

Energy Tidbits

Game Changer? Iran Unleashes Massive Drone/Missile Attack
Against Israel i.e. Didn't Hide Behind its Proxies

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April 14, 2024

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Short-Term Energy Outlook

Overview

U.S. energy market indicators	2023	2024	2025
Brent crude oil spot price (dollars per barrel)	\$82	\$89	\$87
Retail gasoline price (dollars per gallon)	\$3.50	\$3.60	\$3.60
U.S. crude oil production (million barrels per day)	12.9	13.2	13.7
Natural gas price at Henry Hub (dollars per million British thermal units)	\$2.50	\$2.20	\$2.90
U.S. liquefied natural gas gross exports (billion cubic feet per day)	12	12	14
Shares of U.S. electricity generation			
Natural gas	42%	42%	41%
Coal	17%	15%	14%
Renewables	21%	24%	25%
Nuclear	19%	19%	19%
U.S. GDP (percentage change)	2.5%	2.5%	1.5%
U.S. CO₂ emissions (billion metric tons)	4.8	4.8	4.7

Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, April 2024

- Global oil consumption.** This month we revised the 2022 global liquid fuels consumption data available in our [International Energy Statistics](#), increasing our assessment of global oil consumption that year by nearly 0.8 million barrels per day (b/d) compared to last month's STEO. The historic data serves as a baseline for our short-term forecasts, affecting our view of energy markets this year and next. This month's revision to historic data, as well as current market dynamics, led us to increase our forecasts for global oil consumption in 2024 and 2025 between 0.4 million b/d and 0.5 million b/d in both years.
- Global oil prices.** We forecast the Brent crude oil spot price will average \$90 per barrel (b) in the second quarter of 2024 (2Q24) \$2/b more than our March STEO, and average \$89/b in 2024. This increase reflects our expectation of strong global oil inventory draws during this quarter and ongoing geopolitical risks.
- Natural gas inventories.** The U.S. winter natural gas withdrawal season ended with 39% more natural gas in storage compared with the five-year average. From April through October this year, we forecast less natural gas will be injected into storage than is typical, largely because we expect the United States will produce less natural gas on average in 2Q24 and 3Q24 compared with 1Q24. Despite lower production, we still expect the United States will have the most natural gas in storage on record when the winter withdrawal season begins in November. As a result of high inventories, we expect the Henry Hub spot price to average less than \$2.00 per million British thermal units

(MMBtu) in 2Q24 before increasing slightly in 3Q24. Our forecast for all of 2024 averages about \$2.20/MMBtu.

- **Electricity consumption.** We expect hotter summer temperatures this year compared with last year will increase residential electricity consumption by almost 4% in 2024 compared with last year. The rise in residential electricity consumption occurs primarily during the summer months (April–October), supported by our expectation of 7% more cooling [degree days](#) than last summer.
- **Coal exports.** After the Port of Baltimore was closed as a result of the [collapse of the Francis Scott Key bridge](#), we reduced our forecast for coal exports by more than 30% in April and 20% in May compared with the March STEO. Baltimore is the second-largest export hub for coal in the United States.

Notable forecast changes

Current forecast: April 9, 2024; previous forecast: March 12, 2024

	2024	2025
Coal exports (million short tons)	94	105
Previous forecast	101	106
Percentage change	-6.3%	-0.9%
Brent spot price (dollars per barrel)	\$89	\$87
Previous forecast	\$87	\$85
Percentage change	1.8%	2.6%
Retail gasoline price (dollars per gallon)	\$3.60	\$3.60
Previous forecast	\$3.50	\$3.40
Percentage change	3.1%	3.8%
Henry Hub spot price (dollars per million British thermal units)	\$2.20	\$2.90
Previous forecast	\$2.30	\$2.90
Percentage change	-5.2%	-1.7%
Global liquid fuels consumption (dollars per million British thermal units)	102.9	104.3
Previous forecast	102.4	103.8
Change	0.5	0.4

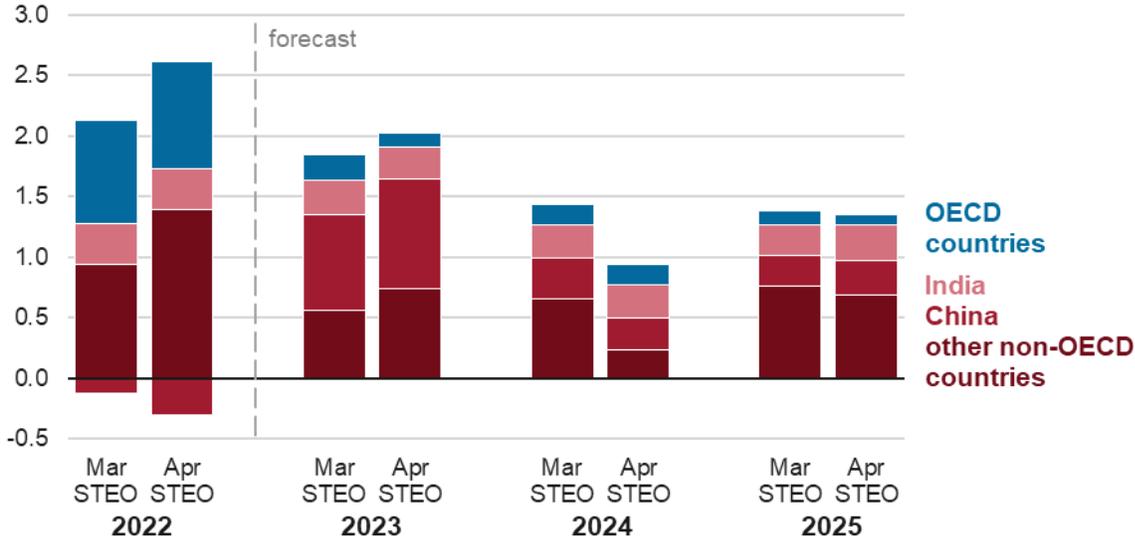
Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*

Global Oil Markets

Global oil consumption

This month’s STEO incorporates the recent update to our [International Energy Statistics](#) for 2022. This update increased our assessment of global liquid fuels consumption for 2022 by nearly 0.8 million barrels per day (b/d) compared with last month’s STEO. Most of this change reflects non-OECD consumption that is higher than we previously estimated. The higher baseline historical data for 2022 in turn increased our estimate of consumption in 2023 and our forecasts for 2024 and 2025. We now estimate that global liquid fuels consumption averaged 102.0 million b/d in 2023, a 2.0 million b/d increase from 2022 and about 1.0 million b/d higher than in last month’s STEO. Global liquid fuels consumption in our forecast now averages 102.9 million b/d in 2024 and 104.3 million b/d in 2025, which is between 0.4 million b/d and 0.5 million b/d more in both years than in last month’s STEO. Year-over-year forecast consumption growth in 2025 is largely unchanged compared with the March STEO.

Annual change in global liquid fuels consumption
million barrels per day



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*(STEO), April 2024

Although the revisions to historical consumption resulted in more forecast petroleum consumption, they also decreased demand growth in 2024 compared with our previous STEO. However, the sources of growth remain the same; non-OECD Asian countries—particularly China and India—drive global liquid fuels demand growth in our forecast, although we also expect significant growth in the Middle East and United States.

Global oil prices and inventories

The Brent crude oil spot price averaged \$85 per barrel (b) in March, a \$2/b increase compared with February and the third consecutive month when the average Brent price increased. Oil prices continued to increase in March as a result of heightened geopolitical risk related to the [attacks targeting commercial ships transiting the Red Sea shipping channel](#) and general elevated tensions around the region. In addition, the [recent extension of OPEC+ voluntary production cuts](#) add to upward price

pressure right at a time of the year when oil demand typically increases because of the spring and summer driving seasons in the Northern Hemisphere.

The combination of flat production and rising consumption causes our forecast of global oil inventories to fall by more than 0.9 million b/d in 2Q24, which we expect will add upward pressure to oil prices. We expect the tighter market balance to keep oil prices relatively elevated, averaging \$90 in 2Q24—\$2/b higher than in last month's STEO.

We forecast oil inventories will begin increasing in 2025 because we assume OPEC+ production will increase when OPEC+ supply cuts expire. We forecast global oil inventories to increase by an average 0.4 million b/d in 2025, which we expect will put downward pressure on prices. We forecast the Brent crude oil price will decrease year-over-year from an average \$90/b in 4Q24 to an average \$86/b in 4Q25, with annual averages of \$89/b in 2024 and \$87/b in 2025.

Global oil production

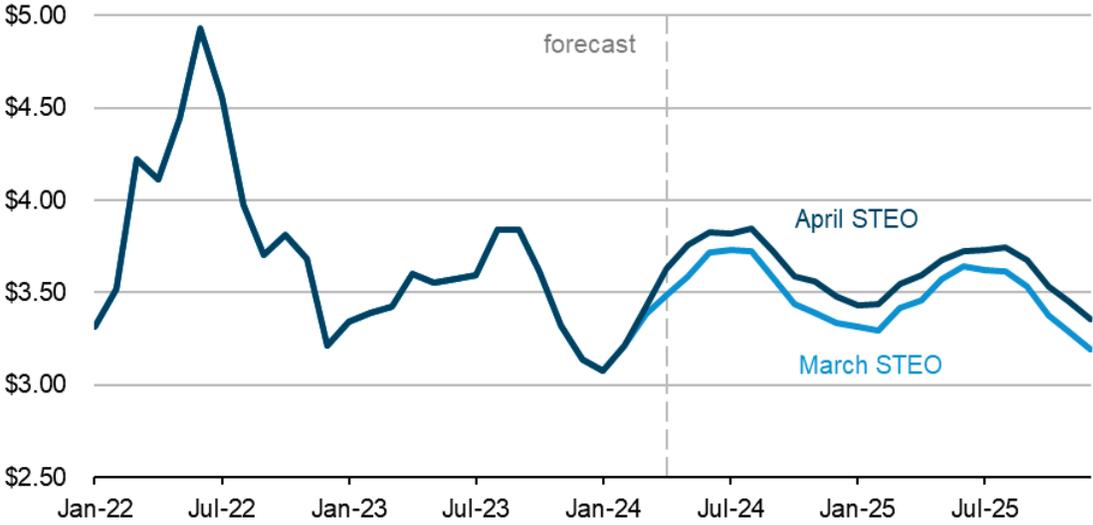
We expect global production of liquid fuels to increase by more than 0.8 million b/d in 2024, slowing from the 1.8 million b/d increase in 2023, as OPEC+ voluntary production cuts are offset by [supply growth outside of OPEC+](#). Although forecast OPEC+ crude oil production in 2024 decreases by 0.9 million b/d compared with last year, forecast production outside of OPEC+ increases by 1.8 million b/d, led by the United States, Guyana, Brazil, and Canada. Global liquid fuels production in our forecast increases by 2.0 million b/d in 2025 as the OPEC+ production cuts expire and supply growth outside of OPEC+ continues to grow.

Petroleum Products

Gasoline prices

We forecast U.S. retail gasoline prices will average about \$3.60 per gallon (gal) in 2024, an increase of about 10 cents/gal from our March STEO and a slight increase from the average price in 2023. This increase is driven by rising wholesale gasoline prices compared with the March STEO as well as higher crude oil prices. We now forecast the wholesale gasoline price will average more than \$2.70/gal in 2024, also 10 cents/gal more than in 2023. The higher forecast wholesale gasoline prices compared with our March STEO reflects our expectation of more gasoline exports and lower gasoline inventories, leading to an increase in the 2024 annual average [crack spread](#) for gasoline relative to last month's forecast.

U.S. average retail gasoline price
dollars per gallon



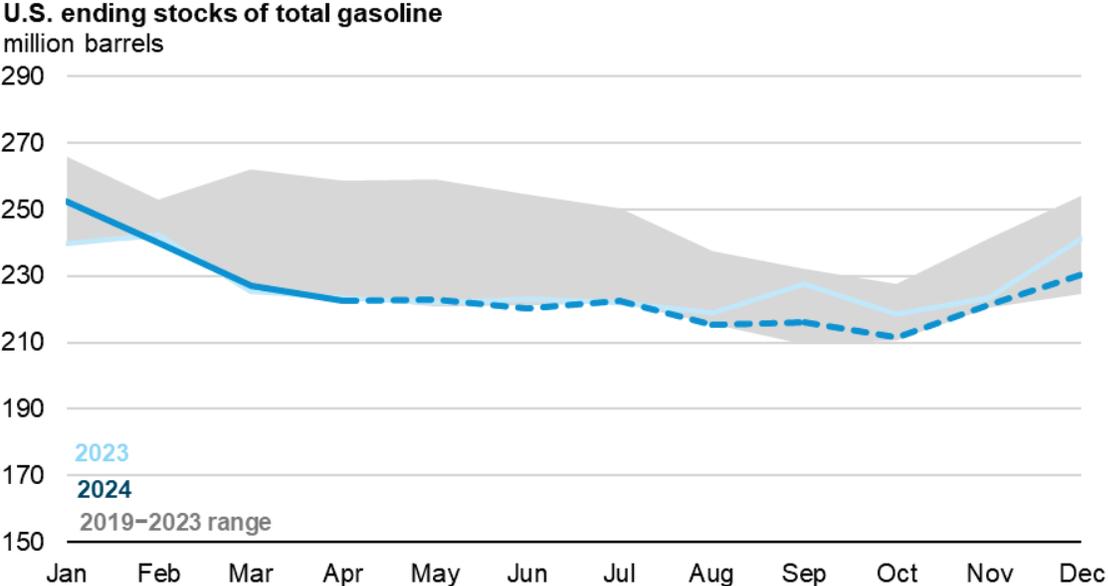
Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook* (STEO), April 2024



We expect higher crude oil prices will put additional upward pressure on the gasoline price this year compared with 2023. Our forecast that crude oil prices in 2024 will be higher than we expected last month is responsible for about half of the increase in average 2024 gasoline prices compared to the March STEO. Retail and distribution margins for gasoline—the difference between the average retail price and the refiner price for resale—were lower in February and March compared with the same months in 2023. Retail and distribution margins can reflect a wide variety of factors including taxes, wages, and regional and logistical complications. We forecast these lower retail margins to dampen the effect of higher crude oil prices and crack spreads on overall retail prices this year. Retail and distribution margins can be volatile, and they present a source of uncertainty for retail gasoline prices this summer and through the rest of the year; higher margins than we expect could lead to higher gasoline prices.

Gasoline inventories and net trade

We have reduced our forecast for end-of-period motor gasoline stocks by almost 7 million barrels in 2Q24 compared to the March STEO. Our outlook for gasoline inventories has gradually decreased since the beginning of 2024 as lower refinery production and higher net exports (exports minus imports) of gasoline have contributed to stronger-than-expected inventory draws so far this year. As a result, we now expect end-of-month gasoline inventories to average about 4 million barrels lower throughout 2024 compared with our previous forecast, contributing to tight market conditions for gasoline during the summer.

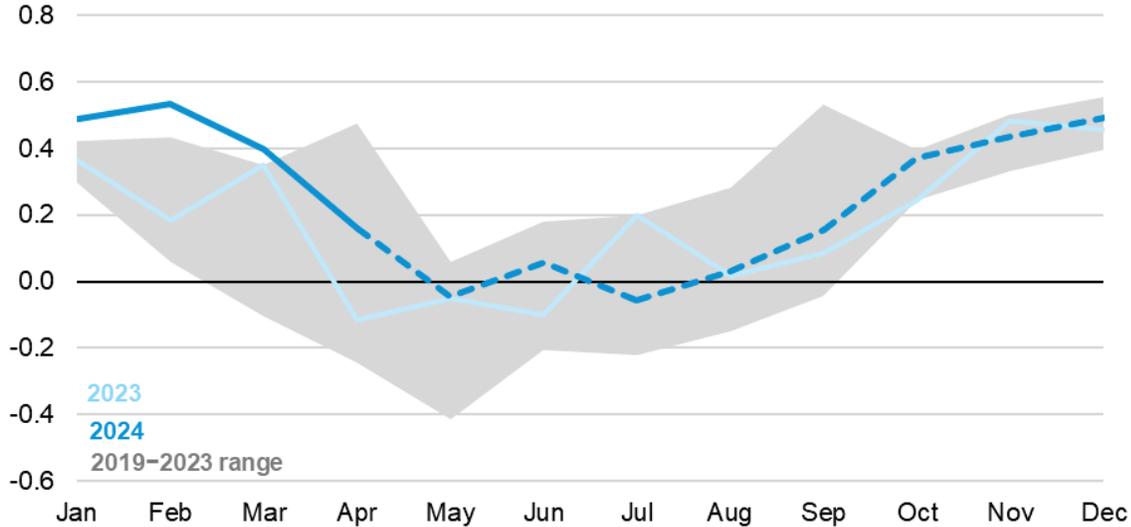


Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, April 2024



Data from our [Weekly Petroleum Status Report](#) show higher gasoline net exports so far this year, which led us to revise our outlook for gasoline trade compared with our last forecast. We expect gasoline net exports to increase slightly from 2023 levels this year. Damage related to Ukraine’s [attacks on Russian refineries](#) will contribute to slightly lower international supplies because of reduced Russian production. We estimate this will have a relatively limited impact on global gasoline availability because Russian refiners tend to produce significantly more diesel than gasoline, and because increasing liquid fuels production at new refineries in the [Middle East](#) will partially ease international supply pressures. However, further constraints on global gasoline availability could increase gasoline net exports from the United States this year, presenting further uncertainty for our U.S. gasoline forecast.

U.S. net exports of total motor gasoline
million barrels per day



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, April 2024



Natural Gas

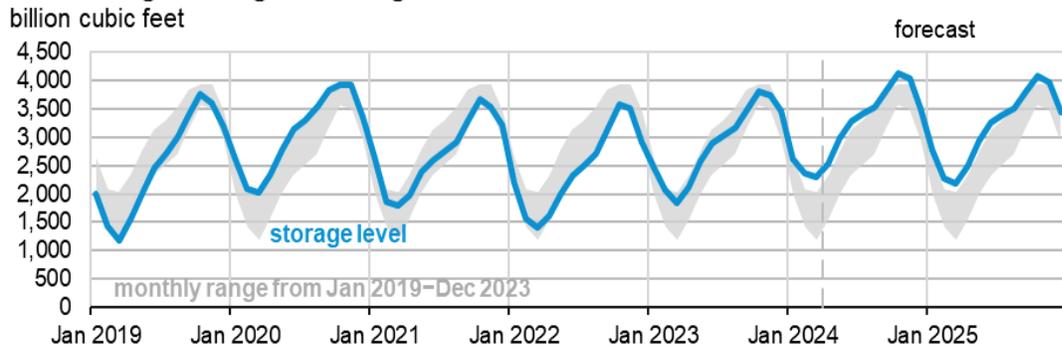
Natural gas storage

We estimate that U.S. natural gas storage inventories were 39% higher at the end of the withdrawal season (November–March) than the five-year (2019–2023) average. The United States [started the winter heating season with a 5% surplus to the five-year average](#). The surplus at the start of winter and a mild winter that resulted in below-average natural gas consumption in the residential and commercial sectors led to the large storage inventory surplus at the end of March. The large storage surplus contributed to low natural gas prices throughout the first quarter of 2024 (1Q24). Natural gas prices at the U.S. benchmark Henry Hub averaged less than \$2.00 per million British thermal units (MMBtu) in both February and March. We forecast the Henry Hub price to average less than \$2.00/MMBtu in 2Q24 and about \$2.20/MMBtu for all of 2024.

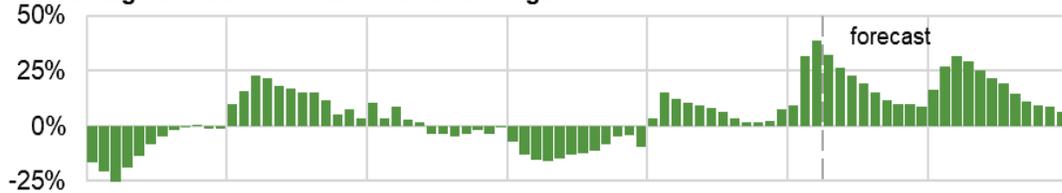
From April through October this year, we forecast less natural gas will be injected into storage than is typical, largely because we expect the United States will produce less natural gas on average in 2Q24 and 3Q24 compared with 1Q24. Despite lower production, we still expect the United States will end the injection season with 4,120 Bcf of natural gas in storage, 10% more than the five-year average and the [most on record](#).

We forecast U.S. dry natural gas production to average about 103 billion cubic feet per day (Bcf/d) from April through October, down slightly from last year’s average of 104 Bcf/d for the same period. We forecast U.S. natural gas consumed for electricity generation to average 38 Bcf/d from April through October, about the same as during the same period last year. If dry natural gas production declines substantially more than we forecast or natural gas consumed for electricity generation increases more than we forecast due to hotter summer temperatures, then inventories could fall below our forecast, potentially resulting in higher prices.

U.S. working natural gas in storage



Percentage deviation from 2019–2023 average



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, April 2024



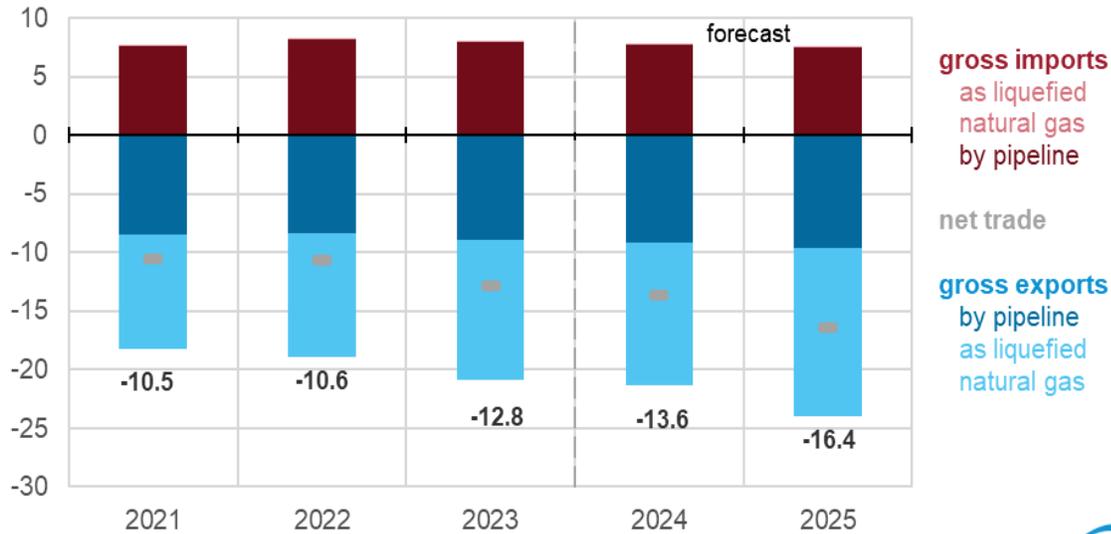
Natural gas trade

We expect U.S. liquefied natural gas (LNG) exports to average 12 Bcf/d in 2024, a 2% increase compared with last year. In 2025, LNG exports increase by an additional 2 Bcf/d (18%) because three of the five [LNG export projects currently under construction](#) are expected to start operations and ramp up to full production.

We forecast that U.S. LNG export facilities will run at similar utilization rates as in 2023, adjusted for seasonality and annual maintenance on liquefaction trains. In April and May 2024, we expect LNG exports to decline compared with April and May 2023 because two of the three trains at the [Freeport LNG export facility are undergoing annual maintenance](#), coinciding with lower global LNG demand in importing countries during the shoulder season. Later in 2024, we expect [Plaquemines LNG Phase I](#) and [Corpus Christi Stage 3](#) to begin LNG production and load first cargoes by the end of the year. In 2025, the developers of the [Golden Pass LNG](#) plan to place the first two trains of this new three-train LNG export facility in service.

We expect U.S. natural gas exports by pipeline to grow by almost 1 Bcf/d over the forecast period, mainly because of increased natural gas exports to Mexico. We expect several pipelines in Mexico—Tula-Villa de Reyes, Tuxpan–Tula, and Cuxtal Phase II connecting to the Energía Mayakan pipeline on the Yucatán Peninsula—to reach full service in 2024–25. These pipelines started partial service in 2022–23 but are not yet fully operational. In addition, flows via the [Sur de Texas-Tuxpan](#) underwater pipeline are likely to increase slightly in 2024, delivering natural gas from the United States to [Mexico’s first LNG export project: Fast LNG Altamira](#).

U.S. annual natural gas trade
billion cubic feet per day



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, April 2024



Electricity, Coal, and Renewables

Electricity consumption

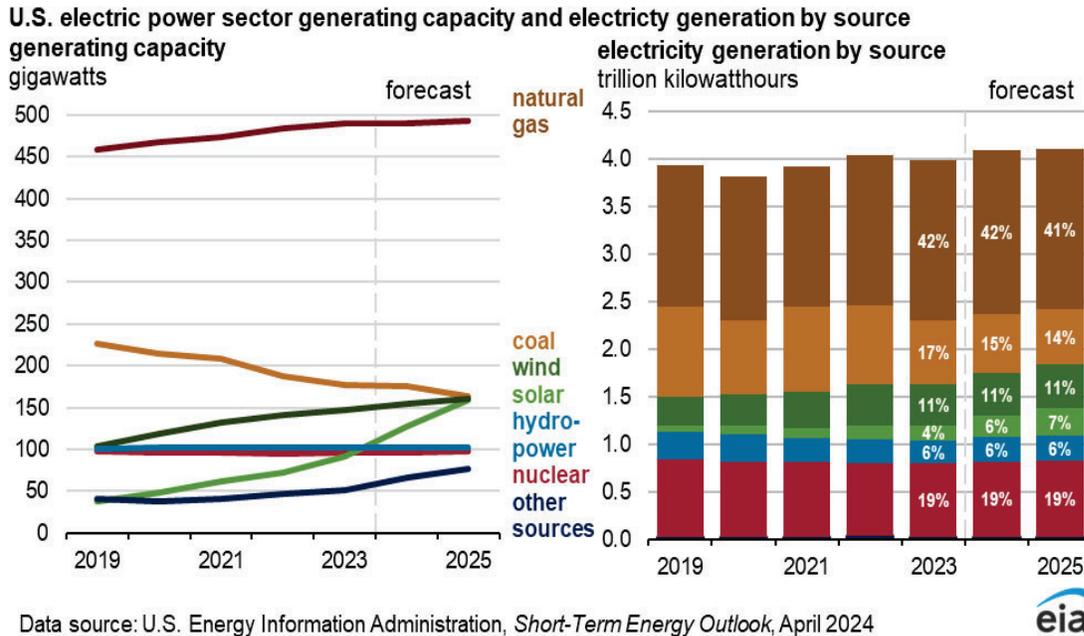
We forecast sales of electricity to U.S. end-use customers will increase by 2% in 2024 compared with 2023 and by 1% in 2025. The expected growth contrasts with a 2% decrease in electricity sales in 2023 compared with 2022. We expect electricity consumption to grow in all major consuming sectors this year, with forecast growth especially strong in the residential sector, where we expect it to increase by 4%. Much of the forecast year-over-year growth in residential electricity occurs this summer. We expect a hotter summer this year, with 7% more forecast cooling [degree days](#) in 2Q24 and 3Q24 than the same quarters in 2023.

U.S. electricity sales to non-residential customers in the commercial and industrial sectors grow in the forecast by 2% annually in 2024 and 1% in 2025. In some regions, we expect relatively little growth in non-residential electricity demand because vacancies in office buildings remain high compared with pre-pandemic levels. Areas of the country with concentrations of new large computing customers, such as data centers, have the fastest forecast growth in total non-residential electricity consumption; we expect the West South Central and West North Central [Census Divisions](#) together will contribute 50% of total U.S. non-residential electricity sales growth in 2024 and almost 90% of growth in 2025.

Electricity generation

Generation from renewable energy sources is the main contributor to growth in U.S. electricity generation over the STEO forecast. In particular, the electric power sector added 19 gigawatts (GW) of solar capacity in 2023 (a 27% increase), and we expect 37 GW will be added in 2024 and another 32 GW will be added in 2025. With this new capacity, we expect solar will provide 6% of total U.S. electricity generation in 2024 and 7% in 2025, up from a 4% share in 2023.

The increased generation from solar is likely to slow growth in generation from natural gas-fired power plants, even with relatively low natural gas prices in the forecast. We expect the share of total U.S. natural gas-fired generation in 2024 to average 42%, similar to 2023, before declining to 41% in 2025. We don't expect any new combined-cycle gas turbine plants in 2024, another reason why natural gas-fired generation makes up a smaller portion of electricity generation. Low natural gas prices will continue to reduce coal-fired generation; the forecast U.S. coal generation share falls to 15% in 2024 and 14% in 2025, compared with 17% last year.



Coal markets

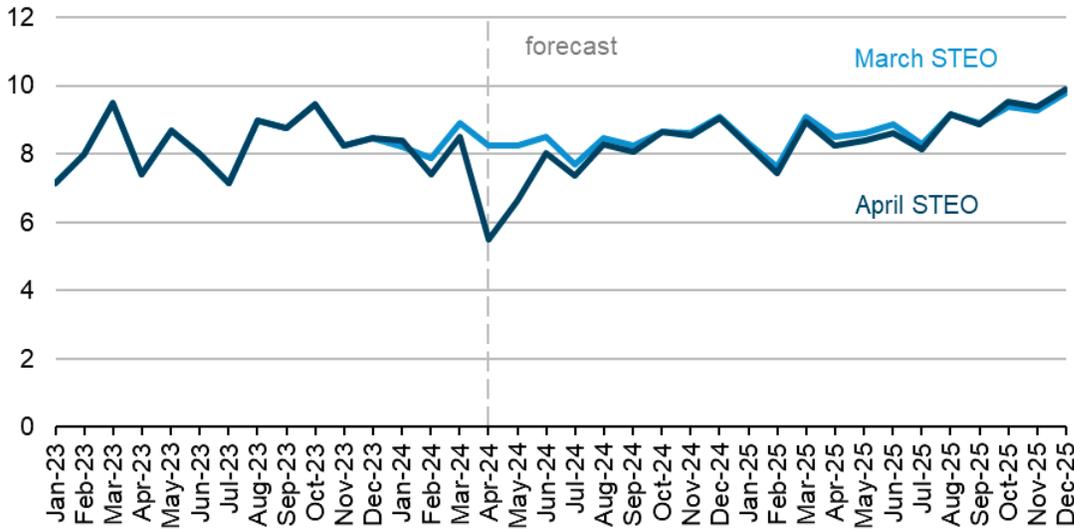
After the Port of Baltimore was closed as a result of the [collapse of the Francis Scott Key bridge](#), we reduced our forecast for U.S. coal exports by almost 3 million short tons (MMst)—more than 30%—in April and 2 MMst—about 20%—in May compared with the March STEO. The port is the second-largest export hub for coal in the United States.

We do not expect this event to have a significant long-term impact on U.S. exports coal exports. The price and quality of coal are important factors contributing to international demand for U.S. coal, and we assume some coal previously exported from Baltimore will be shipped from other U.S. ports. However, with the full closure of the port of Baltimore through at least May, as well as uncertainty around when the port will fully open and how long it will take to clear bottlenecks, we expect U.S. coal exports to total 94 MMst in 2024 down 6% relative to the March STEO. We expect exports in 2025 to increase to 105 MMst in 2025, similar to our forecast in the March STEO.

