



INVESTIGATING EGYPT'S NATURAL GAS EXPLORATION & DRILLING ACTIVITIES STATUS **IN FYS (2018/19-2019/20)**

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Through the path to become a regional natural gas hub, Egypt was able to balance its performance in natural gas Exploration and Production (E&P) activities within one of the most tragic periods facing the global petroleum market. While the international oil and gas markets suffered from the COVID-19 negative effects, the Egyptian Natural Gas Holding Company (EGAS), in the latest annual report of fiscal year (FY) 2019/20, remarked an annual increase of 53.3% in the number of natural gas discoveries in Egypt. This is in addition to keeping a significant production rate of approximately 6.6 billion cubic feet per day (bcf/d).

This report highlights the development of the natural gas upstream activities between FYs 2018/19-2019/20, in addition to the main achievements of EGAS in the latest FY 2019/20.

1. EXPLORATION ACTIVITIES

I. SEISMIC SURVEYS

A key part of natural gas exploration is seismic surveying, which aims to create detailed images of basic geological formations. Hence, before drilling, seismic investigation must first be completed to define the potential drill location.

In FY 2018/19, 2D seismic survey program (SPEC Project) was acquired in the Mediterranean Sea with an area of about 21,328 km, completing the second phase of the project with a total area of about 21,904 km. Also, a 2D seismic acquisition of 116.6 km in the Mediterranean Sea and the Nile Delta have been completed. This is in addition to conducting a 3D seismic survey in the Nile Delta with a total area of 372 km². In FY 2019/20, the 2D seismic survey program (SPEC Project) in Mediterranean was ongoing, while a 3D seismic survey in the Mediterranean was carried out with a total area of 321 km², explained in EGAS's Annual Reports 2018/19 and 2019/20.

II. MAIN AREAS OF EXPLORATION ACTIVITIES

The Egyptian petroleum sector's stakeholders succeeded in increasing the number of natural gas discoveries, in spite of the unstable international conditions. As in FY 2019/20, EGAS reported achieving a total of 23 natural gas discoveries by the companies operating in Egypt, compared to only 15 natural gas discoveries announced in FY 2018/19, according to EGAS's Annual Reports 2018/19 and 2019/20.

The natural gas discoveries were achieved in three main areas; namely the Western Desert, the Mediterranean Sea, and the Nile Delta. In FY 2018/19, the Western Desert had the lion's share in the total discoveries with 66.7%, while the Mediterranean Sea had a share of one third, and none of the discoveries were achieved in the Nile Delta, according to EGAS's Annual Report 2018/19.

In FY 2019/20, the Western Desert also had the largest share in the discovered wells with 69.6%, followed by 21.7% for the Mediterranean region, and 8.7% for the Nile Delta, according to EGAS's Annual Report 2019/20.

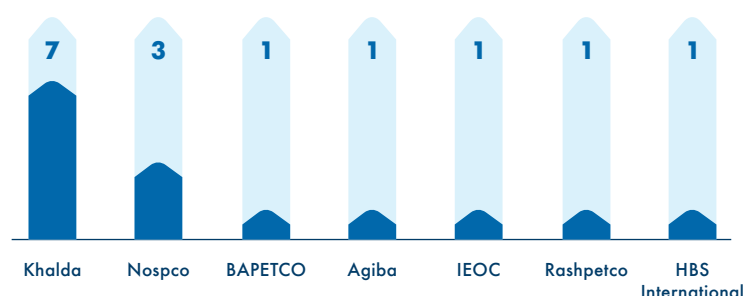
NATURAL GAS DISCOVERIES PER AREA

	FY 2018/19	FY 2019/20
Western Desert	10	16
Mediterranean Sea	5	5
Nile Delta	0	2
TOTAL	15	23

