

The average prices of various types of crude oil decreased in 2019 as compared with 2018. The continuation of US sanctions on Iran's and Venezuela's exports, the intensification of geopolitical tensions between Iran and the US, the increase in the US oil production, drone strikes against Saudi Aramco facilities, the decision by the OPEC members as well as the non-OPEC countries on the amount of production and crude oil prices, and the China-US trade war were among the most important factors to make the average prices of crude oil fluctuate and stand at lower levels compared with 2018. Accordingly, the prices per barrel of Brent Crude and West Texas Intermediate (WTI) decreased by 9.9 and 12.5 percent compared with 2018, to reach \$64.2 and \$57.0, respectively, in 2019.

Based on the Statistical Review of World Energy published by British Petroleum (BP) in 2020, total world primary energy¹ consumption amounted to 583.9 exajoules (EJ) in 2019, indicating an increase of 1.3 percent compared with the year before. This increase was owing mainly to the rise in consumption by the Asia Pacific countries (especially China, Indonesia, and India), as well as the Middle East and Africa. Of the mentioned 583.9 EJ, 37.6 EJ was consumed by the OPEC member countries and 546.3 EJ was used by non-OPEC countries.

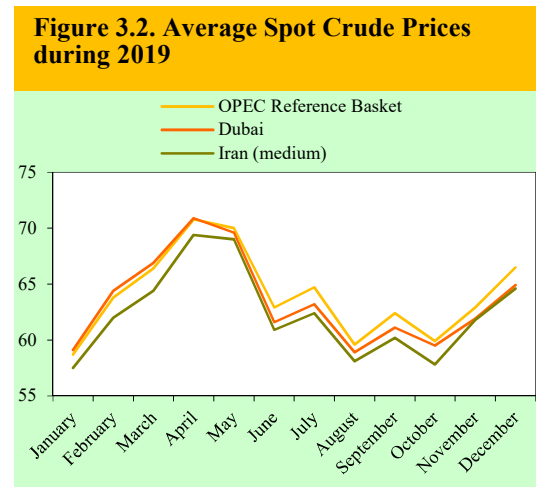
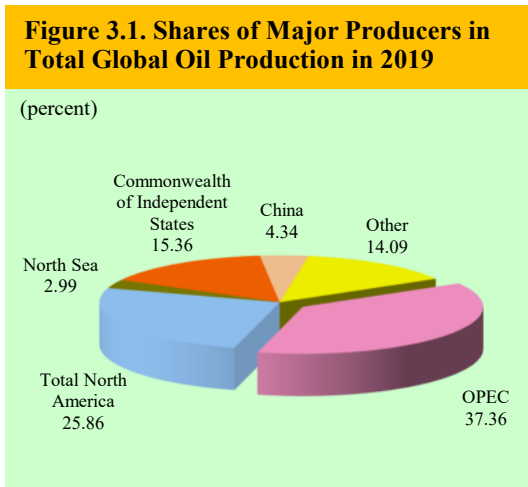
¹ Includes oil, natural gas, coal, hydroelectricity, nuclear energy, and renewables.

Iran's primary energy consumption amounted to 12.3 EJ in 2019, up by 4.3 percent compared with 2018. The main primary energies consumed by Iran include oil and natural gas, while other energies are consumed only sparingly. Global oil production² amounted to 95.2 mb/d in 2019, indicating a decrease of 0.1 percent. Oil production by the OPEC member countries, accounting for 37.4 percent of global oil production, declined by 5.3 percent to 35.6 mb/d. Moreover, global oil consumption³ grew by 0.9 percent to reach 98.3 mb/d⁴. At end-2019, world proved reserves of oil amounted to 1,733.9 billion barrels, showing a decline of 0.1 percent compared with the year before. OPEC members' proved reserves of oil, totaling 1,214.7 billion barrels, accounted for 70.1 percent of global reserves. World proved reserves of natural gas were 198.8 trillion cubic meters, up by 0.9 percent compared with 2018. Global natural gas production increased by 3.4 percent to 3,989.3 billion cubic meters and global natural gas consumption rose by 2.0 percent to 3,929.2 billion cubic meters.

² Includes crude oil, shale oil, oil sands, condensates, and Natural Gas Liquids (NGLs).

³ Inland demand plus international aviation and marine bunkers and refinery fuel and loss. Consumption of biogasoline (such as ethanol), biodiesel and derivatives of coal and natural gas are excluded. Derivatives of coal and natural gas are included.

⁴ Based on the OPEC data, global oil supply and demand were respectively 99.1 and 99.7 mb/d in 2019, not matching the BP figures on global oil production and consumption.