As a result of growth in electricity generation from renewable sources and low [natural gas prices](#) we expect coal-fired generation to decline, resulting in the electric power sector's coal consumption to decline by 8% in 2024 and to further decline by 5% in 2025. As exports temporarily drop in 2Q24 and electric power consumption declines, we forecast coal production to be 5% lower in April and 4% lower

in May compared with the March STEO. With exports and consumption both down relative to the March STEO, we have lowered our forecast for coal production in 2024 to about 485 MMst.

U.S. coal exports
million short tons



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook* (STEO), April 2024



Economy, Weather, and CO₂

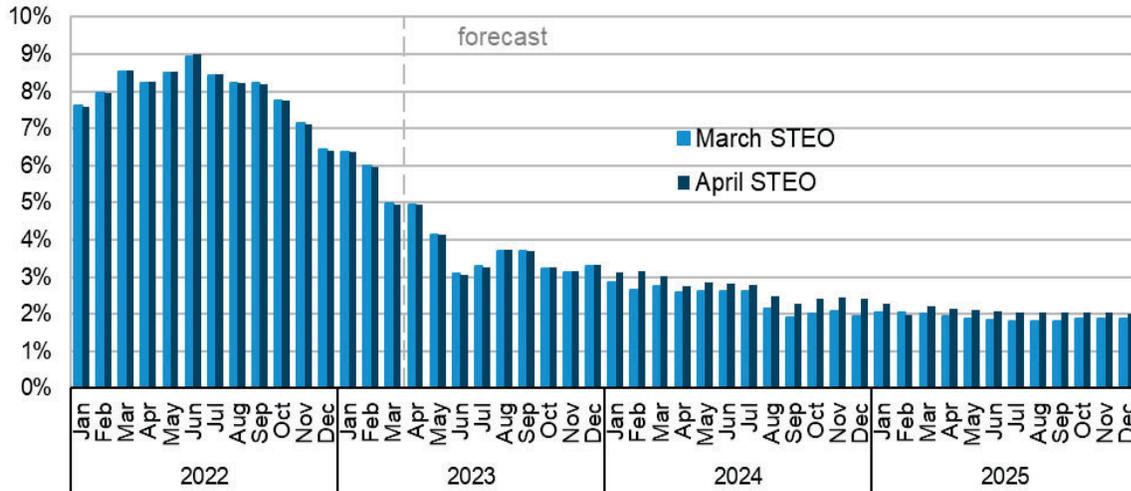
U.S. macroeconomics

Our forecast for April 2024 assumes real GDP will grow by 2.5% in 2024 and 1.5% in 2025, mostly unchanged from the forecast in March. Our U.S. macroeconomic forecasts are based on S&P Global’s macroeconomic model. We incorporate STEO energy price forecasts into the model to obtain the final macroeconomic assumptions.

Overall, the macroeconomic forecast we use for the STEO is similar to last month. However, the small upward revision to the forecast for the Consumer Price Index (CPI) is notable. Inflation, measured as the year-over-year growth rate of the CPI, declined from a peak of 9.0% in June 2022 to 3.2% in February 2024. Our forecast assumes that CPI inflation will continue to decline but will not reach 2.0% until the first quarter of 2025 (1Q25). We previously assumed CPI inflation would reach 2.0% by 3Q24, two quarters earlier. Therefore, forecasts on monetary policy have also been revised by other agencies. We now assume that the U.S. Federal Reserve will wait until June, as opposed to May, to reduce its target for the Federal Funds Rate.

Our forecast assumes the unemployment rate will rise gradually, reaching 3.8% by the end of 2024 and 4.2% by the end of 2025.

Consumer Price Index inflation rate
year-on-year percentage change



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook* (STEO), April 2024

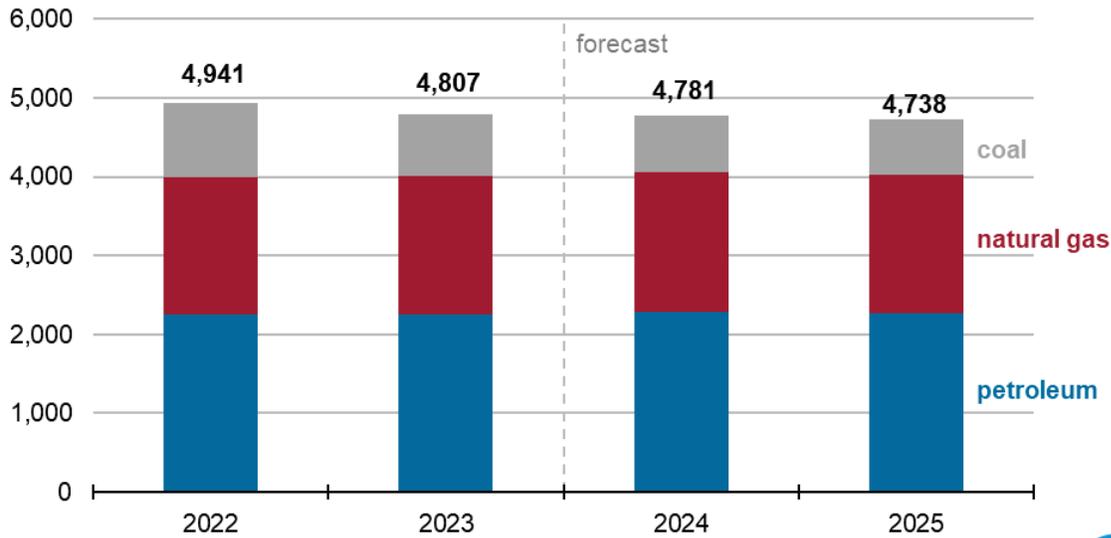


Emissions

Total U.S. energy-related carbon dioxide (CO₂) emissions decrease by 1% in 2024 in our forecast, driven exclusively by a decrease in coal consumption. Coal-related CO₂ emissions decline by 8% as a result of decreasing coal-fired electricity generation. As coal-fired electricity generation declines, several other generation sources grow, most notably solar. Natural gas and petroleum-related CO₂ emissions both increase by about 1%; slight increases in the electric power sector’s natural gas consumption are partly offset by decreased consumption in the industrial sector, and petroleum product consumption rises slightly. CO₂ emissions are expected to decrease by an additional 1% in 2025 driven by slight decreases in total consumption of coal, natural gas, and petroleum products.

Decreasing CO₂ emissions in our STEO forecast are consistent with emissions trends observed over the last several years. However, analysis of emissions by fossil fuel component provides valuable insights into the nature of these reductions. Petroleum and natural gas are the two largest sources of U.S. energy-related CO₂ emissions. However, most emissions reductions in recent years come from coal, which represents the smallest share of total emissions. This trend in decreasing coal-related CO₂ emissions is observed largely in the electric power sector, where [decreases in coal-fired generating capacity](#) contribute to notable decreases in domestic coal consumption.

Annual U.S. energy-related CO₂ emissions
million metric tons



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, April 2024



Weather

March 2024 was milder than March 2023. The United States averaged 500 HDDs in March, 15% fewer HDDs than in March 2023, which contributed to an overall relatively mild winter season (November 2023–March 2024). We expect 2Q24 and 3Q24 to be hotter in 2024 than it was last year, with 7% more CDDs than the same period in 2023.

Table 3a. International Petroleum and Other Liquids Production, Consumption, and Inventories

U.S. Energy Information Administration | Short-Term Energy Outlook - April 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Production (million barrels per day) (a)															
OECD	33.48	33.80	34.55	35.29	34.34	<i>34.54</i>	<i>34.94</i>	<i>35.44</i>	<i>35.58</i>	<i>35.57</i>	<i>35.71</i>	<i>36.11</i>	34.28	<i>34.82</i>	<i>35.74</i>
U.S. (50 States)	21.05	21.69	22.27	22.60	21.64	<i>22.27</i>	<i>22.60</i>	<i>22.83</i>	<i>22.76</i>	<i>23.16</i>	<i>23.21</i>	<i>23.40</i>	21.91	<i>22.34</i>	<i>23.14</i>
Canada	5.79	5.44	5.79	6.10	6.07	<i>5.69</i>	<i>5.87</i>	<i>6.07</i>	<i>6.14</i>	<i>5.85</i>	<i>6.05</i>	<i>6.19</i>	5.78	<i>5.93</i>	<i>6.06</i>
Mexico	2.07	2.16	2.11	2.09	2.05	<i>2.02</i>	<i>2.00</i>	<i>1.97</i>	<i>1.97</i>	<i>1.94</i>	<i>1.92</i>	<i>1.90</i>	2.11	<i>2.01</i>	<i>1.93</i>
Other OECD	4.56	4.51	4.39	4.49	4.58	<i>4.56</i>	<i>4.47</i>	<i>4.57</i>	<i>4.70</i>	<i>4.62</i>	<i>4.52</i>	<i>4.63</i>	4.49	<i>4.55</i>	<i>4.62</i>
Non-OECD	67.63	67.68	67.14	67.62	67.48	<i>67.25</i>	<i>68.45</i>	<i>68.15</i>	<i>68.08</i>	<i>68.88</i>	<i>69.41</i>	<i>69.10</i>	67.52	<i>67.83</i>	<i>68.87</i>
OPEC	32.77	32.46	31.63	31.88	32.05	<i>31.77</i>	<i>32.56</i>	<i>32.46</i>	<i>32.48</i>	<i>32.65</i>	<i>32.73</i>	<i>32.45</i>	32.18	<i>32.21</i>	<i>32.58</i>
Crude Oil Portion	27.38	27.23	26.37	26.58	26.66	<i>26.50</i>	<i>27.27</i>	<i>27.13</i>	<i>27.20</i>	<i>27.37</i>	<i>27.45</i>	<i>27.17</i>	26.89	<i>26.89</i>	<i>27.30</i>
Other Liquids (b)	5.40	5.22	5.26	5.30	5.40	<i>5.27</i>	<i>5.30</i>	<i>5.33</i>	<i>5.28</i>	<i>5.28</i>	<i>5.28</i>	<i>5.28</i>	5.29	<i>5.32</i>	<i>5.28</i>
Eurasia	14.11	13.65	13.42	13.70	13.66	<i>13.30</i>	<i>13.21</i>	<i>13.40</i>	<i>13.58</i>	<i>13.72</i>	<i>13.73</i>	<i>13.91</i>	13.72	<i>13.39</i>	<i>13.74</i>
China	5.32	5.32	5.19	5.23	5.32	<i>5.32</i>	<i>5.31</i>	<i>5.35</i>	<i>5.32</i>	<i>5.35</i>	<i>5.34</i>	<i>5.38</i>	5.26	<i>5.33</i>	<i>5.35</i>
Other Non-OECD	15.43	16.26	16.90	16.81	16.44	<i>16.86</i>	<i>17.36</i>	<i>16.93</i>	<i>16.69</i>	<i>17.15</i>	<i>17.61</i>	<i>17.36</i>	16.35	<i>16.90</i>	<i>17.21</i>
Total World Production	101.11	101.48	101.69	102.90	101.82	<i>101.79</i>	<i>103.38</i>	<i>103.59</i>	<i>103.65</i>	<i>104.45</i>	<i>105.12</i>	<i>105.21</i>	101.80	<i>102.65</i>	<i>104.61</i>
Non-OPEC Production	68.33	69.02	70.06	71.02	69.77	<i>70.02</i>	<i>70.82</i>	<i>71.12</i>	<i>71.17</i>	<i>71.79</i>	<i>72.39</i>	<i>72.76</i>	69.62	<i>70.44</i>	<i>72.03</i>
Consumption (million barrels per day) (c)															
OECD	45.22	45.68	46.04	46.08	45.43	<i>45.60</i>	<i>46.30</i>	<i>46.39</i>	<i>45.88</i>	<i>45.56</i>	<i>46.26</i>	<i>46.37</i>	45.76	<i>45.93</i>	<i>46.02</i>
U.S. (50 States)	19.66	20.38	20.37	20.56	19.82	<i>20.65</i>	<i>20.72</i>	<i>20.60</i>	<i>20.30</i>	<i>20.63</i>	<i>20.69</i>	<i>20.61</i>	20.25	<i>20.45</i>	<i>20.56</i>
U.S. Territories	0.12	0.12	0.12	0.12	0.11	<i>0.11</i>	0.12	<i>0.11</i>	<i>0.11</i>						
Canada	2.33	2.47	2.63	2.37	2.38	<i>2.33</i>	<i>2.43</i>	<i>2.40</i>	<i>2.34</i>	<i>2.29</i>	<i>2.39</i>	<i>2.37</i>	2.45	<i>2.39</i>	<i>2.35</i>
Europe	13.09	13.55	13.64	13.33	13.18	<i>13.33</i>	<i>13.74</i>	<i>13.50</i>	<i>13.16</i>	<i>13.32</i>	<i>13.73</i>	<i>13.49</i>	13.40	<i>13.44</i>	<i>13.43</i>
Japan	3.73	3.10	3.10	3.44	3.59	<i>2.98</i>	<i>3.08</i>	<i>3.41</i>	<i>3.54</i>	<i>2.94</i>	<i>3.04</i>	<i>3.36</i>	3.34	<i>3.27</i>	<i>3.22</i>
Other OECD	6.29	6.06	6.19	6.26	6.34	<i>6.20</i>	<i>6.22</i>	<i>6.35</i>	<i>6.42</i>	<i>6.27</i>	<i>6.29</i>	<i>6.43</i>	6.20	<i>6.28</i>	<i>6.35</i>
Non-OECD	55.75	56.27	56.37	56.42	56.63	<i>57.13</i>	<i>57.09</i>	<i>57.06</i>	<i>57.87</i>	<i>58.41</i>	<i>58.36</i>	<i>58.32</i>	56.21	<i>56.98</i>	<i>58.24</i>
Eurasia	4.66	4.82	5.16	5.06	4.60	<i>4.76</i>	<i>5.11</i>	<i>5.00</i>	<i>4.63</i>	<i>4.79</i>	<i>5.14</i>	<i>5.04</i>	4.93	<i>4.87</i>	<i>4.90</i>
Europe	0.74	0.76	0.77	0.77	0.75	<i>0.77</i>	<i>0.77</i>	<i>0.77</i>	<i>0.76</i>	<i>0.78</i>	<i>0.78</i>	<i>0.78</i>	0.76	<i>0.76</i>	<i>0.77</i>
China	16.02	16.21	15.90	16.11	16.29	<i>16.48</i>	<i>16.16</i>	<i>16.37</i>	<i>16.56</i>	<i>16.76</i>	<i>16.43</i>	<i>16.65</i>	16.06	<i>16.32</i>	<i>16.60</i>
Other Asia	14.58	14.46	13.92	14.32	14.96	<i>14.93</i>	<i>14.32</i>	<i>14.64</i>	<i>15.44</i>	<i>15.41</i>	<i>14.77</i>	<i>15.11</i>	14.32	<i>14.71</i>	<i>15.18</i>
Other Non-OECD	19.75	20.02	20.63	20.17	20.04	<i>20.19</i>	<i>20.74</i>	<i>20.27</i>	<i>20.48</i>	<i>20.67</i>	<i>21.23</i>	<i>20.74</i>	20.14	<i>20.31</i>	<i>20.78</i>
Total World Consumption	100.97	101.95	102.42	102.50	102.06	<i>102.73</i>	<i>103.39</i>	<i>103.45</i>	<i>103.74</i>	<i>103.97</i>	<i>104.62</i>	<i>104.70</i>	101.96	<i>102.91</i>	<i>104.26</i>
Total Crude Oil and Other Liquids Inventory Net Withdrawals (million barrels per day)															
U.S. (50 States)	-0.08	-0.11	-0.25	0.30	0.33	<i>-0.40</i>	<i>-0.26</i>	<i>0.32</i>	<i>0.01</i>	<i>-0.40</i>	<i>-0.13</i>	<i>0.29</i>	-0.03	<i>0.00</i>	<i>-0.06</i>
Other OECD	0.32	-0.02	-0.15	0.13	-0.03	<i>0.41</i>	<i>0.08</i>	<i>-0.15</i>	<i>0.03</i>	<i>-0.02</i>	<i>-0.11</i>	<i>-0.25</i>	0.07	<i>0.08</i>	<i>-0.09</i>
Other Stock Draws and Balance	-0.38	0.60	1.13	-0.84	-0.06	<i>0.93</i>	<i>0.18</i>	<i>-0.32</i>	<i>0.05</i>	<i>-0.05</i>	<i>-0.25</i>	<i>-0.56</i>	0.13	<i>0.18</i>	<i>-0.20</i>
Total Stock Draw	-0.14	0.47	0.73	-0.40	0.24	<i>0.94</i>	<i>0.00</i>	<i>-0.14</i>	<i>0.09</i>	<i>-0.48</i>	<i>-0.50</i>	<i>-0.52</i>	0.17	<i>0.26</i>	<i>-0.35</i>
End-of-period Commercial Crude Oil and Other Liquids Inventories (million barrels)															
U.S. Commercial Inventory	1,231	1,264	1,283	1,252	1,213	<i>1,240</i>	<i>1,251</i>	<i>1,221</i>	<i>1,220</i>	<i>1,257</i>	<i>1,269</i>	<i>1,243</i>	1,252	<i>1,221</i>	<i>1,243</i>
OECD Commercial Inventory	2,746	2,782	2,815	2,771	2,735	<i>2,725</i>	<i>2,729</i>	<i>2,712</i>	<i>2,709</i>	<i>2,747</i>	<i>2,770</i>	<i>2,766</i>	2,771	<i>2,712</i>	<i>2,766</i>

(a) Supply includes production of crude oil (including lease condensates), natural gas plant liquids, biofuels, other liquids, and refinery processing gains.

(b) Includes lease condensate, natural gas plant liquids, other liquids, and refinery processing gain. Includes other unaccounted-for liquids.

 (c) Consumption of petroleum by the OECD countries is synonymous with "petroleum product supplied," defined in the glossary of the EIA *Petroleum Supply Monthly*,

DOE/EIA-0109. Consumption of petroleum by the non-OECD countries is "apparent consumption," which includes internal consumption, refinery fuel and loss, and bunkering.

- = no data available

OECD = Organization for Economic Cooperation and Development: Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Türkiye, United Kingdom, and United States.

OPEC = Organization of the Petroleum Exporting Countries: Algeria, Congo (Brazzaville), Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, United Arab Emirates, Venezuela.

Notes: EIA completed modeling and analysis for this report on April 4, 2024.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Historical data: Latest data available from Energy Information Administration *International Energy Statistics* (<https://www.eia.gov/international/data/world>).

Minor discrepancies with published historical data are due to independent rounding.

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 4a. U.S. Petroleum and Other Liquids Supply, Consumption, and Inventories
U.S. Energy Information Administration | Short-Term Energy Outlook - April 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Supply (million barrels per day)															
Crude Oil Supply															
Domestic Production (a)	12.63	12.75	13.07	13.27	12.84	<i>13.13</i>	<i>13.32</i>	<i>13.54</i>	<i>13.56</i>	<i>13.72</i>	<i>13.74</i>	<i>13.86</i>	12.93	<i>13.21</i>	<i>13.72</i>
Alaska	0.44	0.43	0.40	0.43	0.43	<i>0.41</i>	<i>0.39</i>	<i>0.42</i>	<i>0.42</i>	<i>0.40</i>	<i>0.38</i>	<i>0.41</i>	0.43	<i>0.41</i>	<i>0.40</i>
Federal Gulf of Mexico (b)	1.87	1.77	1.94	1.88	1.75	<i>1.83</i>	<i>1.86</i>	<i>1.90</i>	<i>1.98</i>	<i>1.99</i>	<i>1.94</i>	<i>1.97</i>	1.86	<i>1.84</i>	<i>1.97</i>
Lower 48 States (excl GOM)	10.31	10.55	10.73	10.97	10.66	<i>10.88</i>	<i>11.08</i>	<i>11.22</i>	<i>11.17</i>	<i>11.33</i>	<i>11.43</i>	<i>11.48</i>	10.64	<i>10.96</i>	<i>11.35</i>
Transfers to Crude Oil Supply	0.39	0.51	0.70	0.58	0.49	<i>0.52</i>	<i>0.55</i>	<i>0.52</i>	<i>0.50</i>	<i>0.54</i>	<i>0.57</i>	<i>0.54</i>	0.55	<i>0.52</i>	<i>0.54</i>
Crude Oil Net Imports (c)	2.27	2.51	2.61	2.29	2.28	<i>2.57</i>	<i>2.15</i>	<i>1.51</i>	<i>1.26</i>	<i>1.49</i>	<i>1.32</i>	<i>0.99</i>	2.42	<i>2.12</i>	<i>1.27</i>
SPR Net Withdrawals	0.01	0.26	-0.04	-0.04	-0.10	<i>-0.10</i>	<i>-0.14</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	0.05	<i>-0.08</i>	<i>0.00</i>
Commercial Inventory Net Withdrawals	-0.39	0.12	0.41	-0.10	-0.29	<i>0.16</i>	<i>0.18</i>	<i>-0.07</i>	<i>-0.32</i>	<i>0.09</i>	<i>0.16</i>	<i>-0.08</i>	0.01	<i>0.00</i>	<i>-0.04</i>
Crude Oil Adjustment (d)	0.34	0.00	-0.22	-0.07	0.10	<i>0.21</i>	<i>0.18</i>	<i>0.21</i>	<i>0.23</i>	<i>0.19</i>	<i>0.16</i>	<i>0.20</i>	0.01	<i>0.18</i>	<i>0.20</i>
Total Crude Oil Input to Refineries	15.25	16.15	16.51	15.93	15.32	<i>16.48</i>	<i>16.25</i>	<i>15.71</i>	<i>15.23</i>	<i>16.04</i>	<i>15.96</i>	<i>15.50</i>	15.96	<i>15.94</i>	<i>15.68</i>
Other Supply															
Refinery Processing Gain	0.97	1.01	1.07	1.05	0.95	<i>1.05</i>	<i>1.05</i>	<i>1.04</i>	<i>0.97</i>	<i>1.02</i>	<i>1.05</i>	<i>1.04</i>	1.03	<i>1.02</i>	<i>1.02</i>
Natural Gas Plant Liquids Production	6.01	6.42	6.58	6.70	6.30	<i>6.54</i>	<i>6.66</i>	<i>6.66</i>	<i>6.63</i>	<i>6.76</i>	<i>6.76</i>	<i>6.82</i>	6.43	<i>6.54</i>	<i>6.74</i>
Renewables and Oxygenate Production (e)	1.24	1.29	1.31	1.35	1.33	<i>1.34</i>	<i>1.35</i>	<i>1.38</i>	<i>1.40</i>	<i>1.45</i>	<i>1.45</i>	<i>1.47</i>	1.30	<i>1.35</i>	<i>1.44</i>
Fuel Ethanol Production	1.00	1.00	1.02	1.05	1.04	<i>1.02</i>	<i>1.02</i>	<i>1.03</i>	<i>1.03</i>	<i>1.03</i>	<i>1.02</i>	<i>1.04</i>	1.02	<i>1.03</i>	<i>1.03</i>
Petroleum Products Adjustment (f)	0.20	0.22	0.23	0.23	0.21	<i>0.22</i>	<i>0.21</i>	<i>0.22</i>	<i>0.20</i>	<i>0.21</i>	<i>0.21</i>	<i>0.21</i>	0.22	<i>0.21</i>	<i>0.21</i>
Petroleum Products Transfers to Crude Oil Supply	-0.39	-0.51	-0.70	-0.58	-0.49	<i>-0.52</i>	<i>-0.55</i>	<i>-0.52</i>	<i>-0.50</i>	<i>-0.54</i>	<i>-0.57</i>	<i>-0.54</i>	-0.55	<i>-0.52</i>	<i>-0.54</i>
Product Net Imports (c)	-3.91	-3.71	-4.03	-4.56	-4.52	<i>-4.00</i>	<i>-3.95</i>	<i>-4.28</i>	<i>-3.97</i>	<i>-3.82</i>	<i>-3.87</i>	<i>-4.27</i>	-4.06	<i>-4.19</i>	<i>-3.98</i>
Hydrocarbon Gas Liquids	-2.47	-2.39	-2.42	-2.58	-2.62	<i>-2.55</i>	<i>-2.52</i>	<i>-2.50</i>	<i>-2.66</i>	<i>-2.68</i>	<i>-2.60</i>	<i>-2.62</i>	-2.46	<i>-2.55</i>	<i>-2.64</i>
Unfinished Oils	0.28	0.27	0.22	0.18	0.28	<i>0.40</i>	<i>0.41</i>	<i>0.32</i>	<i>0.29</i>	<i>0.38</i>	<i>0.41</i>	<i>0.32</i>	0.24	<i>0.35</i>	<i>0.35</i>
Other HC/Oxygenates	-0.05	-0.07	-0.04	-0.05	-0.06	<i>-0.05</i>	<i>-0.04</i>	<i>-0.05</i>	<i>-0.09</i>	<i>-0.08</i>	<i>-0.07</i>	<i>-0.08</i>	-0.05	<i>-0.05</i>	<i>-0.08</i>
Motor Gasoline Blend Comp.	0.45	0.67	0.57	0.41	0.32	<i>0.56</i>	<i>0.63</i>	<i>0.46</i>	<i>0.53</i>	<i>0.68</i>	<i>0.59</i>	<i>0.36</i>	0.52	<i>0.49</i>	<i>0.54</i>
Finished Motor Gasoline	-0.75	-0.58	-0.67	-0.81	-0.79	<i>-0.62</i>	<i>-0.67</i>	<i>-0.89</i>	<i>-0.70</i>	<i>-0.53</i>	<i>-0.55</i>	<i>-0.73</i>	-0.70	<i>-0.74</i>	<i>-0.63</i>
Jet Fuel	-0.05	0.01	-0.05	-0.09	-0.09	<i>-0.02</i>	<i>0.00</i>	<i>-0.01</i>	<i>-0.03</i>	<i>0.05</i>	<i>0.07</i>	<i>0.05</i>	-0.05	<i>-0.03</i>	<i>0.03</i>
Distillate Fuel Oil	-0.76	-0.97	-1.01	-1.01	-0.87	<i>-0.96</i>	<i>-1.02</i>	<i>-0.93</i>	<i>-0.64</i>	<i>-0.91</i>	<i>-0.94</i>	<i>-0.86</i>	-0.94	<i>-0.95</i>	<i>-0.84</i>
Residual Fuel Oil	0.01	-0.04	-0.03	0.00	-0.03	<i>-0.11</i>	<i>-0.12</i>	<i>-0.04</i>	<i>-0.06</i>	<i>-0.06</i>	<i>-0.11</i>	<i>-0.03</i>	-0.01	<i>-0.07</i>	<i>-0.07</i>
Other Oils (g)	-0.58	-0.61	-0.59	-0.61	-0.65	<i>-0.66</i>	<i>-0.62</i>	<i>-0.63</i>	<i>-0.61</i>	<i>-0.67</i>	<i>-0.65</i>	<i>-0.69</i>	-0.60	<i>-0.64</i>	<i>-0.66</i>
Product Inventory Net Withdrawals	0.30	-0.49	-0.61	0.44	0.71	<i>-0.45</i>	<i>-0.30</i>	<i>0.39</i>	<i>0.34</i>	<i>-0.49</i>	<i>-0.29</i>	<i>0.37</i>	-0.09	<i>0.09</i>	<i>-0.02</i>
Total Supply	19.67	20.38	20.37	20.56	19.82	<i>20.65</i>	<i>20.72</i>	<i>20.60</i>	<i>20.30</i>	<i>20.63</i>	<i>20.69</i>	<i>20.61</i>	20.25	<i>20.45</i>	<i>20.56</i>
Consumption (million barrels per day)															
Hydrocarbon Gas Liquids	3.40	3.36	3.25	3.81	3.75	<i>3.39</i>	<i>3.46</i>	<i>3.83</i>	<i>3.83</i>	<i>3.44</i>	<i>3.48</i>	<i>3.87</i>	3.46	<i>3.61</i>	<i>3.65</i>
Other HC/Oxygenates	0.22	0.28	0.28	0.28	0.28	<i>0.30</i>	<i>0.30</i>	<i>0.33</i>	<i>0.34</i>	<i>0.37</i>	<i>0.37</i>	<i>0.40</i>	0.27	<i>0.30</i>	<i>0.37</i>
Unfinished Oils	0.00	0.00	0.00	0.00	0.00	<i>0.00</i>	0.00	<i>0.00</i>	<i>0.00</i>						
Motor Gasoline	8.67	9.13	9.05	8.93	8.62	<i>9.17</i>	<i>9.14</i>	<i>8.80</i>	<i>8.65</i>	<i>9.12</i>	<i>9.07</i>	<i>8.72</i>	8.94	<i>8.94</i>	<i>8.89</i>
Fuel Ethanol blended into Motor Gasoline	0.90	0.94	0.94	0.94	0.89	<i>0.95</i>	<i>0.95</i>	<i>0.94</i>	<i>0.90</i>	<i>0.95</i>	<i>0.95</i>	<i>0.94</i>	0.93	<i>0.93</i>	<i>0.93</i>
Jet Fuel	1.55	1.67	1.72	1.66	1.57	<i>1.72</i>	<i>1.73</i>	<i>1.68</i>	<i>1.63</i>	<i>1.75</i>	<i>1.77</i>	<i>1.73</i>	1.65	<i>1.67</i>	<i>1.72</i>
Distillate Fuel Oil	4.01	3.93	3.90	3.90	3.84	<i>4.00</i>	<i>3.91</i>	<i>4.00</i>	<i>4.08</i>	<i>3.94</i>	<i>3.89</i>	<i>3.98</i>	3.93	<i>3.94</i>	<i>3.97</i>
Residual Fuel Oil	0.29	0.22	0.27	0.31	0.29	<i>0.26</i>	<i>0.22</i>	<i>0.24</i>	<i>0.23</i>	<i>0.23</i>	<i>0.21</i>	<i>0.24</i>	0.27	<i>0.25</i>	<i>0.23</i>
Other Oils (g)	1.53	1.79	1.89	1.67	1.48	<i>1.82</i>	<i>1.95</i>	<i>1.71</i>	<i>1.55</i>	<i>1.77</i>	<i>1.90</i>	<i>1.66</i>	1.72	<i>1.74</i>	<i>1.72</i>
Total Consumption	19.66	20.38	20.37	20.56	19.82	<i>20.65</i>	<i>20.72</i>	<i>20.60</i>	<i>20.30</i>	<i>20.63</i>	<i>20.69</i>	<i>20.61</i>	20.25	<i>20.45</i>	<i>20.56</i>
Total Petroleum and Other Liquids Net Imports	-1.64	-1.20	-1.42	-2.28	-2.24	<i>-1.44</i>	<i>-1.81</i>	<i>-2.77</i>	<i>-2.71</i>	<i>-2.33</i>	<i>-2.55</i>	<i>-3.28</i>	-1.64	<i>-2.06</i>	<i>-2.72</i>
End-of-period Inventories (million barrels)															
Commercial Inventory															
Crude Oil (excluding SPR)	465.4	454.7	417.5	426.4	452.4	<i>437.9</i>	<i>421.6</i>	<i>427.9</i>	<i>456.9</i>	<i>448.7</i>	<i>434.3</i>	<i>441.6</i>	426.4	<i>427.9</i>	<i>441.6</i>
Hydrocarbon Gas Liquids	174.3	225.4	279.1	223.3	165.1	<i>214.2</i>	<i>255.0</i>	<i>211.7</i>	<i>174.3</i>	<i>227.6</i>	<i>268.4</i>	<i>227.3</i>	223.3	<i>211.7</i>	<i>227.3</i>
Unfinished Oils	88.6	87.0	88.3	84.1	90.1	<i>87.8</i>	<i>86.8</i>	<i>79.6</i>	<i>88.6</i>	<i>86.7</i>	<i>86.6</i>	<i>80.7</i>	84.1	<i>79.6</i>	<i>80.7</i>
Other HC/Oxygenates	34.3	30.1	30.3	33.2	37.9	<i>36.7</i>	<i>36.4</i>	<i>36.7</i>	<i>38.8</i>	<i>37.5</i>	<i>37.2</i>	<i>37.5</i>	33.2	<i>36.7</i>	<i>37.5</i>
Total Motor Gasoline	225.3	223.2	227.6	241.3	226.9	<i>220.0</i>	<i>215.9</i>	<i>230.5</i>	<i>229.1</i>	<i>225.0</i>	<i>216.9</i>	<i>229.1</i>	241.3	<i>230.5</i>	<i>229.1</i>
Finished Motor Gasoline	14.7	17.6	15.3	18.1	13.0	<i>18.4</i>	<i>17.4</i>	<i>19.5</i>	<i>16.0</i>	<i>18.3</i>	<i>17.8</i>	<i>20.1</i>	18.1	<i>19.5</i>	<i>20.1</i>
Motor Gasoline Blend Comp.	210.6	205.6	212.3	223.2	211.8	<i>201.6</i>	<i>198.5</i>	<i>211.0</i>	<i>213.1</i>	<i>206.7</i>	<i>199.1</i>	<i>208.9</i>	223.2	<i>211.0</i>	<i>208.9</i>
Jet Fuel	37.7	42.7	43.5	39.8	40.7	<i>41.2</i>	<i>42.3</i>	<i>39.2</i>	<i>37.5</i>	<i>37.9</i>	<i>39.2</i>	<i>35.2</i>	39.8	<i>39.2</i>	<i>35.2</i>
Distillate Fuel Oil	112.3	112.6	119.2	130.7	115.6	<i>117.5</i>	<i>119.6</i>	<i>121.3</i>	<i>109.8</i>	<i>110.4</i>	<i>114.7</i>	<i>118.1</i>	130.7	<i>121.3</i>	<i>118.1</i>
Residual Fuel Oil	29.6	30.4	27.5	24.1	29.8	<i>29.7</i>	<i>27.4</i>	<i>26.8</i>	<i>28.1</i>	<i>27.8</i>	<i>25.8</i>	<i>25.3</i>	24.1	<i>26.8</i>	<i>25.3</i>
Other Oils (g)	63.3	58.3	50.5	49.3	57.0	<i>55.1</i>	<i>46.1</i>	<i>47.8</i>	<i>57.1</i>	<i>55.2</i>	<i>46.1</i>	<i>47.7</i>	49.3	<i>47.8</i>	<i>47.7</i>
Total Commercial Inventory	1230.8	1264.4	1283.4	1252.2	1213.4	<i>1240.1</i>	<i>1251.3</i>	<i>1221.4</i>	<i>1220.2</i>	<i>1256.8</i>	<i>1269.2</i>	<i>1242.6</i>	1252.2	<i>1221.4</i>	<i>1</i>