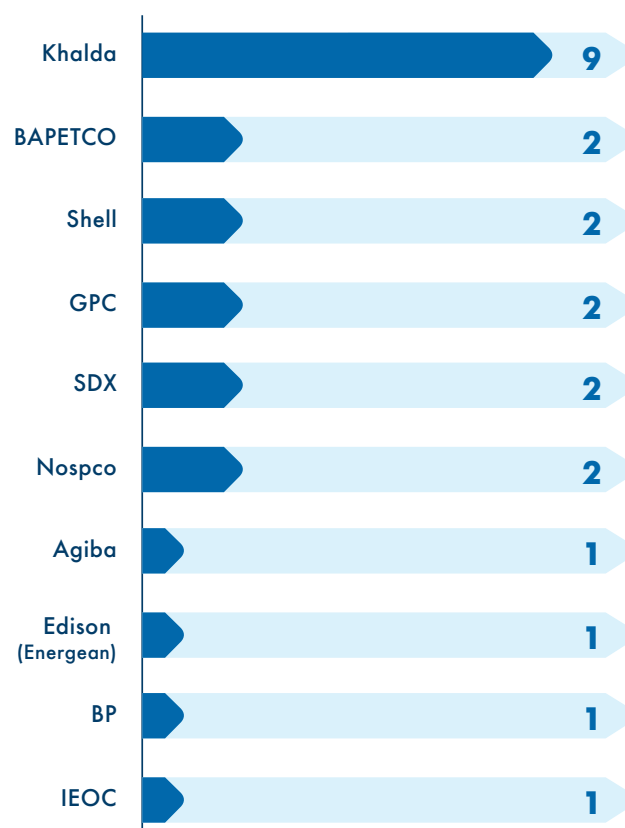
In FY 2018/19, the 15 discoveries were made by seven oil companies. Khalda Petroleum Co. (Khalda) came on the top of these companies with a share of 46.7% of the total discovered wells, that were all located in the Western Desert. North Sinai Petroleum Company (Nospco) came second with a share of 20%, while Badr El Din Petroleum Company (BAPETCO), Agiba Petroleum Co. (Agiba), the International Egyptian Oil Company (IEOC), Rashpetco, and HBS International had a share of 6.6% each, according to EGAS's Annual Report 2018/19.

On the other hand, FY 2019/20 witnessed the success of 10 companies in achieving natural gas discoveries in the different areas. Similarly, Khalda had the largest share of 39.1%, followed by BAPETCO, Shell, the General Petroleum Company (GPC), SDX, and Nospco with a share of 8.7% each. Furthermore, Agiba, Energean (through Edison), BP, and IEOC had a share of 4.4% each, according to EGAS's Annual Report 2019/20.

NATURAL GAS DISCOVERIES PER COMPANY IN FY 2018/19



NATURAL GAS DISCOVERIES PER COMPANY IN FY 2019/20



III. MAIN DISCOVERIES AND ADDED RESERVES

The more natural gas fields discovered with substantial potential, the more Egypt's natural gas reserves added. Yet, the continuous growth of reserves is mainly achieved through intensive exploration campaigns and extensive use of technologies. Over FYs 2018/19 to 2019/20, the added reserves averaged at about 1,459 billion cubic feet (bcf) in the Mediterranean and the Nile Delta, according to EGAS's Annual Reports 2018/19 and 2019/20.



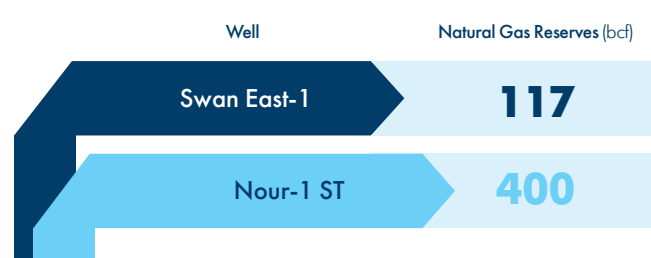
NATURAL GAS ADDED RESERVES (BCF)

FY 2018/19	FY 2019/20
817	2,100

In FY 2018/19, the added reserves of natural gas outstandingly jumped by over 300%. Eight exploratory and appraisal wells were drilled, resulting in three successful wells in Mediterranean Sea and Nile Delta with a Success Ratio of 100%. The drilled well also put on five discoveries that added reserves of 598 bcf of natural gas. Two major discoveries contributed alone more than 70% of the total discoveries, amounting to 517 bcf, according to EGAS's Annual Report 2018/19.



MAIN DISCOVERIES IN THE MEDITERRANEAN SEA IN FY 2018/19



In FY 2019/20, the increase in the number of discoveries drove the added reserves of natural gas to rise by more than 150%. It is worth mentioning that 12 exploratory wells were drilled resulting in four dry and one suspended wells in Mediterranean Sea and Nile Delta with a Success Ratio of 64%. Meanwhile, those drilled wells brought seven discoveries with added reserves of 900 bcf of natural gas; of which, three major discoveries added natural gas reserves of 656 bcf, representing 31% of the total added reserves, according to EGAS's Annual Report 2019/20.



