Statistics report

Oil Information

Overview

2020

IEA

Introduction and highlights

This overview summarises the key messages from the *Oil Information* data set. It is the result of a yearlong team effort by colleagues in the Energy Data Centre of the International Energy Agency in coordination with representatives in OECD member countries and in other countries worldwide, providing the definitive set of energy data for the world. These data are used not only by IEA analysts but also by energy ministries, businesses, journalists, students and many others.

Some of the main messages from the overview are:

- The gap between global demand and supply of oil narrowed slightly in 2019, with the modest increase in oil demand outpacing the increase in production of liquids. However, there was significant regional variation, with demand falling and supply rising in the OECD, and the opposite taking place in non-OECD countries.

- The increase in world oil production was driven by the United States, where production rose by 10.9% compared to 2018 levels. In 2019, the United States remained the world's top producer (800 Mt, 18.5 Mb/d), followed by the Russian Federation (560 Mt, 11.6 Mb/d) and Saudi Arabia (546 Mt, 11.7 Mb/d). Canada (283 Mt, 5.7 Mb/d) and Iraq (234 Mt, 4.8 Mb/d) round out the top 4 and 5, with the People's Republic of China (201 Mt, 4.0 Mb/d) displacing Iran as the world's sixth largest producer.

- Refinery output increased in Asia by 2.7% in 2018 compared to 2017 (+50 Mt, +1.1 Mb/d), driven by growth in Chinese output (+6.2%, +35 Mt, +751 kb/d). Overall the region accounted for about 45% of global refinery output in 2018, up from 26% in 1990. Despite the strong growth in Chinese refinery output, the United States continued to be the world's largest refiner in 2018, with y-o-y growth of 2.2% (+18 Mt, +401 kb/d), followed by China, the Russian Federation, India and Korea.

- In 2018, China surpassed the United States to become the world's largest importer of crude and NGL (+10% y-o-y, +42 Mt), while the latter's imports of primary oil markedly decreased (-2.7% y-o-y, -11 Mt) for the first time since 2014 amidst sustained growth in domestic production (+15%). Preliminary data for the United States show this trend continuing on to 2019, with

further increases in domestic production (+11%) coinciding with a stronger decrease in imports of primary oil products (-11%).

- In the OECD, disaggregated fuel data show a general switch from the use of residual fuel oil to marine gas/diesel oil in international marine bunkers, a trend that will become more pronounced as more stringent regulations from the International Maritime Organisation (IMO) roll out, mandating the marine sector to switch to lower sulphur fuels beginning on 1 January 2020 to slash emissions in international waters.

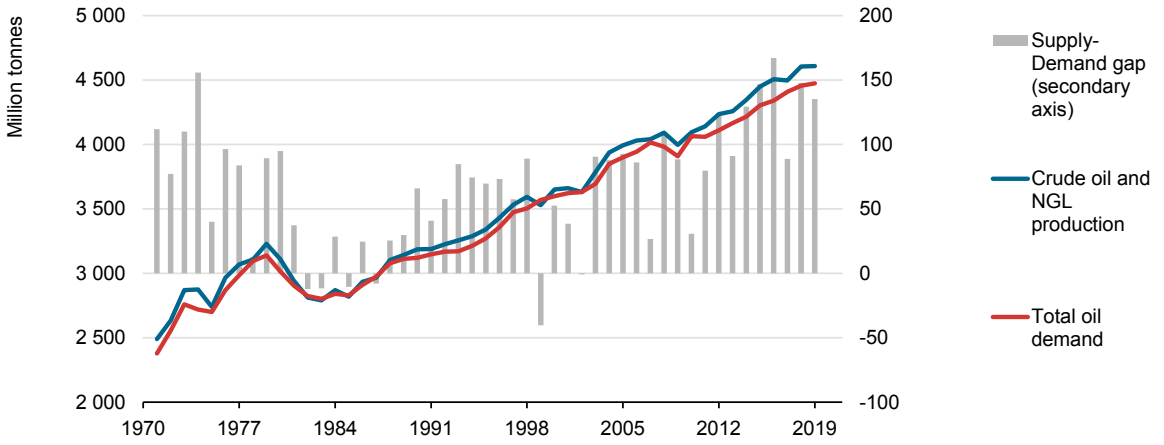
- In 2018, oil demand grew in the United States (+2.0%, +17 Mt, +528 kb/d), which remained the world's largest consumer, followed by the People's Republic of China (+4.1%, 24 Mt, +512 kb/d) and India (+3.6%, +8 Mt, +211 kb/d). Non-OECD countries continued to represent the largest share of world oil demand (53% in 2018, slightly up from 2017 at 52%). While the non-OECD Europe and Eurasia region and Africa both saw growth in oil demand (+0.2% and +4.3% respectively), demand fell in the non-OECD Americas region by 1.6%, driven by sharp declines in Venezuela (-10%, -2.5 Mt, -55 kb/d) as well as in Brazil and Argentina (-2% and -4%, respectively).

- Preliminary data for 2019 show that oil demand in the United States fell slightly by 0.4% (-3.2 Mt, -333 kb/d), decreasing for the first time since 2012. Overall, the United States accounted for almost 20% of global oil demand in 2019. Increases in demand were observed in the U.S. for aviation fuels and other oil products, a significant portion of which are typical petrochemical feedstock with ethane, LPG and naphtha constituting 47% of these other oil products in 2019. At the same time, demand for middle distillates, motor gasoline and residual fuel oil declined due largely to improved fuel economy.

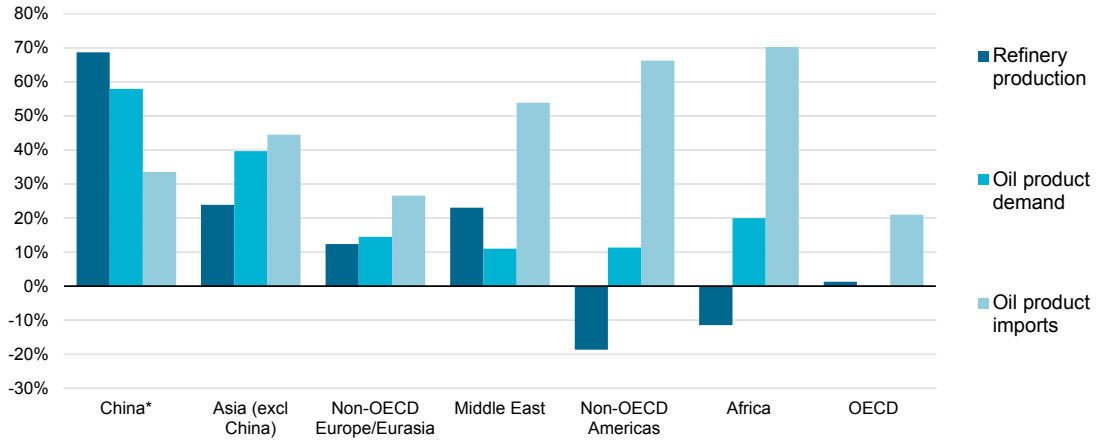
Oil overview

The gap between global demand and supply of oil narrowed slightly in 2019, with the modest increase in oil demand outpacing the increase in production of liquids. Opposite trends were observed in the OECD and non-OECD: While the OECD saw robust increases, Middle Eastern, Latin American and Asian (excluding China) production of liquids declined; conversely, oil demand decreased within the OECD for the first time since 2014 while that of the non-OECD, in particular Asian markets, continued to rise.

World oil supply and demand



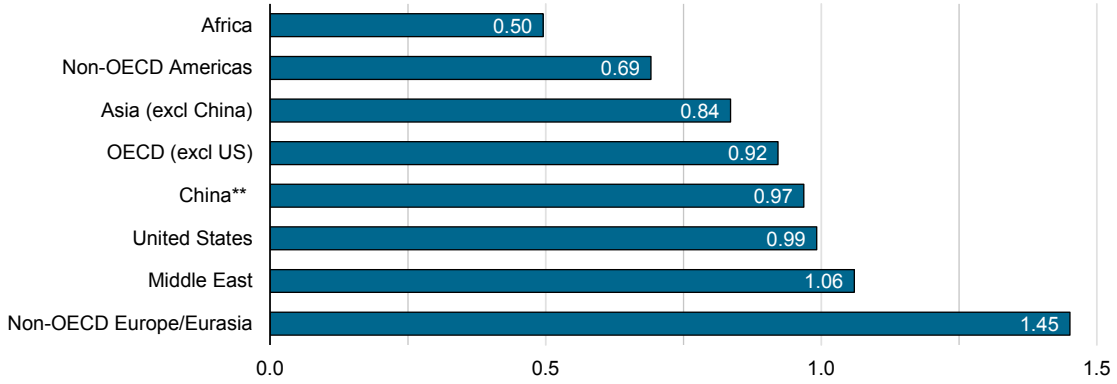
World refinery output, oil product demand and oil product imports growth between 2009 and 2018



* China includes (the People's Republic of) China; Hong Kong, China

Over the period 2009 to 2018, refinery output in Asia, the Middle East and non-OECD Europe and Eurasia increased while oil demand grew across all non-OECD regions. In Asia (excluding China) and non-OECD Europe and Eurasia, oil product demand increased at a faster rate than refinery production and demand was therefore met by imports. Similarly, Africa and non-OECD Americas relied on imports of refined products as refinery output has not kept pace with demand growth over this period. In the Middle East, despite the increase in refinery output surpassing the growth in demand, imports of refined products rose significantly over this same period. Meanwhile in the OECD, imports of refined products soared amidst a slight increase in refinery output (+1.3%) and virtually unchanged oil product demand.

Ratio of refinery output over oil product* demand – 2018



* Total motor gasoline includes motor gasoline, jet gasoline and aviation gasoline. Other products include white spirit, lubricants, bitumen, paraffin waxes, petroleum coke and other oil products.

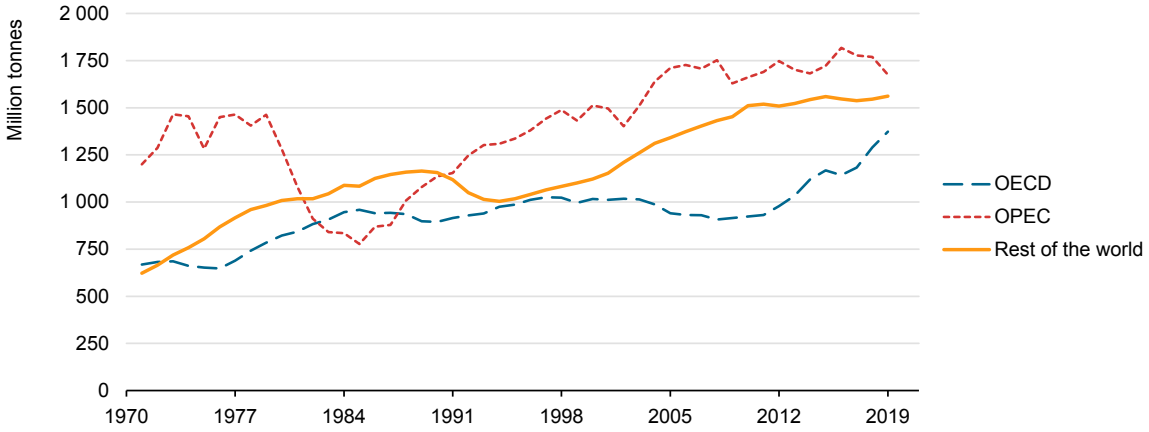
** China includes (the People's Republic of) China; Hong Kong, China.