Table 5a. U.S. Natural Gas Supply, Consumption, and Inventories
U.S. Energy Information Administration | Short-Term Energy Outlook - April 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Supply (billion cubic feet per day)															
Total Marketed Production	111.18	112.50	113.64	115.24	112.86	<i>111.89</i>	<i>112.40</i>	<i>113.05</i>	<i>112.91</i>	<i>114.06</i>	<i>114.09</i>	<i>114.83</i>	113.15	<i>112.55</i>	<i>113.98</i>
Alaska	1.08	1.01	0.91	1.04	1.08	<i>0.98</i>	<i>0.89</i>	<i>1.00</i>	<i>1.02</i>	<i>0.95</i>	<i>0.87</i>	<i>0.99</i>	1.01	<i>0.99</i>	<i>0.96</i>
Federal GOM (a)	2.13	1.89	2.02	1.94	1.87	<i>1.94</i>	<i>1.97</i>	<i>2.02</i>	<i>2.10</i>	<i>2.12</i>	<i>2.07</i>	<i>2.11</i>	1.99	<i>1.95</i>	<i>2.10</i>
Lower 48 States (excl GOM)	107.97	109.60	110.70	112.26	109.92	<i>108.97</i>	<i>109.54</i>	<i>110.03</i>	<i>109.79</i>	<i>110.99</i>	<i>111.16</i>	<i>111.73</i>	110.15	<i>109.61</i>	<i>110.92</i>
Total Dry Gas Production	102.26	103.16	104.12	105.61	103.90	<i>102.97</i>	<i>103.42</i>	<i>104.03</i>	<i>103.90</i>	<i>104.95</i>	<i>104.99</i>	<i>105.66</i>	103.80	<i>103.58</i>	<i>104.88</i>
LNG Gross Imports	0.09	0.02	0.02	0.03	0.09	<i>0.04</i>	<i>0.04</i>	<i>0.06</i>	<i>0.10</i>	<i>0.04</i>	<i>0.04</i>	<i>0.06</i>	0.04	<i>0.06</i>	<i>0.06</i>
LNG Gross Exports	11.45	11.76	11.40	12.97	12.62	<i>10.97</i>	<i>11.64</i>	<i>13.37</i>	<i>13.71</i>	<i>13.81</i>	<i>14.39</i>	<i>15.26</i>	11.90	<i>12.15</i>	<i>14.30</i>
Pipeline Gross Imports	8.45	7.32	7.94	8.23	9.07	<i>7.07</i>	<i>7.27</i>	<i>7.49</i>	<i>8.29</i>	<i>6.98</i>	<i>7.24</i>	<i>7.48</i>	7.98	<i>7.72</i>	<i>7.49</i>
Pipeline Gross Exports	8.93	8.75	9.19	8.94	9.08	<i>9.12</i>	<i>9.42</i>	<i>9.34</i>	<i>9.53</i>	<i>9.53</i>	<i>9.87</i>	<i>9.65</i>	8.95	<i>9.24</i>	<i>9.64</i>
Supplemental Gaseous Fuels	0.22	0.17	0.16	0.15	0.18	<i>0.17</i>	0.17	<i>0.17</i>	<i>0.17</i>	0.17	0.17	0.17	0.17	0.17	0.17
Net Inventory Withdrawals	11.96	-11.71	-6.38	0.29	12.83	<i>-10.97</i>	<i>-5.93</i>	<i>3.50</i>	<i>14.82</i>	<i>-11.94</i>	<i>-6.01</i>	<i>4.18</i>	-1.51	<i>-0.15</i>	<i>0.22</i>
Total Supply	102.60	78.45	85.27	92.41	104.38	<i>79.19</i>	<i>83.91</i>	<i>92.54</i>	<i>104.04</i>	<i>76.86</i>	<i>82.18</i>	<i>92.66</i>	89.64	<i>89.99</i>	<i>88.88</i>
Balancing Item (b)	0.38	-0.43	-1.40	-0.73	-0.06	<i>-0.71</i>	<i>0.47</i>	<i>0.02</i>	<i>0.51</i>	<i>0.33</i>	<i>0.59</i>	<i>-0.50</i>	-0.55	<i>-0.07</i>	<i>0.23</i>
Total Primary Supply	102.98	78.02	83.87	91.68	104.32	<i>78.47</i>	<i>84.38</i>	<i>92.56</i>	<i>104.55</i>	<i>77.19</i>	<i>82.77</i>	<i>92.15</i>	89.09	<i>89.92</i>	<i>89.12</i>
Consumption (billion cubic feet per day)															
Residential	23.50	7.29	3.57	14.95	23.09	<i>7.29</i>	<i>3.84</i>	<i>16.15</i>	<i>24.18</i>	<i>7.26</i>	<i>3.83</i>	<i>16.09</i>	12.28	<i>12.57</i>	<i>12.79</i>
Commercial	14.51	6.43	4.72	10.70	14.36	<i>6.84</i>	<i>5.19</i>	<i>11.00</i>	<i>14.53</i>	<i>6.78</i>	<i>5.14</i>	<i>10.88</i>	9.07	<i>9.34</i>	<i>9.31</i>
Industrial	24.84	22.40	21.98	24.35	24.97	<i>22.26</i>	<i>21.75</i>	<i>23.89</i>	<i>24.79</i>	<i>21.80</i>	<i>21.59</i>	<i>23.86</i>	23.39	<i>23.22</i>	<i>23.01</i>
Electric Power (c)	30.77	33.41	44.84	32.56	32.41	<i>33.66</i>	<i>44.91</i>	<i>32.49</i>	<i>31.55</i>	<i>32.86</i>	<i>43.49</i>	<i>32.20</i>	35.43	<i>35.88</i>	<i>35.05</i>
Lease and Plant Fuel	5.31	5.37	5.43	5.50	5.39	<i>5.34</i>	<i>5.37</i>	<i>5.40</i>	<i>5.39</i>	<i>5.45</i>	<i>5.45</i>	<i>5.48</i>	5.40	<i>5.37</i>	<i>5.44</i>
Pipeline and Distribution Use	3.87	2.93	3.15	3.44	3.90	<i>2.89</i>	<i>3.12</i>	<i>3.45</i>	<i>3.91</i>	<i>2.85</i>	<i>3.07</i>	<i>3.44</i>	3.34	<i>3.34</i>	<i>3.32</i>
Vehicle Use	0.18	0.18	0.18	0.18	0.20	<i>0.20</i>	0.18	<i>0.20</i>	<i>0.20</i>						
Total Consumption	102.98	78.02	83.87	91.68	104.32	<i>78.47</i>	<i>84.38</i>	<i>92.56</i>	<i>104.55</i>	<i>77.19</i>	<i>82.77</i>	<i>92.15</i>	89.09	<i>89.92</i>	<i>89.12</i>
End-of-period Inventories (billion cubic feet)															
Working Gas Inventory	1,850	2,902	3,490	3,457	2,290	<i>3,288</i>	<i>3,834</i>	<i>3,512</i>	<i>2,178</i>	<i>3,265</i>	<i>3,817</i>	<i>3,432</i>	3,457	<i>3,512</i>	<i>3,432</i>
East Region (d)	334	646	853	787	362	<i>652</i>	<i>852</i>	<i>773</i>	<i>398</i>	<i>710</i>	<i>856</i>	<i>762</i>	787	<i>773</i>	<i>762</i>
Midwest Region (d)	417	701	993	950	510	<i>782</i>	<i>1,046</i>	<i>941</i>	<i>474</i>	<i>774</i>	<i>1,063</i>	<i>925</i>	950	<i>941</i>	<i>925</i>
South Central Region (d)	919	1,138	1,092	1,183	1,002	<i>1,303</i>	<i>1,311</i>	<i>1,255</i>	<i>937</i>	<i>1,251</i>	<i>1,287</i>	<i>1,224</i>	1,183	<i>1,255</i>	<i>1,224</i>
Mountain Region (d)	79	171	239	228	162	<i>196</i>	<i>248</i>	<i>212</i>	<i>137</i>	<i>195</i>	<i>244</i>	<i>208</i>	228	<i>212</i>	<i>208</i>
Pacific Region (d)	74	216	278	280	228	<i>328</i>	<i>344</i>	<i>303</i>	<i>208</i>	<i>307</i>	<i>335</i>	<i>286</i>	280	<i>303</i>	<i>286</i>
Alaska	27	30	35	30	25	<i>28</i>	<i>33</i>	<i>29</i>	<i>24</i>	<i>27</i>	<i>32</i>	<i>28</i>	30	<i>29</i>	<i>28</i>

(a) Marketed production from U.S. Federal leases in the Gulf of Mexico.

(b) The balancing item represents the difference between the sum of the components of natural gas supply and the sum of components of natural gas demand.

(c) Natural gas used for electricity generation and (a limited amount of) useful thermal output by electric utilities and independent power producers.

(d) For a list of States in each inventory region refer to *Weekly Natural Gas Storage Report, Notes and Definitions* (<http://ir.eia.gov/ngs/notes.html>).

- = no data available

LNG: liquefied natural gas.

Notes: EIA completed modeling and analysis for this report on April 4, 2024.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Historical data: Latest data available from Energy Information Administration databases supporting the following reports: *Natural Gas Monthly*, DOE/EIA-0130; and *Electric Power Monthly*, Minor discrepancies with published historical data are due to independent rounding.

Forecasts: EIA Short-Term Integrated Forecasting System.

<https://tass.ru/politika/20519199>

11 April, 12:26,

Updated April 11, 12:55 p.m.

Putin said the strikes on Ukrainian energy facilities are part of demilitarization

The President of Russia noted that the strikes are related to the impact on the military-industrial complex of Ukraine MOSCOW, April 11. /TASS/. Strikes on energy facilities in Ukraine are part of the demilitarization process, as they affect Ukraine's defense industry, Russian President Vladimir Putin said at a meeting with Belarusian leader Alexander Lukashenko.

"If everything is looped around the solution of the issues that we talked about initially, and in the energy sector they are related, among other things, to the solution of one of the tasks that we set for ourselves, this is demilitarization. First of all, we proceed from the fact that in this way we influence the defense industry - the military-industrial complex of Ukraine, and directly," Putin said.

At the same time, he added, "if we do move on to some talks about resolving all issues in other ways, of course, as I have said many times in this regard, we are ready for this."

<https://tass.ru/politika/20519183>

11 April, 12:25,

Updated April 11, 12:54

Putin said that the Russian Federation was forced to respond to Ukrainian strikes on its energy facilities

The Russian president stressed that Russia, based on humanitarian considerations, "did not strike any blows" in winter

MOSCOW, April 11. /TASS/. Russian President Vladimir Putin said that the Russian Federation was forced to respond to Ukrainian strikes on its energy facilities. The head of state holds talks with President of Belarus Alexander Lukashenko.

"In the energy sector, unfortunately, we have seen a series of strikes on our energy facilities recently and had to respond," Putin said.

He stressed that Russia, based on humanitarian considerations, "did not strike any blows" in winter. "I mean that they did not want to leave social institutions, hospitals and so on without power supply. But after a series of strikes on our energy facilities, we were forced to respond," Putin stressed.



North Dakota Department of Mineral Resources March 2024 Director's Cut and January 2024 Production Numbers

Oil Production Numbers

January	34,192,256 barrels	= 1,102,976 barrels/day (final)	RF +0.2%
New Mexico	57,124,512 barrels	= 1,842,726	-5.2%
February	36,1554,052 barrels	= 1,246,691 barrels/day	+13% RF +13%
	1,519,037	all-time high Nov 2019	
	1,215,055 barrels/day	= 97% from Bakken and Three Forks	
	31,636 barrels/day	= 3% from Legacy Pools	

Revenue Forecast **1,100,000 barrels/day**

Crude Price (\$barrel)	ND Light Sweet	WTI	ND Market
January	63.64	73.86	66.40 RF -5%
February	66.56	76.61	69.39 RF -1%
Today	76.50	85.02	80.76 RF +15%
All-time high (6/2008)	125.62	134.02	126.75
Revenue Forecast			70.00

Gas Production and Capture

January	93,040,116 MCF	=	3,001,294 MCF/Day	
93% Capture	86,967,903 MCF	=	2,805,416 MCF/Day	
February	97,486,022 MCF	=	3,361,587 MCF/Day	+12%
95% Capture	92,161,703 MCF	=	3,177,990 MCF/Day	

3,582,821 MCF/day all-time high
production Dec 2023
3,355,110 MCF/day all-time high capture
Dec 2023

Wells Permitted

January	78	
February	63	
March	72	All-time high 370 in 10/2012

Rig Count

January	38	
February	38	
March	40	
Today	36	All-time high 218 on 5/29/2012
Federal Surface	0	
New Mexico	108	

Waiting on Completions

January	284
February	300

Inactive

January	1,490
February	1,518

Completed

January	102
February	92 (Preliminary)
March	56 (Preliminary)

Producing

January	18,703	
February	18,734 (Preliminary)	NEW All-time high 18,769 December/2023
	16,560 wells	88% are now unconventional Bakken/Three Forks Wells
	2,174 wells	12% produced from legacy conventional pools

IJA Initial Grant	Wells PA	Sites Reclaimed
January	1	0
February	4	0
March	1	0
April	8	0
May	17	0
June	12	1
July	15	5
August	15	13
September	0	14
October	0	10
November	0	0
December	0	1
January	0	0
February	0	0
March	0	0
Total	73	44

Weekly updates are available at [Initial Grant Information - Plugging and Reclamation | Department of Mineral Resources, North Dakota](#)

Fort Berthold Reservation Activity

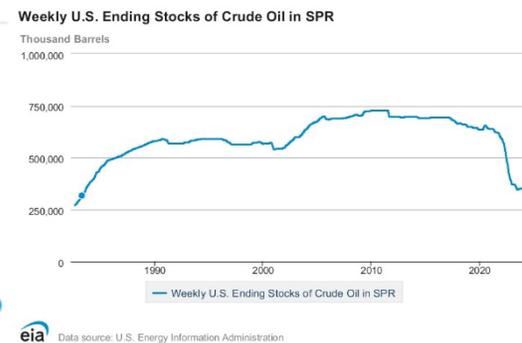
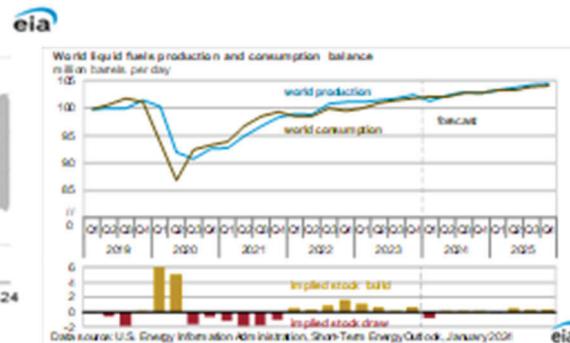
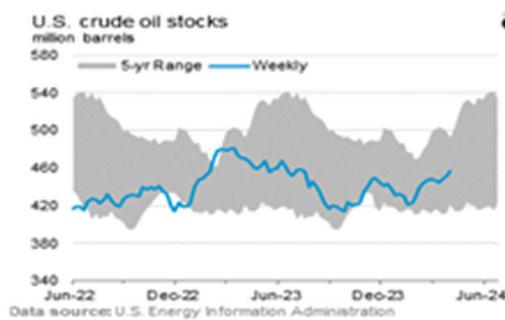
	Total	Fee Land	Trust Land
Oil Production (barrels/day)	135,930	53,501	82,429
Drilling Rigs	7	3	4
Active Wells	2,662	654	2,008
Waiting on Completion	24		
Approved Drilling Permits	127	5	122
Potential Future Wells	2,018	606	1,412

Comments:

The drilling rig count remains low due to demand, mergers, and acquisitions but is expected to return to the mid-forties with a gradual increase expected over the next 2 years.

There are 12 frac crews currently active.

Saudi Arabia and Russia announced continued oil production cuts through second quarter of the year. Middle East conflict, Russia sanctions, China economic activity, potential recessions, and shifting crude oil supply chains continue to create significant price volatility.



Crude oil transportation capacity including rail deliveries to coastal refineries is adequate, but could be disrupted due to:

US Appeals Court for the ninth circuit upholding of a lower court ruling protecting the Swinomish Indian Tribal Community's right to sue to enforce an agreement that restricts the number of trains that can cross its reservation in northwest Washington state.

DAPL Civil Action No. 16-1534 continues, but the courts have now ruled that DAPL can continue normal operations until the USACOE EIS is completed. **Corrected Draft EIS was released 9/11/23. North Dakota submitted comments 12/13/23** Comments are available by request at [Contact | Department of Mineral Resources, North Dakota \(nd.gov\)](https://www.nd.gov/energy/nddpr/contact).

Drilling - activity is expected to increase slightly and operators continue to maintain a permit inventory of approximately 12 months.

Seismic - 1 active, 1 recording, 0 NDIC reclamation projects, 0 remediating, 0 permitted, and 4 suspended surveys, 0 pending.

US natural gas storage is 38% above the five-year average. US and world crude oil inventories are about average, and the US strategic petroleum reserve remains at the lowest levels since 1983.

The price of natural gas delivered to the Northern Border at Watford City is \$1.39/MCF continues at 20–30-year lows. There is continued oversupply in the Midwest US and the Biden Administration's decision to suspend LNG export permitting has created a huge nationwide oversupply. Current oil

MONTHLY UPDATE

APRIL 2024 PRODUCTION & TRANSPORTATION

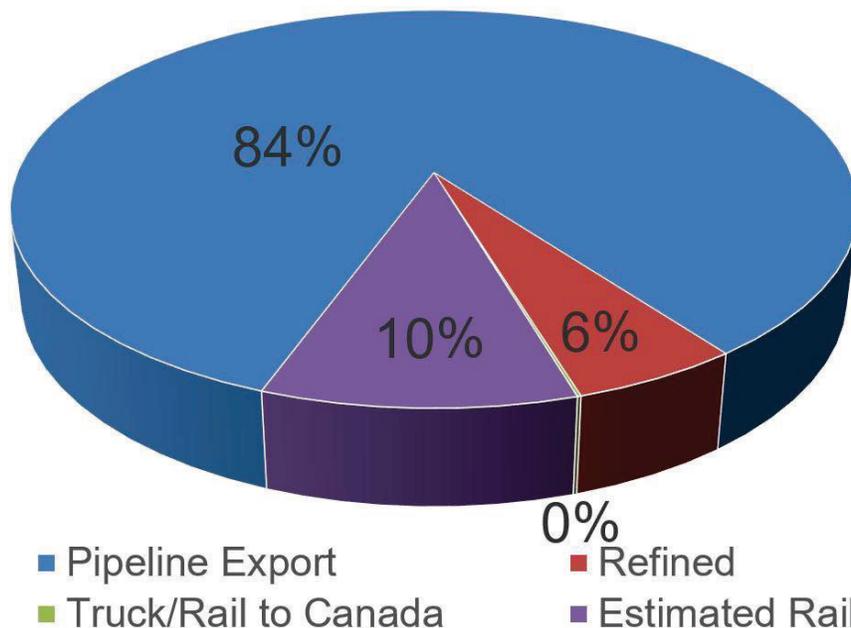
North Dakota Oil Production

Month	Monthly Total, BBL	Average, BOPD
Jan. 2024 - Final	34,192,256	1,102,976
Feb. 2024 - Prelim.	36,154,052	1,246,691

North Dakota Natural Gas Production

Month	Monthly Total, MCF	Average, MCFD
Jan. 2024 - Final	93,040,116	3,001,294
Feb. 2024 - Prelim.	97,486,022	3,361,587

Estimated Williston Basin Oil Transportation, Feb. 2024



CURRENT DRILLING ACTIVITY:

NORTH DAKOTA¹

36 Rigs

EASTERN MONTANA²

2 Rigs

SOUTH DAKOTA²

0 Rigs

SOURCE (APR 12, 2024):

1. ND Oil & Gas Division
2. Baker Hughes

PRICES:

Crude (WTI): \$87.31

Crude (Brent): \$91.83

NYMEX Gas: \$1.76

SOURCE: BLOOMBERG
(APR 12, 2023 10AM EST)

GAS STATS*

95% CAPTURED & SOLD

4% FLARED DUE TO
CHALLENGES OR
CONSTRAINTS ON EXISTING
GATHERING SYSTEMS

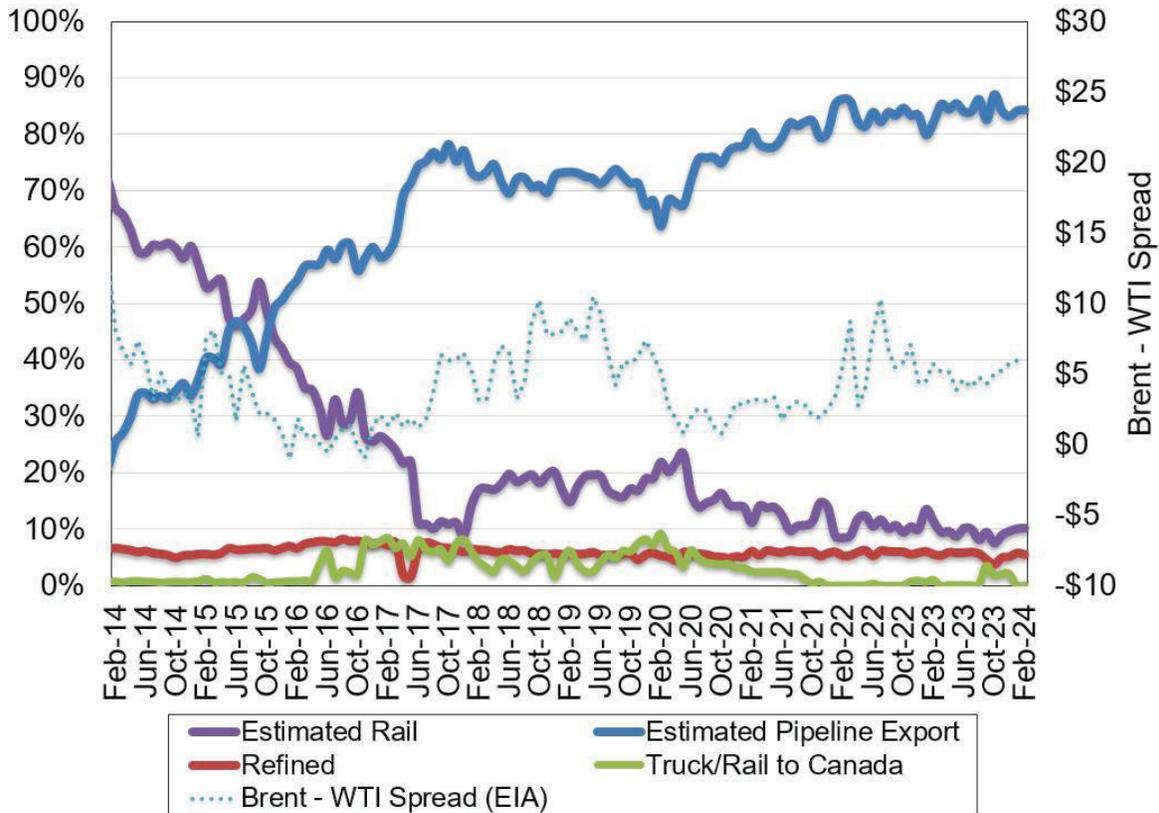
1% FLARED FROM WELL
WITH ZERO SALES

*FEB 2024 NON-CONF DATA

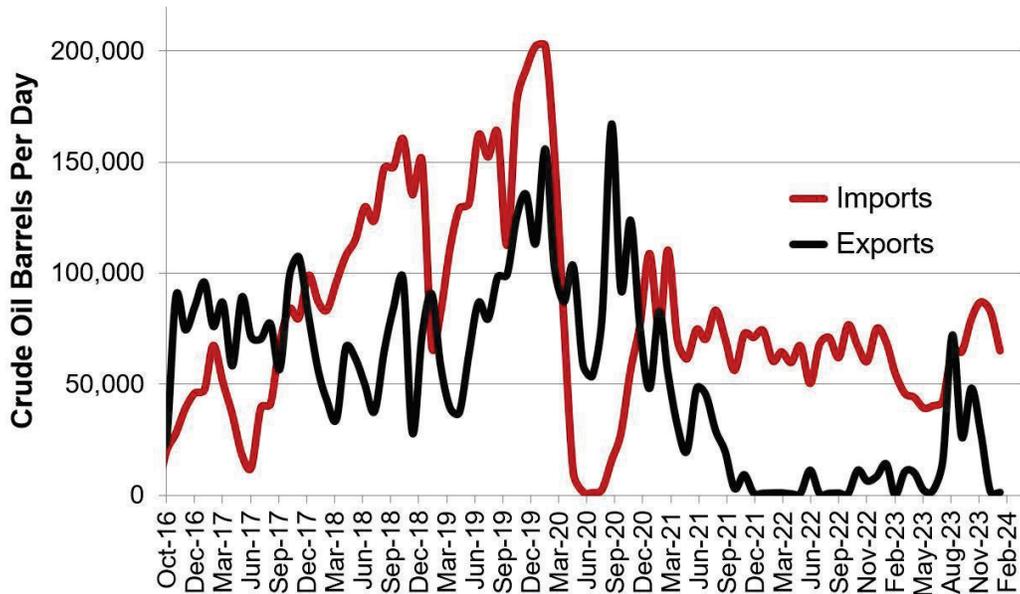
Estimated North Dakota Rail Export Volumes



Estimated Williston Basin Oil Transportation

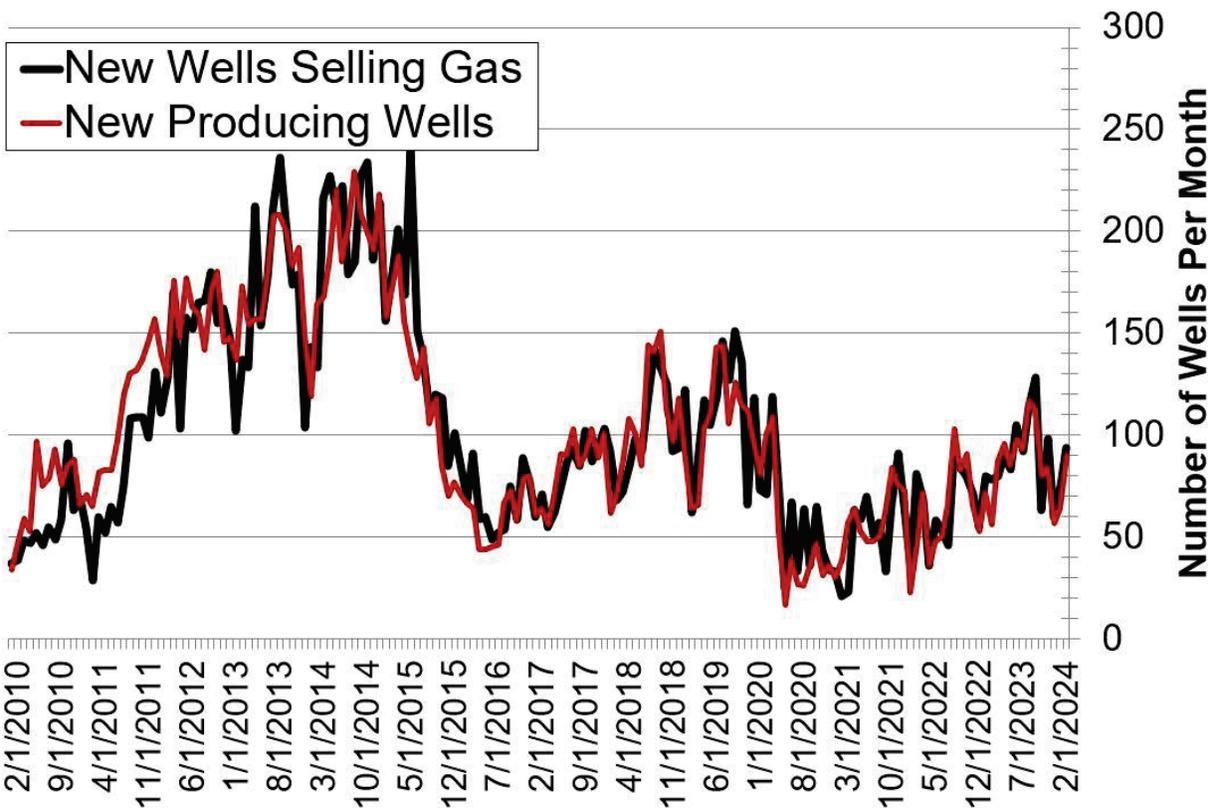


Williston Basin Truck/Rail Imports and Exports with Canada



Data for imports/exports chart is provided by the US International Trade Commission and represents traffic across US/Canada border in the Williston Basin area.

