REPORT IN PRINT

The Economics of Petroleum Transportation:

EGYPT'S PERFORMANCE IN 2016/2017

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Transportation services of petroleum products are a main pillar of the oil and gas industry all over the world. In hydrocarbon producing countries, they play a vital role linking upstream and downstream activities. In importing countries, they secure the linkage between importing locations and consumption points.

Egypt, as a heavy oil producing and exporting country, relies on a variety of tools and channels to transport the extracted oil from its onshore and offshore fields to both local and international consumers. It is worth noting that Egypt's petroleum industry has always been one of the core indicators of the health of the country's economic environment. Thus, petroleum and petroleum products transportation services support increasing the economic growth and help the country overcome the current economic hardships.

MAIN TRANSPORTATION CHANNELS IN EGYPT

There are four different petroleum products transportation channels in Egypt, which are railways, trucks, petroleum pipelines, and water transport units.

TRANSFERRED PRODUCTS BY DIFFERENT CHANNELS IN 2016/2017 THOUSAND METRIC TON

CHANNEL/PRODUCT	CRUDE OIL AND CONDENSATES	LPG	NAPHTHA	GASOLINE	KEROSENE	JET FUEL	DIESEL	MAZUT	TOTAL
RAILWAY TANKERS	-	-	-	26	-	94	287.3	7.0	414.3
TRUCKS	-	1920	-	4625	-	-	8745	2853	18143
PIPELINES	22249	3894	973	6003	67	609	14908	8185	56888
COASTAL TANKERS	5302	-	-	-	-	-	-	90	5392
SUMED PIPELINE	66294	-	-	-	-	-	-	-	66294
TOTAL	93845	5814	973	10654.0	67	703.0	23940.3	11135.0	147131.3

RAILWAYS

Egypt's railways are used for transporting four different petroleum products: gasoline, mazut, diesel, and jet fuel. The railway tankers had a total capacity of 54,859 tons of petroleum products in 2016/2017. Around 37.62% of these tankers are used for transferring jet fuel, while only 7.75% are used for transferring gasoline. It is worth noting that seven railway tankers were scrapped during 2016/2017.

RAILWAY TANKERS' NUMBERS AND CAPACITIES IN 2016/2017

PETROLEUM PRODUCT	NUMBER	TOTAL CAPACITY TON	PERCENTAGE
JET FUEL	321	12038	21.94%
DIESEL	516	20640	37.62%
GASOLINE	125	4250	7.75%
MAZUT	417	17931	32.69%
TOTAL	**1379**	**54859**	**100%**

TRANSFERRED PRODUCTS BY RAILWAY TANKERS IN 2016/2017

PETROLEUM PRODUCT	QUANTITY METRIC TON	PERCENTAGE
JET FUEL	94191	22.7%
DIESEL	287312	69.4%
GASOLINE	25706	6.2%
MAZUT	7138	1.7%
TOTAL	**414347**	**100%**

