

SCOPE OUT EGYPT'S REFINING SECTOR OVER FYS (2014/15-2018/19)



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Egypt is the second largest oil refining country in Africa, acquiring about 23% of the total domestically-refined crude oil in Africa. There are 12 refineries in Egypt, operated by the Egyptian General Petroleum Corporation (EGPC), with a total capacity of 795,000 barrels per day (bbl/d) in 2019, according to BP's Annual Statistical Review of 2020. The Ministry of Petroleum and Mineral Resources (MoP) has been working on fulfilling self-sufficiency of petroleum products since 2016, when imports reached 10 million tons (mmt) annually at a cost of \$4.5 billion (EGP 75.9 billion), noting that these rates declined during 2020, reaching 3.5 mmt with \$1.5 billion (EGP 25.3 billion).

Within the report, all investment costs in dollars and EURs are calculated in their equivalent in EGP on the basis of 2019 average exchange rates.

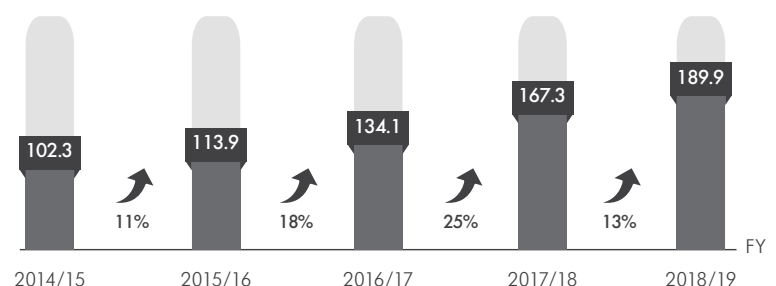
REFINING SECTOR ECONOMIC PERFORMANCE

1. SECTOR'S CONTRIBUTION TO GDP

Over the period from fiscal year (FY) 2014/15 to 2018/19, the refining industry contributed a total of EGP 707.4 billion as Gross Domestic Product (GDP). The refining activities' GDP witnessed a continuous increasing trend over the mentioned period moving consistently with the government's mega projects targeting increasing petroleum product's supply. The refining GDP remarkably increased by 85.6% from EGP 102.3 billion in FY 2014/15 to EGP 189.9 billion in FY 2018/19, according to data published by the Ministry of Planning and Economic Development (MPED).

Despite the increasing value of the refining sector GDP, the sector's share in the total GDP has declined. The share dropped from 4.1% in FY 2014/15 to 3.7% in FY 2018/19, the lowest over the whole period, according to MPED's data.

 Refining GDP (EGP billion)



On an annual average, refining contributes 30% of petroleum GDP. The highest share of refining in petroleum GDP was 39% in FY 2015/16, which happened as the crude oil GDP contribution declined, according to MPED's data.

The refining sector has a remarkable weight in the transformative industries activities. Over the mentioned period, refining activities share in transformative industries' GDP ranged between 22% and 25%, according to MPED's data.

Refining Share in GDP over FYs (2014/15-2018/19) (%)



The public sector dominates refining GDP, as over the referred period, the public sector contributed a total GDP of EGP 670.84 billion, while the private sector contributed only EGP 36.54 billion, according to MPED's data.

Both sectors' GDP exhibited an increasing trend over the comparison period. On one hand, public refining GDP increased by 85.7% from EGP 96.96 billion in FY 2014/15 to EGP 180.04 billion in FY 2018/19. On the other hand, private refining GDP rose by 85.3%, from EGP 5.3 billion in FY 2014/15 to EGP 9.82 billion in FY 2018/19, according to MPED's data.