New Gas Sales Wells per Month



US Williston Basin Oil Production, BOPD

2023

MONTH	ND	EASTERN MT*	SD	TOTAL
January	1,062,924	62,114	2,610	1,127,648
February	1,158,988	63,558	2,475	1,225,021
March	1,124,917	64,596	2,652	1,192,165
April	1,135,872	61,933	2,557	1,200,362
May	1,140,253	61,302	2,560	1,204,115
June	1,174,603	59,742	2,275	1,236,620
July	1,187,084	56,985	2,311	1,246,380
August	1,219,832	62,383	2,540	1,284,755
September	1,290,356	62,816	2,504	1,355,676
October	1,255,517	62,603	2,452	1,320,572
November	1,279,103	63,073	2,448	1,344,624
December	1,275,004	62,935	2,496	1,340,435

2024

MONTH	ND	EASTERN MT*	SD	TOTAL
January	1,102,976	57,997	2,312	1,163,285
February	1,246,691			
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				

* Eastern Montana production composed of the following Counties: Carter, Daniels, Dawson, Fallon, McCone, Powder River, Prairie, Richland, Roosevelt, Sheridan, Valley, Wibaux

DON'T GET APRIL FOOLED BY WOBBLING GAS PRICES

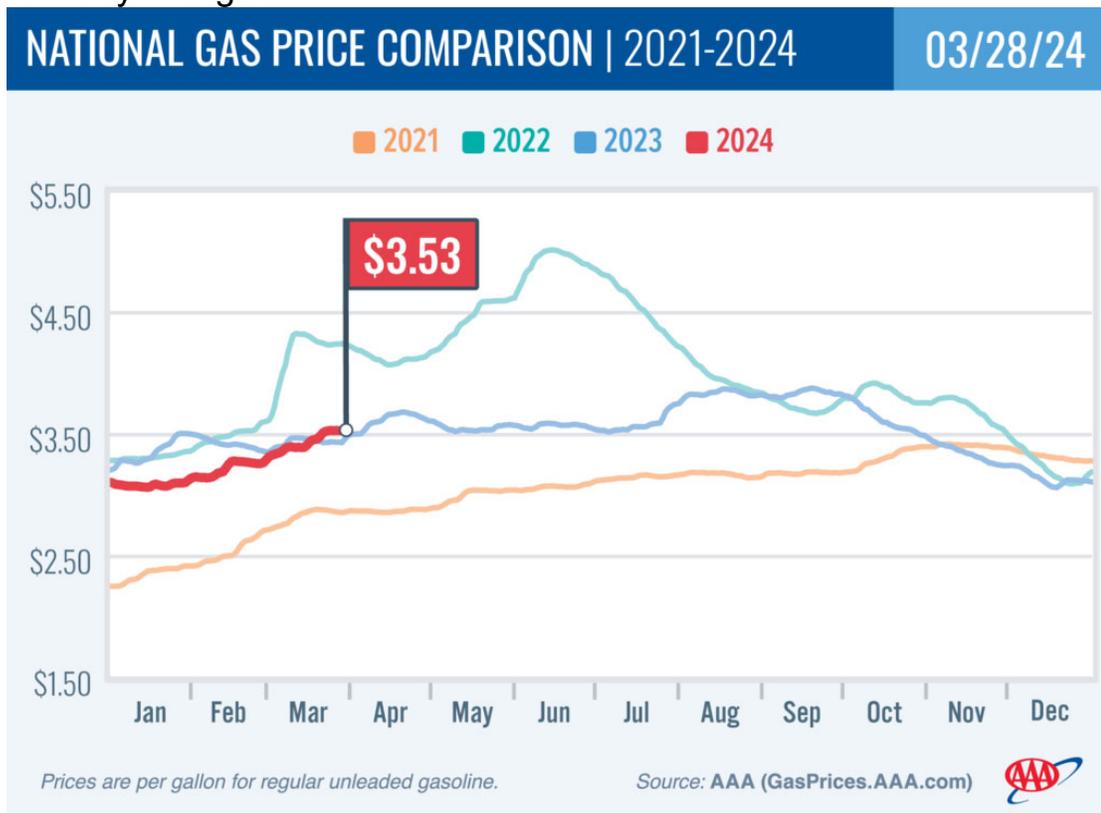
March 28, 2024

WASHINGTON, D.C. — After an early spring surge, the national average for a gallon of gas spent the past week drifting up and down by a fraction of a cent before settling a penny higher at \$3.53. But the break may be temporary, as gas pump prices will likely resume a spring increase.

“Uncertainty of the impact of Ukraine’s targeting of Russia’s oil infrastructure likely spiked oil prices recently,” said Andrew Gross, AAA spokesperson. “But those concerns have abated somewhat for now, and gas prices are settling into a pattern similar to last year when the usual seasonal increase was slow and steady.”

According to new data from the Energy Information Administration (EIA), gas demand dipped slightly from 8.81 to 8.72 million b/d last week. Meanwhile, total domestic gasoline stocks increased by 1.3 million bbl to 232.1 million bbl. Lower demand would typically contribute to pushing pump prices lower or slowing increases, but rising oil prices have kept them elevated instead.

Today’s national average of \$3.53 is 24 cents more than a month ago and 10 cents more than a year ago.



Quick Stats

- Since last Thursday, these **10 states have seen the largest increases** in their averages: Utah (+26 cents), Idaho (+17 cents), Alaska (+15 cents), Nevada (+12 cents), Washington (+12 cents), Oregon (+11 cents), Wyoming (+7 cents), California (+7 cents), North Dakota (+6 cents) and Washington, DC (+6 cents).
- The nation's **top 10 most expensive markets**: California (\$5.02), Hawaii (\$4.69), Washington (\$4.49), Nevada (\$4.38), Oregon (\$4.25), Alaska (\$4.07), Illinois (\$3.90), Arizona (\$3.78), Utah (\$3.76) and Washington, DC (\$3.69).

Oil Market Dynamics

At the close of Wednesday's formal trading session, WTI decreased by 27 cents to settle at \$81.35. Oil prices fell after the EIA reported that total domestic commercial crude stocks increased by 3.2 million bbl to 448.2 million bbl last week. Although stocks increased when compared to a year ago, the current stock level is 25.5 million bbl lower than at the end of March 2023.

Drivers can find current gas prices along their route using the [AAA TripTik Travel planner](#).

Seasonal Gas Prices Explained

From refinery maintenance to consumer demand, seasonal fuel production affects gas prices at the dispenser.

February 28, 2024 3 min read

Traditionally, gasoline prices are at their lowest during the first week of February and then begin to climb, often peaking right before Memorial Day. Seasonal increases in demand plus a transition to unique fuel blends put pressure on gas prices each spring.

Since 2000, gasoline prices have increased about 50 cents from the seasonal low at the beginning of February to the seasonal high in mid-May. Here's a timeline of events that can affect gas prices during the first half of the year.

February: Refinery Maintenance

U.S. demand for gasoline is generally at its lowest during the first two months of the year, so refinery maintenance, known as a "turnaround," is often scheduled during the first quarter. A turnaround is a planned, periodic shut down (total or partial) of a refinery process unit or plant to perform maintenance, overhaul and repair operations and to inspect, test and replace materials and equipment.

Refineries undergo turnarounds roughly once every four years so about 25% of refineries undergo a turnaround each spring. Another reason for scheduling turnarounds is that they allow refineries to retool for summer-blend fuels.

March-April: Refineries Switch to Summer-Blend Production

The U.S. Environmental Protection Agency (EPA) defines April to June as the "transition season" for fuel production. Refineries lead this transition and switch over to summer-blend production in March and April.

Gasoline blends used in the summer months are different than the blends used in the winter. In the winter, fuels have a higher Reid vapor pressure, meaning they evaporate more easily and allow cars to start in colder weather. In the warm summer months, these evaporative attributes would lead to increased emissions and the formation of smog.

There are also more fuels to produce during the transition season. In the winter months, only a few fuels are used across the United States. However, because of various state or regional requirements, [14 different fuel specifications](#) are required for the summer months. Refineries must produce enough fuel for each area to ensure there are no supply shortages, and that can complicate the production and distribution of fuels.

Summer-blend fuel is also more expensive to make than winter-blend fuel. First, the production process takes longer and, second, the overall yield of gasoline per barrel of oil is lower. These complexities add as much as 15 cents per gallon to the cost to produce these higher-grade fuels.

May-June: Deadlines for Terminals and Retailers

The May 1 compliance deadline for terminals to fully purge their systems of winter-blend fuels is considered one of the biggest factors in seasonal price increases. This regulatory requirement can lead to lower inventories at the terminal, which also puts upward pressure on gas prices. It can also take fuels refined in the Gulf Coast several weeks to reach storage terminals throughout the country, which is why it's important to have summer-blend fuel at terminals and storage facilities by May 1. This date is the most important reason that seasonal gas prices tend to peak in May.

In most areas of the country that require summer-blend fuels, retailers have until June 1 to switch to summer-grade gas.

February-August: Summer Drive Season and Increased Demand

Demand can play a role in elevating seasonal gas prices. Gas demand increases a few percentage points each month beginning in February and peaks in August. Total fuel demand is 10% to 15% greater in August than in February, and any stress to the system—such as a refinery or pipeline outage—can cause a supply/demand imbalance and affect prices.

September: A Welcome Change

As gasoline demand decreases and temperatures cool, retailers are able to switch to selling winter-blend fuel beginning September 15. While these winter-blend fuels are cheaper to produce, the complications of the switchover can result in a temporary bump in price. Weather conditions, such as hurricanes, can also affect gas prices in the late summer to fall months.

Unlike in the spring, the change to winter-blend fuel is not required. However, because winter-blend fuel costs less, retailers often sell the fuel blend to remain price competitive. Not all retailers begin selling this fuel on September 15; many make the switch when their inventories are low.

By the end of September, gas prices generally decrease as the switchover processes and demand continues to fall. And despite conspiracy theories, [lower gas prices do not correlate to pre-election politics](#).

In California, the season for summer-blend fuels is longer than the rest of the country. Both Northern and Southern California's summer-blend requirements run through the end of October. This exacerbated supply issues within the state in early October 2012, when fires at two large refineries limited state-specific production and caused wholesale and retail gas prices to spike to record levels.

Meanwhile, demand for distillate fuel (diesel fuel and home heating oil) begins to increase in September because of both greater diesel fuel demand related to the harvest and greater home heating oil demand because of the colder weather.

Exceptions to the Rule

Summer-blend fuel requirements may be relaxed in times of emergencies or when potential shortages are possible.

In 2005, NACS worked with Congress to give the EPA the authority to waive certain regulations affecting the motor fuels system in times of emergency. The EPA's immediate use of these waivers is critical to bringing the entire fuel supply chain into operation as quickly and safely as possible. For example, this flexibility allowed winter blends of gasoline to enter into the market in 2017 before the traditional transition date of September 15 in response to Hurricanes Harvey, Irma and Maria.

Mexico to Halt Some Oil Exports, Further Squeezing Global Market

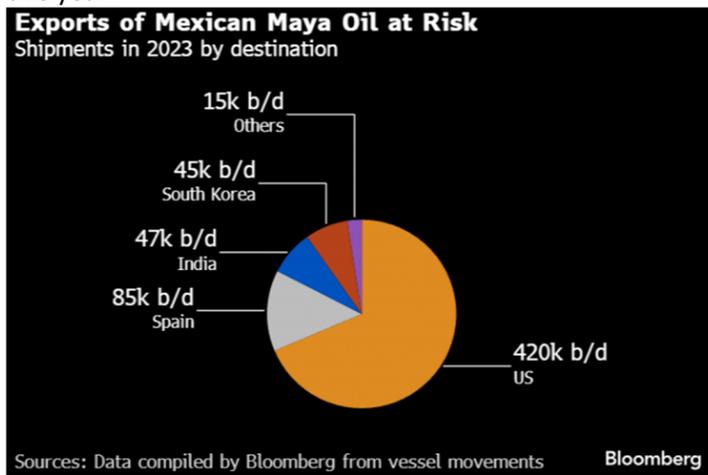
2024-04-01 18:16:54.646 GMT

By Lucia Kassai

(Bloomberg) -- Mexico's state-controlled oil company plans to halt some crude exports over the next few months, a move that would cut supply from a tightening global market.

Petroleos Mexicanos, also called Pemex, canceled contracts to supply its flagship Maya crude oil to refiners in the US, Europe and Asia, according to people with knowledge of the situation, who asked not to be named because the information is private.

The export cut, coming at a time when OPEC and its allies are already curbing production, threatens to drive up oil prices that are at a six-month high. Physical supplies — especially heavier, sour grades such as Maya — are tightening even further with Venezuelan exports set to fall after the reinstatement of US sanctions on its oil industry. JPMorgan Chase & Co. last week warned that global benchmark Brent could reach \$100 a barrel this year.



Pemex's plan to suspend some exports is part of an effort to produce more domestic gasoline and diesel ahead of the June 2 presidential election, the people said. President Andres Manuel Lopez Obrador, whose term is coming to an end, won office with the promise of weaning the country off of costly fuel imports. His multi-year effort to revamp Mexico's refining sector is finally paying off.

In February the country's six refineries operated near the highest rates seen in more than six years. Oil use should keep rising as Pemex works to start commercial operations of the new Olmeca refinery, also known as Dos Bocas, with capacity to process 340,000 barrels of crude oil a day.

Pemex didn't immediately return call and messages seeking comment.

The halt affects primarily exports of Maya while shipments of other grades including medium sour Isthmus should continue at reduced volumes, the people said. It's unclear if Pemex's trading arm PMI will be able to follow through on the export cut. In 2021 and later in 2023 the company had to shelve plans to halt oil exports after it failed to increase domestic fuelmaking.

US refiners are likely to bear the brunt of the cut in Maya exports. Fuelmakers including Valero Energy Corp, Chevron Corp and Marathon Petroleum Corp import 420,000 barrels of the heavy sour variety per day. In 2023, Maya exports reached 612,000 barrels a day.

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<https://www.reuters.com/business/energy/mexico-cut-least-330000-bpd-crude-exports-may-sources-say-2024-04-08/>

Exclusive: Mexico to cut at least 330,000 bpd of crude exports in May, sources say

By Marianna Parraga and Stefanie Eschenbacher

April 8, 2024 1:00 PM MDT Updated 5 hours ago



The Dos Bocas refinery from the Mexican state-run oil producer Petroleos Mexicanos (PEMEX) is pictured during its inauguration, in Paraiso, Tabasco state, Mexico, July 1, 2022. REUTERS/Edgard Garrido/File Photo [Purchase Licensing Rights, opens new tab](#)

HOUSTON/MEXICO CITY, April 8 (Reuters) - Mexico's state energy company, Pemex, is planning to cut at least 330,000 barrels per day (bpd) of crude exports in May, leaving customers in the United States, Europe and Asia with a third less supply, two sources said.

The plan follows the withdrawal of 436,000 bpd of Maya, Isthmus and Olmeca crudes this month, ordered by Pemex to its trading arm PMI Comercio Internacional because it needs to supply more to its domestic refineries as it targets energy self-sufficiency.

Pemex has no option other than applying monthly cuts to exports after its crude production in February fell to the lowest level in 45 years and the country's refineries, including a new facility in the port of Dos Bocas, began taking in more crude oil.

Dos Bocas alone is expected to need an average of some 179,000 bpd of crude this year, according to official figures.

Neither Pemex nor its trading arm immediately responded to a request for comment.

Over the weekend, a deadly fire at a key offshore platform in the Gulf of Mexico also meant Pemex had to halt production at several wells, one of the sources said. It is not clear how many barrels would be cut as a result.

Pemex exported 1.03 million bpd of crude last year, and 945,000 bpd in January-February.

Mexico's energy ministry expects domestic processing to increase to an average of 1.04 million bpd this year from 713,300 bpd in 2023, leaving fewer barrels available for exports in the remainder of the year.

"May cuts are expected to be between 10 million and 14 million barrels (in total)," another source said.

Even though the cuts are significant and expected to be applied on a monthly basis from April onward, Pemex's trading arm has not declared force majeure over supply contracts, the sources, who are traders, said. Most of the contracts include provisions to allocate monthly volumes of specific crudes depending on availability, the sources added. The volumes are agreed mid-month.

Pemex and the government of President Andres Manuel Lopez Obrador said earlier this year that the Dos Bocas refinery, in Mexico's Tabasco state, would start producing gasoline and diesel in the first quarter.

While the refinery has begun processing crude in recent months, it has yet to contribute to the domestic market with finished motor fuels.

Apart from the increased local demand, dwindling reserves - especially at old Gulf of Mexico fields - is another challenge, a separate source, at the energy ministry, said.

There have been "discrepancies" in Mexico's data on reserves, the source said, adding that these currently overestimate both the amount of crude oil Pemex can technically recover at a cost that is financially feasible, and the quality of the crude oil itself.

"The prognosis for the future is not encouraging," the source said. "The (production) decline is unavoidable."

The Reuters Power Up newsletter provides everything you need to know about the global energy industry. Sign up [here](#).

Reporting by Marianna Parraga in Houston and Stefanie Eschenbacher in Mexico City Additional reporting by Ana Isabel Martinez in Mexico City Editing by Matthew Lewis

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1. EXCLUSIVE
2. AMERICAS

Biden Is Unlikely to Reimpose Oil Sanctions on Venezuela **Nicolás Maduro of Venezuela has barred presidential candidates, but U.S. officials worry that new penalties would raise gas prices in a U.S. election year**

By *Kejal Vyas Follow*, *Patricia Garip* and *Juan Forero Follow*

March 29, 2024 4:09 pm ET

The Biden administration is leaning away from reimposing sanctions on Venezuela's oil industry despite President Nicolás Maduro's moves to [bar leading opposition candidates](#) from the country's July elections, said people familiar with the matter.

U.S. officials are concerned that reverting to [Trump-era sanctions](#) that accelerated the decline of Venezuela's oil production would raise the price of gas at U.S. pumps and prompt more migration from Venezuela as President Biden campaigns for re-election in November. Restricting Western oil companies would tighten global energy supplies and open the way for Chinese investment in Venezuela, they say.

Biden administration officials have said they didn't think that [the oil sanctions](#)—leveled against Venezuela in early 2019 in former President [Donald Trump](#)'s effort to force Maduro from power—was constructive.

Top officials including national security adviser Jake Sullivan; Amos Hochstein, senior White House energy adviser; and Deputy national security adviser Jon Finer are encouraging a different approach that emphasizes broader strategic interests such as energy supply over political change in Caracas.

“We are committed to maintain sanctions relief if Maduro and his representatives uphold the commitments outlined” in a deal they signed in October for an electoral road map, a senior U.S. administration official said Friday. “We urge Maduro to do so.”

Maintaining the current policy “spells a greater opportunity of keeping Venezuela as part of the Western marketplace, less inclined to spin back in the direction of China and Iran,” said an oil industry adviser familiar with the deliberations.

In October 2023, after secret talks between U.S. and Venezuelan officials in Qatar, the Biden administration [issued a six-month general license](#), which expires April 18, allowing oil companies to work in Venezuela. The license expanded an easing of sanctions that since late 2022 had been mostly limited to [Chevron](#), the largest private company with assets in Venezuela. In exchange, Maduro's regime pledged to work toward free and fair elections this year and agreed to receive Venezuelan deportees as the U.S. grapples with record migration.

Instead, the government halted the short-lived deportation deal, arrested a range of political opponents and banned from office Maria Corina Machado, an opposition politician who had been chosen in a primary to challenge him.

When Machado and opposition political parties last week named an 80-year-old grandmother and academic as a replacement candidate, the government banned her, too. A poll by the American company ClearPath Strategies showed Machado or any candidate she backed would easily defeat Maduro in a vote.

“I said at the time, you lift the sanctions now, you take away your own leverage,” said Eric Farnsworth, a former high-ranking State Department diplomat who is vice president of the Council of the Americas policy group in Washington. “That is exactly what happened.”

The Biden administration is likely to extend the current policy until July 28, when Venezuela will hold elections, people familiar with the administration’s thinking say, allowing oil companies and traders to engage with national oil company Petróleos de Venezuela for now. U.S. oil executives are negotiating deals in Caracas in the hopes of a more enduring commercial opening.

Those familiar with the administration’s thinking don’t rule out some punitive measures, such as restricting payment for Venezuelan oil to local currency rather than U.S. dollars.

“Fundamentally, the maximum pressure strategy was something that did not lead to the outcome it intended to promote regime change through crushing sanctions,” Juan Gonzalez, who until recently was the White House’s top Latin American adviser, told reporters in February.

The Biden administration has quietly retained Gonzalez as a go-between with Venezuela in ongoing talks, the people familiar with the matter said. A face-to-face meeting is scheduled for early April, possibly in Doha or Mexico City.

Among the U.S.’s top concerns regarding Venezuela has been the exodus of migrants, hundreds of thousands of whom have sought asylum after crossing the American southwestern border. Sanctions relief helped Venezuela raise daily oil production by nearly 200,000 barrels in three years, to about 800,000.

For some analysts who track U.S. policy in Latin America, the Biden administration’s opening to Maduro failed.

“After all that’s been done, without snapping back sanctions, we lose credibility,” said Ryan Berg, who tracks Venezuela at the Center for Strategic and International Studies in Washington. “If we don’t have accountability, I think Maduro would be laughing at us.”

Geoff Ramsey, Venezuela director at the Atlantic Council in Washington, said a policy that gives priority to Western energy interests would require “significant concessions” from Maduro.

“I don’t see the administration completely scrapping a democracy and human rights agenda,” he said. “The White House has walked a fine line between pursuing U.S. energy and geopolitical interests while also trying to encourage a gradual democratic opening in Caracas.”

In Latin America, Maduro’s measures sparked criticism.

Argentine President Javier Milei’s government issued a statement calling on Maduro to “ensure the safety and welfare of the Venezuelan people as well as convening transparent elections.” In

Brazil, President Luiz [Inácio Lula da Silva](#) and French President Emmanuel Macron called the exclusion of the Venezuelan candidate, Corina Yoris, “serious.”

“I just want the elections carried out the way they are in Brazil, whoever wants to take part, takes part,” said da Silva.

In Caracas, foreign energy executives say they have taken comfort in the U.S.’s unwillingness to sever business ties with Venezuela, despite the rocky political climate.

Chevron, which was given a special license by the U.S. Treasury in 2022 to operate in Venezuela, plans to drill dozens of wells this year in a bid to raise its output to 200,000 barrels a day, roughly a quarter of the country’s total production. Italy’s [Eni](#) and Spain’s [Repsol](#) have also been operating under special exemptions that the U.S. made to its sanctions policy. Other oil companies are in talks with the U.S. over securing terms similar to Chevron’s.

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US, Venezuela Secretly Meet in Mexico Before Sanctions Deadline
2024-04-11 21:08:15.380 GMT

By Andreina Itriago Acosta and Eric Martin (Bloomberg) -- US officials met secretly this week with members of Venezuelan President Nicolás Maduro's administration to keep him engaged in negotiations over democratic reforms as a deadline nears to reinstate sanctions against the nation's oil industry.

Representatives from Joe Biden's administration and the Venezuelan government, including Daniel Erikson of the US National Security Council and Maduro's head negotiator Jorge Rodríguez, met Tuesday in Mexico City to discuss electoral conditions, according to people with direct knowledge of the matter.

The same day, Colombian President Gustavo Petro flew to Caracas with US backing, meeting with Maduro for nearly three hours before sitting down with opposition presidential candidate Manuel Rosales the following morning. The visit took place after Colombia took the unusual step of criticizing Maduro for blocking the participation of several opposition candidates in the July 28 election.

The US National Security Council declined to comment. Venezuela's information ministry didn't immediately reply to a request for comment.

On Thursday, Colombia's acting Foreign Minister Luis Gilberto Murillo said Petro's administration was in constant touch with the US regarding regional issues, including Venezuela. "We will always play a constructive role within the framework of diplomatic channels," Murillo, Colombian ambassador to the US, said in a radio interview.

Maduro has been testing the limits of a US-backed agreement with the opposition last year. Maria Corina Machado, who won an October opposition primary, and her little-known substitute, Corina Yoris, have been barred from running in this year's presidential race.

The repeated offenses have put Washington in an increasingly uncomfortable situation: whether to reimpose oil and gas sanctions during an election year in which migration has emerged as a key issue for US voters.

If the suspension is lifted, Venezuela could lose a total of \$2 billion in oil revenues by the end of 2024, according to Luis Barcenás, the head of Caracas-based economic firm Ecoanalítica. From October until March, the license has enabled Maduro's government to earn an additional \$740 million in oil sales, according to Eduardo Fortuny, head of Dinámica Venezuela, a Caracas-based consultancy firm.

Read More: Maduro Is Testing the Limits of Biden's Fair-Election Deal

Murillo, who helped organize the meeting with Rosales, said on Thursday that he has also been speaking confidentially with Machado.

For months, the US has been urging Venezuela's neighbors to pressure Maduro to fall back in line. Venezuela and US officials finally agreed to meet earlier this week. They had met Feb. 23, before the Maduro government called for early elections and prevented Machado and Yoris from registering in the vote. Francisco Palmieri, chief of mission of the Venezuelan Affairs Unit, joined the US delegation, the people said. Deputy Homeland Security Adviser Jennifer Daskal also attended the meeting, according to one of the people. A press official for the Venezuelan Affairs Unit declined to comment on Palmieri's participation.

Still, much about the election remains up in the air, including the participation of credible electoral observers, who are visiting Venezuela starting this week.

--With assistance from Fabiola Zerpa.

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GLOBAL COMMODITY STRATEGY AND MENA | RESEARCH

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Geopolitical Update: Temperatures Rising

Analysis and Updates on Conflicts in Ukraine and the Middle East

March 27, 2024

RBC Capital Markets, LLC

Helima Croft (Head of Global Commodity Strategy and MENA Research) (212) 618-7798; helima.croft@rbccm.com

President Biden faces the prospect of a cruel summer if the Russia-Ukraine and Middle East conflicts continue to pose risks to global energy supplies.

- **This week brought more attacks by Ukraine on Russian refineries with drones circling back to two previously targeted refineries, Novokuibyshevsky and Kuibyshevsky, in the Samara region, resulting in significant damage to the latter's primary crude distillation unit.** As a result, we now count 5 refineries facing significant throughput disruptions, with our estimates for downed refining capacity rising to 13% of Russia's total. These attacks seem to be serving the twin purposes of partially denying the Russian frontlines diesel as well as reducing Russia's essential energy revenue to fund the war. Preliminary estimates already show aggregate Russian refinery runs in March down 650 kb/d y/y. While it is still too early to see how these disruptions will ultimately affect seaborne refined product export flows, the largest impacts would be seen on global gasoil and fuel oil markets. Turkey, Africa, and Brazil have been the top destinations for Russian gasoil since exports were barred from Europe.
- **There have been reports that the White House has tried to dissuade Kyiv from this strategy, fearing the energy price impact – we find this entirely credible based on our conversations.** As we have repeatedly noted, the White House has sought to avert a Russian supply disruption and has shaped policy towards this end; including price caps designed as a release valve to ensure Russian barrels locked out of Europe would flow to Asia, or directly telling Ukraine to not target Black Sea oil tankers. However, with US assistance being held up in Congress, and Russia making battlefield gains, Ukraine and key regional allies appear to be questioning the utility of this energy bargain with Washington.
- **A key dynamic worth watching is whether Congress moves to approve the \$60bn supplementary military, budgetary, and humanitarian aid package being held up in the House after already passing in the Senate.** House Speaker Mike Johnson (R-LA) has signaled a willingness to hold a vote on Ukraine support after Congress's Easter recess, however at the time of writing, there are no clear indications of imminent passage. Moreover, with a complete cutoff of funding potentially in the offing if President Trump wins in November, the window for Ukraine to make battlefield advances in the two-year conflict may be closing.

- **Hence, we will be closely watching whether Ukraine moves at some stage to target actual export facilities to strike a deeper blow on the Russian balance sheet.** We continue to contend that Ukraine seemingly has the capability to target the majority of export facilities in western Russia, which would put ~60% of Russia's crude exports at risk. While Washington would certainly not be happy with such a move because of the serious price implications, Kyiv could decide that such asymmetrical measures may be necessary. Resilient energy revenue has been essential for Russia's continued military strength – the 2024 budget contains record defense spending, with the Russian Federation for the time poised to spend over 6% of GDP on military and defense spending. At the same time, Moscow is forecasting a shrinking deficit based on an anticipated rise in revenue this year. According to the Carnegie Endowment, the 2024 budget is based on the assumption that revenue will climb by over a third to over ₺35tn (\$378bn), of which ₺11.5tn (\$124bn) is expected to come from the oil and gas sector.
- **While OPEC is sitting on over 2 mb/d of spare capacity, we do not think the producer group would rush in to cool the rally and ramp up output given what transpired in the months immediately following the Russian invasion of Ukraine.** Washington made unprecedented interventions in the market by releasing 180 mb from the SPR after the IEA and other market participants warned of a multimillion b/d Russian disruption that never materialized. Certainly, we do not see any indications that the recent run up in prices due to the heightened Russian infrastructure risk will prompt any policy reversal at next week's Joint Ministerial Monitoring Committee Meeting. Any serious shift will likely have to wait until the June 1 Ministerial Meeting, and even then, we believe the group will be very judicious when it comes to unwinding any cuts.
- **Complicating the challenge for the White House is the lack of progress in resolving the six-month Middle East war.** The Houthis continue to attack ships in the Red Sea, claiming six attacks on Tuesday, while Houthi officials this week have renewed threats against Saudi Arabia over providing support and airspace access to US jets conducting strikes in Yemen. In addition, the continuing exchange of fire between Hezbollah and Israel – with Hezbollah launching “dozens” of rockets in response to deadly Israeli strikes in southern Lebanon yesterday – still represents a serious contagion risk.
- **Hence, it is our view that Washington may once again have to resort to policy tools such as the SPR if these twin conflicts continue to imperil global energy supplies. Certainly, this raises a campaign risk for President Biden, as his opponents will likely accuse him of endangering energy security by tapping further into the strategic reserve. However, if President Biden cannot find a way to ameliorate the risk from these conflicts, the White House may decide that SPR releases are more politically palatable than retail gasoline prices north of \$4/gallon for the summer driving season.**

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04/09/2024 07:04:52 [BN] Bloomberg News

Russia's Crude Exports Fall Back as Flows From the Baltic Shrink

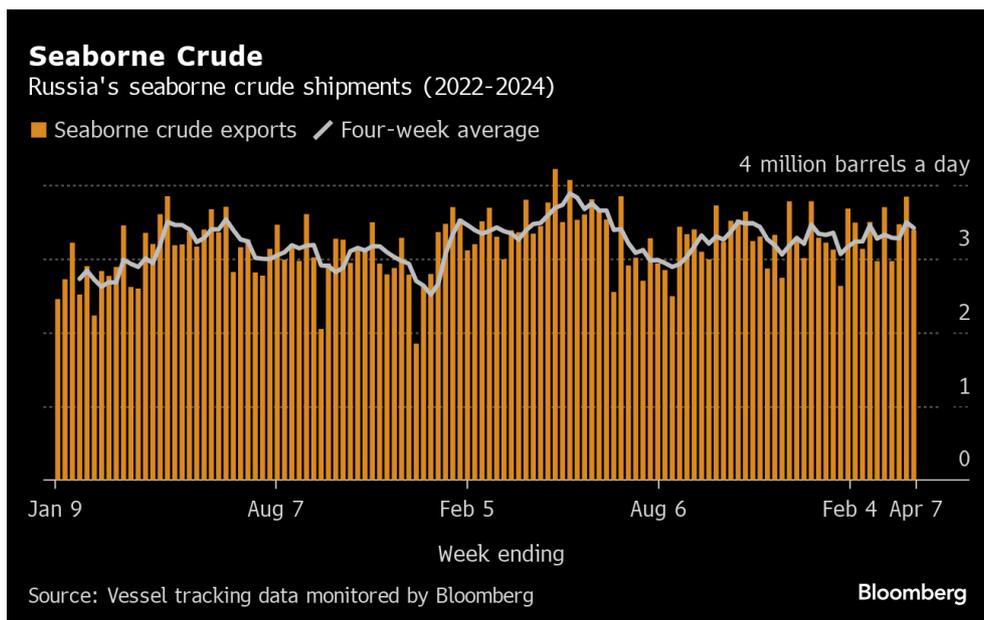
Shipments from Primorsk and Ust-Luga were down by one-fifth from the previous week

By Julian Lee

(Bloomberg) -- Russia's seaborne crude exports in the first week of April fell back from the year-to-date high they reached at the end of last month, as shipments from the country's Baltic ports sagged.

