, I always tell staff that the primary person responsible for their development is them, I want people to take ownership and be passionate about their own growth.

What role do you see Egypt playing in the global oil and gas market in the coming years, particularly in light of its strategic location and resource potential?

Egypt is blessed with vast onshore and offshore resources. It is also a country that is pivotal in the region and has the unique advantage of: i) a massive market, for its own hydrocarbon resources, but also as a destination for Mediterranean production, ii) a large network of existing infrastructure including for LNG, and iii) a large and very well-educated capable population. For these reasons, Egypt is indeed a regional hub. The establishment of the EMGF, led by Engineer Osama Mobarez, which brings together regional governments and international companies was a brilliant step that was taken many years ago. It's great to see this organization going from strength to strength.

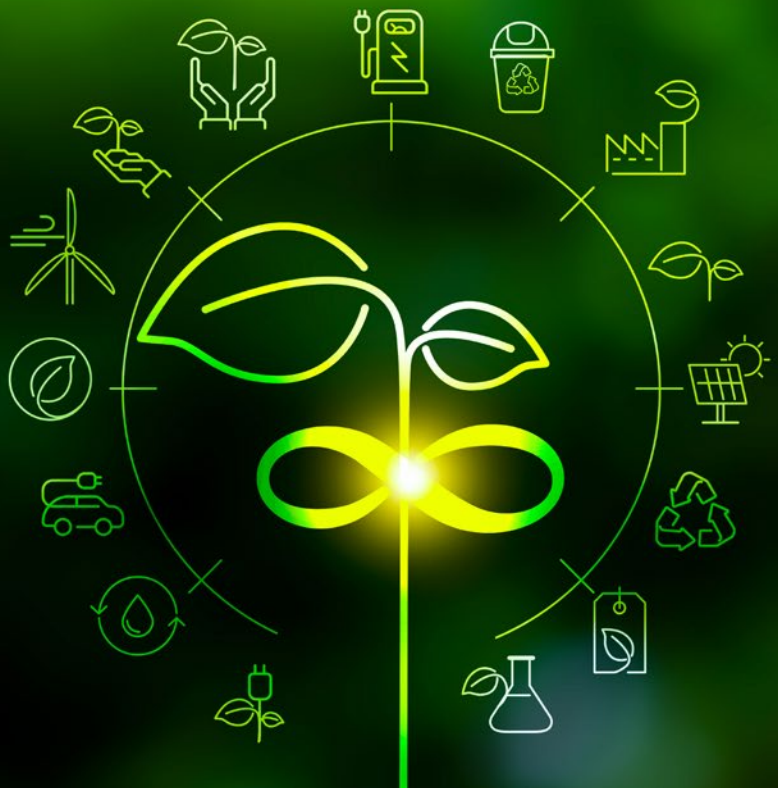
Looking ahead, what is your long-term vision for Vaalco in Egypt, and how do you plan to contribute to the country's growing energy sector?

My ambition is to grow Vaalco Egypt to become a significant value creator and contributor to the Vaalco Group, and in doing so, to become a trusted and collaborative partner to Egypt. Growing production and pursuing exploration opportunities as well as looking at inorganic ways to grow. We look forward to an improving and sustainable enabling environment that allows us to safely maximize our investment in Egypt.

Vaalco ENERGY

ANALYSIS

BRIDGING FDI AND ENERGY TRANSITION PATHWAYS TO A SUSTAINABLE FUTURE



Energy FDI Trends in Egypt

Egypt has significant potential to accelerate energy transition, with substantial untapped potential for expanding renewable energy from solar, wind, and hydrogen, according to the National Renewable Energy Authority (NREA). The state aims to achieve energy transition by raising low-carbon and renewable energy utilization rates. In this regard the Egyptian government developed a comprehensive strategy built on three main pillars; establishing a strong political framework, strengthening the collaborative ecosystem, and investing in infrastructure and human capital.

Egypt aims to raise the share of renewable energy in the national electricity grid to 42% by 2030, through allocating large spaces to establish solar and wind stations amounting to 40 km² and accommodating about 1,000 gigawatts (GW), NREA said.

Egypt is actively encouraging foreign and local investment in renewable energy projects. Egypt's renewable energy capacity is seen to increase by 65% by 2027 and provide more than 25% of total renewable energy capacity in the Middle East and North Africa (MENA) region as expected by the IEA.

Egypt topped the list of the most important Arab countries as the largest recipient of FDI costs during 2023, with an investment cost exceeding $40 billion. Egypt's FDI costs were concentrated in the renewable energy sector, representing 22% of the total cost of FDI in the region, which amounted to $181 billion, according to fDi Markets.