Refining GDP per Sector over FYs (2014/15-2018/19)

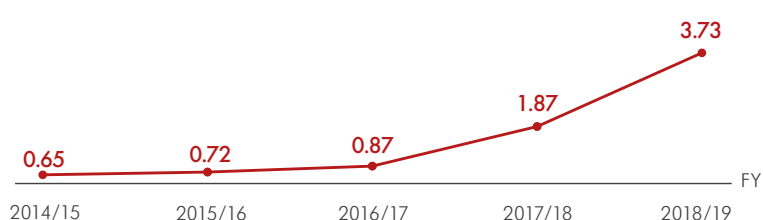


2. SECTOR'S CONTRIBUTION TO INVESTMENTS

Boosting investments in the refining sector comes as part of the MoP plan to expand and develop refineries. Hence, the sector will be able to increase the domestic production of high-value petroleum products to meet the local market's needs with the potential of exporting the surplus. With this regard, over FYs (2014/15 to 2018/19), the investments pumped into the refining sector recorded EGP 7.47 billion, representing 0.3% of the total public investments, according to MPED's data.

Yet, these investments experienced an outstandingly increasing trend, hitting the highest value in FY 2018/19 at EGP 3.73 billion. It is worth mentioning that the investments have increased five-fold in FY 2018/19 compared to FY 2014/15, which witnessed the lowest investments of only EGP 0.65 billion. Further, over FYs 2017/18 and 2018/19, the refining investments jumped by 115% and 100%, respectively, in line with the expansion projects in Midor and Mostorod two of the largest refineries in Egypt, stated by MPED's data.

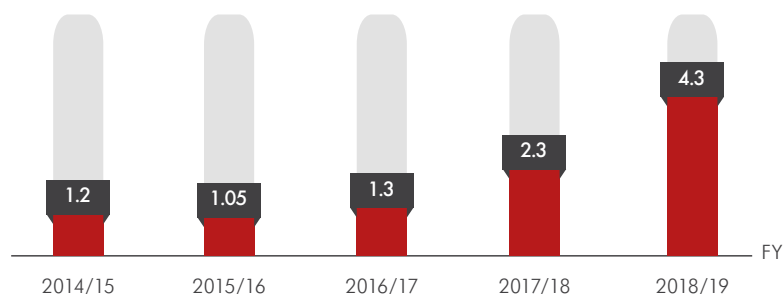
Refining Investments (EGP billion)



Over the referred period, the petroleum refining contribution in the petroleum sector's investments, represented only 2% while crude oil and natural gas contributions act

38% and 60% respectively. Yet, the refining contribution followed an increasing trend over the years, reaching its highest in FY 2018/19 with 4.28%, explained by MPED's data.

Refining Share in the Petroleum Sector's Investments (%)



B. EGYPT'S MAIN REFINING COMPANIES

1. MIDDLE EAST OIL REFINERY (MIDOR)

MIDOR is one of the most important refineries in Egypt. The refinery was established in 1994 to refine crude oil and to process high-quality petroleum products for the domestic market as well as the international markets. MIDOR has a design capacity of 115,000 bbl/d. The refinery's investments reached approximately \$1.4 billion (EGP 23.6 billion), according to the company's official website.

MIDOR is owned by state companies including the EGPC, Engineering for the Petroleum & Process Industries (Enppi), the Petroleum Projects and Technical Consultations Company (Petrojet), and Suez Canal Bank, according to the refinery's official website.

In FY 2018/19, MIDOR achieved the highest revenues over a period of five years with \$2.4 billion (EGP 40 billion), according to the company's press release on the general assembly results in FY 2018/19.

From FY 2014/15 to 2018/19, MIDOR was able to refine a total of 167 million barrels (mmbbl) of crude oil, and to supply the domestic market with 15.8 mmt of high-quality petroleum products, according to press releases on the general assembly results over FYs 2014/15-2018/19.

MIDOR Performance Evolution over FYs (2014/15-2018/19)

	2014/15		2018/19
Production (mmt)	4.3	▲ 18.6%	5.1
Refined Oil (mmbbl)	10.7	▲ 261.7%	38.7
Diesel Production (mmt)	1.9	▲ 31.6%	2.5
Domestic Supply (mmt)	3.7	▼ 16.2%	3.1
Exports (mmt)	0.72	▲ 177.8%	2