In 2018, refinery output in non-OECD Europe and Eurasia and the Middle East exceeded oil product demand while the United States and China inched close to this. Africa, non-OECD Americas, Asia and the rest of the OECD's oil product demand continued to outpace refinery output and was met by imports of refined products.

Oil supply

In 2019[1], world oil production stood at 98.1 Mb/d, slightly up from the 2018 daily production level of 97.7 Mb/d. Production increased in the OECD (+6.5%, +83 Mt, +1.9 Mb/d) counteracting declines in OPEC[2] (-5.3%, -93.9 Mt, -1.9 Mb/d). Elsewhere, production increased moderately (+1.0%, +15 Mt, +0.4 Mb/d).

World oil production by region



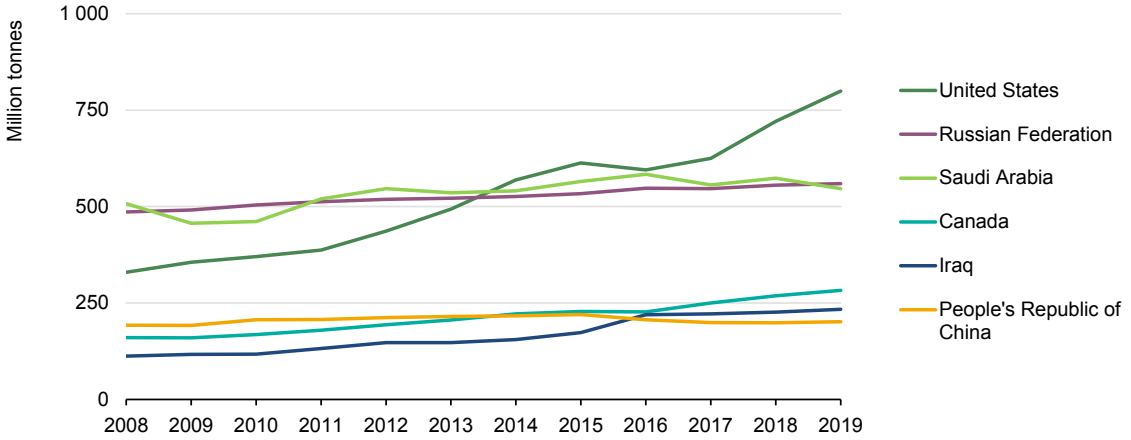
This increase in world oil production was driven by the United States, where production rose by 10.9% compared to 2018 levels. As such, the United States remained the world's top producer (800 Mt, 18.5 Mb/d), followed by the Russian Federation (560 Mt, 11.6 Mb/d) then Saudi Arabia in third place[3] (546 Mt, 11.7 Mb/d). Canada (283 Mt, 5.7 Mb/d) and Iraq (234 Mt, 4.8 Mb/d) remained at top 4 and 5, respectively. The People's Republic of China (201 Mt, 4.0 Mb/d) overtook Iran as the world's sixth largest producer, as production in the latter fell by 29% in 2019.

[1] All energy data for 2019 are provisional.

[2] OPEC includes data for the Republic of Congo that became a full member of OPEC on 22 June 2018. Data for Qatar that terminated its membership on 1 January 2019 are not included in the OPEC aggregate but are available separately.

[3] In volume units, Saudi Arabia was the world's second top producer in 2019.

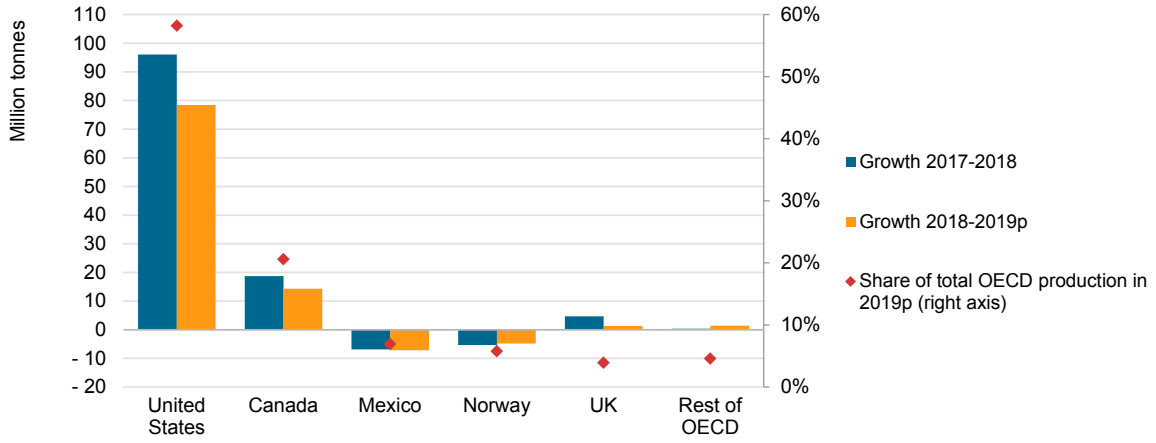
Crude and NGL production in the world's top six producers



At the OECD level, production notably declined in Mexico and Norway (-7.0% and -5.7% y-o-y, respectively) but was far outweighed by the output increase in the United States and Canada (+11% and +5% y-o-y, respectively). As a result, OECD production of oil accounted for 30% of world production in 2019, up from 28% in the previous year.

Although the increase in output in 2019/18 was lower than in 2018/17, United States output reached new record levels in 2019. Crude oil production in the country has increased significantly over the past decade driven by increased production in the Permian basin, as well as new projects coming online in the Gulf of Mexico since 2016.

Change in OECD oil production by main producing countries



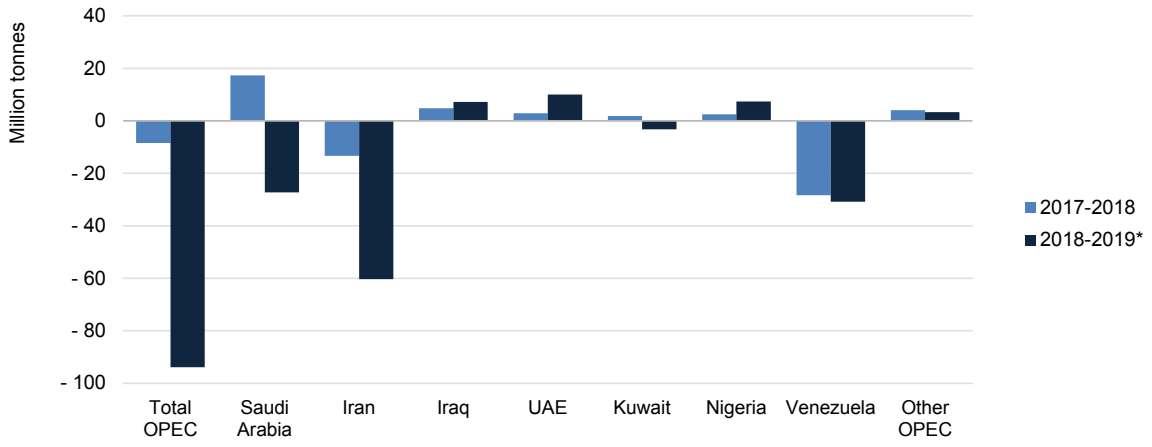
Canadian supply growth was driven by continued strong growth in oil sands output (+5.1%) and modest increase in conventional crude oil and condensate production, supported by an increase in shipments by rail as available pipeline capacity remained limited.

Elsewhere in the OECD, production also increased in Australia (+17% y-o-y), with additional condensate and NGLs production from new LNG projects, and in the United Kingdom (+2.5% y-o-y) as robust production in the North Sea continued in 2019.

Overall production in the North Sea[4] basin declined by 3.0% in 2019 compared to 2018, as the decrease in Norwegian production outweighed the gains in the United Kingdom. This is the third consecutive year of decline marking a return to negative growth after gains from 2015 to 2016.

Outside the OECD, production in OPEC declined by 5.3% in 2019 following the Organization's decision in January 2019 to enact supply cuts, alongside some non-OPEC members. Saudi Arabia delivered substantial cuts (-4.8% y-o-y) and production was further disrupted after attacks on its oil facilities in September 2019. Steeper losses were observed in Iran (-29%), due to sanctions, and in Venezuela (36%), due to political and economic turmoil. These losses were more than sufficient to overcome the solid gains in production in Iraq (+3.2%), the United Arab Emirates (+5.6%), Nigeria (+7.7%) and Libya (+12.7%).

Change in OPEC production

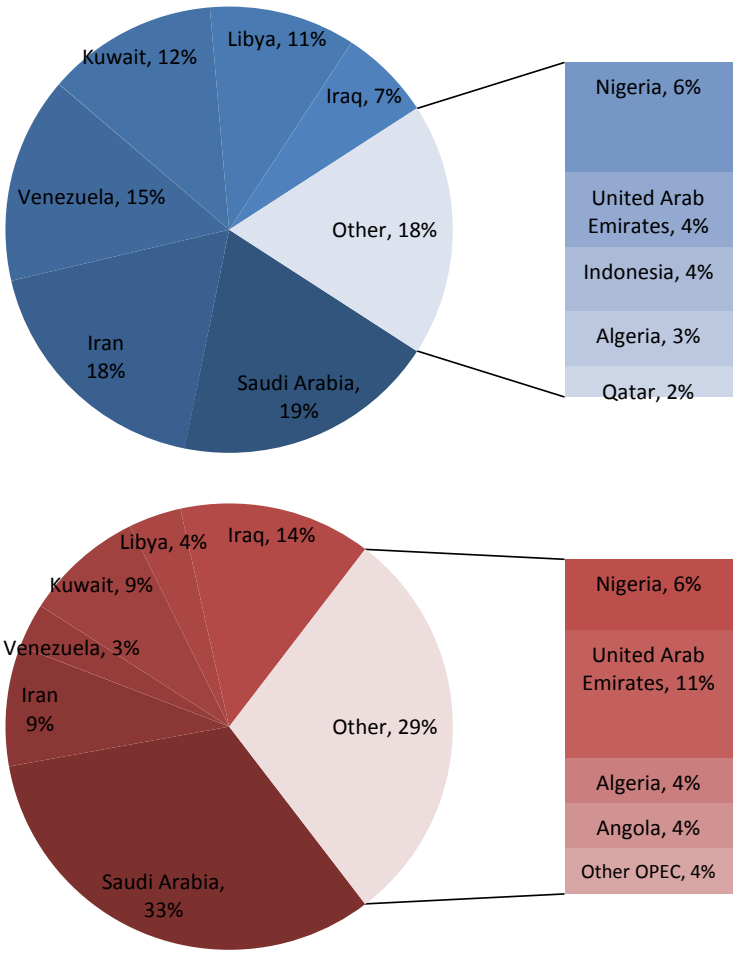


* IEA Secretariat estimates.