In the same context, Egypt is among the leading African nations in adopting green hydrogen projects. Since 2021, Egypt has attracted a surge of green hydrogen investments with an estimated $215.5 billion. Green hydrogen is a renewable energy source produced through the process of water electrolysis. Its importance stems from applying it in industries such as fertilizer manufacturing and transportation. Egypt secured three major green hydrogen projects in 2023, with a value of $17.4 billion. Many of the green hydrogen ventures are slated for the Suez Canal Economic Zone (SCZONE), a strategic area established in 2015 as part of Egypt's Vision 2030, fDi Markets stated.

In 2024, Egypt achieved significant milestones by signing 12 agreements were dedicated to green fuel and renewable energy projects, showcasing the country's dedication to sustainable development and environmental stewardship.

Future Goals

In early 2024, Egypt received requests from international and Gulf investors, expressing their interest in obtaining new licenses to invest in renewable energy projects. These requests involve several alliances, including a European-Gulf alliance, a Chinese alliance, and an Indian alliance, all vying for these licenses, with each project valued at $2 billion, according to the General Authority of Investment and Free Zones (GAFI).

Total Offered Renewable Investments

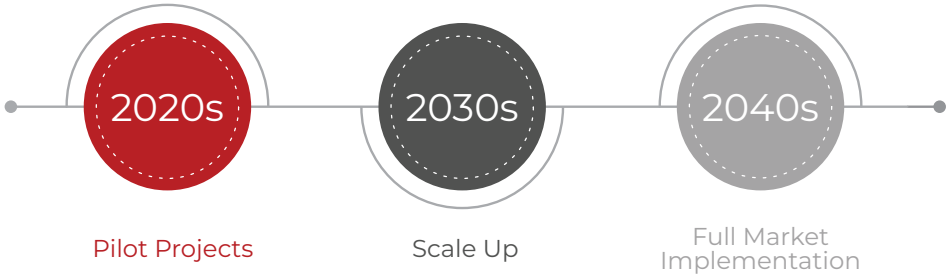
+$6 billion

Egypt's National Low Carbon Hydrogen Strategy

In mid-August 2024, Egypt officially launched its National Low Carbon Hydrogen Strategy in cooperation with the European Bank for Reconstruction and Development (EBRD). The strategy states that Egypt will play a leading role in supplying hydrogen and its derivatives to develop a low-carbon hydrogen economy. Egypt plans to leverage its competitive advantages to achieve ambitious goals for its hydrogen sector, aiming to capture up to 8% of the tradable market, which translates to approximately 5.6 million tons per year (mmt/y) by 2040. This initiative will require around $60 billion in investment and is expected to significantly increase the share of renewable energy in electricity production to 42%. By focusing on these targets, Egypt is positioning itself as a key player in the global hydrogen market, according to the Egyptian Cabinet.

In the 2020s, Egypt's pilot projects will leverage the country's hydrogen experience to lay the groundwork for a developing low-carbon hydrogen economy and export market. These projects will receive close support to ensure their success and will establish a governance structure tailored to the sector's specific needs.

Egypt will cement its position as a world leader through a phased approach



As we move into the 2030s, the focus will shift toward scaling up hydrogen production to GW levels and beyond, securing Egypt's position in the growing hydrogen economy.

This will involve using lower-cost hydrogen to facilitate the broader decarbonization of the country, effectively replacing grey hydrogen.

By the 2040s, the goal will be to maintain Egypt's market position in the low-carbon hydrogen sector. Hydrogen will be integrated across society, supporting decarbonization efforts and securing a sustainable, low-carbon future for the nation's industries and transportation systems, the cabinet stated.

Egypt's Plan for Developing a Hydrogen Economy

To facilitate the rapid development of the hydrogen economy during the pilot phase and prepare for scale-up, Egypt will undertake key initiatives. First, the country will build on its successful track record of attracting overseas investment in renewables. Egypt plans to utilize hydrogen diplomacy to secure international support for launching low-carbon hydrogen projects and accelerating the deployment of hydrogen technologies.

Strategically, Egypt aims to support the establishment of hydrogen projects in locations that are geographically close to Europe and have access to global maritime traffic via the Suez Canal. This approach will build on the country's existing infrastructure, including ports and export facilities, to create a favorable environment for development.

In addition to these strategic initiatives, Egypt will establish a governance structure and legislative framework designed to minimize barriers to progress. This includes ensuring access to necessary land, infrastructure, and utilities, as well as implementing a clear governance system that streamlines decision-making. By doing so, the country aims to accelerate the initiation of hydrogen projects, encourage investment, and facilitate regular monitoring and updates of the strategy.

Furthermore, Egypt will prioritize reviews of its legislative and regulatory frameworks to reduce potential barriers and administrative burdens. This will provide both certainty and flexibility to investors and project developers, fostering a more inviting investment climate.