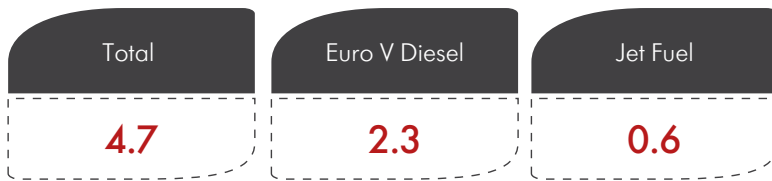
2. THE EGYPTIAN REFINING COMPANY (ERC)

ERC is the only Egyptian refinery managed by the private sector, which makes up 76.2% of the refinery's shares. Qatar Petroleum has the majority of the shares in the ERC with approximately 30%, in addition to other international partners. EGPC has a share of around 24%. The company's investment cost is \$4.4 billion (EGP 74.2 billion) and is considered Egypt's largest Public Private Partnership (PPP) infrastructure megaproject, according to Qalaa Holding official website.

The refinery that was established in 2007, converts low value mazut into middle and light distillates to meet the domestic market needs. Cairo Oil Refining Company (CORC) provides the feedstock for ERC.

In September 2019, all the projects' units were in operation. Since then and until February 2020, the company's total production recorded 2.58 mmt, according to Qalaa Holding official website.

 ERC Production Capacity (mmt)



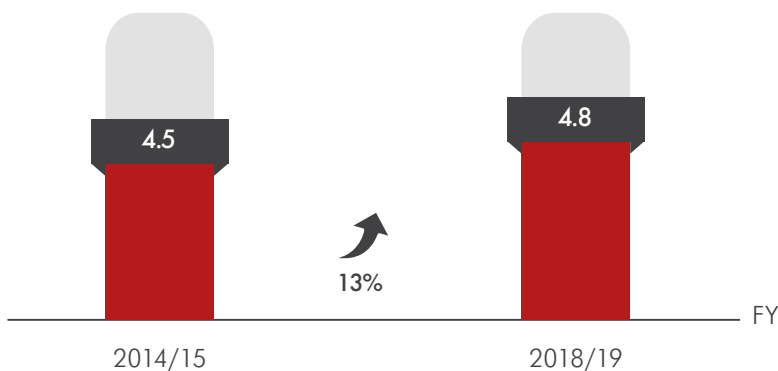
3. ALEXANDRIA PETROLEUM COMPANY (APC) (EL MEX REFINERY)

APC was built in 1962, to supply the market with its needs of Liquefied Petroleum Gas (LPG), kerosene, diesel, mazut, lube oils, and waxes. The refinery, located in El Mex in Alexandria, has an annual refining capacity of 5 mmt, according to EGPC.

The refinery has three crude distillation units, one of which is basically to produce the atmospheric residue for the lube oil complex. The refinery has a lube oil complex that was commissioned in 1983 with an annual capacity of 1.1 mmt. It mainly produces vacuum gas oil, bright stock, waxes, bitumen, and mazut to be further processed by downstream units, according to EGPC.

Over the referred five years, APC was able to refine a total of 22.9 mmt of crude oil to meet part of the domestic market needs, according to press releases on the general assembly results over FYs 2014/15-2018/19.

 Crude Oil Refined by APC (mmt)



4. ALEXANDRIA NATIONAL REFINING AND PETROCHEMICALS COMPANY (ANRPC)

ANRPC is a crude oil refinery that was established in 1999 under the Egyptian investment law no. (8) of 1997. It is one of the largest refining and petrochemicals companies. In fact, the refinery's production of 92-octane and 95-octane represents around 43% across Egypt. The company is located in the Amerya region in Alexandria, according to EGPC.

 ANRPC's Main Units

	Number	Capacity (mmt/y)	Date	Products
CCR & Isomerization Complex	1	0.8	-	LPG Isomerate Reformate
CCR & Platforming Unit	1	0.55	2015-2018	Reformate Stabilized LPG Hydrogen

In FY 2015/16, ANRPC produced 1.2 mmt of naphtha, of which 238,000 tons were exported. Meanwhile, octane 92 and octane 95 production exceeded 842,000 tons. Moreover, the company's revenue reached EGP 4.7 billion.

In FY 2016/17, the company's petrochemical project completed by 78.5%, adding 850,000 tons of reformate to produce high octane benzene, in addition to producing naphtha and hydrogen, worth \$233 million (EGP 3.9 billion) of investments. This came during the review of the company's report by El Molla in June 2017.