PETROLEUM PIPELINES

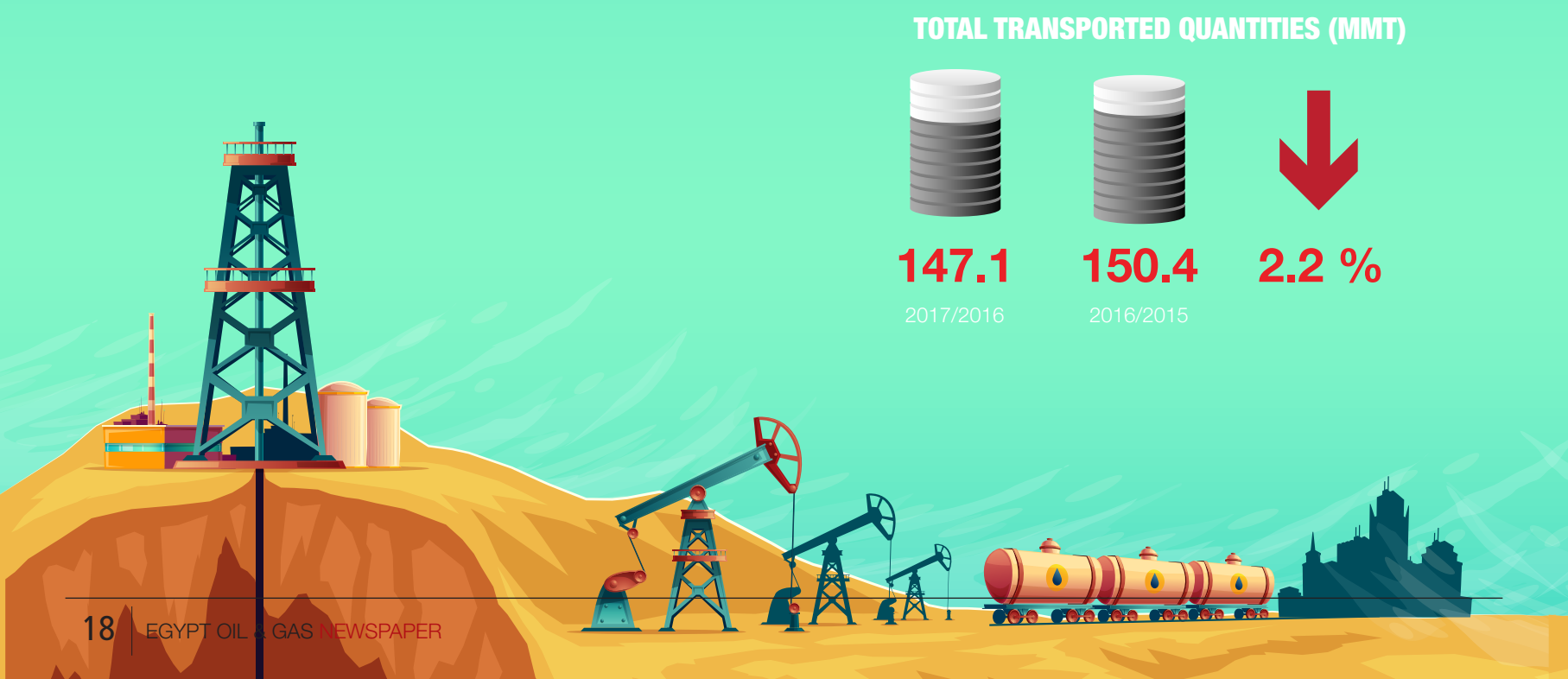
Both pipelines and tankers are used in transporting crude oil, although petroleum pipelines are considered the best channel in some cases - pipelines are better from an economic perspective, if the distance between the wells and the port is long.

There are three types of petroleum pipelines in Egypt. The first type is the main pipelines, which are mainly long pipelines with large diameters. They are buried under the ground or under the sea. This type of pipelines are used to transfer oil or natural gas through high-pressure techniques. These transportation networks include several compressor stations in gas lines or pump stations for crude and multi product pipelines.

The second type is gathering pipelines. These are smaller interconnected pipelines forming complex networks with the purpose of bringing crude oil or natural gas from several nearby wells to a treatment plant or processing facility. In this group, pipelines are usually short - a couple of hundred meters - and with small diameters. In addition, subsea pipelines for collecting product from deep-water production platforms are considered gathering systems.

The third type is distribution pipelines. They are composed of several interconnected pipelines with small diameters, used to take the products to the final consumer. Feeder lines to distribute gas to homes and businesses downstream, additionally pipelines at terminals for distributing products to tanks and storage facilities are included in this group.

The total number of both the main and internal oil pipelines of the Petroleum Pipelines Company (PPC) reached 58 lines with a total length of 5,590 kilometers (km) in 2016/2017. Sumed pipeline is considered the main pipeline, as it is an international crude oil marketing and storage hub. Sumed is a 320 km long. It consists of two parallel lines of 42 inches diameter. Its capacity is 117 million metric ton per year (mmt/y).