Last week's drop was driven by fewer cargoes from Primorsk and Ust-Luga, where volumes declined by about 20%, tanker-tracking data compiled by Bloomberg show. The pullback followed a surge in flows from those ports in the final two weeks of March amid Ukrainian drone strikes on Russian refineries, which may have diverted crude into exports rather than domestic processing.

Moscow's weekly earnings shrank. The gross value of the country's crude exports fell to \$1.82 billion in the seven days to April 7 from a revised \$1.95 billion in the period to March 31. Four-week average income was also down, shrinking to \$1.75 billion a week.



Separately, four-week average shipments to Asia climbed to their highest since July 2023 in the 28 days to April 7.

The increase in flows to Asian destinations – predominantly China and India – came as Treasury officials said that the US isn't trying to stop India importing Russian oil after it tightened sanctions on companies and ships hauling Moscow's barrels. Washington wants to keep energy flowing to prevent any supply shortages stemming from the war in Ukraine, while reducing the Kremlin's revenues.

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Most of a backlog of Russia's Sokol crude that built up after being turned away by Indian refiners has now been discharged. About 9.1 million barrels, half of the total, have been delivered to refineries in China. Another 7 million barrels are finding their way back to India. One cargo was delivered to Pakistan and a second is waiting to be offloaded there.

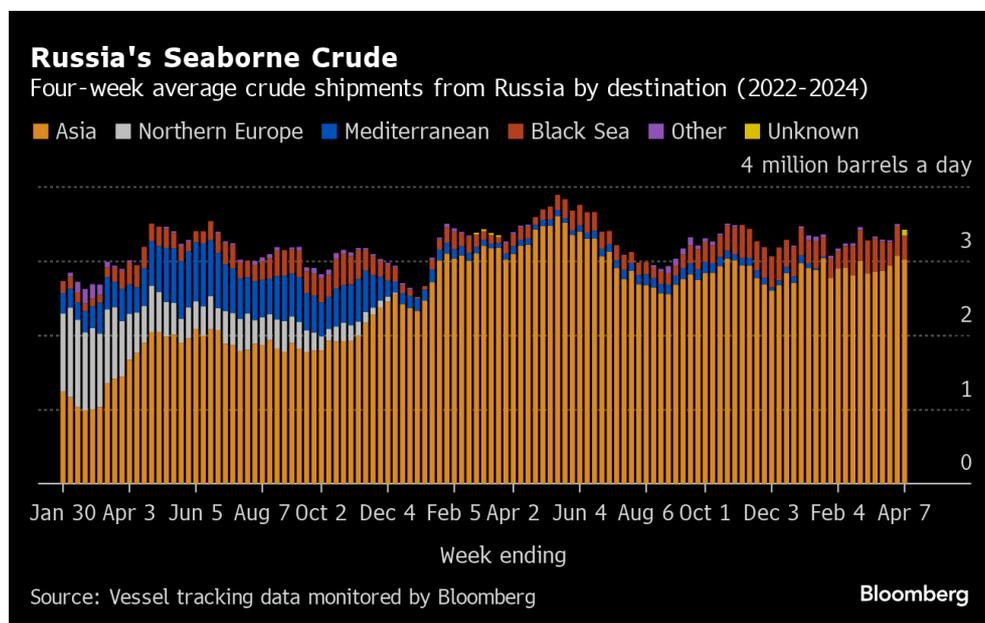
That leaves just 1.4 million barrels still to show a destination. All of the Sokol cargoes loaded since mid-February headed directly to China.

Flows by Destination

Russia's seaborne crude flows in the week to April 7 fell by 450,000 barrels a day to 3.39 million, down from the previous week's year-to-date high. The less volatile four-week average also dropped, down by about 80,000 barrels a day to 3.42 million.

Weekly shipments were about 200,000 barrels a day lower than the average seen in May and June, or about 75,000 barrels a day less than Russia's April target, which is part of the OPEC+ alliance's broader effort to curb supplies and support prices. The four-week average was about 50,000 barrels a day below the target.

Russia said it would cut crude exports during April by 121,000 barrels a day from their average May-June level as part of the wider OPEC+ initiative, as Moscow shifts more of the burden onto production targets, which are preferred by other members of the group. Seaborne shipments in the first three months of the year exceeded Russia's target level by just 16,000 barrels a day.



All figures exclude cargoes identified as Kazakhstan's KEBCO grade. Those are shipments made by KazTransoil JSC that transit Russia for export through the Black Sea port of Novorossiysk and the Baltic's Ust-Luga and are not subject to European Union sanctions or a price cap.

The Kazakh barrels are blended with crude of Russian origin to create a uniform export grade. Since Russia's invasion

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of Ukraine, Kazakhstan has rebranded its cargoes to distinguish them from those shipped by Russian companies.

• **Asia**

Observed shipments to Russia’s Asian customers, including those showing no final destination, rose to 3.09 million barrels a day in the four weeks to April 7, up from a revised 3.07 million in the previous four-week period to the highest since July 2023.

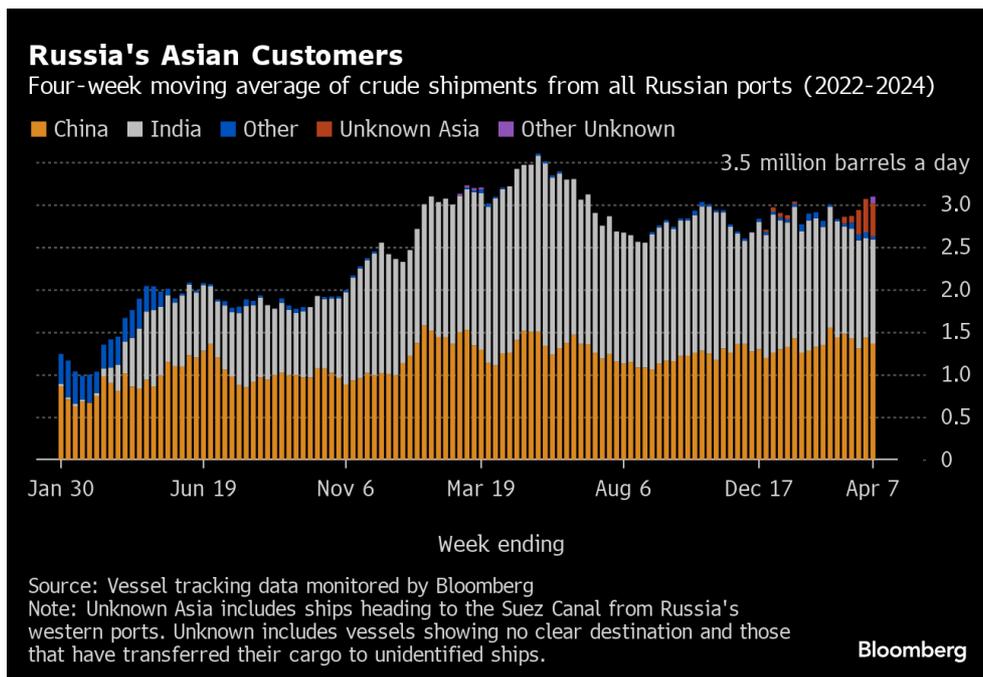
About 1.36 million barrels a day of crude was loaded onto tankers heading to China. The Asian nation’s seaborne imports are boosted by about 800,000 barrels a day of crude delivered from Russia by pipeline, either directly, or via Kazakhstan.

Flows on ships signaling destinations in India averaged about 1.22 million barrels a day.

Both the Chinese and Indian figures will rise as the discharge ports become clear for vessels that are not currently showing final destinations.

The equivalent of about 390,000 barrels a day was on vessels signaling Port Said or Suez in Egypt. Those voyages typically end at ports in India or China and show up in the chart below as “Unknown Asia” until a final destination becomes apparent. This figure includes stranded Sokol crude cargoes that are still waiting to discharge after failing to find homes in India since mid-December.

The “Other Unknown” volumes, running at about 80,000 barrels a day in the four weeks to March 31, are those on tankers showing no clear destination. Most of those cargoes originate from Russia’s western ports and go on to transit the Suez Canal, but some could end up in Turkey. Others could be moved from one vessel to another, with most such transfers now taking place in the Mediterranean, off the coast of Greece, or more recently off Sohar in Oman.

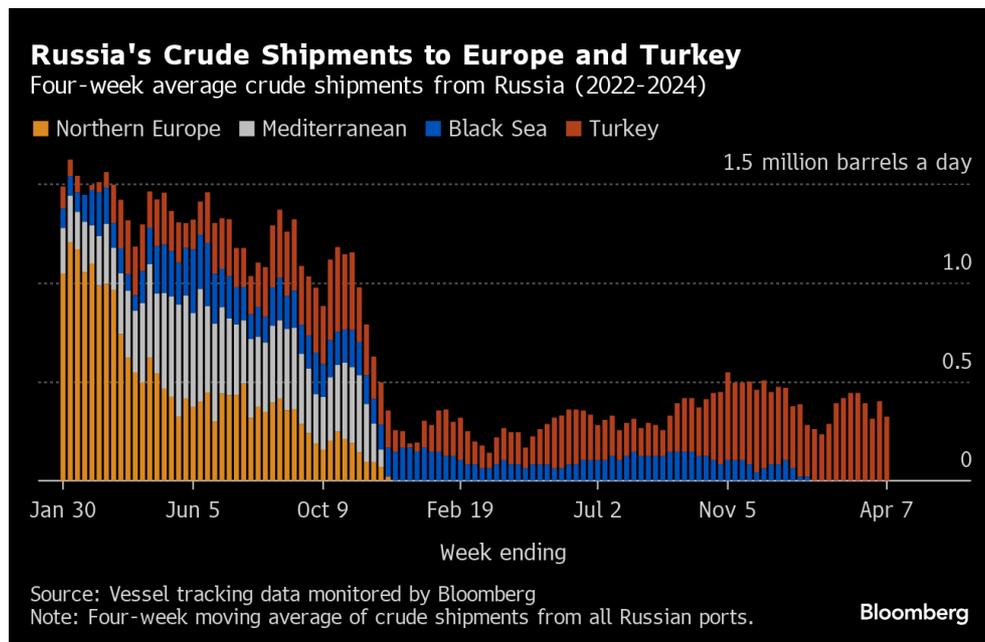


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Europe and Turkey

Russia’s seaborne crude exports to European countries have ceased.

With flows to Bulgaria halted at the end of last year, Turkey is now the only short-haul market for shipments from Russia’s western ports.



Exports to Turkey slipped to about 323,000 barrels a day in the four weeks to April 7 from a revised 400,000 barrels a day in the period to March 31.

Vessel-tracking data are cross-checked against port agent reports as well as flows and ship movements reported by other information providers including Kpler and Vortexa Ltd.

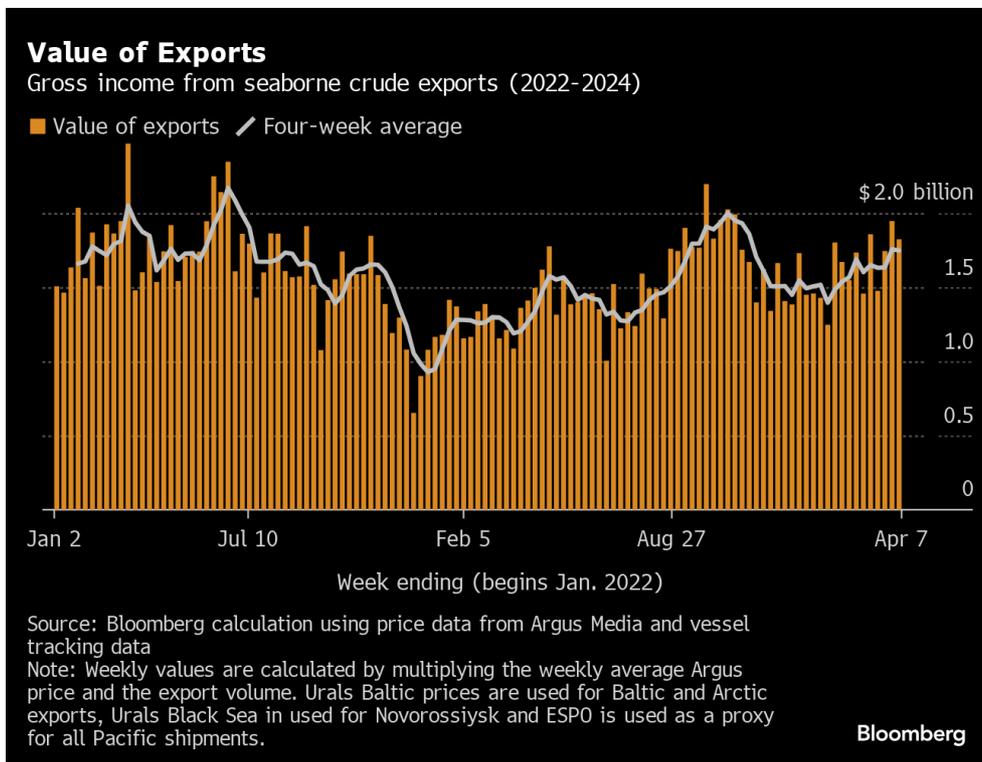
Export Value

Following the abolition of export duty on Russian crude, we have begun to track the gross value of seaborne crude exports, using Argus Media price data and our own tanker tracking.

The gross value of Russia’s crude exports fell to \$1.82 billion in the seven days to April 7 from a revised \$1.95 billion in the period to March 31. Four-week average income was also down slightly, dropping by about \$8 million to \$1.75 billion a week. The four-week average is well off its peak of \$2.17 billion a week, reached in the period to June 19, 2022. The highest it reached last year was \$2 billion a week in the period to Oct. 22.

During the first four weeks after the Group of Seven nations’ price cap on Russian crude exports came into effect in early December 2022, the value of seaborne flows fell to a low of \$930 million a week, but soon recovered.

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The chart above shows a gross value of Russia’s seaborne oil exports on a weekly and four-week average basis. The value is calculated by multiplying the average weekly crude price from Argus Media Group by the weekly export flow from each port. For shipments from the Baltic and Arctic ports we use the Urals FOB Primorsk dated, London close, midpoint price. For shipments from the Black Sea we use the Urals Med Aframax FOB Novorossiysk dated, London close, midpoint price. For Pacific shipments we use the ESPO blend FOB Kozmino prompt, Singapore close, midpoint price.

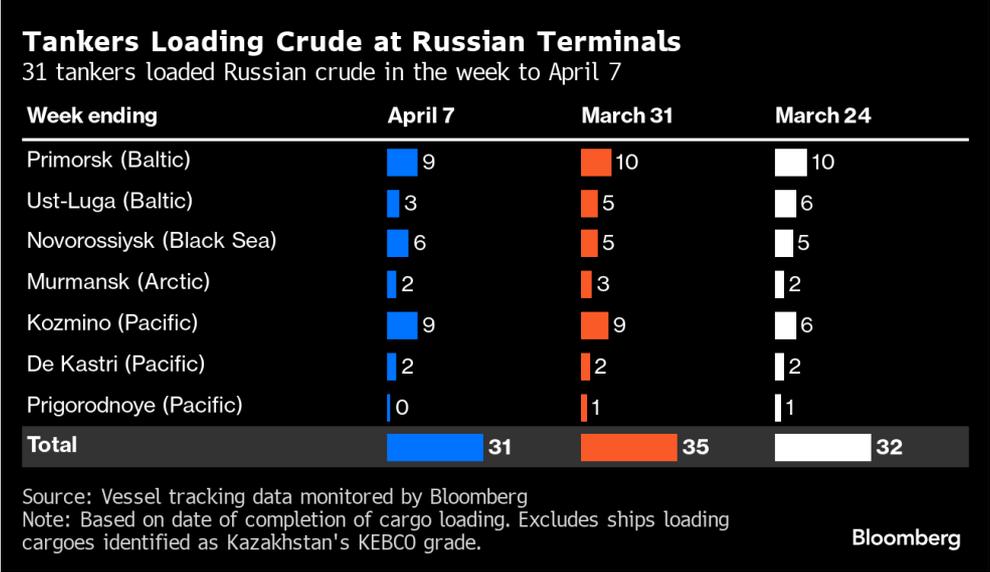
Export duty was abolished at the end of 2023 as part of Russia’s long-running tax reform plans.

Ships Leaving Russian Ports

The following table shows the number of ships leaving each export terminal.

A total of 31 tankers loaded 23.7 million barrels of Russian crude in the week to April 7, vessel-tracking data and port agent reports show. That was down by about 3.2 million barrels from the revised figure for the previous week.

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All figures exclude cargoes identified as Kazakhstan's KEBCO grade. Two cargoes of KEBCO were loaded at Ust-Luga during the week.

NOTES

Note: This story forms part of a weekly series tracking shipments of crude from Russian export terminals and the gross value of those flows. Weeks run from Monday to Sunday. The next update will be on Tuesday, April 16.

Note: All figures exclude cargoes owned by Kazakhstan's KazTransOil JSC, which transit Russia and are shipped from Novorossiysk and Ust-Luga as KEBCO grade crude.

If you are reading this story on the Bloomberg terminal, click [here](#) for a link to a PDF file of four-week average flows from Russia to key destinations.

--With assistance from [Sherry Su](#).

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Oil Market Highlights

Crude Oil Price Movements

In March, the OPEC Reference Basket (ORB) value increased by \$2.99, or 3.7%, m-o-m, to average \$84.22/b. Oil futures prices averaged higher, with the ICE Brent front-month contract rising by \$2.95, or 3.6%, m-o-m, to \$84.67/b, and the NYMEX WTI front-month contract up by \$3.80, or 5.0%, m-o-m, to average at \$80.41/b. The DME Oman front-month contract rose by \$3.30, or 4.1%, m-o-m, to settle at \$84.25/b. The front-month ICE Brent/NYMEX WTI spread narrowed further by 85¢ to average \$4.26/b. The market structures of oil futures prices strengthened and remained in backwardation as money managers turned increasingly bullish about oil.

World Economy

The world economic growth forecasts for 2024 and 2025 remain unchanged at 2.8% and 2.9%, respectively. In the United States, economic growth for 2024 is revised up slightly to 2.1%, as the healthy momentum from 2H23 is expected to carry into 2024, while the forecast for 2025 remains at 1.7%. The economic growth forecast for the Eurozone remains at 0.5% for 2024 and 1.2% for 2025. Japan's economic growth forecast is also unchanged at 0.8% in 2024 and 1% in 2025. Meanwhile, China's economic growth forecast remains at 4.8% in 2024 and 4.6% in 2025. India's economic growth forecast is unchanged at 6.6% for 2024 and 6.3% for 2025. Brazil's economic growth forecast remains at 1.6% for 2024, and 1.9% for 2025. The ongoing robust performance of Russia's economy leads to upward revisions for both the 2024 and 2025 growth forecasts, now standing at 2% and 1.4%, respectively.

World Oil Demand

The global oil demand growth forecast for 2024 remains broadly unchanged from last month's assessment of 2.2 mb/d. Slight adjustments were made to the 1Q24 data, with a slight upward revision in OECD Europe and some non-OECD data, reflecting better-than-expected performance in oil demand data. This increase was offset by a downward revision to Africa in 1Q24 and the Middle East in the first three quarters. Accordingly, the OECD is projected to expand by around 0.3 mb/d and the non-OECD by about 2.0 mb/d. In 2025, global oil demand is expected to see robust growth of 1.8 mb/d, y-o-y. The OECD is expected to grow by 0.1 mb/d, y-o-y, while demand in the non-OECD is forecast to increase by 1.7 mb/d.

World Oil Supply

The non-DoC liquids supply (i.e. liquids supply from countries not participating in the Declaration of Cooperation) is expected to grow by 1.2 mb/d in 2024, revised down from the previous month's assessment by about 0.1 mb/d. In 2024, the main drivers for liquids supply growth are expected to be the US, Canada, Brazil and Norway. The non-DoC liquids supply growth in 2025 is expected at 1.1 mb/d, revised down by 0.1 mb/d from the previous month's assessment. The growth is mainly driven by the US, Brazil, Canada and Norway.

The term "non-DoC liquids supply" is established to better reflect the current breakdown of global liquids supply into DoC and non-DoC.

The non-OPEC liquids supply (including the 10 non-OPEC countries participating in DoC) in 2024 is expected to grow by 1.0 mb/d, revised down from the previous month's assessment by about 0.1 mb/d. The main drivers for liquids supply growth are expected to be the US, Canada, Brazil and Norway. The forecast for non-OPEC liquids supply growth in 2025 stands at 1.3 mb/d, revised down by 0.1 mb/d from the previous month's assessment. The growth is mainly driven by the US, Brazil, Canada, Russia, Kazakhstan and Norway.

Indeed, crude production levels/growths for countries participating in DoC (including Azerbaijan, Bahrain, Brunei Darussalam, Kazakhstan, Malaysia, Mexico, Oman, Russia, Sudan, and South Sudan) are subject to their DoC production adjustments in 2024 and 2025.

Separately, OPEC natural gas liquids (NGLs) and non-conventional liquids are forecast to grow by around 64 tb/d to average 5.5 mb/d this year, followed by a growth of 110 tb/d to average 5.6 mb/d in 2025. OPEC-12 crude oil production in March increased by 3 tb/d, m-o-m, averaging 26.60 mb/d, as reported by available secondary sources.

Product Markets and Refining Operations

In March, refining margins declined, with significant products stock builds reported during the month in several trading hubs, with middle distillates representing the main source of the weakness. A softer refinery maintenance season y-o-y, as well as limited overall product requirements and high product supplies from Asia and the Middle East, partly offset the seasonal contraction in product balances expected at this time of the year. Additionally, the strength in feedstock prices observed in March likely further weighed on refining economics. Global refinery intake reversed course and increased 230 tb/d in March, m-o-m, to average 79.8 mb/d, but remained 600 tb/d lower, y-o-y.

Tanker Market

Dirty freight rates were relatively steady in March on most monitored routes. VLCC spot freight rates on the Middle East to East route were unchanged, m-o-m, although down 20% compared to the same month last year. Suezmax spot freight rates fell 4%, m-o-m, in the Atlantic Basin. Aframax rates saw mixed movement, up 6%, m-o-m, in the Indonesia-to-East route, but with an outsized drop of 19%, m-o-m, on the Caribbean to US East Coast route. The clean market was also mixed, with East of Suez spot freight rates declining 8%, m-o-m, while West of Suez rates rose 10%, m-o-m, supported by gains on the Mediterranean routes.

Crude and Refined Products Trade

Preliminary data shows that US crude imports averaged 6.3 mb/d in March, representing a decline of over 5%, m-o-m. US crude exports also fell, dropping 11%, m-o-m, to average 4.1 mb/d. US product exports were in line with the previous month at 6.4 mb/d. The latest data for China shows crude imports averaged 11.1 mb/d in February, representing an increase of 7%, m-o-m, while product exports averaged 1.1 mb/d, indicating a decline of more than 33% from the high levels seen last year. India's crude imports in February experienced an 11% m-o-m drop to stand at 4.5 mb/d, while products exports recovered most of the previous month's decline, rebounding 18% to 1.4 mb/d. Japan's crude imports in February were broadly unchanged from the previous month at 2.4 mb/d, but still 10% lower, y-o-y. Product flows into Japan, including LPG, fell by 11%, m-o-m, to average 886 tb/d in February, with declines across most major products. Preliminary estimates expect OECD Europe crude imports to remain relatively high in 1Q24 compared to the same quarter of last year. Product imports into OECD Europe are seen increasing, driven by higher diesel inflows.

Commercial Stock Movements

Preliminary February 2024 data shows total OECD commercial oil stocks down by 25.7 mb, m-o-m. At 2,733 mb, they were 187 mb below the 2015–2019 average. Within the components, crude stocks rose by 19.6 mb, while product stocks fell by 45.3 mb, m-o-m. OECD commercial crude stocks stood at 1,342 mb in February, 106 mb lower than the 2015–2019 average. OECD total product stocks in February stood at 1,391 mb, 81 mb below the 2015–2019 average. In terms of days of forward cover, OECD commercial stocks dropped by 0.4 days, m-o-m, in February 2024 to stand at 59.8 days. This is 2.8 days less than the 2015–2019 average.

Balance of Supply and Demand

Demand for DoC crude (i.e. crude from countries participating in the Declaration of Cooperation) is projected to stand at about 43.2 mb/d in 2024, which is around 0.9 mb/d higher than the estimated level for 2023. Demand for DoC crude in 2025 is expected to reach about 44.0 mb/d, an increase of about 0.8 mb/d over the forecast 2024 level.

Demand for OPEC crude in 2024 is projected to stand at about 28.5 mb/d, which is around 1.2 mb/d higher than the estimated level for 2023. Demand for OPEC crude in 2025 is expected to reach about 29.0 mb/d, an increase of about 0.4 mb/d over the forecast 2024 level.

Feature Article

Global oil demand in summer months of 2024

In 2024, global oil demand is expected to grow by a healthy 2.2 mb/d, y-o-y, led by robust demand from non-OECD regions, mainly China, Middle East and Other Asia. On a quarterly basis, global oil demand is expected to grow by around 2.0 mb/d, y-o-y, in 1Q24, 2.2 mb/d y-o-y in 2Q24, 2.7 mb/d y-o-y in 3Q24 and 2.1 mb/d y-o-y in 4Q24.

In the upcoming summer months, and focusing on transportation fuels, global demand for jet/kerosene is forecast to grow by 0.6 mb/d, y-o-y, in 2Q24 and by 0.8 mb/d, y-o-y, in 3Q24. At the same time, demand for gasoline and diesel is forecast to increase by 0.4 mb/d and 0.2 mb/d, y-o-y, respectively, in 2Q24. In 3Q24, gasoline demand is forecast to improve further and expand by 0.8 mb/d, while diesel is projected to increase by 0.3 mb/d, y-o-y (**Graph 1**).

In OECD, the upcoming driving season in the US is expected to provide the usual additional demand for transportation fuels. Economic activity is also expected to pick up in 2H24, supported by a likely more accommodative monetary policy by the US

Federal Reserve in 3Q24, as fears of inflation risks subside. Overall, OECD Americas is forecast to lead demand growth in the region with around 0.2 mb/d, y-o-y, in 2Q24 and same in 3Q24, while oil demand in OECD Europe and Asia Pacific is expected to also rise, albeit only slightly in both quarters.

In non-OECD countries, China is projected to drive oil demand, supported by strong mobility and industrial activity, growing by 0.5 mb/d, y-o-y, in 2Q24 and 0.7 mb/d, y-o-y, in 3Q24. Similarly, the Middle East is forecast to expand by 0.3 mb/d, y-o-y, in 2Q24 and 0.5 mb/d, y-o-y, in 3Q24. India's oil demand is forecast to grow by 0.2 mb/d, y-o-y, in 2Q24 and 0.2 mb/d, y-o-y in 3Q24. Other Asia and Latin America are also expected to see healthy growth in the range of 0.2 mb/d–0.4 mb/d, y-o-y, on average in 2Q24 and same in 3Q24.

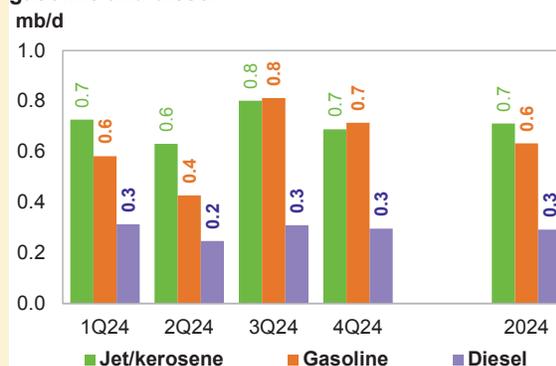
On the refining side, global crude intakes have declined since the start of the year despite a slight recovery in March. Intakes fell to 79.5 mb/d in February, and in March they were still 2.4 mb/d lower compared with the peak level of 82.1 mb/d seen in December 2023 (**Graph 2**). Refinery runs declines were mostly in the US, China, Russia and Europe on the back of severe weather, seasonality and weakening refining margins. In March, however, refinery intakes improved slightly, with a gradual capacity return in the US and rising demand in select Asian countries.

In the US, gasoline markets on the Gulf Coast strengthened on tightening gasoline availability, elevated octane prices (a gasoline blending component), and a positive outlook for summer gasoline demand. In Europe, ongoing geopolitical tension could further intensify upward pressure on regional diesel markets. Meanwhile, Asia has so far remained well supplied amid strong refinery runs, particularly in India, and product supplies from the Middle East.

Expected growing demand for gasoline and diesel in the Atlantic Basin is expected to establish stronger East-to-West export opportunities for these products. Moreover, strong near-term upside potential for residual fuel in Southeast Asia is expected to add strength to Asian product markets. Jet/kerosene markets are projected to show solid upward potential across regions in the coming months as air travel picks up. Demand for naphtha, however, may remain soft, amid new capacity additions despite projections for robust gasoline blending demand in the coming months. Outside of the US, propane could become the preferred petrochemical feedstock on the back of stronger margins.