3.1. OPEC

3.1.1. Primary Energy Consumption

Primary energy consumption by OPEC members increased from 36.7 exajoules (EJ) in 2018 to 37.6 EJ in 2019. Oil and natural gas are consumed by member countries largely while others are used sparingly, with the lowest related to the nuclear energy and renewables. Middle East members (including

Saudi Arabia, Iran, Iraq, Kuwait, and the UAE) consumed 32.1 EJ, higher than other members (Venezuela, Ecuador, and Algeria). Iran, with 12.3 EJ, and Saudi Arabia, with 11.0 EJ, ranked first and second among the Middle East members, respectively, in terms of primary energy consumption.

Table 3.1. OPEC Primary Energy Consumption in 2019 by Fuel¹ (Exajoules)

	Oil	Natural gas	Coal	Nuclear energy	Hydroelectricity	Renewables	Total
Middle East	15.1	16.4	0.2	0.1	0.3	0.1	32.1
Saudi Arabia	6.9	4.1	0.0	0.0	0.0	0.02	11.0
Iran	3.9	8.1	0.1	0.1	0.3	0.0	12.3
Iraq	1.5	0.7	0.0	0.0	0.0	0.0	2.2
Kuwait	0.8	0.8	0.0	0.0	0.0	0.0	1.6
United Arab Emirates	2.0	2.7	0.1	0.0	0.0	0.04	4.8
Other members²	2.1	2.6	0.0	0.0	0.8	0.01	5.5
Total	17.2	19.0	0.2	0.1	1.1	0.1	37.6

Source: BP Statistical Review of World Energy 2020. ¹ Excludes Nigeria, Libya, Gabon, Equatorial Guinea, the Republic of Congo, and Angola. ² Includes Venezuela, Algeria, and Ecuador.

3.1.2. Proved Reserves of Oil

At end-2019, proved reserves of oil located in OPEC member countries reached 1,214.7 billion barrels, 0.1 billion barrels lower than 2018 year-end. Among the OPEC member countries, the largest reserves by

303.8 billion barrels belonged to Venezuela, followed by Saudi Arabia with 297.6 billion barrels. Iran, with proved reserves of oil at 155.6 billion barrels, ranked third among OPEC member countries.

Table 3.2. OPEC Proved Reserves of Oil (billion barrels)

	Year-end			Percentage change		Share (percent)	
	2017	2018	2019	2018	2019	2018	2019
Middle East	798.1	797.6	797.5	-0.1	-0.01	65.7	65.7
Saudi Arabia	296.0	297.7	297.6	0.6	-0.03	24.5	24.5
Iran	155.6	155.6	155.6	0.0	0.0	12.8	12.8
Iraq	147.2	145.0	145.0	-1.5	0.0	11.9	11.9
Kuwait	101.5	101.5	101.5	0.0	0.0	8.4	8.4
United Arab Emirates	97.8	97.8	97.8	0.0	0.0	8.1	8.1
Other members¹	416.9	417.2	417.2	0.1	0.0	34.3	34.3
Venezuela	302.8	303.8	303.8	0.3	0.0	25.0	25.0
Total	1,215.0	1,214.8	1,214.7	0.0	-0.01	100.0	100.0

Source: BP Statistical Review of World Energy 2020

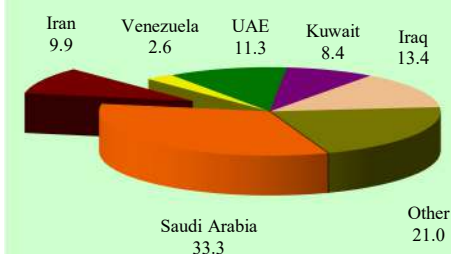
¹ Includes Nigeria, Libya, Algeria, Ecuador, Angola, Gabon, Equatorial Guinea, and the Republic of Congo.

3.1.3. Oil Production

In 2019, the average OPEC oil production decreased by 5.3 percent to reach 35.6 mb/d. This equaled a reduction by 2.0 million b/d. Production by the Middle East members, with a decline of 5.3 percent (about 1.5 million b/d) compared with the year before, totaled 27.1 mb/d. Production by other OPEC members decreased by 5.4 percent compared with 2018, to reach 8.4 mb/d. The highest amount of production was related to Saudi Arabia with 11.8 mb/d, accounting for 33.3 percent of total OPEC oil production.