PETROLEUM PIPELINES COMPANY (PPC)'S PIPELINES NUMBERS, LENGTHS AND CAPACITIES IN 2016/2017

PIPELINE	NUMBER	LENGTH KM
MAIN PIPELINES		
A: CRUDE OIL	11	1236
B: CONDENSATES	6	501
C: LPG	10	1278
D: PRODUCTS	31	2426
INTERNAL PIPELINES	-	149
TOTAL	58	5590

TRANSFERRED PRODUCTS BY PPC'S PIPELINES IN 2016/2017

PETROLEUM PRODUCT	QUANTITY METRIC TON	PERCENTAGE
CRUDE OIL AND CONDENSATES	**22249**	**39.1%**
MAZUT	**8185**	**14.4%**
DIESEL	**14908**	**26.2%**
GASOLINE 80	**1239**	**2.2%**
GASOLINE 90	**1274**	**2.2%**
GASOLINE 95	**3490**	**6.1%**
LPG	**3894**	**6.9%**
NAPHTHA	**973**	**1.7%**
JET FUEL	**609**	**1.1%**
KEROSENE	**67**	**0.1%**
TOTAL	**56888**	**100%**

TRUCKS

Trucks are mainly used for transferring gasoline, diesel, mazut, and LPG.

TRANSFERRED PRODUCTS BY TRUCKS IN 2016/2017

PETROLEUM PRODUCT	QUANTITY METRIC TON	PERCENTAGE
GASOLINE	**4625**	**25.5%**
DIESEL	**8745**	**48.2%**
MAZUT	**2853**	**15.7%**
LPG	**1920**	**10.6%**
TOTAL	**18143**	**100%**

WATER TRANSPORT UNITS

TRANSFERRED PRODUCTS BY COASTAL TANKERS IN 2016/2017

TANKER	QUANTITY THOUSAND METRIC TON	PERCENTAGE
EL NABILA 5	**603**	**11.2%**
EL SHARIFA 4	**2273**	**42.1%**
EL KESIA	**2516**	**46.7%**
TOTAL	**5392**	**100%**

LEADING INDICATORS

The total cost of transportation of petroleum products in Egypt increased by 6.5%, reaching EGP 19.3 billion in 2016/2017, up from EGP 18.1 billion in 2015/2016. Thus, the total transported quantities of petroleum products by various channels of transportation reached 147.1 mmt in 2016/2017, down from 150.4 mmt in 2015/2016, registering a decline of 2.2%.

It is worth noting that the highest petroleum products quantities were transferred by the Sumed pipeline, as it alone transferred 66.3 mmt in 2016/2017 at a transfer cost of EGP 37 per ton, compared to 65.8 mmt transferred in 2015/2016 at a cost of EGP 36 per ton, recording an increase of 0.7%. Meanwhile, the lowest quantities were transferred by railway tankers, which transferred 414,300 mt of petroleum products in 2016/2017 at a transport cost of EGP 87 per ton, compared to 446,100 tons in 2015/2016 at a cost of EGP 19 per ton—a decline of 7.1%.

Moreover, the total transferred quantities of petroleum products, including crude oil, condensates, and LPG, through the PPC's lines reached 56.9mt in 2016/2017, at a cost of EGP 354, 180, 73, and 256 respectively. Meanwhile, the total transferred quantities through the PPC's lines recorded 61.1 mmt in 2015/2016.

As for trucks, the total quantities transferred by this channel increased by 3.2%, reaching around 18.1 mmt in 2016/2017, up from 17.6 mmt in 2015/2016. The transfer cost by trucks reached EGP 41 per ton in 2016/2017, compared to EGP 45 per ton in 2015/2016. While the transferred crude oil and other petroleum products by coastal tankers reached 5.4 mt in 2016/2017, of which 5.3 mt were crude oil and 0.1 mt were other petroleum products, at a transport cost of EGP 66 per ton.

THE QUANTITIES AND COSTS OF TRANSFERRED PRODUCTS BY DIFFERENT CHANNELS IN 2016/2017

CHANNEL	QUANTITY THOUSAND METRIC TONS	TOTAL COST MILLION EGP
RAILWAY TANKERS	**414.3**	**36.0**
TRUCKS	**18143**	**743.9**
SUMED PIPELINE	**66294**	**2452.9**
CRUDE OIL PIPELINES	**20529**	**3695.2**
CONDENSATES PIPELINES	**1720**	**125.6**
PETROLEUM PRODUCTS PIPELINES	**30745**	**10883.7**
LPG PIPELINES	**3894**	**996.9**
COASTAL TANKERS	**5392**	**355.9**
TOTAL	**147131.3**	**19290.2**

THIS REPORT IS BASED ON CAPMAS' FIGURES.