[4] Includes: Denmark, Germany, Iceland, Ireland, Netherlands, Norway and the United Kingdom.

The shares of oil production among the OPEC members in 2019 have changed compared to those comprising the Organisation in 1971. Among the 1971 members, Saudi Arabia and Iraq's shares in oil production in 2019 have grown substantially while those of Iran, Venezuela and Libya have diminished.

OPEC* oil production and composition in 1971 and 2019**



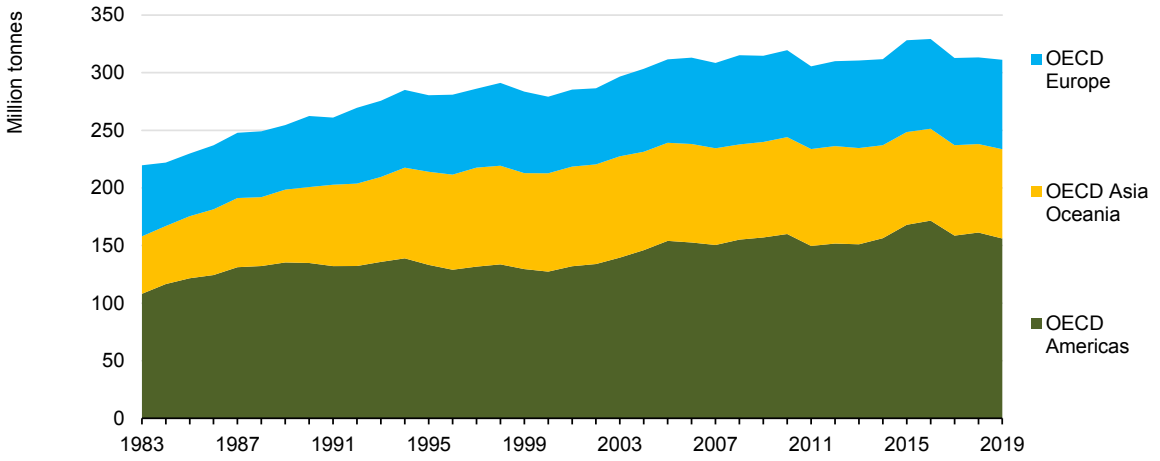
* In the AOSWORLD database, the country item referred to here is "Memo: OPEC Historical Composition."
** IEA Secretariat estimates.
Note: Other OPEC in 2019 includes Ecuador, Congo, Equatorial Guinea and Gabon.

At the end of 2019, closing stocks of primary oil products in the OECD decreased by 0.7% compared to end of 2018 levels and stood at 311 Mt. The overall stock draw was driven by the OECD Americas, where stocks stood at 156 Mt and decreased by 3.2% y-o-y, mainly in Mexico (-1.5 Mt) and the United States (-4.0 Mt).

The OECD Asia Oceania and the OECD Europe built stocks, both standing at the same closing stock level of 78 Mt at the end of 2019, equivalent to y-o-y increases of 0.9% and 3.2%, respectively.

As the new coronavirus (COVID-19) crisis rattled the global oil market, monthly oil data[5] revealed that between December 2019 and April 2020, the OECD had built stocks of primary oil products (+19.8 Mt) as oil demand weakened.

OECD closing stocks of primary oil products*



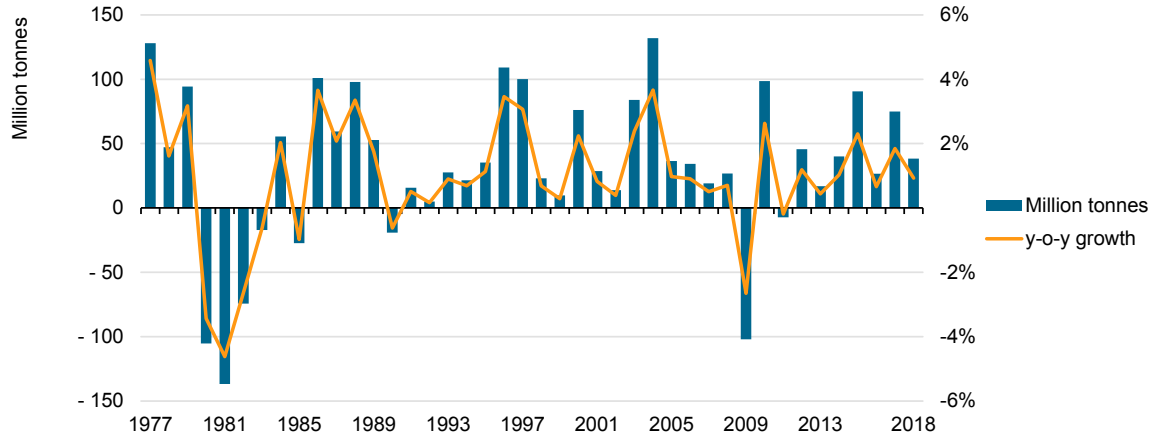
* Includes crude oil, natural gas liquids, refinery feedstocks, additives/oxygenates and other hydrocarbons.

Refining

In 2018, world refinery output, excluding liquid biofuel components, increased modestly by 0.9% (+38 Mt, +0.8 Mb/d).

[5] The IEA Monthly Oil Data Service provides a detailed database of historical and projected information used in preparing the monthly IEA's Oil Market Report (OMR). For more information, please refer to https://www.iea.org/monthly-oil-data-service.

World refinery output annual change



Refinery output increased in Asia by 2.7% in 2018 compared to 2017 (+50 Mt, +1.1 Mb/d), driven by growth in Chinese output (+6.2%). Overall the region accounted for about 45% of global refinery output in 2018, up from 26% in 1990.

The only regions where refinery output decreased[6] in 2018 were the OECD Europe (-1.8%) and non-OECD Americas region (-4.1%). Most of the decline in the OECD Europe was brought about by reductions in Germany by 94 kb/d (-4.4% y-o-y) and in Italy by 64 kb/d (-4.3% y-o-y). In the non-OECD Americas region, the decline was attributable to Venezuela, where refinery output in 2018 fell by 111 kb/d (-16% y-o-y).

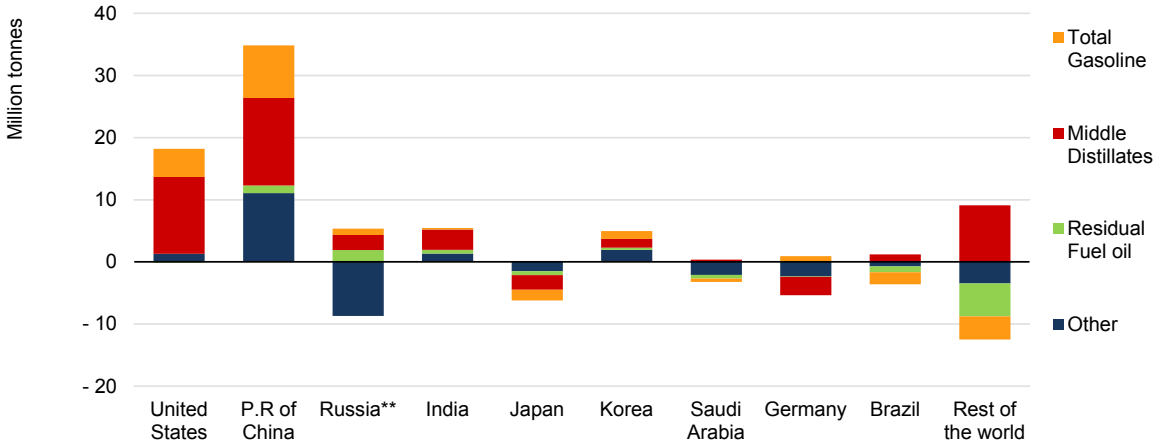
While Africa is the world's largest net importer of refined products, with refinery output covering less than half of demand, refinery output increased in 2018 by 1.8% (+1.7 Mt, +34 kb/d) compared to 2017. This marked the first year of increase in refinery output since 2014 and was led by growths in Algeria (+37 kb/d, +6% y-o-y) as Sonatrach acquired the Augusta refinery in Italy to supply its domestic market.

Despite the strong growth in Chinese refinery output (+6.2%, +35 Mt, +751 kb/d) in 2018, the United States continued to be the world's largest refiner, with y-o-y growth of 2.2% (+18 Mt, +401 kb/d). China was thus the world's second largest refiner, followed by the Russian Federation[7], India and Korea.

[6] Refinery gas data for Russia are not available in 2018. This affects the refinery output trend seen in the database for the country as well as in non-OECD Europe and other regional aggregates in which it is part of.

[7] Refinery gas data for Russia are not available in 2018. This affects the refinery output trend seen in the database for the country as well as in non-OECD Europe and other regional aggregates in which it is part of.

World refinery output* growth between 2017 and 2018: main refining countries



* Total gasoline includes motor gasoline, jet gasoline and aviation gasoline. Middle distillates include gas/diesel oil, jet kerosene and other kerosene. Else, except fuel oil, included under Other.

** Refinery gas data for Russia are not available in 2018. This affects the refinery output trend seen in the database for the country as well as in non-OECD Europe and other regional aggregates in which it is part of.

Note: In addition to refinery production, Saudi Arabia produces a large amount of refined products in gas separation plants. This production is not included in refinery output.

Growth in the United States was driven by middle distillates output, in particular gas/diesel oil output grew by 3.1% y-o-y in 2018. However, preliminary data show gas/diesel oil output contracted slightly in 2019 by 0.6% compared to 2018 levels.

Chinese refinery output growth was underpinned by strong output of all oil products in 2018, with a growth rate of 6.3%[8] across the board except for refinery gas, which increased by 3.5%.

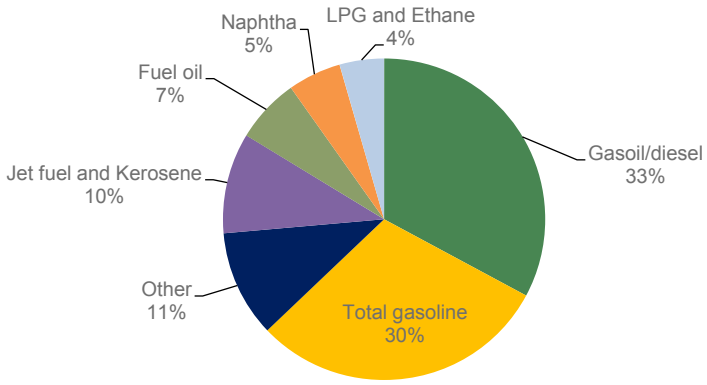
Refinery output of residual fuel oil continued to decline globally in 2018 but at a slower rate (-0.7%, -3.1 Mt) than seen in 2017 (-1.6%). The main driver of this slower decline was the Russian Federation, which, after three consecutive years of decrease in output of residual fuel oil, saw a rebound of +3.4% (+1.9 Mt) in 2018 as the country maintained its position as the world's top fuel oil exporter.