Figure 3.3. Shares of OPEC Members in Total OPEC Oil Production in 2019

(percent)

**Table 3.3. OPEC Oil Production¹** (million b/d)

	2017	2018	2019	Percentage change		Share (percent)	
				2018	2019	2018	2019
Middle East	28.4	28.7	27.1	1.1	-5.3	76.3	76.3
Saudi Arabia	11.9	12.3	11.8	3.1	-3.5	32.6	33.3
Iran ²	5.0	4.8	3.5	-4.1	-26.4	12.8	9.9
Iraq	4.5	4.6	4.8	2.1	3.2	12.3	13.4
Kuwait	3.0	3.0	3.0	1.3	-1.8	8.1	8.4
United Arab Emirates	3.9	3.9	4.0	0.1	2.2	10.4	11.2
Other members³	9.4	8.9	8.4	-5.4	-5.4	23.7	23.7
Total	37.8	37.6	35.6	-0.5	-5.3	100.0	100.0

Source: BP Statistical Review of World Energy 2020

¹ Includes crude oil, shale oil, oil sands, condensates, and Natural Gas Liquids (NGLs).

² BP data on Iran's oil production are overestimated.

³ Includes Venezuela, Nigeria, Libya, Algeria, Ecuador, Angola, Gabon, Equatorial Guinea, and the Republic of Congo.

3.1.4. Oil Consumption

In 2019, the consumption of oil by OPEC members¹ increased by 2.0 percent to 9.0 mb/d. The highest amount of consumption by 3.8 mb/d was related to Saudi Arabia. Ecuador, with 248.6 thousand barrels a day, accounted for the lowest consumption. Iran's consumption was about 2.0 mb/d, constituting 22.3 percent of total².

3.1.5. Proved Reserves of Natural Gas

OPEC proved reserves of natural gas reached 66.6 trillion cubic meters at the end of 2019, indicating an increase of 0.1 percent compared with the end of 2018. Iran and Saudi Arabia, with 32.0 and 6.0 trillion cubic meters, were the holders of the largest reserves among member countries in the year under review.

Table 3.4. OPEC Oil Consumption¹

(million b/d)

	2017	2018	2019	Percentage change		Share (percent)	
				2018	2019	2018	2019
Middle East	7.8	7.8	8.0	-0.3	2.5	87.9	88.3
Saudi Arabia	3.8	3.8	3.8	-1.8	0.5	42.5	41.9
Iran ²	1.8	1.8	2.0	1.5	10.0	20.7	22.3
Iraq	0.7	0.7	0.7	-2.6	1.7	7.9	7.9
Kuwait	0.4	0.4	0.4	-1.3	-1.7	4.9	4.7
United Arab Emirates	1.0	1.1	1.0	4.4	-1.4	11.9	11.5
Other members³	1.1	1.1	1.1	-2.9	-1.5	12.1	11.7
Total⁴	8.9	8.9	9.0	-0.6	2.0	100.0	100.0

Source: BP Statistical Review of World Energy 2020

¹Inland demand plus international aviation and marine bunkers and refinery fuel and loss. Consumption of biogasoline (such as ethanol), biodiesel and derivatives of coal and natural gas are excluded. Derivatives of coal and natural gas are included. ²Data related to Iran are overestimated. ³Includes Venezuela, Ecuador, and Algeria. ⁴Excludes Nigeria, Libya, Angola, Gabon, Equatorial Guinea, and the Republic of Congo.

Table 3.5. OPEC Proved Reserves of Natural Gas

(trillion cubic meters)

	Year-end			Percentage change		Share (percent)	
	2017	2018	2019	2018	2019	2018	2019
Middle East	48.8	49.1	49.2	0.6	0.2	73.8	73.8
Saudi Arabia	5.7	5.9	6.0	4.3	1.6	8.9	9.0
Iran	31.9	32.0	32.0	0.3	0.0	48.1	48.1
Iraq	3.6	3.5	3.5	-0.4	0.0	5.3	5.3
Kuwait	1.7	1.7	1.7	0.0	0.0	2.5	2.5
United Arab Emirates	5.9	5.9	5.9	0.0	0.0	8.9	8.9
Other members¹	17.4	17.5	17.5	0.0	0.0	26.2	26.2
Total²	66.2	66.5	66.6	0.5	0.1	100.0	100.0

Source: BP Statistical Review of World Energy 2020

¹Includes Venezuela, Nigeria, Libya, and Algeria.

²Excludes Angola, Ecuador, Gabon, Equatorial Guinea, and the Republic of Congo.

¹Excludes Nigeria, Libya, Angola, Gabon, Equatorial Guinea, and the Republic of Congo.

²Estimates released by the BP are higher than the figures published by Iran's Ministry of Petroleum.

3.1.6. Natural Gas Production

Natural gas production¹ by OPEC Middle East members amounted to 449.5 billion cubic meters in 2019, up by 2.3 percent. Iran, with a production of 244.2 billion cubic meters, enjoyed the highest share by 39.3 percent. Saudi Arabia, with a production of 113.6 billion cubic meters and a share of 18.3 percent, ranked second. Total OPEC natural gas production decreased by 0.1 percent to 620.9 billion cubic meters.