In FY 2017/18, the company finished 97% of its project, as announced during El Molla's visit for the project in June, 2018. In FY 2018/19, ANRPC completed a project for producing high-octane benzene 92 and 95 to increase the annual capacity to 1.5 mmt, according to the MoP.

5. AMERYA PETROLEUM REFINING COMPANY (ARPC)

ARPC was built in 1972 with an annual refining capacity 4 mmt. It supplies the local market with its needs of LPG, naphtha, jet fuel and others. The refinery is also located in the Amerya region in Alexandria, as explained by EGPC.

 ARPC's Main Units

	Number	Capacity (mmt/y)	Date	Products
Crude Distillation Units 2 4 CHEX	2	4	-	Propane LPG Naphtha -Others
Platforming Unit	1	0.4	1985	LPG Isomerate Reformate
Isomerization Unit	1	0.15		
LAB Complex	1	-	-	LAB HAB
Lube Complex	1	0.58	1973	Special Oils Medical Oil Mazut & Others

Over FYs 2015/16, 2017/18 and 2018/19, ARPC refined over 11 mmt of crude oil with investments of almost EGP 600 million. In addition, company's revenues accounted for more than EGP 5 billion, according to the company's general assemblies for the mentioned FYs.

In FY 2015/16, ARPC refined 3.9 mmt of crude oil in order to cover its output targets of petroleum products. Meanwhile, the company's investments reached EGP 217 million. In FY 2017/18, the company refined about 3.7 mmt of crude oil, its investments amounted to EGP 194 million while its revenues recorded about EGP 2.6 billion. In FY 2018/19, the company refined 3.7 mmt of crude oil. In the meantime, the company's investments accounted for EGP 179 million, while its revenues hit EGP 3 billion. All stated during the general assemblies of the company for the mentioned FYs.

6. SUEZ OIL PROCESSING COMPANY (SOPC)

The Suez Refinery was built in 1965 and has a current annual refining capacity of 3 mmt. It supplies the market with LPG, naphtha, gasoline, kerosene, diesel, and mazut. The refinery is located in Suez region on the Red Sea, according to EGPC.

 SOPC's Main Units

	Number	Capacity (mmt/y)	Date	Products
Crude Distillation Units	2	3	-	LPG Naphtha Jet Fuel & Others
Platforming Unit	1	0.8	1983	LPG Isomerate reformate
Coker Complex	1	1.5	1966	
Vacuum Distillation Unit	1	0.0012	2014-2017	Asphalt VGO

It is worth mentioning that in FY 2017/18, the company's plan included producing 48,000 tons of butane and 81,000 tons of naphtha with investments worth more

than \$44 million (EGP 741.8 million). This is also in addition to producing 396,000 tons of Asphalt and 322,000 tons of diesel with total investments amounted to \$54 million (EGP 910 million), stated by SOPC's CEO, Reda Abdel Samad during the company's general assembly in January 2017.

7. ASSIUT OIL REFINING COMPANY (ASORC)

ASORC was established in 1984 with an annual refining capacity of 2.5 mmt. It supplies the market in Upper Egypt with LPG, propane, naphtha, jet fuel, diesel, and mazut, according to EGPC.

ASORC' Main Units

	Number	Capacity (mmt/y)
Crude Distillation Units	2	2.5
Vapor Recovery Unit	1	0.4
Hydrocracker Complex	1	2.3
CCR and Isomerization Complex	1	0.88