In non-OECD countries, the shift in refinery output towards higher value-added items in 2018 was evident, with production of middle distillates increasing robustly by 31 Mt compared to 2017 levels, with gas/diesel oil (excluding biofuels) accounting for 75% of this growth.

[8] IEA Secretariat estimate.

In 2019, OECD refinery output declined slightly (-0.2%) compared to 2018. Both the OECD Asia Oceania and OECD Europe regions recorded declines (-0.7% and -0.9% y-o-y, respectively), led mainly by France (-9.2%, -5.1 Mt) and Japan (-2.3%, -3.5 Mt). The rather strong decrease in refinery output in the United States (-1.4%, -11.7 Mt) in 2019 was counteracted by strong increase in output in Canada[9] (+17.5%, +16 Mt), resulting in an overall y-o-y growth in the OECD Americas (+0.4%).

OECD refinery yield by product* in 2019



* LPG and ethane include refinery gas. Total motor gasoline includes motor gasoline, jet gasoline and aviation gasoline. Other oil products include white spirit, lubricants, bitumen, paraffin waxes, petroleum coke and other oil products.

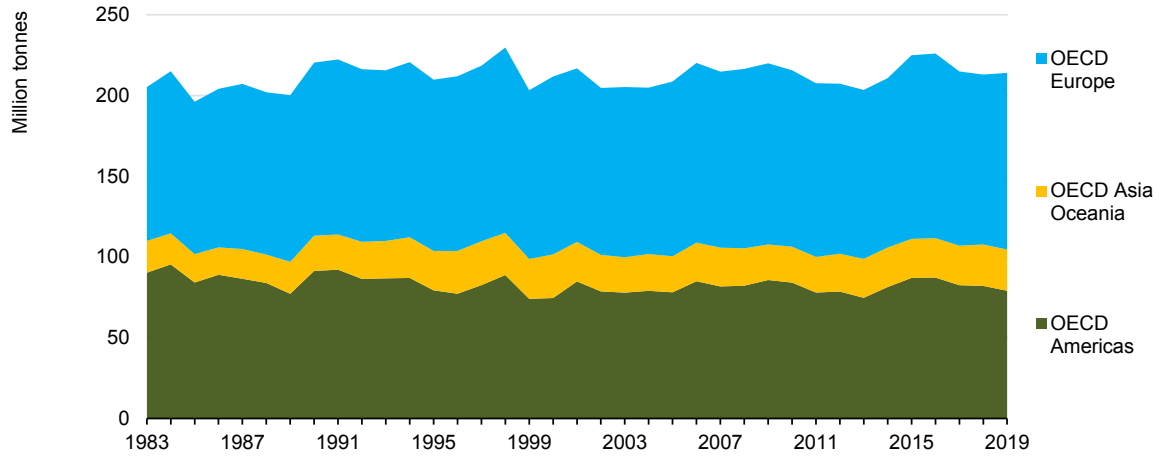
Most of the outputs from OECD refineries in 2019 were gas/diesel oil and motor gasoline. However, refinery output of other oil products recorded the strongest increase y-o-y at 12% (+15 Mt).

Despite the slight overall decline in refinery activity in the OECD, closing stocks of oil products at the end of 2019 stood at 214 Mt, higher than at the end of 2018. The resulting stock build of 1.0 Mt in the OECD was mostly driven by a strong increase in transfers[10] of oil products within the OECD Europe (+14.7%, +1.9 Mt).

[9] Due to the new Monthly Refined Petroleum Products survey launched by the Canadian administration in 2019, which includes greater coverage of all products, there are breaks in the time series between 2018 and 2019. Please see the oil documentation country notes for more details.

[10] Transfers of oil products refer to finished products which have been reclassified and re-entered for use in a refinery without having been delivered to final consumers. These include transfers between products which are reclassified after blending and primary product receipts.

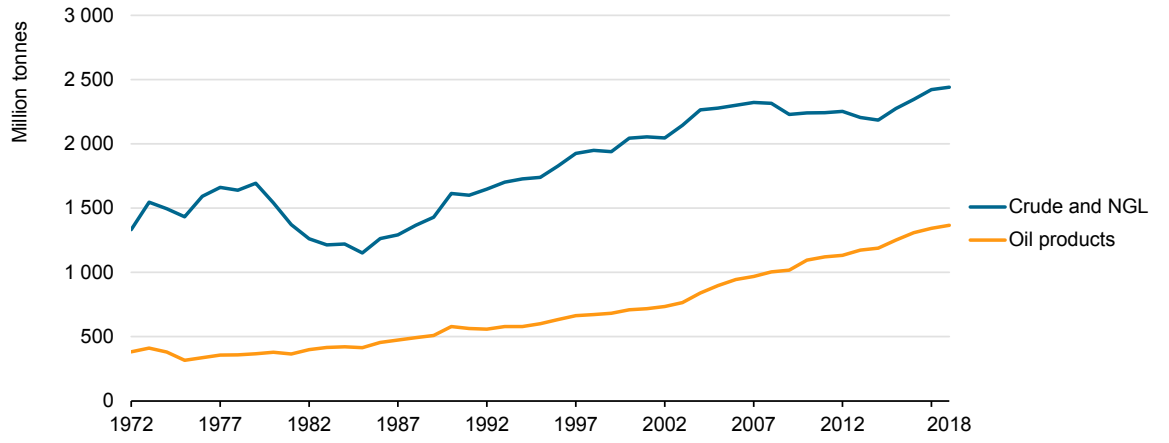
OECD closing stocks of oil products



Trade

In 2018, trade of oil products and of crude oil and NGL[11] both increased from 2017. Global crude and NGL imports increased modestly by 0.8% y-o-y, whilst exports increased by 2.6%. This marked the fourth consecutive year of increases in imports of primary oil. However, growth in imports of oil products outpaced that of primary oil (+1.9% y-o-y). Exports of oil products grew by 0.7% in 2018 compared to 2017.

World imports of primary and secondary oil products



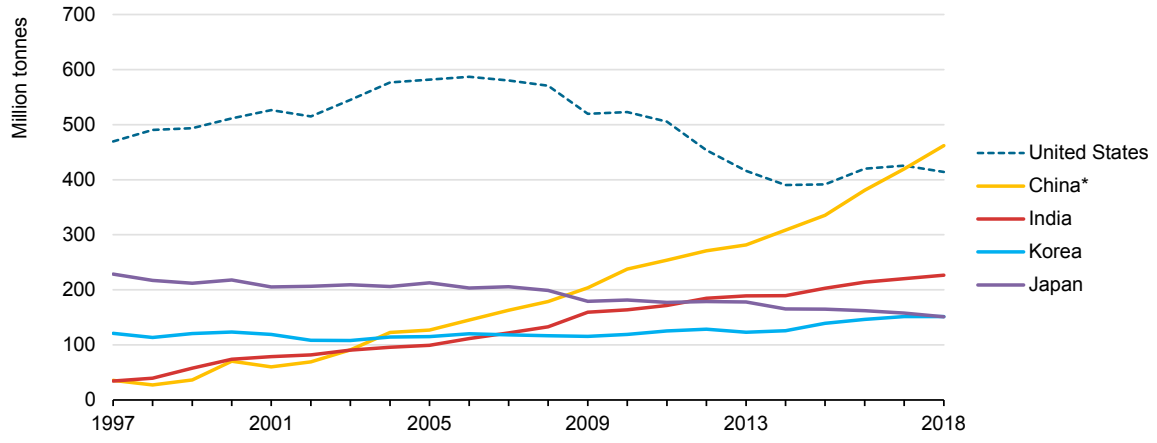
[11] Includes crude oil, NGL, refinery feedstocks, additives/oxygenates and other hydrocarbons.

Imports of crude and NGL into non-OECD countries in 2018 remained strong compared to 2017 levels, buoyed by firm growth in Asia excluding China (+2.1%), Americas (+2.1%) and Africa (+3.4%). On the contrary, imports of crude and NGL into the OECD fell by 2.3% with all regions showing comparable declines.

In 2018, China surpassed the United States to become the world's largest importer of crude and NGL (+10% y-o-y, +42 Mt), while the latter's imports of primary oil markedly decreased (-2.7% y-o-y, -11 Mt) for the first time since 2014 amidst sustained growth in domestic production (+15%). Preliminary data for the United States show this trend continuing on to 2019, with further increases in domestic production (+11%) coinciding with a stronger decrease in imports of primary oil products (-11%).

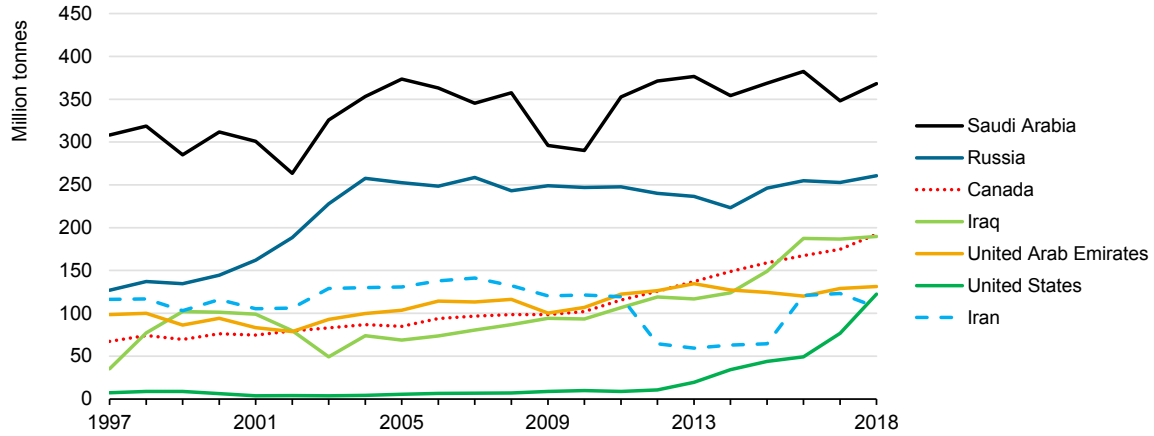
India maintained its third position among the world's top importers of crude and NGL combined, reaching a new historical high of 226 Mt (4.6 Mb/d) in 2018, as refinery activity continued to increase in the country. Meanwhile, Korean primary oil imports stayed practically flat in 2018, which was nevertheless sufficient for the country to take fourth place, overtaking Japan whose primary oil imports continued to decline in 2018 (-4.3%).