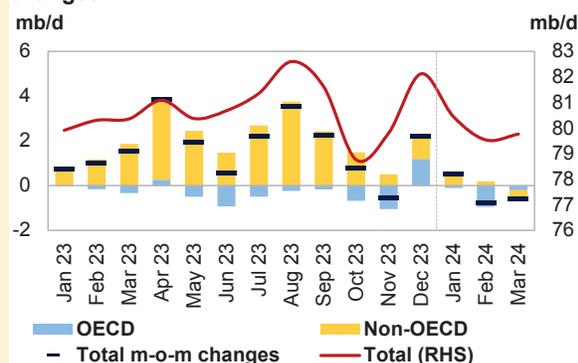
The robust oil demand outlook for the summer months warrants careful market monitoring, amid ongoing uncertainties, to ensure a sound and sustainable market balance. To this end, the countries participating in the Declaration of Cooperation (DoC) will remain vigilant, proactive and prepared to act, when necessary, to the requirement of the market.

Graph 1: Global demand growth for jet/kerosene, gasoline and diesel



Source: OPEC.

Graph 2: Global refinery crude intake by region, y-o-y changes



Sources: Argus and OPEC.

World Oil Demand

The global oil demand growth forecast for 2024 remained broadly unchanged from the last month's assessment at 2.2 mb/d. Some adjustments were made to 1Q24 data, including a slight upward adjustment to OECD Europe and some upward revisions to non-OECD data, due to better-than-expected performance in oil demand data in the first quarter. This was offset by a downward revision to the Middle East and Africa in 1Q24 due to historical data, and a further downward revision to the Middle East in 2Q24 and 3Q24. Oil demand in the OECD is projected to grow by around 0.3 mb/d, with OECD Americas leading oil demand growth, along with an uptick from OECD Europe and Asia-Pacific. In the non-OECD, oil demand is forecast to see a healthy growth of 2.0 mb/d y-o-y, driven by China and supported by Other Asia, the Middle East, India and Latin America. Total world oil demand is anticipated to reach 104.5 mb/d in 2024, bolstered by strong air travel demand and healthy road mobility, including on-road diesel and trucking, as well as healthy industrial, construction and agricultural activities in non-OECD countries. Similarly, capacity additions and petrochemical margins in non-OECD countries – mostly in China and the Middle East – are expected to contribute to oil demand growth. However, this forecast is subject to many uncertainties, including global economic developments.

The forecast for global oil demand growth in 2025 remains unchanged from the previous month's assessment to show robust growth of 1.8 mb/d, y-o-y, to average 106.3 mb/d. The OECD is expected to grow by 0.1 mb/d, y-o-y, while demand in the non-OECD is forecast to increase by 1.7 mb/d.

Table 4 - 1: World oil demand in 2024*, mb/d

World oil demand	2023	1Q24	2Q24	3Q24	4Q24	2024	Change 2024/23	
							Growth	%
Americas	25.06	24.68	25.38	25.58	25.45	25.28	0.21	0.84
<i>of which US</i>	20.40	20.09	20.67	20.67	20.85	20.57	0.17	0.85
Europe	13.41	13.17	13.58	13.68	13.34	13.44	0.04	0.28
Asia Pacific	7.32	7.80	6.97	7.09	7.49	7.34	0.01	0.16
Total OECD	45.80	45.65	45.93	46.35	46.28	46.06	0.26	0.57
China	16.22	16.35	16.77	17.19	17.29	16.90	0.68	4.22
India	5.34	5.66	5.64	5.40	5.59	5.57	0.23	4.26
Other Asia	9.28	9.69	9.74	9.49	9.51	9.61	0.33	3.56
Latin America	6.69	6.79	6.88	6.97	6.88	6.88	0.19	2.84
Middle East	8.63	8.76	8.66	9.28	9.00	8.93	0.29	3.39
Africa	4.46	4.64	4.37	4.39	4.82	4.56	0.10	2.19
Russia	3.84	3.89	3.80	3.99	4.08	3.94	0.10	2.61
Other Eurasia	1.17	1.28	1.24	1.08	1.28	1.22	0.05	4.09
Other Europe	0.78	0.82	0.78	0.77	0.84	0.80	0.02	2.07
Total Non-OECD	56.42	57.88	57.89	58.55	59.29	58.41	1.99	3.52
Total World	102.21	103.53	103.82	104.90	105.57	104.46	2.25	2.20
Previous Estimate	102.21	103.33	103.91	104.88	105.69	104.46	2.25	2.20
Revision	0.00	0.20	-0.09	0.02	-0.12	0.00	0.00	0.00

Note: * 2024 = Forecast. Totals may not add up due to independent rounding.

Source: OPEC.

Table 4 - 2: World oil demand in 2025*, mb/d

World oil demand	2024	1Q25	2Q25	3Q25	4Q25	2025	Change 2025/24	
							Growth	%
Americas	25.28	24.74	25.43	25.70	25.53	25.35	0.08	0.31
of which US	20.57	20.12	20.70	20.73	20.89	20.61	0.04	0.21
Europe	13.44	13.19	13.59	13.70	13.35	13.46	0.02	0.12
Asia Pacific	7.34	7.81	6.98	7.10	7.50	7.35	0.01	0.14
Total OECD	46.06	45.74	46.01	46.51	46.38	46.16	0.11	0.23
China	16.90	16.78	17.15	17.63	17.68	17.31	0.41	2.43
India	5.57	5.88	5.88	5.61	5.82	5.80	0.23	4.09
Other Asia	9.61	9.98	10.07	9.82	9.81	9.92	0.31	3.24
Latin America	6.88	6.99	7.07	7.19	7.07	7.08	0.20	2.90
Middle East	8.93	9.14	9.00	9.74	9.35	9.31	0.38	4.28
Africa	4.56	4.76	4.47	4.52	4.93	4.67	0.11	2.47
Russia	3.94	3.95	3.85	4.05	4.12	3.99	0.05	1.37
Other Eurasia	1.22	1.32	1.27	1.12	1.31	1.25	0.03	2.58
Other Europe	0.80	0.83	0.79	0.78	0.85	0.81	0.01	1.40
Total Non-OECD	58.41	59.61	59.56	60.45	60.95	60.15	1.74	2.98
Total World	104.46	105.35	105.56	106.96	107.33	106.31	1.85	1.77
Previous Estimate	104.46	105.15	105.65	106.94	107.44	106.30	1.85	1.77
Revision	0.00	0.20	-0.09	0.02	-0.12	0.00	0.00	0.00

Note: * 2025 = Forecast. Totals may not add up due to independent rounding.

Source: OPEC.

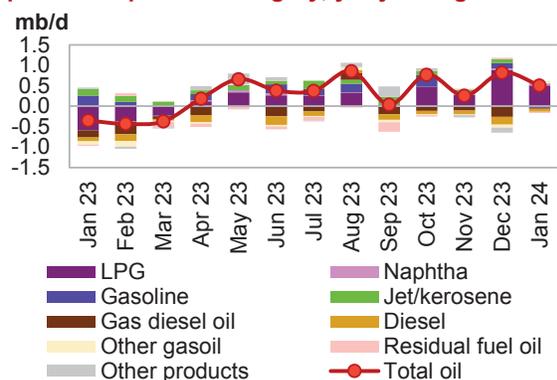
OECD

OECD Americas

Update on the latest developments

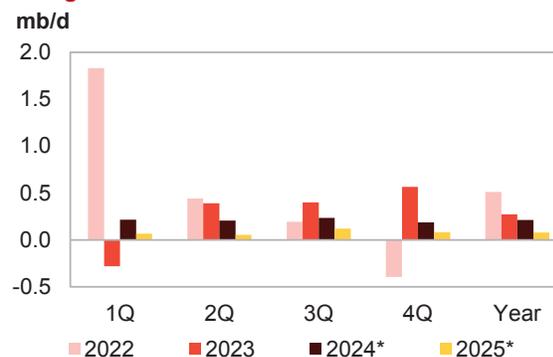
January oil demand in OECD Americas expanded by 506 tb/d, y-o-y. Incremental oil demand over the month came mostly from the US for the fourth consecutive month, while demand in Canada increased by 45 tb/d, y-o-y, and Mexico showed a slight decline of 28 tb/d, y-o-y. Oil demand growth in January can largely be attributed to strong petrochemical feedstock requirements in the US. Details of various product contributions in the US are discussed below.

Graph 4 - 1: OECD Americas' oil demand by main petroleum product category, y-o-y change



Sources: IEA, JODI, OPEC and national sources.

Graph 4 - 2: OECD Americas' oil demand, y-o-y change



Note: * 2024-2025 = Forecast.

Source: OPEC.

US

Oil demand in the US increased by 438 tb/d, y-o-y, in **January**, down from growth of nearly 1 mb/d, y-o-y, in the previous month. Growth was driven by healthy petrochemical sector requirements amid a weak baseline effect. While LPG recorded the largest increase of 455 tb/d y-o-y, naphtha saw growth of 21 tb/d, y-o-y. Diesel decreased by 32 tb/d, y-o-y, an improvement from the 179 tb/d annual decline seen the previous month. Jet/kerosene increased marginally by 5 tb/d, y-o-y, down from 94 tb/d y-o-y growth seen the previous month.

World Oil Demand

According to a report from the International Air Travel Association (IATA), US domestic traffic saw a slight decline of 2.2% m-o-m in seasonally adjusted terms, explained by the harsh winter weather conditions some parts of the country experienced over the month. Despite those events, air traffic growth continued at a solid rate of 3.1% y-o-y and 5.9% compared with pre-pandemic figures. Finally, the 'other products' category saw a 42 tb/d y-o-y increase, up from a 30 tb/d y-o-y decline the previous month.

However, gasoline demand declined in January by 44 tb/d, y-o-y, down from the 244 tb/d y-o-y growth seen in the previous month. Gasoline was subdued by a decline in travel activity in January, according to a report from the US Department of Transportation, which shows that travel on all roads and streets in the US fell by -0.8% for January 2024 compared with January 2023. The seasonally adjusted vehicle miles travelled for January 2024 also saw a 1.2% decline over January 2023. Diesel demand additionally softened by 32 tb/d, y-o-y, albeit seeing an improvement from the 179 tb/d y-o-y decline seen in the previous month.

Table 4 - 3: US oil demand, mb/d

US oil demand			Change Jan 24/Jan 23	
By product	Jan 23	Jan 24	Growth	%
LPG	3.48	3.93	0.46	13.1
Naphtha	0.14	0.16	0.02	14.8
Gasoline	8.28	8.24	-0.04	-0.5
Jet/kerosene	1.55	1.55	0.01	0.3
Diesel	3.90	3.87	-0.03	-0.8
Fuel oil	0.28	0.27	-0.01	-3.2
Other products	1.81	1.85	0.04	2.3
Total	19.44	19.88	0.44	2.3

Note: Totals may not add up due to independent rounding.

Sources: EIA and OPEC.

Near-term expectations

In the near term, healthy economic activity is expected to continue in 1H24 in the US, amid improvements in air travel and road mobility. Accordingly, these factors are expected to support jet/kerosene and gasoline demand. Healthy petrochemical feedstock requirements for ethylene are also expected to bolster LPG demand. However, the US manufacturing sector continued to show a lacklustre trend, affecting demand for diesel. Accordingly, oil demand in the US is projected to increase by an average of about 170 tb/d y-o-y in 1H24, mostly supported by demand for jet/kerosene, gasoline and LPG, while diesel demand remains soft. Overall, US oil demand in **2024** is expected to increase by 173 tb/d, mostly supported by transportation fuels and light distillates.

In **2025**, oil demand in the US is expected to return to its normal growth trend after recovering from losses due to the COVID-19 pandemic. Transportation activity is expected to be solid and transportation fuel demand to drive oil demand growth. Further, healthy demand for LPG from petrochemical requirements is forecast to continue. However, demand for diesel and naphtha is expected to remain subdued amid softer manufacturing activity. Overall in 2025, oil demand in the US is projected to increase by 42 tb/d, y-o-y.

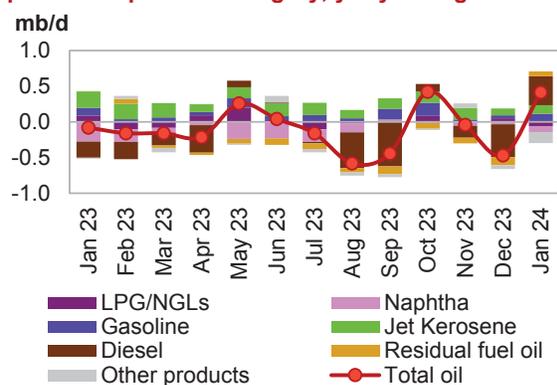
OECD Europe

Update on the latest developments

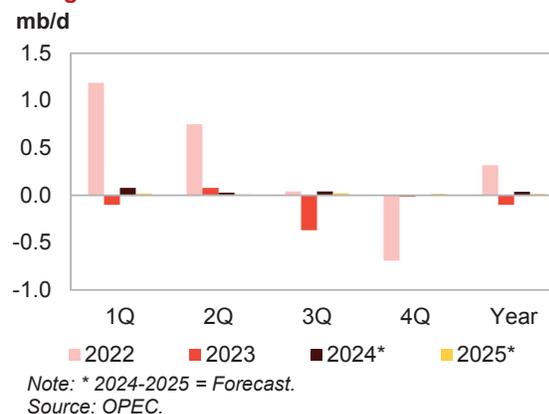
Oil demand in OECD Europe in January saw strong growth of 414 tb/d y-o-y, after two consecutive months of decline. The increase in demand was supported by requirements for diesel, jet/kerosene and gasoline. Within the region, the largest increases were seen in Spain and Germany.

In terms of products, the largest increase in oil demand came mostly from diesel, which saw 405 tb/d y-o-y growth, up from a 460 tb/d y-o-y decline the previous month. Jet/kerosene expanded by 120 tb/d, y-o-y, on the back of steady air travel recovery and up from the 98 tb/d y-o-y growth seen the previous month. A report from the IATA's Air Passenger Market Analysis states that Europe's international revenue passenger-kilometres (RPKs) grew by 10.8% y-o-y in January. However, this is still below January 2019 RPKs by 0.4%. Gasoline posted a y-o-y increase of 115 tb/d, up from the 44 tb/d y-o-y growth seen the previous month. Demand for residual fuels increased by 68 tb/d, y-o-y, up from an annual decline of 114 tb/d the previous month.

Graph 4 - 3: OECD Europe's oil demand by main petroleum product category, y-o-y change



Graph 4 - 4: OECD Europe's oil demand, y-o-y change



The biggest decline came from the 'other products' category, which posted a y-o-y decline of 153 tb/d, down from an annual decline of 55 tb/d the previous month. In terms of petrochemical products, ongoing weak regional petrochemical steam cracker unit requirements subdued demand for naphtha and LPG, which declined by 82 tb/d and 59 tb/d, y-o-y, respectively.

Near-term expectations

In **2024**, the Eurozone's economic growth is expected to remain relatively stable, with the forecast for 2024 suggesting a gradual improvement in the industrial sector, driven by both domestic and external demand, particularly in the latter part of the year. The expected revival of German industrial output is set to play a crucial role in supporting overall growth in 2024, while transportation and air travel activities in the region are expected to continue to support regional oil demand. Weak manufacturing activity is anticipated to weigh on diesel demand. Oil demand growth in the region is expected to average around 50 tb/d, y-o-y, in 1H24, supported by regional jet/kerosene and gasoline consumption. Petrochemical activity is expected to show some improvement, supporting naphtha demand, albeit remaining at low levels. Overall, the region is expected to see an average growth of 38 tb/d, y-o-y, for the year, mostly supported by transportation fuels. Similarly, LPG and residual fuels are expected to record a slight uptick.

Potential improvements towards the end of 2024 are expected to carry over into **2025**. The Eurozone's economic growth is forecast to gain traction next year and see GDP growth rates above this year's level. However, the higher penetration of electrical vehicles amid increasing environmental regulations is expected to subdue gasoline and, to a lesser degree, diesel demand. Similarly, the European LPG market is poised for major changes in fundamentals, mostly due to high production costs and environmental regulations that could weigh on demand going forward. Consequently, oil demand growth for OECD Europe is forecast at 17 tb/d, y-o-y, supported by air travel and driving activity.

OECD Asia Pacific

Update on the latest developments

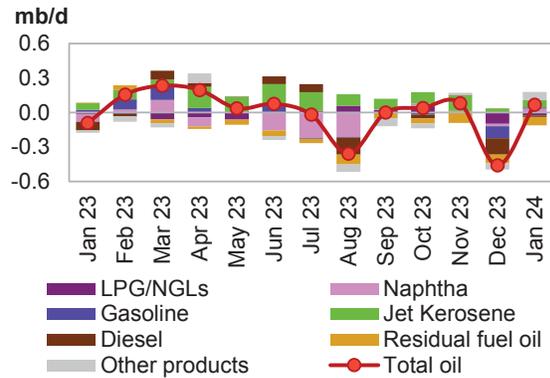
Oil demand in OECD Asia Pacific recorded an uptick of 69 tb/d, y-o-y, in **January**, an improvement from the large decline of 460 tb/d, y-o-y, seen in December. While improvements were seen in demand for most oil products in South Korea and Australia, oil demand in Japan recorded a decline.

In terms of products, the 'other products' category led oil demand growth by 70 tb/d, y-o-y, up from a 55 tb/d annual decline the previous month. Supported by steady regional air travel, jet/kerosene increased by 66 tb/d, y-o-y, up from a 37 tb/d y-o-y increase seen the previous month. A report from the IATA Air Passenger Market Analysis shows that in January, Asia Pacific's international RPK increased by 45.4% y-o-y, climbing towards 2019 levels in January and reaching 83.7% of pre-pandemic levels.

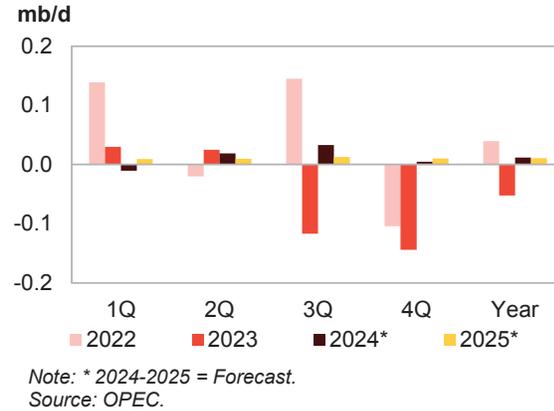
In terms of petrochemical feedstock, naphtha increased by 33 tb/d, y-o-y, up from an annual decline of 21 tb/d seen the previous month. However, lacklustre demand in the region continued to subdue LPG requirements, which declined by 27 tb/d, y-o-y, albeit an improvement from the 98 tb/d y-o-y decline seen the previous month. Gasoline inched up by 11 tb/d, y-o-y, an improvement from the 104 tb/d, y-o-y, decline of the previous month. Furthermore, while diesel posted a 12 tb/d y-o-y decline, residual fuels saw a decline of 72 tb/d, y-o-y.

World Oil Demand

Graph 4 - 5: OECD Asia Pacific oil demand by main petroleum product category, y-o-y change



Graph 4 - 6: OECD Asia Pacific oil demand, y-o-y change



Near-term expectations

In **2024**, economic activity in the region is expected to remain positive, with variations among countries. Forward-looking indicators, including services and manufacturing PMIs, also varied among major oil-consuming countries in the region, although most numbers indicate a gradual improvement in both the services and manufacturing sectors. Steady air traffic recovery, along with driving activity and petrochemical industry operations, is anticipated to support oil demand growth for the year, which is projected to increase by 12 tb/d, y-o-y.

In **2025**, GDP growth rates in the region are expected to surpass those of 2024. In addition, transportation and air travel activity are expected to support oil demand in OECD Asia Pacific, which is forecast to grow moderately by 11 tb/d, y-o-y, mostly supported by transportation fuels.

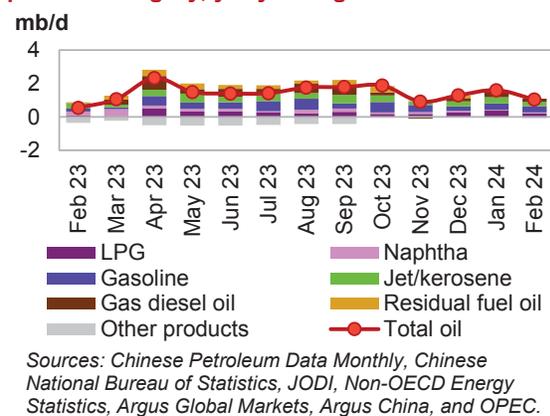
Non-OECD

China

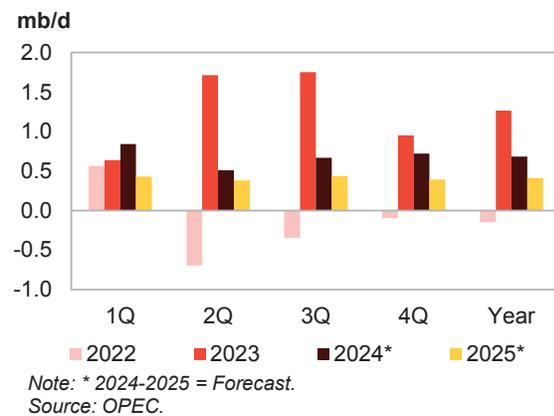
Update on the latest developments

January data released from China indicates that oil demand surged by 1.6 mb/d, y-o-y. On specific product demand, gasoline and LPG recorded the largest increases, with 380 tb/d y-o-y growth each. While jet/kerosene increased by 363 tb/d, diesel surged by 331 mb/d, y-o-y. Finally, residual fuels and naphtha saw growth of 104 tb/d and 51 tb/d y-o-y, respectively. However, the 'other products' category softened by 11 tb/d, y-o-y.

Graph 4 - 7: China's oil demand by main petroleum product category, y-o-y change



Graph 4 - 8: China's oil demand, y-o-y change



Oil demand in February expanded by 1 mb/d, y-o-y, with incremental demand supported by healthy economic activity amid steady petrochemical feedstock requirements. Gasoline posted the highest growth among oil products on the back of ongoing healthy economic activity, increasing by 372 tb/d, y-o-y, in February, broadly in line with the 380 tb/d, y-o-y, growth observed the previous month. Gasoline was supported by strong driving mobility, as data from the China National Bureau of Statistics/Haver Analytics indicates that Passenger Traffic

World Oil Demand

(in 100 million persons) rose by 23.7% y-o-y in February. Jet/kerosene also surged by 251 tb/d, y-o-y, with strong demand backed by healthy air travel activity over the Lunar New Year Holidays, as indicated by the 81.8% y-o-y increase in domestic traffic and 34.6% y-o-y rise in international air traffic.

In terms of petrochemical feedstock, while LPG expanded by 225 tb/d y-o-y, naphtha saw an uptick of 52 tb/d and diesel increased by 197 tb/d, y-o-y. Diesel was supported by healthy industrial activity. China's industrial production expanded by 7.0% y-o-y in January-February combined, after a growth of 6.6% in December. However, residual fuels and the 'other products' category softened by 37 tb/d and 29 tb/d, y-o-y, respectively.

Table 4 - 4: China's oil demand*, mb/d

China's oil demand			Change Feb 24/Feb 23	
By product	Feb 23	Feb 24	Growth	%
LPG	2.44	2.67	0.22	9.2
Naphtha	2.00	2.05	0.05	2.6
Gasoline	3.51	3.89	0.37	10.6
Jet/kerosene	0.90	1.15	0.25	27.9
Diesel	4.11	4.31	0.20	4.8
Fuel oil	0.79	0.77	-0.03	-3.6
Other products	2.17	2.13	-0.04	-1.7
Total	15.93	16.97	1.03	6.5

Note: * Apparent oil demand. Totals may not add up due to independent rounding.

Sources: Argus Global Markets, China OGP (Xinhua News Agency), Facts Global Energy, JODI, National Bureau of Statistics China and OPEC.

Near-term expectations

Looking ahead, China is expected to lead global oil demand growth in 2024. The country is thought to continue with its ongoing robust and resilient demand for oil products in the near term on the back of expected solid economic activity amid anticipated healthy manufacturing and driving activity. Furthermore, growing petrochemical capacity in 1H24 is expected to strengthen petrochemical feedstock demand, thus boosting demand for naphtha in the near term. Accordingly, oil demand in the country is anticipated to grow on average by a healthy 675 tb/d, y-o-y, in 1H24.

Overall, oil demand in **2024** is expected to be supported by sustained services sector activity, a recovery in manufacturing activity and surging petrochemical activity, fuelled by a heightened demand for feedstock. Moreover, international air travel is expected to continue to rebound. Furthermore, increased transportation activity is expected to boost demand for gasoline and diesel. China's oil demand in 2024 is anticipated to expand by a healthy 685 tb/d, y-o-y.

Economic and manufacturing activity in China is expected to be steady in **2025**. Accordingly, China's product demand is expected to continue to expand, and the country is predicted to remain the global leader in oil demand. China's stimulus measures are also expected to impact oil demand growth, although likely to a lesser degree than in 2024. The country is additionally projected to lead global petrochemical feedstock demand, while its jet fuel demand is expected to rise on the prospect of further growing air transportation requirements. In 2025, the country is expected to post strong oil demand growth of 410 tb/d, y-o-y.

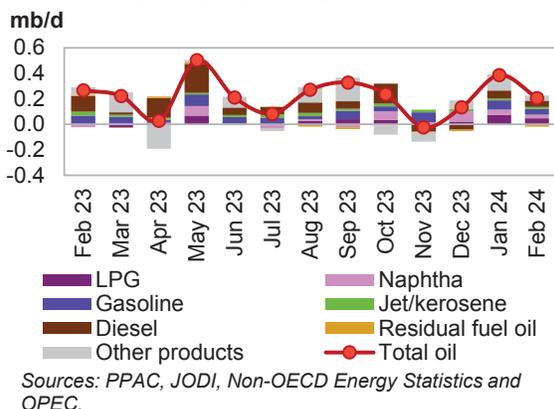
India

Update on the latest developments

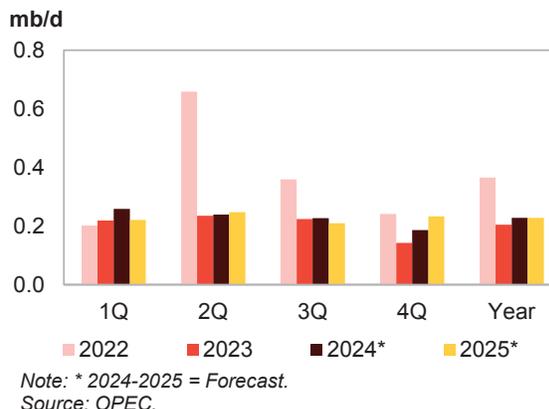
Oil demand in India expanded by 207 tb/d y-o-y in **February**, slightly down from the 386 tb/d y-o-y growth seen in the previous month. The increase in demand was largely supported by demand for diesel, LPG and gasoline.

The largest increase in oil demand in February was recorded for diesel, which expanded by 49 tb/d, y-o-y. Diesel demand was supported by the industrial and mining sectors, combined with agricultural activities. Gasoline grew by 43 tb/d, y-o-y, on the back of healthy mobility. A report from the Society of Indian Automobile Manufacturers (SIAM) indicates that vehicle sales in India surged by 11% y-o-y in February. Consumption in the 'other products' category, including bitumen, also increased by 40 tb/d, y-o-y, supported by road construction amid drier weather during the month. Bitumen consumption in February grew by 3.8%, y-o-y.

Graph 4 – 9: India’s oil demand by main petroleum product category, y-o-y change



Graph 4 – 10: India’s oil demand, y-o-y change



In terms of demand for petrochemical products, LPG increased by 47 tb/d, y-o-y, slightly below the 72 tb/d seen the previous month. Naphtha saw an uptick of 29 tb/d, y-o-y, from y-o-y growth of 42 tb/d the previous month. Jet/kerosene increased by 17 tb/d, y-o-y, as domestic airlines during February registered a 4.7% y-o-y increase in passenger traffic. However, residual fuels saw an 18 tb/d y-o-y decline.

Table 4 - 5: India’s oil demand, mb/d

India’s oil demand			Change Feb 24/Feb 23	
By product	Feb 23	Feb 24	Growth	%
LPG	0.99	1.04	0.05	4.7
Naphtha	0.34	0.37	0.03	8.5
Gasoline	0.84	0.89	0.04	5.1
Jet/kerosene	0.18	0.20	0.02	9.0
Diesel	1.88	1.93	0.05	2.6
Fuel oil	0.13	0.12	-0.02	-13.1
Other products	1.17	1.21	0.04	3.4
Total	5.54	5.75	0.21	3.7

Note: Totals may not add up due to independent rounding.

Sources: JODI, Petroleum Planning and Analysis Cell of India and OPEC.

Near-term expectations

In the near term, economic activity in India is expected to remain robust in 1H24. This is expected to be supported by investment and services amid an expected surge in manufacturing and construction activity brought on by government spending and an improved investment environment. Overall, these factors are expected to bolster India’s oil demand in 1H24, which is projected to expand by an average of around 250 tb/d, y-o-y, in 1H24. Diesel is projected to be the driver of oil demand growth, supported mostly by agriculture, construction and manufacturing activities. Additionally, annual traditional festivities are expected to support transportation activity and boost gasoline demand. Finally, the ongoing air travel recovery is expected to bolster jet/kerosene demand. Overall, India is expected to see healthy oil demand growth of 228 tb/d, y-o-y, in **2024**.

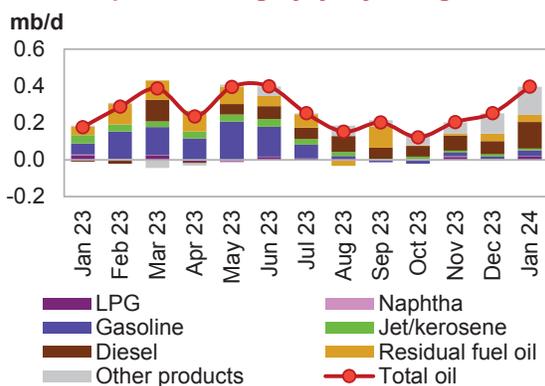
The healthy economic momentum in 2024 is expected to continue into **2025**. Furthermore, manufacturing and business activities in India are expected to be steady, supporting an oil demand increase of 228 tb/d, y-o-y. Diesel is expected to continue to be the main driver of demand, followed by the ‘other products’ category, mostly supported by bitumen. Similarly, demand for transportation fuels and petrochemical feedstock is expected to remain healthy and support oil demand over the year.

Latin America

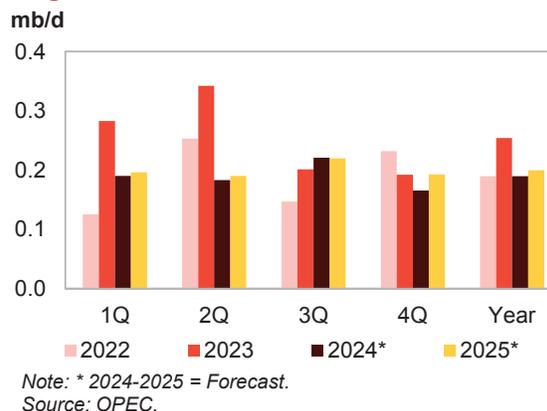
Update on the latest developments

Oil demand in Latin America in January surged a further 395 tb/d, y-o-y, up from growth of 252 tb/d seen in the previous month. The increase was driven by the 'other products' category and diesel for the second consecutive month, with consumption coming mostly from Brazil and Venezuela.