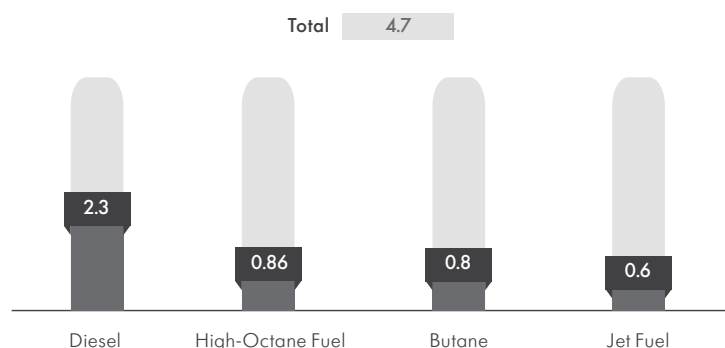
In FY 2018/19, ASORC refined around 3.5 mmt of crude oil to produce high-quality products including gasoline 92 and 80, butane, jet fuels, and diesel. Meanwhile, the company implemented several projects with investments reaching EGP 2 billion, including establishing a plant to produce naphtha fuel with amounts reaching 660,000 tons annually, according to the company's general assembly held in September 2019.

C. MAJOR CURRENT & PLANNED REFINING PROJECTS

1. MOSTOROD PETROCHEM REFINERY AT ERC

Mostorod Refinery was built in 1969 with a refining capacity 8 mmt/y to supply the local market with its needs of LPG, Jet fuel, Gas Oil and Fuel Oil. The refinery is located in the Mostorod region, north of Cairo. In September 2020, a new ERC facility in Mostorod was inaugurated. The project's total current annual capacity represents 22% of Egypt's refining capacity. The project is expected to increase Egypt's diesel production by 30% and increase octane production by 15%. Accordingly, the project is estimated to reduce Egypt's annual imports bill by \$0.6-1 billion (EGP 10.1-16.9 billion). Moreover, the refinery is expected to decrease gasoline and diesel imports by 35%. The project's investment cost is \$ 4.3 billion (EGP 72.5 billion), according to MoP's press release, in September.

Mostorod Refinery Production Capacity (mmt)



2. MIDOR'S EXPANSION

In 2017, the first phase of the refinery's expansion was operated, which increased MIDOR's total production capacity by 15%. In 2018, a new project was implemented to increase MIDOR's refining capacity by 60%, increasing crude oil from 100,000 barrels per day (bbl/d) to 160,000 bbl/d. Additionally, that same year, a new project was implemented to increase MIDOR's refining capacity by 60% to reach 160,000 bbl of crude oil. This project costs \$2.3 billion (EGP 38.78 billion). In February 2019, MIDOR reached financial closure for the \$2.2 billion (EGP 37.1 billion) expansion and upgrade program for its Alexandria refinery. The project is planned to be completed in 2022, according to a document published in January by MoP on refining projects.

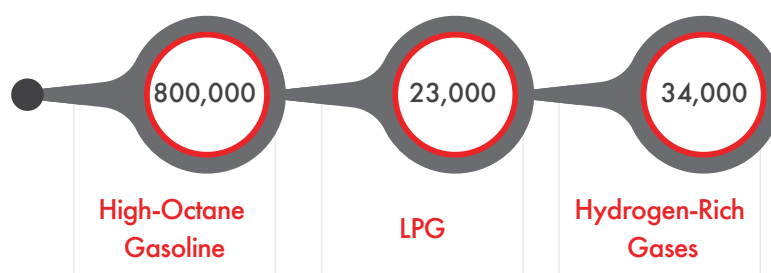
MIDOR Expansion Production Capacity (mmt/y)

GASOLINE 95	DIESEL	LPG	JET FUEL	COAL	SULFUR
0.6	1.3	0.15	0.7	0.23	0.065

3. HIGH-OCTANE GASOLINE PRODUCTION UNIT AT ASORC

The project in ASORC has started in 2017 and is expected to be fully completed by Q4 2020. The project's annual capacity is expected to reach 660,000 tons of naphtha in addition to producing butane. The project's investment cost is \$450 million (about EGP 7.6 billion in 2019), according to the petroleum minister during the general assembly of ASORC in September.

High-Octane Gasoline Production Unit Capacity (t/y)



4. ASPHALT 60/70 PRODUCTION UNIT AT SOPC

A project for asphalt 60/70 production started in 2019 at SOPC. The project aims to increase asphalt production, through establishing a vacuum distillation unit, to direct asphalt production to the local market. The project is expected to be finalized in Q4 2021. The project's investments are estimated at more than \$ 68.5 million (EGP1.2 billion), according to the MoP's document published in January on refining projects.