Crude and NGL imports: world's top importers



* China includes the (People's Republic of) China; Hong Kong, China.

Crude and NGL exports; world's top exporters

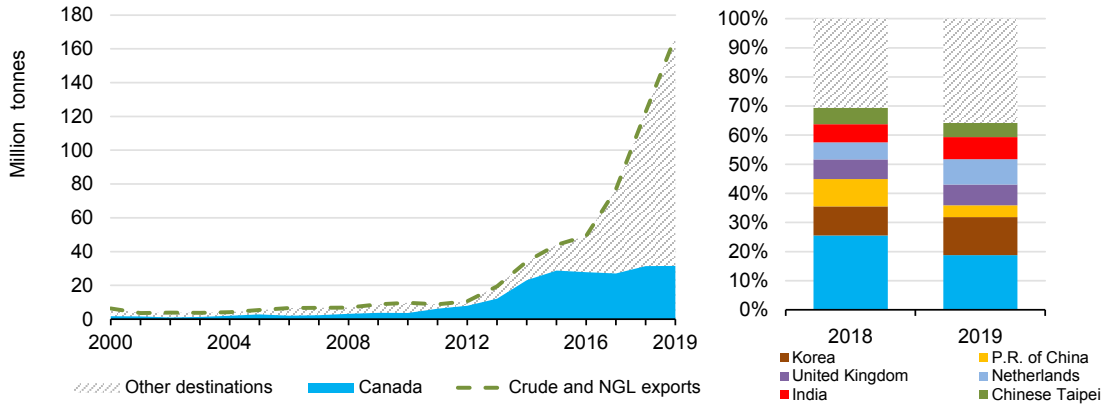


OPEC's share of world crude and NGL exports further decreased in 2018 compared to the previous year and stood at 52.5%. Overall, exports of crude and NGL from OPEC countries saw little change in 2018. The increase in exports in Saudi Arabia (+5.8%, +404 kb/d) were mainly offset by large cuts observed in Iranian (-13%) and Venezuelan (-20%) exports.

Saudi Arabia remained the world's largest exporter of crude and NGL, exporting 7.4 Mb/d in 2018, followed by Russia (5.3 Mb/d), Canada (3.9 Mb/d) and Iraq (3.9 Mb/d). Of the world's top 5 exporters, Canadian export volumes exhibited the strongest y-o-y increase (+10%), with preliminary 2019 data showing a further increase of 2.5%. Iran was displaced two spots by the United Arab Emirates (2.8 Mb/d) and the United States (2.6 Mb/d), whose exports of primary oil products soared by 60% in 2018.

In 2018, Russia remained the top crude oil supplier to OECD Europe accounting for a share of 26.5%, followed by Norway, Iraq and several countries (including Nigeria, Saudi Arabia, Kazakhstan and Libya) filling in lost Iranian volumes. Preliminary 2019 data show a further decrease in Iranian share of exports to OECD Europe as other players such as the United States, the United Kingdom and Azerbaijan gained larger parts. Meanwhile Saudi Arabia continued to be the main exporter to OECD Asia Oceania through 2019, with the United States acquiring higher export shares to the region, growing from 3.6% in 2018 to 7.0% in 2019, according to preliminary data.

United States crude and NGL exports

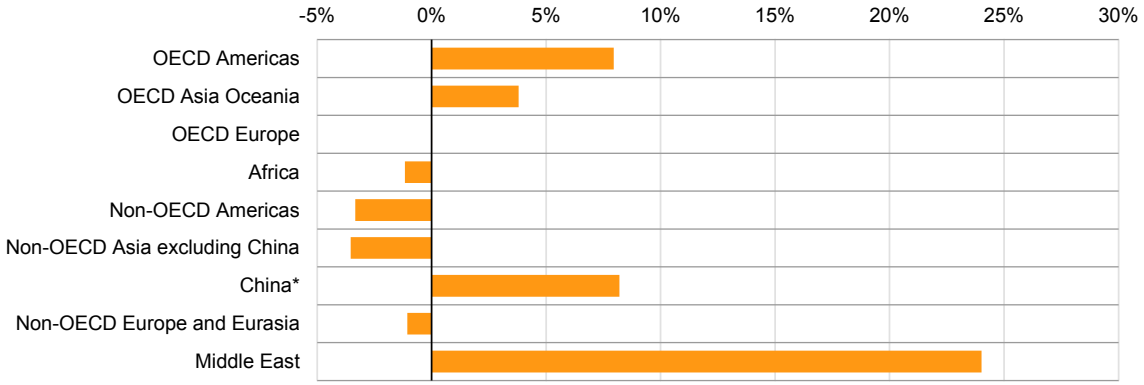


* China includes (the People's Republic of) China; Hong Kong, China.

The United States moved up from the 10th to the 6th position among the top global crude and NGL exporters in 2018. U.S. exports of crude oil and NGL grew by 60% from 2017 to 2018, and continued to increase through 2019 albeit at a slower rate (+36.4%) according to provisional data. Most of these new volumes have been exported to Asian markets. In particular, exports to Korea and India in 2019 grew significantly by 80% and 66% y-o-y, respectively; nevertheless, exports to China fell by 42%, with some of these volumes taken by Chinese Taipei. Canada remained as the top destination of U.S. crude and NGL despite seeing only a marginal increase in export volumes in 2019.

In 2018, imports of oil products surged in the Middle East, driven by higher y-o-y imports into Saudi Arabia (+71%, +18 Mt). Imports of oil products into the OECD Americas further increased in 2018, supporting higher refinery activity to meet increased domestic demand. The OECD Asia Oceania and China's imports of oil products also continued to increase while other regions saw declines. The OECD Europe was the only region whose oil product imports remained stable in 2018 compared to 2017 levels.

World imports of products; regional growth 2017-2018



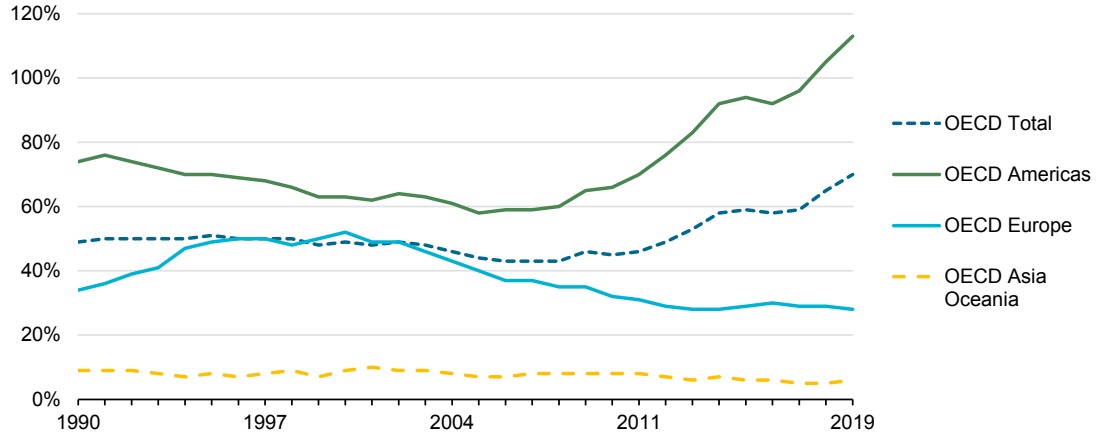
* China includes (the People's Republic of) China; Hong Kong, China.

Self-sufficiency

OECD oil self-sufficiency[12] increased in 2019, driven by an increase in self-sufficiency in the OECD Americas region, owing to strong increase production in the United States and Canada. In particular, the United States went from production covering 85% of domestic supply to 96% in the space of a year. As a result, the region continued to be self-sufficient in 2019. Self-sufficiency in the import-dependent regions of OECD Asia Oceania and OECD Europe remained relatively stable compared to 2018.

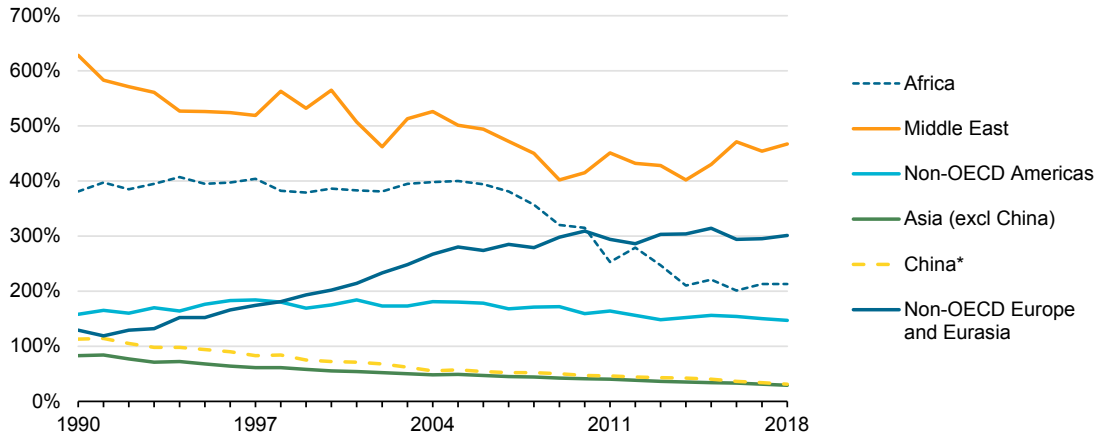
[12] Measured as production/TES, where TES is defined as total energy supply. Excludes marine and aviation bunkers demand.

OECD oil self-sufficiency (oil production as a percentage of total oil energy supply)



Despite the gains in oil self-sufficiency in the Middle East in 2018, oil self-sufficiency outside the OECD decreased slightly, driven mainly by the decrease observed in Asia, in particular China.

Non-OECD oil self-sufficiency (oil production as percentage of total oil energy supply)

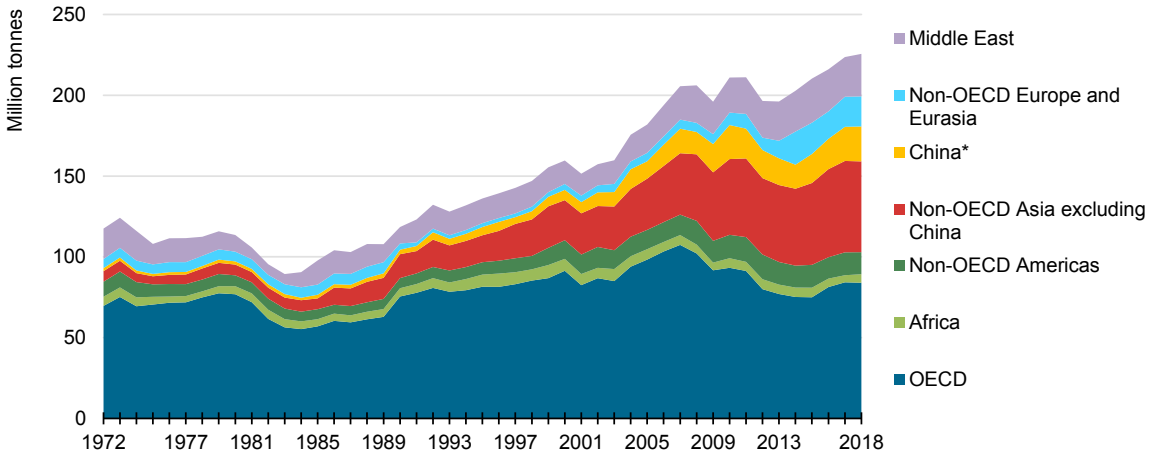


* China includes the (People's Republic of) China; Hong Kong, China.