Graph 4 - 11: Latin America's oil demand by main petroleum product category, y-o-y change



Graph 4 - 12: Latin America's oil demand, y-o-y change



In terms of demand by product, the 'other products' category accounted for the largest increase of 152 tb/d, equivalent to 18%, y-o-y growth in January, up from the 109 tb/d y-o-y increase seen the previous month. Diesel expanded by 143 tb/d, up from the 70 tb/d y-o-y increase seen the previous month. Requirements for residual fuels expanded by 39 tb/d, y-o-y, slightly below growth of 42 tb/d seen in December. While gasoline expanded further by 33 tb/d, y-o-y, up from 11 tb/d y-o-y growth in December, jet/kerosene saw growth of 10 tb/d, y-o-y. A report from IATA's Air Passenger Market Analysis states that in January Latin America's international RPKs grew by 17.9%, reaching 2% below pre-pandemic levels. In terms of petrochemical feedstock, LPG increased by 17 tb/d, y-o-y, while naphta was flat.

Near-term expectations

Looking ahead, Latin America's economic activity is expected to be steady, combined with an ongoing recovery in air travel and a healthy manufacturing sector. This is predicted to boost oil demand growth by around 190 tb/d, y-o-y, in 1H24. Overall, ongoing healthy economic activity on the back of improvements in both manufacturing and air travel in **2024** is expected to support oil demand growth of 190 tb/d, y-o-y.

In **2025**, economic activity in the region is expected to remain healthy, as GDP growth is projected to improve further from 2024. Furthermore, both transportation and manufacturing activities are expected to support average oil demand growth of 200 tb/d, y-o-y. Transportation fuels, including gasoline, jet/ kerosene and diesel, are expected to drive demand growth, supported by an uptick in demand for residual fuels.

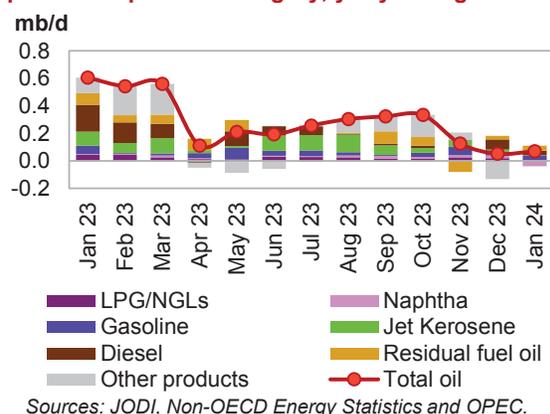
Middle East

Update on the latest developments

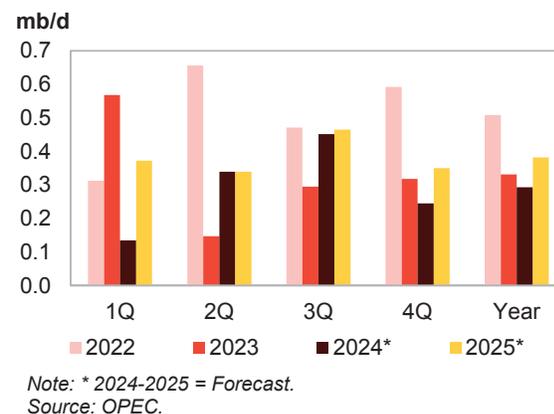
Oil demand in the Middle East grew by 69 tb/d, y-o-y, in **January**, up from annual growth of 52 tb/d recorded in December. Demand was mostly supported by demand for transportation fuels amid healthy economic activity in Saudi Arabia, the UAE and Iraq. Meanwhile, February data for Iraq indicated y-o-y growth of 34 tb/d.

In the region, gasoline led oil demand growth by 40 tb/d, y-o-y, up from the 20 tb/d y-o-y increase seen in the previous month. Residual fuels, mostly used for electricity generation, increased by 37 tb/d, y-o-y, up from growth of 26 tb/d in December. Diesel demand increased by 32 tb/d, y-o-y, down from 75 tb/d y-o-y growth recorded in December.

Graph 4 - 13: Middle East's oil demand by main petroleum product category, y-o-y change



Graph 4 - 14: Middle East's oil demand, y-o-y change



Jet/kerosene was broadly flat, y-o-y, supported by the ongoing air travel recovery in the region. In terms of petrochemical requirements, LPG saw a minor decline of 5 tb/d, y-o-y, and naphtha dropped by 32 tb/d, y-o-y. Finally, the 'other products' category contracted marginally by 4 tb/d, from a drop of 132 tb/d, y-o-y.

Table 4 - 6: Iraq's oil demand, mb/d

Iraq's oil demand By product	Feb 23	Feb 24	Change Feb 24/Feb 23	
			Growth	%
LPG	0.07	0.07	0.00	0.7
Naphtha	0.01	0.00	0.00	-53.8
Gasoline	0.19	0.19	0.01	4.3
Jet/kerosene	0.05	0.06	0.01	30.5
Diesel	0.16	0.16	0.00	-0.9
Fuel oil	0.22	0.26	0.04	19.4
Other products	0.23	0.20	-0.03	-11.4
Total	0.92	0.95	0.03	3.7

Note: Totals may not add up due to independent rounding.

Sources: JODI and OPEC.

Near-term expectations

In the near term, ongoing economic activity in the region is expected to continue to support oil demand in 1H24. Furthermore, ongoing strong growth in transportation fuel demand is expected to continue on the back of healthy driving and air travel activity. Moreover, the current focus on petrochemical sector development is expected to bolster petrochemical feedstock requirements in the region. Accordingly, these factors are expected to support overall oil demand growth, which is forecast to expand in 1H24 by an average of around 240 tb/d, y-o-y.

Overall in **2024**, GDP growth rates in the region are forecast to surpass those of 2023, amid expected healthy transportation activity combined with petrochemical feedstock requirements, supporting transportation fuels and petrochemical feedstock demand. Accordingly, the Middle East is expected to see healthy demand growth of around 290 tb/d, y-o-y.

In **2025**, economic activity in the region is projected to remain healthy. In addition, mobility and petrochemical sector requirements are expected to stay steady. These factors should support demand for transportation fuels and other distillates in the region. Accordingly, regional oil demand in 2025 is expected to expand by an average of 382 tb/d, y-o-y.

World Oil Supply

The non-DoC liquids supply (i.e. liquids supply from countries not participating in the Declaration of Cooperation) is expected to grow by 1.2 mb/d in 2024, revised down from the previous month's assessment by about 0.1 mb/d. In 2024, the main drivers for liquids supply growth are expected to be the US, Canada, Brazil and Norway. The non-DoC liquids supply growth in 2025 is expected at 1.1 mb/d, revised down by 0.1 mb/d from the previous month's assessment. The growth is mainly driven by the US, Brazil, Canada and Norway.

The term “non-DoC liquids supply” is established to better reflect the current breakdown of global liquids supply into DoC and non-DoC.

The non-OPEC liquids supply (including the 10 non-OPEC countries participating in DoC) in 2024 is expected to grow by 1.0 mb/d, revised down from the previous month's assessment by about 0.1 mb/d. The main drivers for liquids supply growth are expected to be the US, Canada, Brazil and Norway. The forecast for non-OPEC liquids supply growth in 2025 stands at 1.3 mb/d, revised down by 0.1 mb/d from the previous month's assessment. The growth is mainly driven by the US, Brazil, Canada, Russia, Kazakhstan and Norway.

Indeed, crude production levels/growths for countries participating in DoC (including Azerbaijan, Bahrain, Brunei Darussalam, Kazakhstan, Malaysia, Mexico, Oman, Russia, Sudan, and South Sudan) are subject to their DoC production adjustments in 2024 and 2025.

Separately, OPEC natural gas liquids (NGLs) and non-conventional liquids are forecast to grow by around 64 tb/d to average 5.5 mb/d this year, followed by a growth of 110 tb/d to average 5.6 mb/d in 2025. OPEC-12 crude oil production in March increased by 3 tb/d, m-o-m, averaging 26.60 mb/d, as reported by available secondary sources.

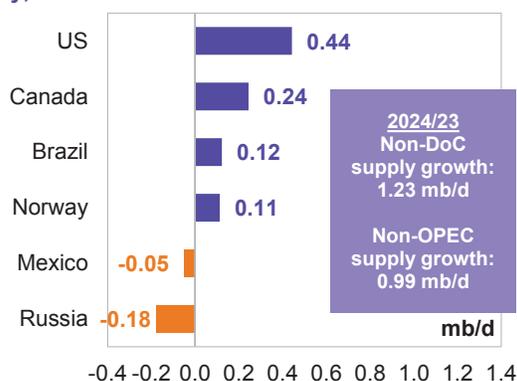
Key drivers of growth and decline

The non-DoC liquids supply (i.e. liquids supply from countries not participating in the Declaration of Cooperation) is expected to grow by 1.2 mb/d in 2024, revised down from the previous month's assessment by about 0.1 mb/d. In 2024, the main drivers for liquids supply growth are expected to be the US, Canada, Brazil and Norway. The non-DoC liquids supply growth in 2025 is expected at 1.1 mb/d, revised down by 0.1 mb/d from the previous month's assessment. The growth is mainly driven by the US, Brazil, Canada and Norway.

The term “non-DoC liquids supply” is established to better reflect the current breakdown of global liquids supply into DoC and non-DoC.

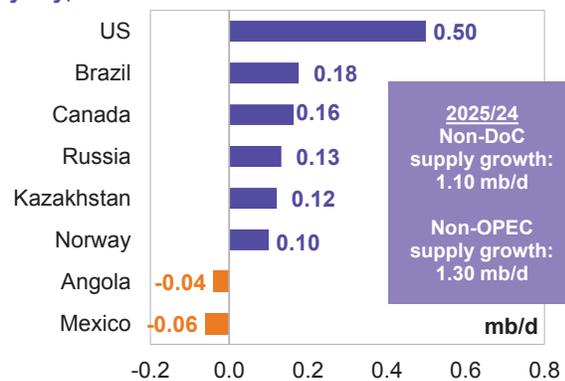
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Graph 5 - 1: Annual liquids production changes, y-o-y, for selected countries in 2024*



Note: * 2024 = Forecast. Source: OPEC.

Graph 5 - 2: Annual liquids production changes, y-o-y, for selected countries in 2025*



Note: * 2025 = Forecast. Source: OPEC.

Note: Crude production levels/growths for countries participating in DoC (including Azerbaijan, Bahrain, Brunei Darussalam, Kazakhstan, Malaysia, Mexico, Oman, Russia, Sudan, and South Sudan) are subject to their DoC production adjustments in 2024 and 2025.

Non-OPEC liquids production in 2024 and 2025**

Table 5 - 1: Non-OPEC liquids production in 2024*, mb/d

Non-OPEC liquids production**	2023	1Q24	2Q24	3Q24	4Q24	2024	Change 2024/23	
							Growth	%
Americas	28.70	28.88	29.10	29.44	29.94	29.34	0.64	2.22
of which US	20.90	20.87	21.24	21.44	21.81	21.34	0.44	2.12
Europe	3.65	3.69	3.74	3.72	3.90	3.76	0.11	2.99
Asia Pacific	0.44	0.45	0.42	0.43	0.42	0.43	-0.01	-2.91
Total OECD	32.80	33.02	33.26	33.59	34.25	33.53	0.73	2.24
China	4.52	4.60	4.59	4.46	4.46	4.53	0.01	0.24
India	0.77	0.78	0.79	0.79	0.78	0.78	0.01	1.32
Other Asia	2.28	2.29	2.24	2.22	2.22	2.24	-0.04	-1.70
Latin America	6.96	7.36	7.31	7.35	7.39	7.35	0.39	5.62
Middle East	3.27	3.20	3.23	3.27	3.27	3.24	-0.03	-0.90
Africa	2.42	2.45	2.40	2.42	2.45	2.43	0.01	0.49
Russia	10.93	10.83	10.44	10.85	10.87	10.75	-0.18	-1.63
Other Eurasia	2.93	2.93	2.91	2.99	3.01	2.96	0.03	1.12
Other Europe	0.10	0.10	0.10	0.10	0.10	0.10	0.00	-1.15
Total Non-OECD	34.18	34.54	34.02	34.44	34.56	34.39	0.21	0.61
Total Non-OPEC production	66.98	67.57	67.28	68.03	68.81	67.93	0.94	1.41
Processing gains	2.47	2.52	2.52	2.52	2.52	2.52	0.05	2.03
Total Non-OPEC liquids production	69.45	70.09	69.80	70.55	71.33	70.44	0.99	1.43
Previous estimate	69.46	70.32	69.88	70.66	71.24	70.53	1.07	1.54
Revision	-0.01	-0.23	-0.08	-0.11	0.09	-0.08	-0.07	-0.11

Note: * 2024 = Forecast. Totals may not add up due to independent rounding.

** Crude production levels/growths for countries participating in DoC (including Azerbaijan, Bahrain, Brunei Darussalam, Kazakhstan, Malaysia, Mexico, Oman, Russia, Sudan, and South Sudan) are subject to their DoC production adjustments in 2024 and 2025.

Source: OPEC.

Table 5 - 2: Non-OPEC liquids production in 2025*, mb/d

Non-OPEC liquids production**	2024	1Q25	2Q25	3Q25	4Q25	2025	Change 2025/24	
							Growth	%
Americas	29.34	29.91	29.68	29.90	30.28	29.94	0.60	2.05
of which US	21.34	21.75	21.77	21.82	22.03	21.84	0.50	2.34
Europe	3.76	3.94	3.81	3.79	3.90	3.86	0.10	2.66
Asia Pacific	0.43	0.43	0.42	0.43	0.43	0.42	-0.01	-1.81
Total OECD	33.53	34.27	33.91	34.12	34.61	34.23	0.69	2.07
China	4.53	4.57	4.55	4.51	4.51	4.53	0.01	0.13
India	0.78	0.78	0.79	0.80	0.80	0.79	0.01	1.00
Other Asia	2.24	2.23	2.19	2.16	2.16	2.19	-0.06	-2.62
Latin America	7.35	7.51	7.55	7.63	7.77	7.62	0.26	3.58
Middle East	3.24	3.27	3.30	3.30	3.30	3.29	0.05	1.50
Africa	2.43	2.46	2.45	2.45	2.44	2.45	0.02	0.70
Russia	10.75	10.89	10.88	10.86	10.89	10.88	0.13	1.23
Other Eurasia	2.96	3.08	3.12	3.06	3.10	3.09	0.13	4.42
Other Europe	0.10	0.10	0.10	0.10	0.10	0.10	0.00	1.97
Total Non-OECD	34.39	34.88	34.93	34.88	35.08	34.94	0.55	1.60
Total Non-OPEC production	67.93	69.15	68.84	68.99	69.68	69.17	1.24	1.83
Processing gains	2.52	2.58	2.58	2.58	2.58	2.58	0.06	2.38
Total Non-OPEC liquids production	70.44	71.73	71.41	71.57	72.26	71.75	1.30	1.85
Previous estimate	70.53	71.80	71.60	71.89	72.42	71.93	1.40	1.99
Revision	-0.08	-0.07	-0.18	-0.32	-0.16	-0.18	-0.10	-0.14

Note: * 2025 = Forecast. Totals may not add up due to independent rounding.

** Crude production levels/growths for countries participating in DoC (including Azerbaijan, Bahrain, Brunei Darussalam, Kazakhstan, Malaysia, Mexico, Oman, Russia, Sudan, and South Sudan) are subject to their DoC production adjustments in 2024 and 2025.

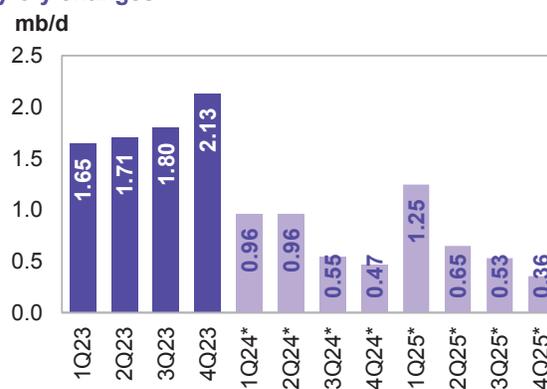
Source: OPEC.

OECD

For 2024, OECD liquids production is likely to grow by 0.7 mb/d to average 33.5 mb/d. Growth is set to be led by OECD Americas, with an expected increase of 0.6 mb/d to an average of 29.3 mb/d. This is revised down by 0.1 mb/d compared with the previous month's assessment. Yearly liquids production in OECD Europe is expected to rise by 0.1 mb/d to average 3.8 mb/d, which is revised down by about 20 tb/d compared with the previous assessment. OECD Asia Pacific is expected to decline by 13 tb/d, y-o-y, to average 0.4 mb/d.

OECD liquids production is forecast to grow by 0.7 mb/d to average 34.2 mb/d in 2025. OECD Americas is expected to be the main growth driver, with an expected increase of 0.6 mb/d for an average of 29.9 mb/d. Yearly liquids production in the OECD Europe is expected to grow by 0.1 mb/d to average 3.9 mb/d, while OECD Asia Pacific is expected to decline by a minor 8 tb/d, y-o-y, to average 0.4 mb/d.

Graph 5 - 3: OECD quarterly liquids supply, y-o-y changes



Note: * 1Q24-4Q25 = Forecast. Source: OPEC.

OECD Americas

US

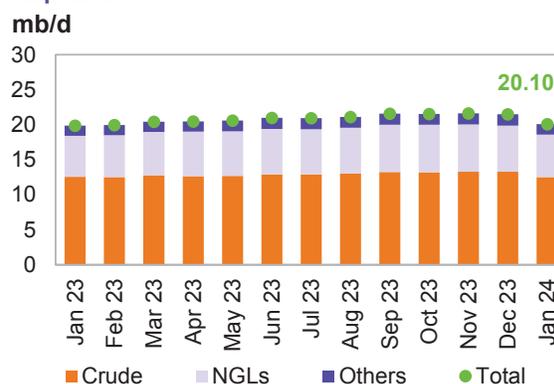
US liquids production in **January** dropped by 1.4 mb/d, m-o-m, to average 20.1 mb/d due to a cold wave and freezing weather. This was up by 0.2 mb/d compared with January 2023.

Crude oil and condensate production fell by 0.8 mb/d, m-o-m, to an average of 12.5 mb/d in **January**. This was down by 35 tb/d, y-o-y.

In terms of **crude and condensate production breakdown by region (PADDs)**, production decreased on the US Gulf Coast (USGC) by 0.5 mb/d to average 9.1 mb/d. Production in the East Coast region remained broadly unchanged, while output in the Midwest, Rocky Mountains and West Coast regions dropped by 213 tb/d, 62 tb/d and 10 tb/d, m-o-m, respectively.

A drop in production in the main regions can primarily be attributed to lower output in Texas, New Mexico, North Dakota and the offshore Gulf of Mexico (GoM) producing wells.

Graph 5 - 4: US monthly liquids output by key component



Sources: EIA and OPEC.

NGL production fell by 0.5 mb/d, m-o-m, to average 6.1 mb/d in January. This was 0.2 mb/d higher, y-o-y. According to the US Department of Energy (DoE), the production of **non-conventional liquids** (mainly ethanol) dropped by 148 tb/d, m-o-m, to average 1.5 mb/d. Preliminary estimates show non-conventional liquids averaging about 1.6 mb/d in February, up by 0.1 mb/d, m-o-m.

GoM production dropped by 77 tb/d, m-o-m, to average 1.8 mb/d in January. This was due to ongoing oil spill outages and a shut-in at the Shell Appomattox asset that was necessary to connect it to the Rydberg project. However, GoM production was still supported by new project ramp-ups. In the **onshore Lower 48**, crude and condensate production fell by 0.7 mb/d, m-o-m, to an average of 10.4 mb/d in January.

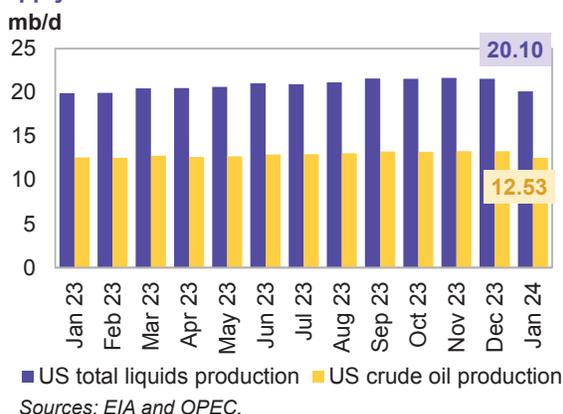
Table 5 - 3: US crude oil production by selected state and region, tb/d

State	Jan 23	Dec 23	Jan 24	Change	
				m-o-m	y-o-y
Texas	5,318	5,649	5,361	-288	43
New Mexico	1,808	1,927	1,819	-108	11
Gulf of Mexico (GOM)	1,903	1,829	1,752	-77	-151
North Dakota	1,049	1,284	1,122	-162	73
Colorado	429	484	443	-41	14
Alaska	448	433	427	-6	-21
Oklahoma	432	419	389	-30	-43
Total	12,568	13,295	12,533	-762	-35

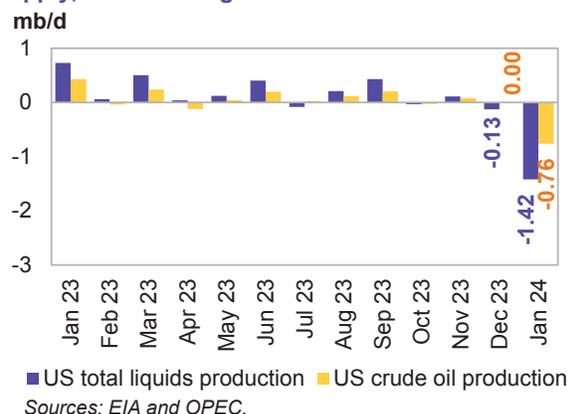
Sources: EIA and OPEC.

Looking at **individual US states**, New Mexico's oil production fell by 108 tb/d to average 1.8 mb/d, which is 11 tb/d higher than a year ago. Production from Texas was down by 288 tb/d to an average of 5.4 mb/d, which is 43 tb/d higher than a year ago. In the Midwest, North Dakota's production fell by 162 tb/d, m-o-m, to average 1.1 mb/d, up 73 tb/d, y-o-y, while Oklahoma's production dropped by 30 tb/d, averaging 0.4 mb/d, m-o-m. Production in Colorado fell by 41 tb/d, m-o-m, while output in Alaska remained mostly unchanged.

Graph 5 - 5: US monthly crude oil and total liquids supply



Graph 5 - 6: US monthly crude oil and total liquids supply, m-o-m changes

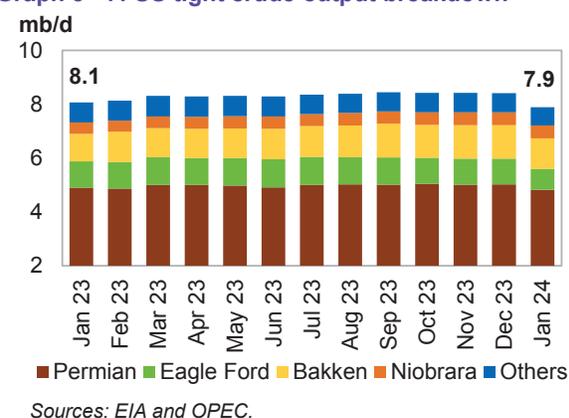


US tight crude output in January is estimated to have fallen by 518 tb/d, m-o-m, to average 7.9 mb/d, according to the latest estimates by the US Energy Information Administration (EIA). This was 0.2 mb/d lower than the same month last year.

The m-o-m decrease from shale and tight formations using horizontal wells came mainly from Permian shale production in Texas and New Mexico, where output dropped by 193 tb/d for an average of 4.8 mb/d. This was down by 77 tb/d, y-o-y.

In North Dakota, Bakken shale oil output fell, m-o-m, averaging 1.1 mb/d, up by 109 tb/d, y-o-y. Tight crude output at Eagle Ford in Texas dropped by 182 tb/d to average 0.8 mb/d, down by 197 tb/d, y-o-y. Production at Niobrara-Codell in Colorado and Wyoming was largely unchanged at an average of 473 tb/d.

Graph 5 - 7: US tight crude output breakdown

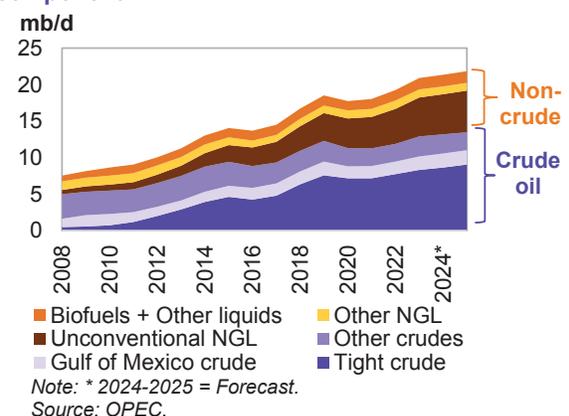


US liquids production in 2023, excluding processing gains, is estimated to expand by 1.6 mb/d, y-o-y, to average 20.9 mb/d. **Crude oil and condensate** output is estimated to increase by 1.0 mb/d, y-o-y, to average 12.9 mb/d. Average tight crude output in 2023 is estimated at 8.3 mb/d, up by 0.6 mb/d, y-o-y.

At the same time, NGL production and non-conventional liquids, particularly ethanol, are estimated to increase by 0.5 mb/d and 0.1 mb/d, y-o-y, to average 6.4 mb/d and 1.5 mb/d, respectively.

US liquids production in 2024, excluding processing gains, is expected to grow by 0.4 mb/d, y-o-y, to average 21.3 mb/d. This is revised down by 0.1 mb/d from the previous assessment. The forecast assumes a modest level of drilling activity and fewer supply chain/logistical issues at the prolific Permian, Bakken and Eagle Ford shale sites this year.

Graph 5 - 8: US liquids supply developments by component



Crude oil and condensate output in 2024 are expected to jump by 0.3 mb/d, y-o-y, to average 13.2 mb/d. At the same time, NGL production and that of non-conventional liquids, particularly ethanol, is projected to increase by 0.1 mb/d and 30 tb/d, y-o-y, to average 6.5 mb/d and 1.6 mb/d, respectively.

Average tight crude output in 2024 is expected to reach 8.7 mb/d, up by 0.4 mb/d, y-o-y. The 2024 forecast assumes ongoing capital discipline and less inflationary pressure, as well as moderating supply chain issues

and oil field service constraints. At the same time, well productivity and operational efficiency improvements are expected to support crude production amid moderate drilling activity increases.

US liquids production, excluding processing gains, is expected to grow by 0.5 mb/d, y-o-y, to average 21.8 mb/d in **2025**, assuming a mild increase in drilling activity, lower service cost inflation and well productivity improvements in key shale basins. **Crude oil and condensate** output is expected to jump by 0.4 mb/d, y-o-y, to average 13.5 mb/d. At the same time, NGLs production and that of non-conventional liquids, particularly ethanol, is projected to increase, y-o-y, by 0.2 mb/d and 20 tb/d, and average 6.7 mb/d and 1.6 mb/d, respectively. Average tight crude output in 2025 is expected to reach 9.1 mb/d, up by 0.4 mb/d, y-o-y. The 2025 forecast assumes ongoing capital discipline and less inflationary pressure in the US upstream sector.

Table 5 - 4: US liquids production breakdown, mb/d

US liquids	Change		Change		Change	
	2023	2023/22	2024*	2024/23	2025*	2025/24
Tight crude	8.32	0.55	8.68	0.36	9.08	0.40
Gulf of Mexico crude	1.86	0.13	1.90	0.03	1.97	0.07
Conventional crude oil	2.75	0.33	2.65	-0.10	2.47	-0.18
Total crude	12.93	1.02	13.23	0.30	13.51	0.29
Unconventional NGLs	5.31	0.53	5.46	0.15	5.67	0.21
Conventional NGLs	1.12	-0.03	1.09	-0.03	1.07	-0.02
Total NGLs	6.43	0.50	6.55	0.12	6.74	0.19
Biofuels + Other liquids	1.54	0.10	1.57	0.03	1.59	0.02
US total supply	20.90	1.62	21.34	0.44	21.84	0.50

Note: * 2024-2025 = Forecast.

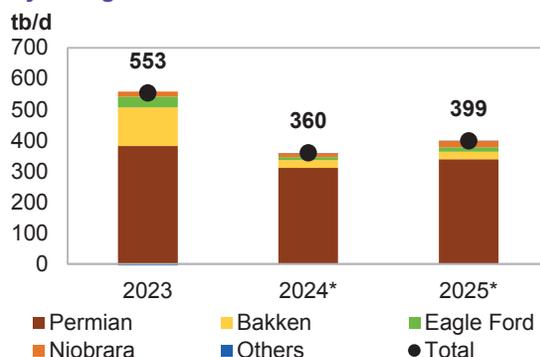
Sources: EIA, OPEC and Rystad Energy.

US tight crude production in the **Permian** during 2023 is estimated to increase by 0.4 mb/d, y-o-y, to average 5.0 mb/d. In 2024, it is forecast to grow by 0.3 mb/d, y-o-y, to average 5.3 mb/d, and growth of 0.3 mb/d is expected for 2025.

In North Dakota, **Bakken** shale production is still expected to remain below the pre-pandemic average of 1.4 mb/d. In 2023, growth is estimated at 0.1 mb/d, to average 1.2 mb/d. Growth of just 25 tb/d is expected for 2024 and 2025, each, respectively, for an average of 1.2 mb/d over both years. These trends could indicate maturity in the basin

Eagle Ford in Texas saw an output of 1.2 mb/d in 2019, followed by declines from 2020 to 2021 and no growth in 2022. With an estimated growth of about 35 tb/d for 2023, output rests at an average of 1.0 mb/d. At the same time, minor growth of 10 tb/d and 15 tb/d is expected for 2024 and 2025, respectively.

Graph 5 - 9: US tight crude output by shale play, y-o-y changes



Note: * 2024-2025 = Forecast.

Sources: EIA and OPEC.

Niobrara's production is estimated to rise by around 16 tb/d, y-o-y, in 2023, to an average of 450 tb/d. With an expected growth of just 12 tb/d for 2024, the output is forecast to rise by 20 tb/d, y-o-y, in 2025. In the remaining tight plays, production is estimated to remain largely steady in 2023, y-o-y. With a modest pace in drilling and completion activities, production is expected to stabilize both this year and in 2025.

Table 5 - 5: US tight oil production growth, mb/d

US tight oil	Change		Change		Change	
	2023	2023/22	2024*	2024/23	2025*	2025/24
Permian tight	4.98	0.38	5.30	0.31	5.63	0.34
Bakken shale	1.16	0.13	1.18	0.03	1.21	0.02
Eagle Ford shale	1.00	0.04	1.01	0.01	1.02	0.01
Niobrara shale	0.45	0.02	0.46	0.01	0.48	0.02
Other tight plays	0.73	0.00	0.73	0.00	0.73	0.00
Total	8.32	0.55	8.68	0.36	9.08	0.40

Note: * 2024-2025 = Forecast.

Source: OPEC.