Collaboration with investors will also be crucial, as Egypt will explore diverse financing mechanisms to de-risk low-carbon hydrogen initiatives and improve their profitability. This, in turn, is expected to stimulate market uptake within the country.

Lastly, the country will work with international bodies to ensure that hydrogen production complies with low-carbon standards, complete with a "guarantee of origin," thereby promoting transparency and credibility in its hydrogen initiatives, the cabinet added.

Powering Egypt's Future with Low-Carbon Hydrogen

Achieving the vision of a low-carbon hydrogen economy presents significant benefits for Egypt. Economically, the demand for low-carbon hydrogen is expected to at least double, with some forecasts predicting an increase of nearly seven times. A substantial portion of this hydrogen is anticipated to be traded on the international market, which could contribute a major boost to Egypt's GDP, estimated between $10 billion and $18 billion by 2040. To maximize these benefits, Egypt should aim to capture a larger share of the value chain,

particularly by increasing the domestic assembly of hydrogen-related products. Additionally, Egypt's expertise in Direct Reduced Iron (DRI) could facilitate a faster transition to low-carbon steel, opening up further lucrative market opportunities.

The anticipated growth in this sector is also expected to create over 100,000 jobs, with a significant proportion of these positions being highly skilled. By investing in the right training programs, Egypt can ensure that much of the workforce is drawn from the domestic labor pool. Furthermore, contracts with international companies should emphasize the importance of maximizing the use of local resources and workforce. For instance, a facility generating 1,000 megawatts (MW) would typically require around 750 personnel. In Addition to promote exports, by becoming a regional hub for the production and export of green hydrogen and its derivatives in the region.

In terms of energy security, increasing local hydrogen production will significantly enhance Egypt's energy security by reducing reliance on petroleum imports, thereby fostering national energy independence. Additionally, this initiative aims to promote exports by establishing Egypt as a regional hub for the production and export of green hydrogen and its derivatives. Ultimately, the development of the hydrogen economy will not only support Egypt's decarbonization efforts but also position the country to play a crucial role in global decarbonization initiatives, as noted by the cabinet.

Egypt's Resilience

As Egypt positions itself as a key player in the global energy sector, it presents a wealth of opportunities and incentives designed to attract FDI. With its strategic location, rich natural resources, and ongoing energy sector reforms, Egypt offers significant potential for investors looking to capitalize on emerging markets. The Egyptian government and its institutions are primarily focused on attracting investment and fostering partnership opportunities that serve the mutual interests of all parties. They emphasize that Egypt stands out as a promising destination for both local and foreign private investment, according to the State Information Service (SIS).

Concerning the business and investment environment in Egypt, the country offers a robust business environment with a domestic market of 105 million consumers and access to over 1.5 billion through trade agreements. It is expected to be a leading economy in new and renewable energy, thanks to its strategic location, competitive labor costs, skilled workforce, and recent reforms boosting FDIs, the SIS added.

Egypt's FDI inflows within the oil and energy sector showed significant progress from July to March of the fiscal year (FY) 2023/24. The FDI inflows into the oil sector experienced an increase, reaching a total of $4.4 billion, representing the greenfield investments made

by foreign oil companies. In comparison, the previous period recorded $4.2 billion. The rise in investment reflects a growing interest and confidence from international investors in the oil sector, highlighting the sector's ongoing appeal and potential for future growth, according to the Central Bank of Egypt.

As for the green investment, Egypt has issued the Green Hydrogen Incentives Law (Law No. 2 of 2024) which provides tax incentives for green hydrogen projects, aligning with the Cabinet's 2023 decisions, according to the SIS. Moreover, Egypt plans to increase green investments to 75% of public investments by 2030 and boost the green economy's GDP contribution to 5%. By 2026, it aims to become a regional green hydrogen hub, targeting 5.8 million tons (mmt) of green hydrogen output by 2040. The country also seeks to improve its Environmental Performance Index ranking significantly, according to a research project titled "The Most Prominent Strategic Direction of the Egyptian Economy for the New Presidential Period (2024□2030)".

FDI is a powerful tool for bridging the gap between the current energy system and a suitable future. By aligning investment strategies with the goals of the energy transition, both globally and in Egypt, stakeholders can drive meaningful progress toward a low-carbon economy.

In the context of Egypt, the country has great potential for expanding the deployment of renewable energy sources, particularly solar, wind, and low-carbon hydrogen. Despite significant investmenat, the potential of renewables remains largely underexploited. However, green investment in renewable energy sources is set to grow massively in the coming years, according to the Organization for Economic Cooperation and Development (OECD) Green Growth Policy Review of Egypt 2024.

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