Bunkers

Deliveries of oil products for international marine bunkers have been steadily increasing globally, and have recovered since the 2010 downturn. Although at a slower rate compared to the 3.5% increase seen between 2016 and 2017, global deliveries for international marine bunkers increased by 0.9% in 2018 compared to 2017.

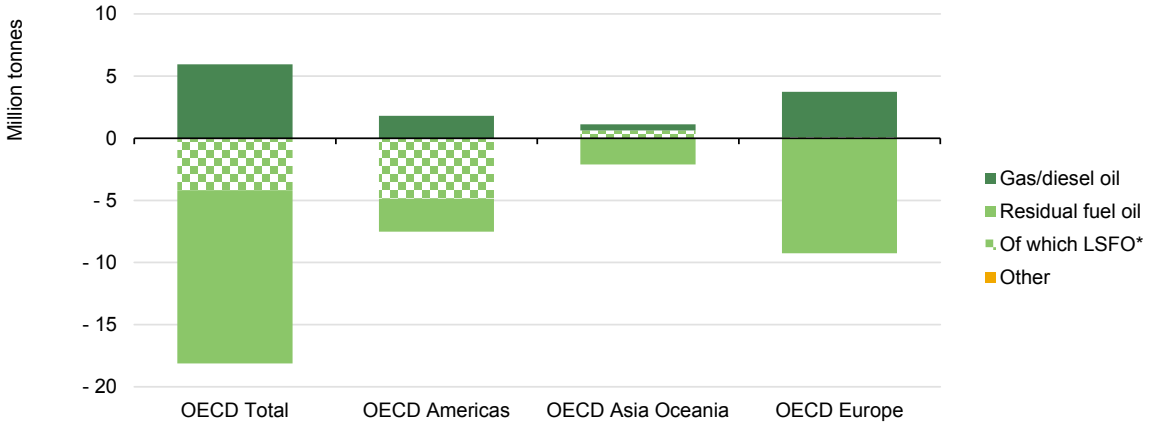
World deliveries of oil products to international marine bunkers by region



* China includes the (People's Republic of) China; Hong Kong, China.

Growth was robust in the Middle East and Africa, recording y-o-y increases of 7% and 20%, respectively, in 2018. In contrast, deliveries in the non-OECD Americas fell by 4% whilst the non-OECD Europe and Eurasia exhibited negligible change. As China deliveries continued to grow by 2%, deliveries in the rest of Asia fell by 1%.

OECD change by fuel composition of deliveries to international marine bunkers from 2010 to 2019



* Of which low Sulphur fuel oil.

In the OECD, disaggregated fuel data show a general switch from the use of residual fuel oil to marine gas/diesel oil in international marine bunkers, a trend that will become more pronounced as more stringent regulations from the International Maritime Organisation (IMO) roll out, mandating the marine sector to switch to

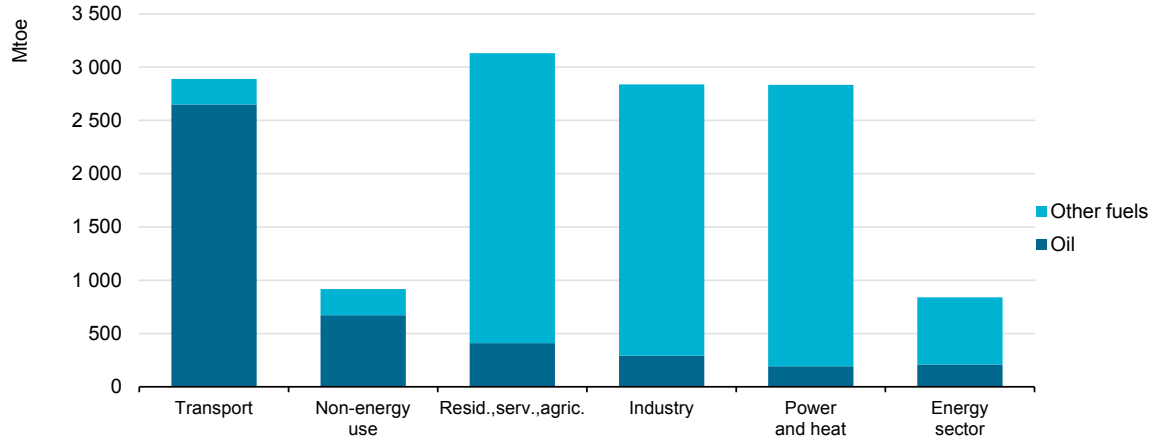
lower sulphur fuels beginning on 1 January 2020 to slash emissions in international waters. Moreover, some increase in the use of low sulphur fuel oil in the OECD Asia Oceania and OECD Europe was observed over the same period, as countries prepared for the new mandate.

Demand

Data from the world energy balance show that oil remained the most used fuel in the world energy mix in 2018, accounting for about one third of the world total energy supply.

The world energy balance shows that road transport is by far the main oil consuming sector (1 999 Mtoe), with other fuels increasing y-o-y, yet still playing a very limited role (89 Mtoe of biofuels, 50 Mtoe of natural gas and 6 Mtoe of electricity).

World consumption by sector of oil and other fuels in 2018



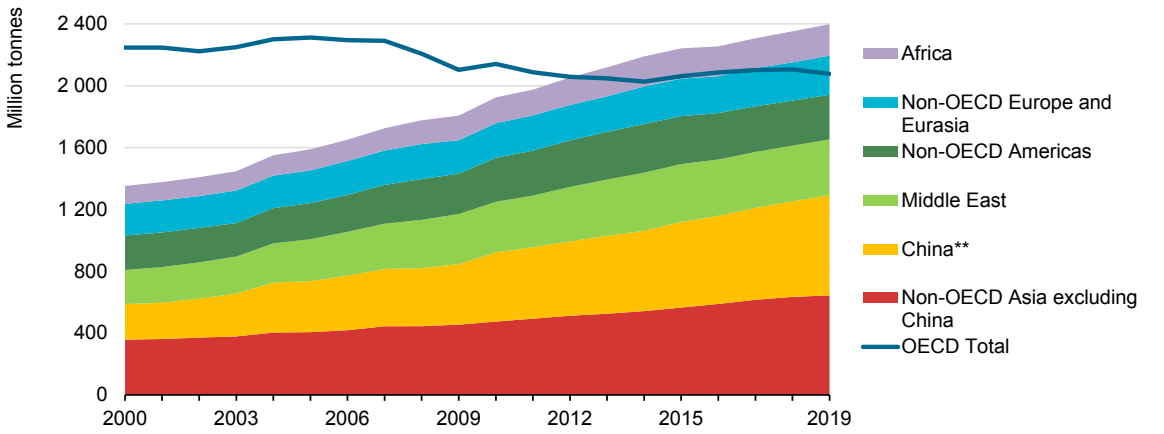
In 2018, world oil demand[13] increased by 1.1% from 2017 (+49 Mt, +1.3 Mb/d). Estimates by the IEA Secretariat point to a slightly slower increase in world oil demand growth in 2019 (+0.4%).

[13] Product coverage: Sum of refined products (ethane, LPG, naphtha, motor gasoline, aviation gasoline, jet gasoline, jet kerosene, gas/diesel oil, other kerosene, residual fuel oil, other products including crude and NGL direct use).

In 2018, in line with previous years, oil demand growth was driven by non-OECD countries (+2.0%, +45 Mt, +1.1 Mb/d). Provisional 2019[14] data show further growth (+1.9%, +46 Mt, +1.0 Mb/d).

In the OECD, oil demand slightly grew in 2018 (+0.2%, +3.6 Mt, +0.2 Mb/d) as growth in the OECD Americas region (+1.9%, +20 Mt) was counteracted by the strong decline in the OECD Asia Oceania (-3.1%, -11 Mt), largely due to the decrease in Japan's oil demand in the power and heat sector as well as fuel economy improvements offsetting increases in transportation demand. This, according to preliminary data for 2019, drove the continued decline in Japanese oil demand (-4.0%, -6.8 Mt). Meanwhile, demand in the OECD Europe declined marginally (-0.7%, -5 Mt) in 2018.

Oil product demand* by geographical regions



* Hereafter, demand refers to net deliveries (including refinery fuel, international marine bunkers and international aviation bunkers).

** China includes (the People's Republic of) China; Hong Kong, China.

In 2018, demand grew in the United States (+2.0%, +17 Mt, +528 kb/d), which remained the world's largest consumer, followed by the People's Republic of China (+4.1%, 24 Mt, +512 kb/d) and India (+3.6%, +8 Mt, +211 kb/d).

Non-OECD countries continued to represent the largest share of world oil demand (53% in 2018, slightly up from 2017 at 52%). Most of the additional oil demand came from the non-OECD Asia region[15] (+3.5%, +43 Mt, +1.0 Mb/d) and in particular China and India. The non-OECD Europe and Eurasia region and Africa both saw growth in

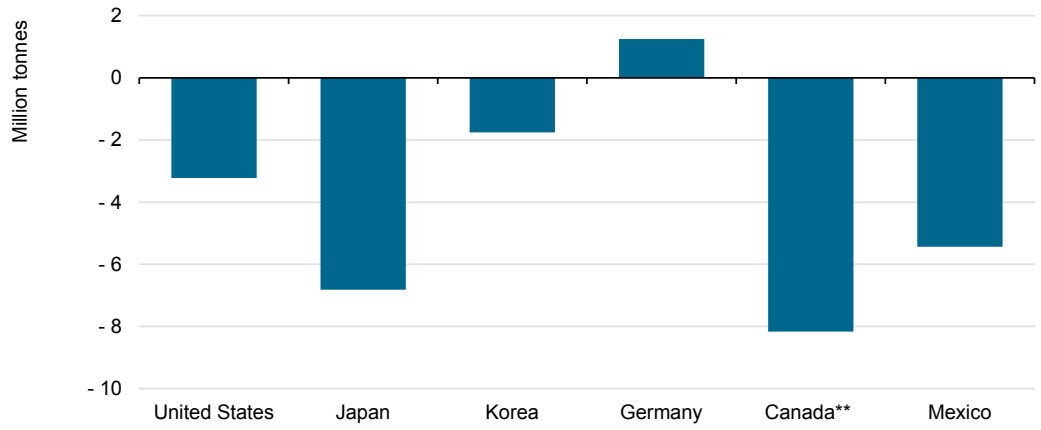
[14] IEA Secretariat estimate.