3.1.7. Natural Gas Consumption

OPEC natural gas consumption amounted to 529.0 billion cubic meters in 2019, indicating an increase of 1.3 percent compared with 2018. Consumption of natural gas by the Middle East members reached 456.7 billion cubic meters, constituting a share of 86.3 percent of total natural gas consumption, which was 0.8 percentage point higher than the figure of the year before (85.5 percent).

Table 3.6. OPEC Natural Gas Production

(billion cubic meters)

	2017	2018	2019	Percentage change		Share (percent)	
				2018	2019	2018	2019
Middle East	417.5	439.2	449.5	5.2	2.3	70.7	72.4
Saudi Arabia	109.3	112.1	113.6	2.6	1.4	18.0	18.3
Iran	219.5	238.3	244.2	8.6	2.4	38.4	39.3
Iraq	10.1	10.6	10.8	4.5	1.9	1.7	1.7
Kuwait	16.2	16.9	18.4	3.7	9.2	2.7	3.0
United Arab Emirates	62.4	61.4	62.5	-1.6	1.9	9.9	10.1
Other members¹	187.4	182.0	171.4	-2.9	-5.8	29.3	27.6
Total²	604.9	621.2	620.9	2.7	-0.1	100.0	100.0

Source: BP Statistical Review of World Energy 2020. ¹ Includes Venezuela, Nigeria, Libya, and Algeria. ² Excludes Angola, Ecuador, Gabon, Equatorial Guinea, and the Republic of Congo.

Table 3.7. OPEC Natural Gas Consumption

(billion cubic meters)

	2017	2018	2019	Percentage change		Share (percent)	
				2018	2019	2018	2019
Middle East	425.5	446.4	456.7	4.9	2.3	85.5	86.3
Saudi Arabia	109.3	112.1	113.6	2.6	1.4	21.5	21.5
Iran	209.1	224.1	223.6	7.2	-0.2	42.9	42.3
Iraq	11.4	14.6	19.9	27.8	36.5	2.8	3.8
Kuwait	21.0	21.2	23.5	0.6	11.2	4.1	4.4
United Arab Emirates	74.7	74.4	76.0	-0.4	2.2	14.2	14.4
Other members¹	78.9	75.7	72.3	-4.0	-4.5	14.5	13.7
Total²	504.4	522.1	529.0	3.5	1.3	100.0	100.0

Source: BP Statistical Review of World Energy 2020. ¹ Includes Venezuela, Algeria, and Ecuador. ² Excludes Nigeria, Libya, Angola, Gabon, Equatorial Guinea, and the Republic of Congo.

¹ Excludes gas flared or recycled. Includes natural gas produced for gas-to-liquids transformation.

3.2. Iran

3.2.1. Natural Gas

With the development of gas supply infrastructure in urban and rural areas, domestic consumption of natural gas rose 3.1 percent to 215.4 billion cubic meters in 2019/20. The shares of "residential, commercial, and industrial sectors", "power plants", and "major industries" in total consumption were 52.3, 28.2 and 19.5 percent, respectively.

3.2.2. Electricity

In 2019/20, Iran's electricity generation increased by 5.0 percent to 326.4 billion kWh. Of total generated electricity, 176.5 billion kWh (54.1 percent) was related to the private sector's power plants, 144.1 billion kWh (44.1 percent) belonged to the Ministry of Energy, and 5.9 billion kWh (1.8 percent) was related to large industries.

The highest amount of generated electricity by 106.3 billion kWh was related to the combined cycle power plants affiliated to the private sector, followed by steam power plants affiliated to the Ministry of Energy (60.6 billion kWh), constituting

32.6 and 18.6 percent of total electricity generation by power plants, respectively. The amount of electricity generated by power plants affiliated to the Ministry of Energy experienced an increase of 10.1 percent compared with the year before and the amount of electricity generated by the private sector rose by 0.8 percent. The increase in electricity generation by the power plants affiliated to the Ministry of Energy was mainly due to a rise of 94.5 percent (an increase of 15.1 billion kWh) in electricity generation by hydroelectric power plants. Meanwhile, electricity consumption amounted to 275.1 billion kWh, indicating an increase of 5.3 percent compared with the year before. The industrial and commercial sectors experienced the highest increases in consumption by 11.1 and 9.6 percent, respectively. Public, street lighting, residential, and agriculture sectors indicated rises of 7.3, 5.7, 1.0 and -1.4 percent, respectively, compared with 2018/19. Industrial and residential sectors enjoyed the highest shares in consumption by respectively 35.3 and 32.2 percent.