MAIN DISCOVERIES IN FY 2019/20

Region	Well	Natural Gas Reserves (bcf)
Mediterranean Sea	Atoll North-1 ST2	300
	Bashrush-2 Dir Bis	331
Nile Delta	South Disouq-12	25

2. DRILLING AND PRODUCTION ACTIVITIES

I. DRILLED WELLS

The total number of drilled wells decreased by 17% in FY 2019/20, reaching 29 wells, compared to FY 2018/19. Such decline was particularly due to the circumstances of COVID-19 prevalence and its impact on different sectors.

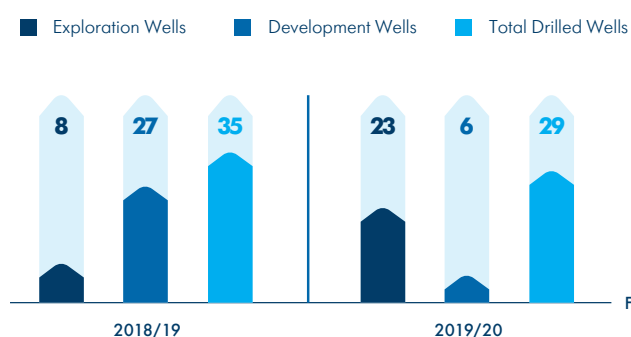
Exploration wells are drilled for exploration purposes in new areas. While development or production wells are for production in fields with proven reserves. Thus, in FY 2019/20, development wells witnessed a decreasing rate of 78%. While exploration wells recorded an increase of about 188%, according to EGAS's Annual Reports 2018/19 and 2019/20.

Development wells' share reached 21% of total number of drilled wells in FY 2019/20 instead of 77% in FY 2018/19. On the other hand, the exploration wells' share massively increased to 79% in FY 2019/20 instead of 23% in FY 2018/19, according to EGAS's Annual Reports 2018/19 and 2019/20.

In total, there are three exploration wells in the drilling phase in FY 2019/20, according to EGAS's Annual Reports 2018/19 and 2019/20.



DRILLED WELLS



II. NATURAL GAS AND CONDENSATES PRODUCTION

In association with exploration and drilling activities, 39 wells were put on stream in FY 2019/20, declining by 30.4% compared to 56 wells in FY 2018/19. Development wells put on stream declined by 77% in FY 2019/20 compared to the previous year, while wells from development projects, whether exploration or development wells, put on stream increased by 48% in FY 2019/20.



TOTAL WELLS PUT ON STREAM

FY	Wells from Development Projects	Development Wells
2018/19	21	35
2019/20	31	8



WELLS PUT ON STREAM PER TYPE

■ Wells from Development Projects ■ Development Wells



As a result of the wells put on stream, total natural gas production in the two FYs reaches 4,920 bcf; total condensates production reaches 62.88 million barrels (mmbbl). Natural gas and condensates production decreased separately by about 5% in FY 2019/20 compared to FY 2018/19. It is worth noting that natural gas and condensates production was similarly impacted due to the pandemic circumstances, according to EGAS's Annual Reports 2018/19 and 2019/20.

As an annual average in the two years, natural gas production reached 2,460 bcf, while condensates average production recorded 31.44 mmbbl, according to EGAS's Annual Reports 2018/19 and 2019/20.



NATURAL GAS & CONDENSATES PRODUCTION IN FY 2019/20



Facing the first wave of the pandemic in H2 FY 2019/20, the Egyptian market showed a solid and well-balanced performance. This was mainly due to the extensive efforts of the Ministry of Petroleum and Mineral Resources (MoP) and EGAS to keep the market safe, and appealing for the international investors. These efforts were based on two pillars including enhancing exploration activities which resulted in increasing the number of discoveries through implementing both 2D and 3D seismic surveys in the Mediterranean Sea and the Nile Delta. This is in addition to performing several development projects to keep stable levels of production; 11 natural gas development projects were implemented with total investments of \$1.116 billion, according to EGAS's Annual Report 2019/20.