[15] Includes (the People's Republic of) China; Hong Kong, China.

oil demand (+0.2% and +4.3% respectively). Demand fell in the non-OECD Americas region by 1.6%, driven by sharp declines in Venezuela (-10%, -2.5 Mt, -55 kb/d) as well as in Brazil and Argentina (-2% and -4%, respectively).

Preliminary 2019 data show OECD oil demand declined (-1.3%) as all regions recorded decreases: OECD Americas (-1.5%), OECD Asia Oceania (-2.3%) and OECD Europe (-0.5%).

Change in oil product demand in the main OECD oil consumer countries between 2018 and 2019*



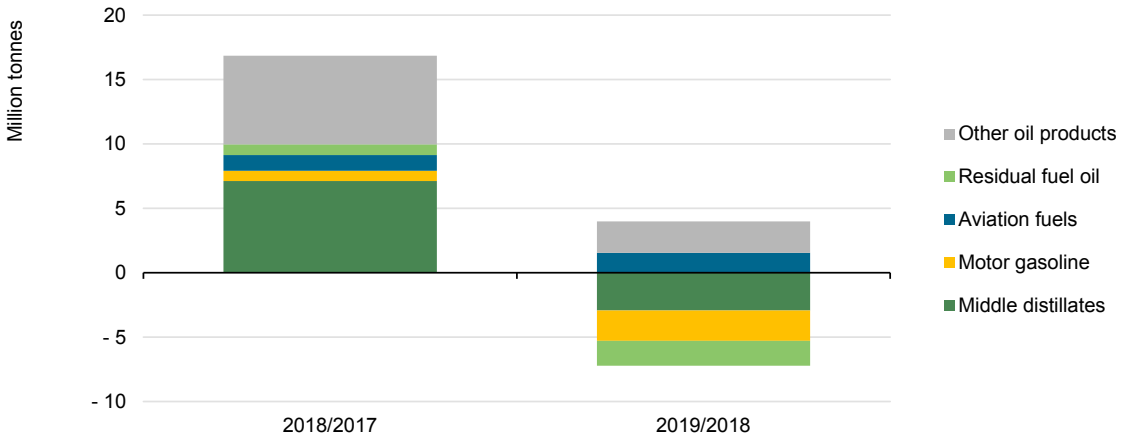
* Provisional data.

** Due to the new Monthly Refined Petroleum Products survey launched by the Canadian administration in 2019, which includes greater coverage of all products, there are breaks in the time series between 2018 and 2019. Please see the oil documentation country notes for more details.

According to preliminary data for 2019, oil demand in the United States fell slightly by 0.4% (-3.2 Mt, -333 kb/d), decreasing for the first time since 2012. Overall, the United States accounted for almost 20% of global oil demand in 2019.

Increases were observed in the U.S. oil demand for aviation fuels and other oil products, a significant portion of which are typical petrochemical feedstock with ethane, LPG and naphtha constituting 47% of these other oil products in 2019. At the same time, demand for middle distillates, motor gasoline and residual fuel oil declined due largely to improved fuel economy.

United States demand by product groups* change between 2017-2018 and 2018-2019**



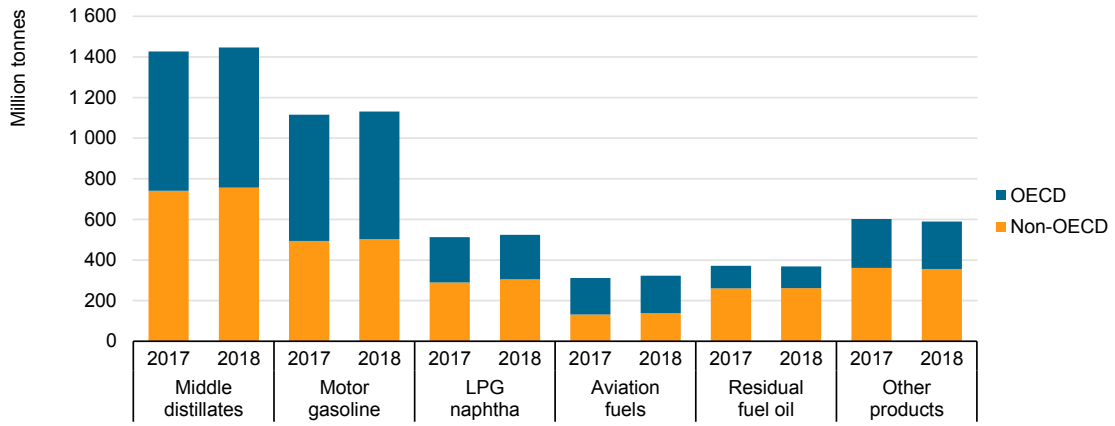
* Middle distillates include other kerosene and gas/diesel oil. LPG/naphtha includes LPG, naphtha and ethane. Aviation fuels include aviation gasoline, gasoline type jet fuel and kerosene type jet fuel. Other products include refinery gas, white spirit, lubricants, bitumen, paraffin waxes, petroleum coke and other non-specified oil products as well as crude and NGL direct use (e.g. burning in power plants).

** All energy data for 2019 are provisional.

World demand of gas/diesel oil continued to increase in 2018 (+1.6%, +23 Mt, +0.5 Mb/d), driven by increases in the United States (+3.6%), the People's Republic of China (+2.5%) and India (+2.8%).

World demand of motor gasoline also grew in 2018 (+1.4%, +15 Mt, +0.3 Mb/d). The main drivers of this increase were the United States (+0.2%) and the People's Republic of China (+3.4%).

World demand by product groups*

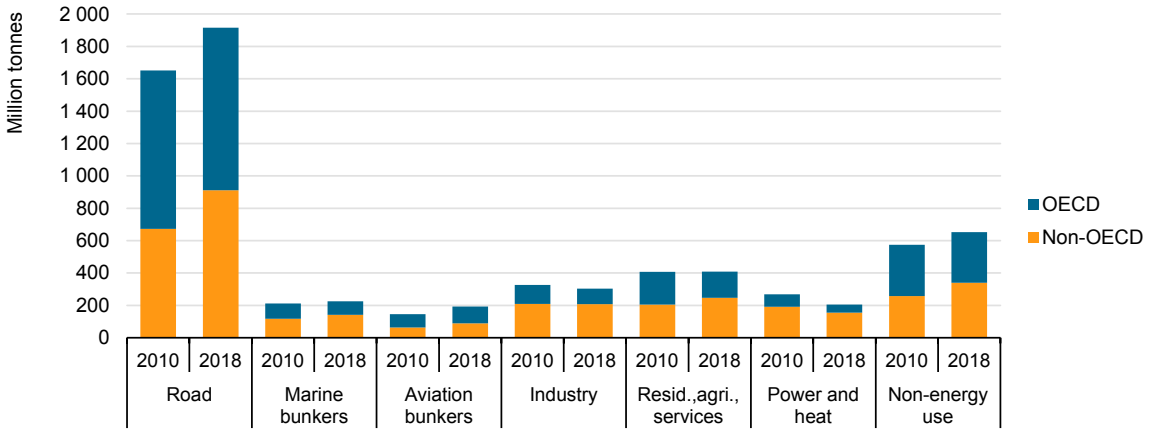


* Middle distillates include other kerosene and gas/diesel oil. LPG/naphtha includes LPG, naphtha and ethane. Aviation fuels include aviation gasoline, gasoline type jet fuel and kerosene type jet fuel. Other products include refinery gas, white spirit, lubricants, bitumen, paraffin waxes, petroleum coke and other non-specified oil products as well as crude and NGL direct use (e.g. burning in power plants).

Gains occurred as well in global demand of aviation fuels[16] (+3.7%, +12 Mt, +0.3 Mb/d) in 2018, with both OECD and non-OECD regions having comparable growth at 3.4% and 4.1%, respectively.

In 2018, global naphtha demand exhibited its slowest y-o-y growth (+0.3 Mt) since 2012 while ethane and LPG recorded robust increases (+7 Mt and +11 Mt, respectively). The apparent slowdown in naphtha demand was driven by declines in demand in Korea (-2.2 Mt) and Japan (-1.7 Mt). The former came as a result of LPG's price competitiveness against naphtha. Meanwhile, the increase in ethane demand was supported by strong demand in the United States (+5.2 Mt) and Saudi Arabia (+0.8 Mt) while LPG demand was driven by China (+1.6 Mt) and the United States (+3.2 Mt).

Change in world demand in selected sectors between 2010 and 2018*

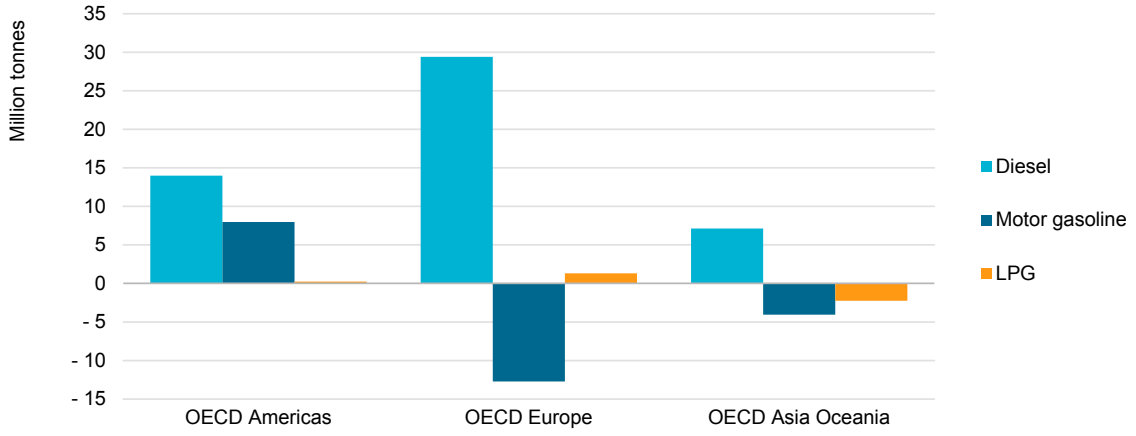


* Includes direct use of crude and NGL

In the OECD, consumption of diesel in road transport has been increasing since 2010. In the case of the OECD Europe and OECD Asia Oceania regions, this has been at the expense of motor gasoline.

[16] Includes aviation gasoline, gasoline type jet fuel and kerosene type jet fuel.

Change in OECD road consumption between 2010 and 2018



In 2018, demand from industry declined slightly (-0.3%, -1.1 Mt) in the OECD. Consumption for non-energy purposes fell (-1.2%) while energy use rose (+2.5%) compared to 2017 levels. Non-energy use in the sector accounted for over 75% of energy consumption.