Asphalt Production Unit Capacity (mmt/y)

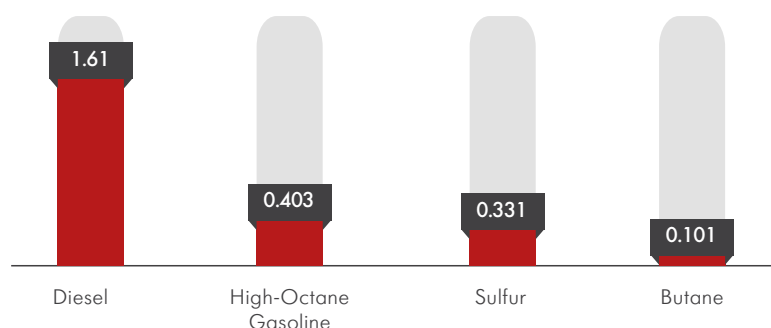


It is worth noting that the three mentioned projects, MIDOR refinery expansion project, High-Octane Gasoline project, and the Asphalt production unit received investments of \$2.8 billion (EGP 47.2 billion) in June, according to MoP's press release in June.

5. MAZUT HYDROCRACKING COMPLEX AT ANOPC

The project started its operations in 2019 at Assiut National Oil Processing Company (ANOPC), aiming at achieving self-sufficiency of petroleum products in Upper Egypt and decreasing import bills. The project has a feed capacity of 2.5 mmt of mazut to produce higher quality petroleum products. The project is scheduled to be finalized in September 2022 with investment costs of \$2.15 billion (EGP 36.25 billion), according to MoP's document on refining projects in January.

Mazut Hydrocracking Complex Production Capacity (mmt/y)



6. HYDROCRACKING COMPLEX AND PRODUCTION OF GASOLINE (RED SEA CO.)

The project started operations in 2019 to exploit untapped capacities of El Nasr refinery at SOPC. The project also aims to benefit from the produced mazut to manufacture high-quality petroleum products. The project's production capacity reaches 2.5 mmt of mazut and 1 mmt of naphtha. The project is planned to be completed by 2022, with costs of \$2.75 billion (EGP 46.37 billion), according to MoP's document on refining projects in January.

7. REHABILITATION OF COKING COMPLEX AT SOPC

In 2019, a project had started to rehabilitate the coking complex at SOPC, with the aim to increase the production capacity of mazut to 1.75 mmt annually. The project's investment cost is estimated at \$589 million (EGP 9.9 billion), according to MoP's document on refining projects in January.

8. AROMATICS EXTRACTION UNITS PROJECT AT APC

The project aims to renew the oils complex at APC and to increase oils and waxes production from 32 to 36 m³/h. The project investment cost is estimated at EUR 356.5 million (EGP 6.73 billion), according to MoP's document on refining projects in January.

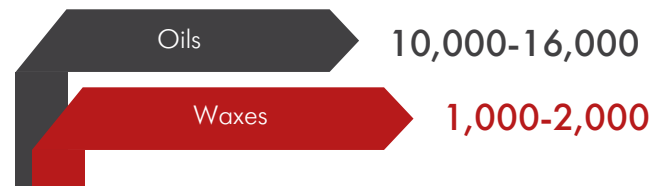
The MoP has set an integrated plan to increase refining capacity to reach more than 41 mmt of petroleum products and achieve self-sufficiency, according to the MoP's document on refining projects in 2020, published in January.

This can be achieved through developing and updating the efficiencies of refineries, implementing projects and conversion units. Moreover, the ministry considered developing refineries as an essential step in transforming Egypt into a regional hub for trading oil and gas, taking advantage of its privileged location in the middle of the world's energy-producing and consuming markets. The ambitious plan's investment cost reached EGP 48 billion.

Moreover, the sector seeks the assistance of major international consultancy offices to implement the refining sector's development strategy, and so, an attractive investment climate was created. This was in addition to applying the latest technologies in the field of digital transformation, according to the ministry's press release in September.



Aromatics Extraction Units Production Capacity (t/y)



Investments Directed to Recent Refining Projects