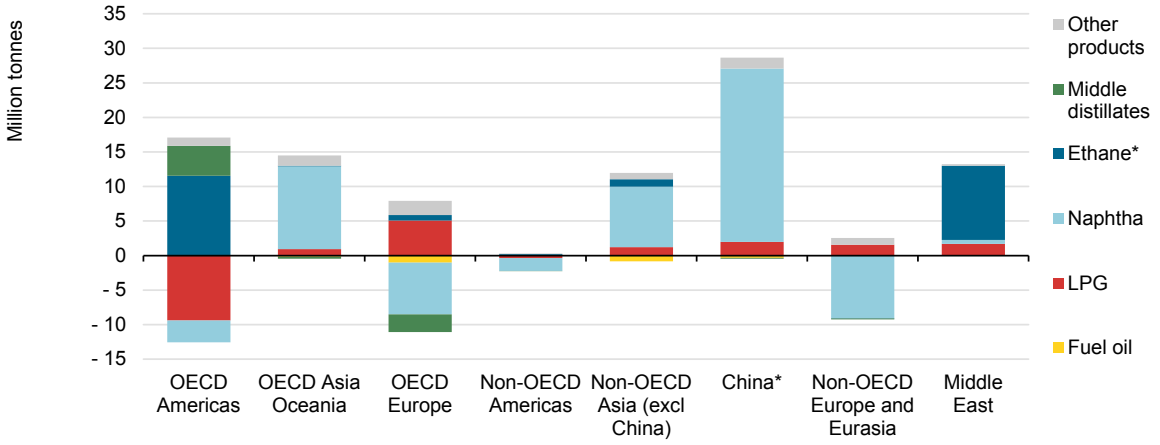
Global energy demand from petrochemicals has grown very quickly but has slowed down in recent years. In 2018, global energy and non-energy consumption of energy products in the chemical and petrochemical sector remained somewhat stable as y-o-y growth in the OECD (+1.1%) was offset by declines in the non-OECD (-0.6%).

Oil product consumption in the chemical and petrochemical sector declined considerably in 2018 compared to 2017 (-9.5%). This decline is the result of a drop in energy use of oil products in the sector, rather than feedstock use, which increased globally by 2.8% in 2018, owing to robust increases seen in the non-OECD (+6.4%).

Feedstock consumption of oil products in the petrochemical sector marginally decreased in the OECD in 2018 by 0.2% compared to 2017 levels. Firm increases in the OECD Americas (+7.2%, 6.2 Mt) were slightly overtaken by decreases in the OECD Asia Oceania (-3.7%, -3.0 Mt) and OECD Europe (-5.7%, -3.7 Mt).

Naphtha continued to be the predominant feedstock for non-energy consumption in the chemical and petrochemical sector (+11.0%, +23 Mt between 2010 and 2018), particularly in Asian markets. Elsewhere, the share of naphtha in petrochemical feedstock is decreasing in favour of LPG and ethane. The growth of the latter is of particular relevance in the OECD Americas and the Middle East. Both regions have a feedstock advantage in their access to low-cost ethane, owing to their abundant natural gas supply.

Change in petrochemical feedstock demand in selected global regions between 2010 and 2018



* Ethane includes refinery gas. Middle distillates include other kerosene and gas/diesel oil. Other oil products can include white spirit, lubricants, bitumen, paraffin waxes, other non-specified oil products and direct use of crude and NGL.

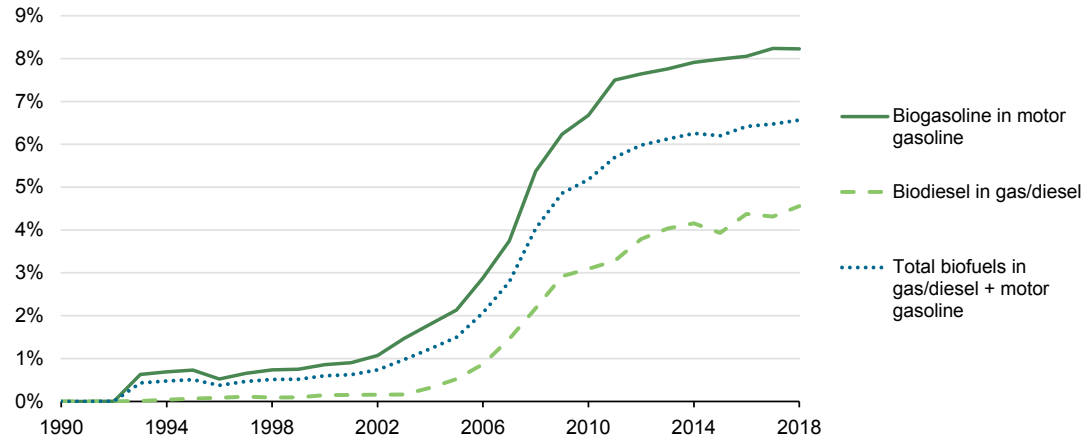
** China includes (the People's Republic of) China; Hong Kong, China.

Liquid biofuels

Global growth in liquid biofuels production continued in 2018, driven by strong growth in the United States (+3.1%), Brazil (+21%) and Indonesia (+100%).

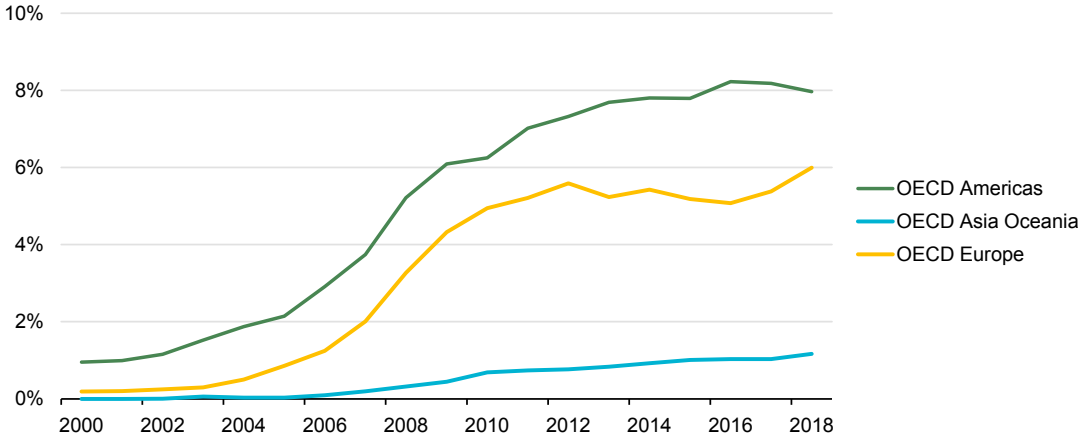
In the OECD, the overall share of liquid biofuels in road transport consumption increased in 2018 compared to 2017 and stood at 6.6%.This reflected an increase in the share of biofuels blended with diesel (from 4.3% in 2017 to 4.6% in 2018) while the share of biofuels blended with gasoline stayed the same at 8.2%. Biodiesel use in gas/diesel oil was at its highest in 2018 (21 Mt) but remained small compared to biogasoline use in motor gasoline (50 Mt).

Share of biofuels in OECD road consumption



Across OECD regions, the share of biofuels in road consumption varies reflecting diverse policies and product standards across countries.

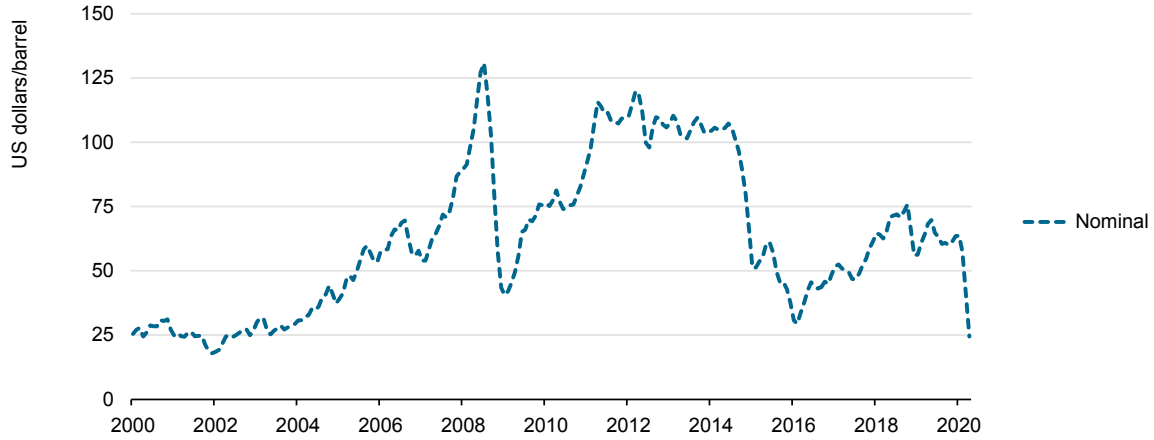
Share of biofuels in road consumption in OECD regions



Prices

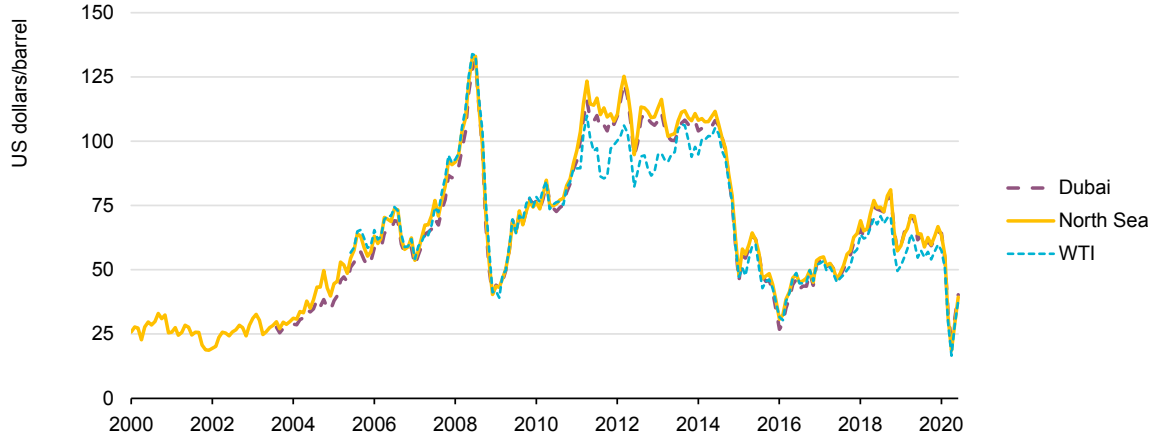
Average crude oil import costs in IEA member countries plunged in the first quarter of 2020 to levels not seen in recent years, as COVID-19 shook the global oil market.

Nominal crude oil import costs (IEA average)



Crude oil spot prices slowly recovered at the end of the second quarter of 2020, after having dipped as a result of COVID-19. Spot prices for international benchmarks in June 2020 were on average 34.5% lower than a year earlier.

Crude oil spot market prices



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