US rig count, spudded, completed, DUC wells and fracking activity

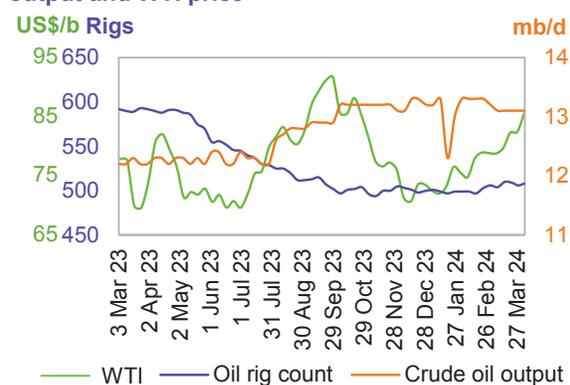
The total number of **active US drilling rigs** in the week ending 28 March 2024 dropped by three to 621, according to Baker Hughes, 134 fewer rigs than a year ago. The number of active offshore rigs fell by three, w-o-w, to 20. This is two more than in the same month a year earlier. The number of onshore oil and gas rigs remained unchanged, w-o-w, to stand at 601, with no rigs in inland waters. This is down by 135 rigs, y-o-y.

The **US horizontal rig count** rose by two, w-o-w, to 558, compared with 691 horizontal rigs a year ago. The number of drilling rigs for oil decreased by three, w-o-w, to 506, while the number of gas-drilling rigs remained the same, w-o-w, at 112.

The Permian's rig count rose by one, w-o-w, to 316. Rig counts remained unchanged in Williston, Eagle Ford and Cana Woodford at 34, 55 and 21, respectively. Meanwhile, the number of rigs fell by one, w-o-w, in Niobrara to 11.

No operating oil rig has been reported in the Barnett Basin since 19 January.

Graph 5 - 10: US weekly rig count vs. US crude oil output and WTI price



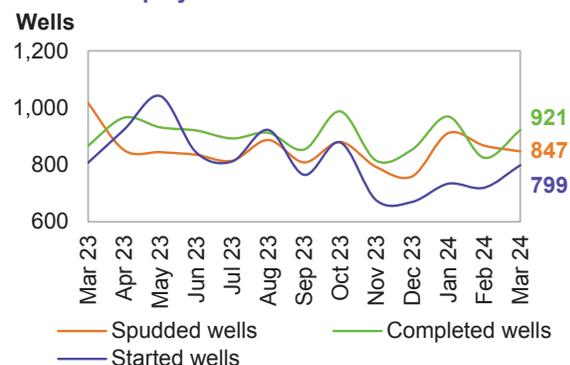
Sources: Baker Hughes, EIA and OPEC.

Drilling and completion (D&C) activities for spudded, completed and started oil-producing wells in all US shale plays included 867 horizontal wells spudded in February (as per preliminary data), based on EIA-DPR regions. This is down by 44, m-o-m, and 8% higher than in February.

Preliminary data for February indicates a lower number of completed wells at 824, but up by 0.4%, y-o-y. The number of started wells is estimated at 720, which is 3% higher than a year earlier.

Preliminary data for March 2024 saw 847 spudded, 921 completed and 799 started wells, according to Rystad Energy.

Graph 5 - 11: Spudded, completed and started wells in US shale plays



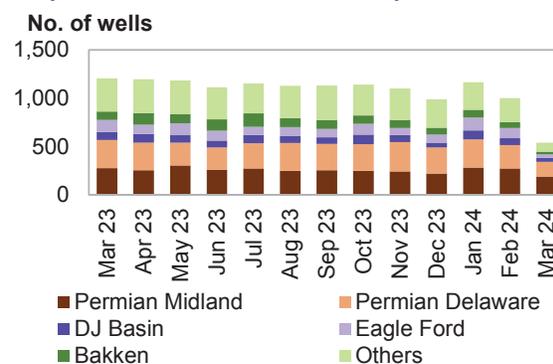
Note: Feb 24-Mar 24 = Preliminary data.

Sources: Rystad Energy and OPEC.

In terms of identified **US oil and gas fracking operations** by region, Rystad Energy reported that 1164 wells were fracked in January. In February and March, it stated that 1001 and 563 wells began fracking, respectively, according to preliminary numbers based on an analysis of high-frequency satellite data.

In regional terms, preliminary February data shows that 273 and 243 wells were fracked in the Permian Midland and Permian Delaware regions, respectively. There was a decrease of 10 wells in the Midland region and a drop of 48 in Delaware compared with January. Data also indicates that 42 wells were fracked in the DJ Basin, 105 in Eagle Ford and 61 in Bakken during February.

Graph 5 - 12: Fracked wells count per month



Note: Feb 24-Mar 24 = Preliminary data.
Sources: Rystad Energy Shale Well Cube and OPEC.

Canada

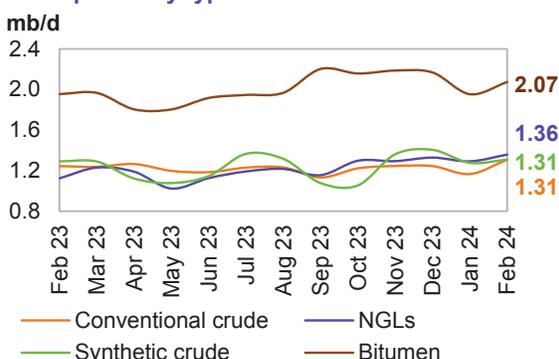
Canada's liquids production in February is estimated to have risen by 0.4 mb/d, m-o-m, to average 6.1 mb/d. This was due to recovery from the cold wave in January.

Conventional crude production rose by 141 tb/d, m-o-m, in February to an average of 1.3 mb/d. NGL output was up by 66 tb/d, m-o-m, averaging 1.4 mb/d.

Crude bitumen production output rose in February by 120 tb/d, m-o-m, while synthetic crude increased by 32 tb/d, m-o-m. Taken together, crude bitumen and synthetic crude production rose by 152 tb/d to 3.4 mb/d.

New upstream maintenance was announced for Syncrude, Suncor Firebag, Shell Albian Sands and Imperial Kearn, which is tightening supplies towards 2Q24.

Graph 5 - 13: Canada's monthly liquids production development by type

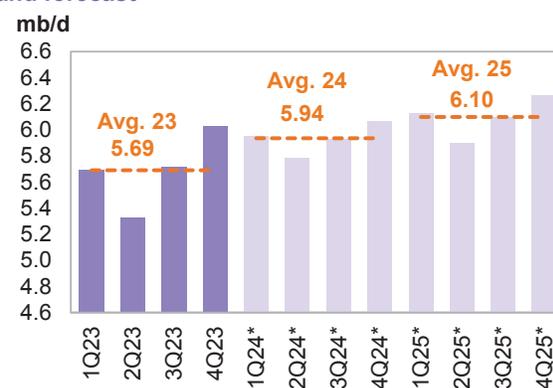


Sources: Statistics Canada, Alberta Energy Regulator and OPEC.

In **2024**, Canada's liquids production is forecast to increase at a much faster pace compared with 2023, rising by 0.2 mb/d to an average of 5.9 mb/d. Incremental production is expected to come from oil sands project ramp-ups and the expansion of existing facilities in areas like Montney, Kearn and Fort Hills, in addition to some conventional field growth.

Canada's liquids production is forecast to grow by 0.2 mb/d to average 6.1 mb/d in **2025**. Additional production is expected to come from expanding oil sands projects and some growth in conventional fields. Sources of production are primarily expected from Athabasca, Syncrude Mildred Lake, Kearn, Horizon, Christina Lake, Suncor and Foster Creek oil Sands projects. The main start-ups in 2025 are expected to be Syncrude Mildred Lake/Aurora, Narrows Lake, Lloyd Thermal, Cold Lake Oil Sands and Montney Play.

Graph 5 - 14: Canada's quarterly liquids production and forecast



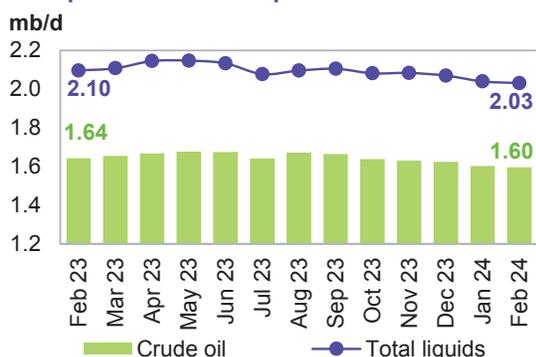
Note: * 1Q24-4Q25 = Forecast. Source: OPEC.

Mexico

Mexico's total February liquids output dropped by 9 tb/d, m-o-m, to average 2.0 mb/d, according to the Comisión Nacional de Hidrocarburos (CNH).

For **2024**, liquids production is forecast to decline by 50 tb/d to average 2.1 mb/d, largely unchanged from the previous assessment. In general, declines from mature fields are expected to offset any gains from new projects. Pemex's total crude production decline in mature areas like Ku-Maloob-Zaap and Integral Yaxche-Xanab is forecast to outweigh production ramp-ups in Area-1 and El Golpe-Puerto Ceiba, as well as from a few start-ups, namely TM-01, Paki and AE-0150-Uchukil. Mature fields accounted for over 60% of total Mexican crude and condensate production in 2023.

Graph 5 - 15: Mexico's monthly liquids and crude production development



Sources: Mexico Comisión Nacional de Hidrocarburos (CNH) and OPEC

OECD Europe

Norway

Norwegian liquids production in February dropped by just 7 tb/d, m-o-m, to average 2.1 mb/d. Norway's crude production increased by 5 tb/d, m-o-m, in February to average 1.8 mb/d. This remained close to historical highs and was up by 57 tb/d, y-o-y. Monthly oil production was 3% higher than the Norwegian Offshore Directorate's (NOD's) forecast.

Production of NGLs and condensate, in the meantime, fell by 12 tb/d, m-o-m, to average 0.2 mb/d, according to NOD data.

For **2024**, Norwegian liquids production is forecast to increase by 0.1 mb/d to average 2.1 mb/d. This is revised down by a minor 8 tb/d from the previous assessment. Several projects are scheduled to ramp up this year. At the same time, start-ups are expected at the Balder/Ringhorne, Eldfisk, Kristin, Alvheim floating, production, storage and offloading (FPSO), Hanz, Skarv Aasgard FPSO and PL636 offshore projects. Johan Castberg is projected to be the main source of output increases this year, with the first oil planned in 4Q24.

Norwegian liquids production is forecast to grow by 0.1 mb/d to average 2.2 mb/d in **2025**. Several small-to-large scale projects are scheduled to ramp up in 2025, such as Johan Castberg, Kristin, Eldfisk and Balder/Ringhorne. At the same time, start-ups are expected at the Ormen Lange, Snohvit, Halten East, Tyrving, Eirin, Norne FPSO, Maria and Verdande projects.

Graph 5 - 16: Norway's monthly liquids production development



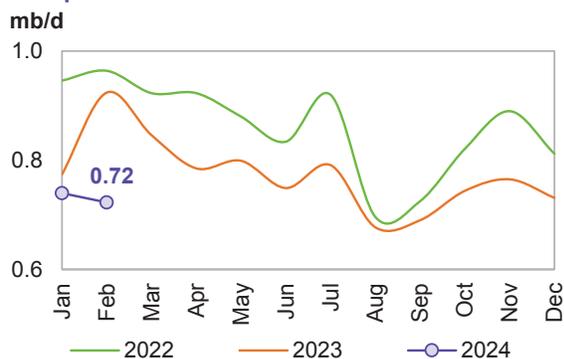
Sources: The Norwegian Petroleum Directorate (NPD) and OPEC.

UK

In **February**, **UK liquids production** fell by 17 tb/d, m-o-m, to average 0.7 mb/d. Crude oil output decreased by 15 tb/d, m-o-m, to average 0.6 mb/d, lower by 179 tb/d, y-o-y, according to official data. NGL output remained largely unchanged, averaging 66 tb/d.

For **2024**, UK liquids production is forecast to drop by about 10 tb/d to an average of 0.8 mb/d. Production ramp-ups will be seen at the ETAP and Clair sites, as well as at the Anasuria and Captain enhanced oil recovery (EOR) start-up projects. The Penguins FPSO is expected to be towed out to the UK North Sea field in 1H24.

Graph 5 - 17: UK monthly liquids production development

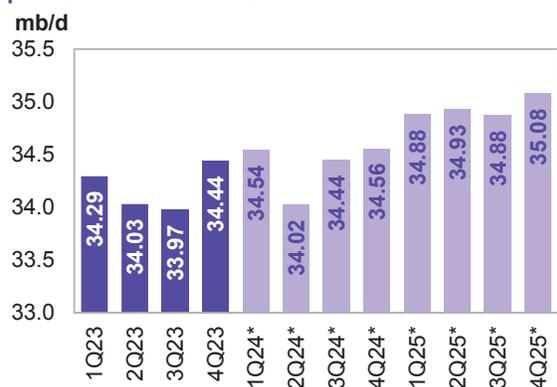


Sources: UK Department for Business, Energy and Industrial Strategy and OPEC.

UK liquids production is forecast to stay steady at an average of 0.8 mb/d in 2025. Production ramp-ups will be seen at the Clair sites and Schiehallion. Meanwhile, project start-ups are expected at the Alwyn, Laggan-Tormore, Murlach (Skua redevelopment) and Janice's assets. However, decline rates from mature fields are expected to offset these additional volumes.

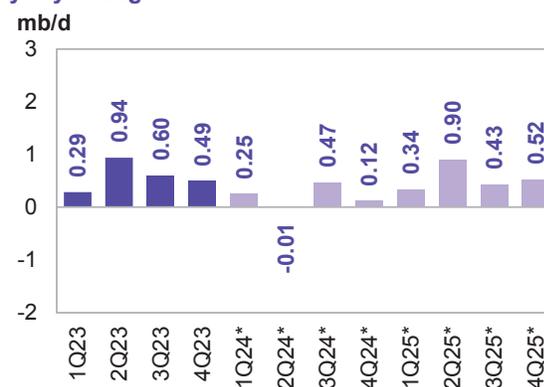
Non-OECD

Graph 5 - 18: Non-OECD quarterly liquids production and forecast



Note: * 1Q24-4Q25 = Forecast. Source: OPEC.

Graph 5 - 19: Non-OECD quarterly liquids supply, y-o-y changes

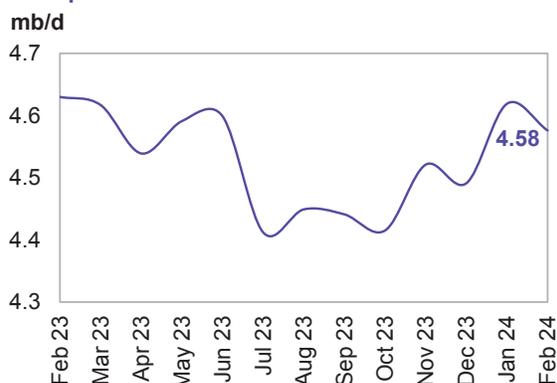


Note: * 1Q24-4Q25 = Forecast. Source: OPEC.

China

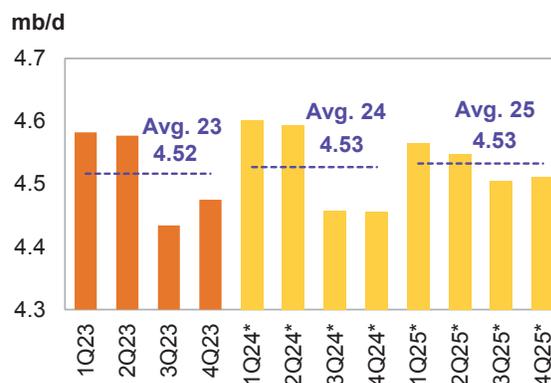
China's liquids production dropped by 43 tb/d, m-o-m, to average 4.6 mb/d in **February**. This is down by 54 tb/d, y-o-y, according to official data. Crude oil output in February averaged 4.3 mb/d, down by 43 tb/d compared with the previous month, and lower by 45 tb/d, y-o-y. Conversely, NGL and condensate production remained unchanged, m-o-m, averaging 40 tb/d.

Graph 5 - 20: China's monthly liquids production development



Sources: CNPC and OPEC.

Graph 5 - 21: China's quarterly liquids production and forecast



Note: * 1Q24-4Q25 = Forecast. Sources: CNPC and OPEC.

For **2024**, Chinese liquids production is expected to rise by about 10 tb/d, y-o-y, and is forecast to average 4.5 mb/d. This is largely unchanged from the previous assessment. Natural decline rates are expected to be offset by additional growth through more infill wells and EOR projects. For this year, Lingshui 17-2, Lufeng, Lihua 11-1, Xi'nan, Bozhong 19-2 Oilfield Development, Shayan and Lihua 4-1 (redevelopment), operated by CNOOC, PetroChina and Sinopec, are planned to come on stream. At the same time, key ramp-ups are expected from Changqing, Kenli 10-2, Wushi 17-2 and Kenli 6-4. Recently, CNOOC Limited made a major oilfield discovery in the Bohai Sea offshore China, named Qinhuangdao 27-3 Oilfield, with more than 100 million tons of oil equivalent in-place proved volume.

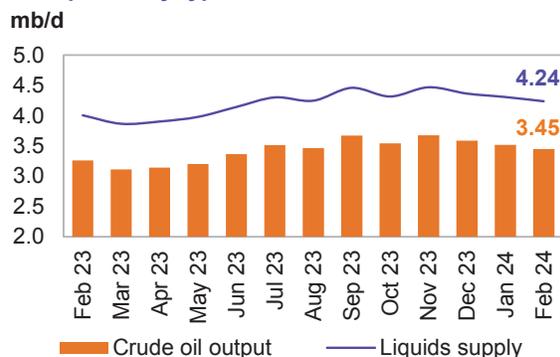
Chinese liquids production is expected to remain steady, y-o-y, and is forecast to average 4.5 mb/d in 2025. For next year, oil and gas condensate projects like Bozhong 19-6, Huizhou 26-6, Peng Lai 19-9, Shengli, Wushi 17-2, Liaohe and Xijiang 30-2, operated by CNOOC and Sinopec, are planned to come on stream. At the same time, key ramp-ups are expected from Changqing, Tarim, Xibei, Peng Lai 19-9 and Xi'nan.

Latin America

Brazil

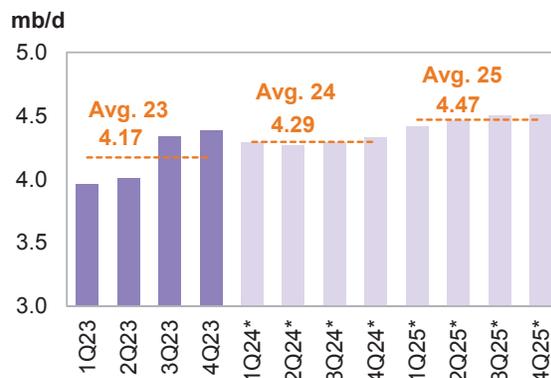
Brazil's crude output in February fell by 71 tb/d, m-o-m, to average 3.4 mb/d. The drop in output in February was primarily driven by the P-67 FPSO vessel operating at the Tupi field. NGL production, however, remained largely unchanged at an average of around 80 tb/d and is expected to remain flat in March 2024. Biofuel output (mainly ethanol) remained mostly unchanged at an average of 0.7 mb/d, with preliminary data showing a stable trend in March 2024. The country's total liquids production decreased by 70 tb/d in February to average 4.2 mb/d, but was higher by 0.2 mb/d, y-o-y.

Graph 5 - 22: Brazil's monthly liquids production development by type



Sources: Brazilian National Agency of Petroleum, Natural Gas and Biofuels (ANP) and OPEC.

Graph 5 - 23: Brazil's quarterly liquids production



Note: * 1Q24-4Q25 = Forecast. Sources: ANP and OPEC.

For **2024**, Brazil's liquids supply, including biofuels, is forecast to increase by about 120 tb/d, y-o-y, to average 4.3 mb/d. Crude oil output is expected to increase through production ramp-ups in the Buzios (Franco), Mero (Libra NW), Tupi (Lula) and Itapu (Florim) fields. Oil project start-ups are expected at the Buzios, Atlanta,

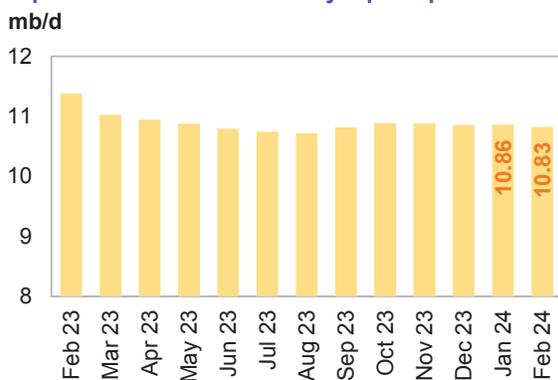
Pampo-Enchova Cluster and Vida sites. However, increasing costs in the offshore market and inflation might continue to delay projects and could temper growth in the short term.

Brazil's liquids supply, including biofuels, is forecast to increase by about 180 tb/d, y-o-y, to average 4.5 mb/d in **2025**. Crude oil output is expected to increase through production ramp-ups in the Buzios (Franco), Mero (Libra NW), Tupi (Lula), Marlim and Atlanta fields. Oil project start-ups are expected at the Buzios, Bacalhau (x-Carcara), Parque das Baleias, and Lapa (Carioca) fields.

Russia

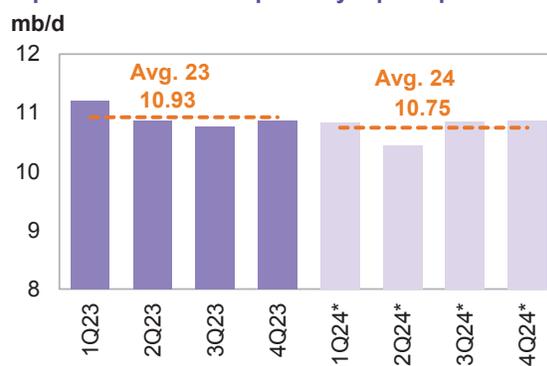
Russia's liquids production in **February** is estimated to drop by about 40 tb/d, m-o-m, to average 10.8 mb/d.

Graph 5 - 24: Russia's monthly liquids production



Sources: Nefte Compass and OPEC.

Graph 5 - 25: Russia's quarterly liquids production



Note: * 1Q24-4Q24 = Forecast.

Sources: Nefte Compass and OPEC.

For **2024**, Russian liquids production is forecast to drop by about 0.2 mb/d compared with the previous year, averaging 10.7 mb/d. It is worth noting that this takes into account all voluntary announced crude oil production adjustments to the end of 2024. In addition to project ramp-ups at several oil fields, there will be start-ups by Rosneft, Russneft, Lukoil, Gazprom, Neftisa and TenderResurs. However, overall additional liquids production is expected to be offset by declines at mature fields.

Caspian

Kazakhstan & Azerbaijan

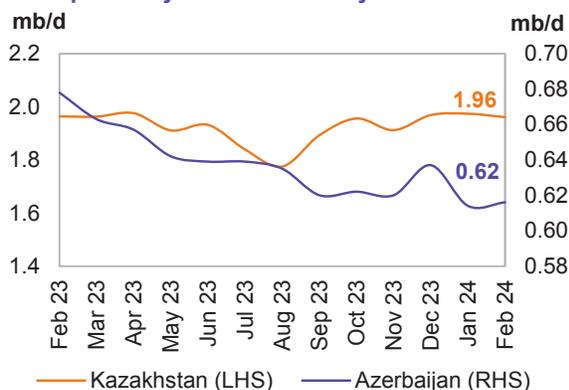
Liquids output in **Kazakhstan** dropped by 13 tb/d, m-o-m, to an average of 2.0 mb/d in **February**.

For **2024**, the liquids supply is forecast to increase by about 18 tb/d to average 1.9 mb/d, revised up by 9 tb/d compared with the previous assessment, owing to the higher-than-expected output in February. Oil production in the Kashagan field and gas condensate output in the Karachaganak field are expected to rise marginally.

Azerbaijan's liquids production in **February** remained primarily unchanged, m-o-m, averaging 0.6 mb/d, which is a drop of 62 tb/d, y-o-y.

Azerbaijan's liquids supply for **2024** is forecast to rise by about 14 tb/d to an average of 0.7 mb/d. Growth is forecast to come partly from the Shah Deniz, Absheron and Umid-Babek gas condensate projects. Production in Azerbaijan's ACG oil fields should also get a boost this year due to a seventh ACG platform.

Graph 5 - 26: Caspian monthly liquids production development by selected country



— Kazakhstan (LHS) — Azerbaijan (RHS)

Sources: Nefte Compass, JODI and OPEC.

OPEC NGLs and non-conventional oils

OPEC NGLs and non-conventional liquids are estimated to expand by about 65 tb/d in **2024** to average 5.5 mb/d. NGL production is projected to grow by 65 tb/d to average 5.4 mb/d, while non-conventional liquids are forecast to remain unchanged at 0.1 mb/d.

Preliminary data shows NGL output in 1Q24 averaging 5.4 mb/d, while non-conventional output is estimated to remain steady at 0.1 mb/d. Taken together, 5.5 mb/d is estimated for February, according to preliminary data.

The primary **2025** forecast points toward a combined growth of 110 tb/d for an average of 5.6 mb/d. NGL production is projected to grow by 110 tb/d to average 5.5 mb/d, while non-conventional liquids are projected to remain unchanged at 0.1 mb/d.

Graph 5 - 27: OPEC NGLs and non-conventional liquids quarterly production and forecast

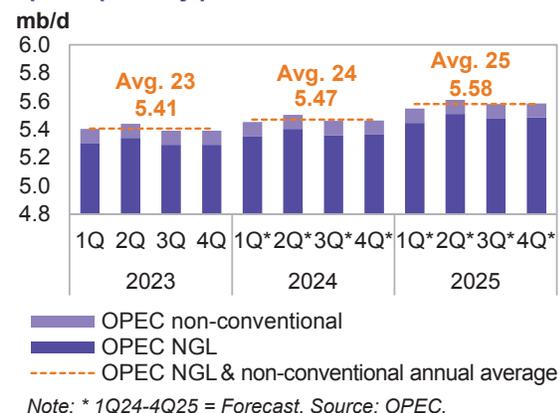


Table 5 - 6: OPEC NGLs + non-conventional oils, mb/d

OPEC NGL and non-conventional oils	Change		Change		Change					
	2023	23/22	2024	24/23	1Q25	2Q25	3Q25	4Q25	2025	25/24
OPEC NGL	5.31	0.05	5.37	0.06	5.45	5.51	5.48	5.48	5.48	0.11
OPEC non-conventional	0.10	0.00	0.10	0.00	0.10	0.10	0.10	0.10	0.10	0.00
Total	5.41	0.05	5.47	0.06	5.55	5.61	5.58	5.58	5.58	0.11

Note: 2024-2025 = Forecast.

Source: OPEC.

OPEC crude oil production

According to secondary sources, total **OPEC-12 crude oil production** averaged 26.60 mb/d in March 2024, 3 tb/d higher, m-o-m. Crude oil output increased mainly in IR Iran, Saudi Arabia, Gabon and Kuwait, while production in Nigeria, Iraq and Venezuela decreased.

Table 5 - 7: OPEC crude oil production based on secondary sources, tb/d

Secondary sources	2022	2023	3Q23	4Q23	1Q24	Jan 24	Feb 24	Mar 24	Change Mar/Feb
Algeria	1,018	976	952	961	910	912	908	909	0
Congo	261	260	259	250	246	244	245	250	5
Equatorial Guinea	84	56	59	53	55	55	53	59	6
Gabon	194	204	202	217	217	208	215	230	15
IR Iran	2,554	2,859	3,005	3,152	3,170	3,161	3,161	3,188	28
Iraq	4,439	4,275	4,289	4,305	4,207	4,211	4,217	4,194	-23
Kuwait	2,704	2,595	2,560	2,552	2,436	2,429	2,434	2,446	12
Libya	981	1,164	1,160	1,171	1,116	1,027	1,163	1,161	-2
Nigeria	1,210	1,314	1,279	1,381	1,423	1,434	1,437	1,398	-38
Saudi Arabia	10,531	9,608	8,993	8,952	9,008	8,969	9,017	9,037	20
UAE	3,066	2,950	2,912	2,906	2,928	2,928	2,931	2,925	-6
Venezuela	684	749	767	774	812	804	822	809	-14
Total OPEC	27,726	27,011	26,437	26,674	26,528	26,382	26,601	26,604	3

Notes: Totals may not add up due to independent rounding, given available secondary sources to date.

Source: OPEC.

Table 5 - 8: OPEC crude oil production based on direct communication, tb/d

Direct communication	2022	2023	3Q23	4Q23	1Q24	Jan 24	Feb 24	Mar 24	Change Mar/Feb
Algeria	1,020	973	951	958	907	907	906	907	1
Congo	262	271	269	259	252	258	245	254	9
Equatorial Guinea	81	55	58	53	53	52	47	60	14
Gabon	191	223	232	234	..	..	..	..	..
IR Iran	..	..	..	..	..	..	..	..	..
Iraq	4,453	4,117	4,101	4,123	3,957	3,979	3,992	3,903	-89
Kuwait	2,707	2,590	2,548	2,548	2,413	2,413	2,413	2,413	0
Libya	..	1,189	1,187	1,191	1,149	1,040	1,173	1,236	63
Nigeria	1,138	1,234	1,201	1,313	1,327	1,427	1,322	1,231	-92
Saudi Arabia	10,591	9,606	8,969	8,901	8,979	8,956	9,011	8,973	-39
UAE	3,064	2,944	2,904	2,892	2,919	2,925	2,914	2,918	4
Venezuela	716	783	797	796	864	841	877	874	-3
Total OPEC	..	..	..	..	..	..	..	..	..

Notes: .. Not available. Totals may not add up due to independent rounding.

Source: OPEC.

Commercial Stock Movements

Preliminary February 2024 data shows total OECD commercial oil stocks down by 25.7 mb, m-o-m. At 2,733 mb, they were 80 mb lower than the same time one year ago, 105 mb lower than the latest five-year average and 187 mb below the 2015–2019 average. Within the components, crude stocks rose by 19.6 mb, while product stocks fell 45.3 mb, m-o-m.

OECD commercial crude stocks stood at 1,342 mb in February. This was 41 mb lower than the same time a year ago, 38 mb below the latest five-year average, and 106 mb lower than the 2015–2019 average.

OECD total product stocks in February stood at 1,319 mb. This is 39 mb below the same time a year ago, 66 mb lower than the latest five-year average, and 81 mb below the 2015–2019 average.

In terms of days of forward cover, OECD commercial stocks in February dropped by 0.4 days, m-o-m, to stand at 59.8 days. This is 2.1 days lower than the level registered in February 2023, 5.2 days lower than the latest five-year average, and 2.8 days less than the 2015–2019 average.

Preliminary data for March 2024 shows that total US commercial oil stocks fell by 7.7 mb, m-o-m, to stand at 1,215 mb. This is 15.7 mb, or 1.3%, lower than the same month in 2023 and 38.5 mb, or 3.1%, below the latest five-year average. Crude stocks rose by 2.9 mb, while product stocks fell by 10.6 mb, m-o-m.

OECD

Preliminary February 2024 data shows total OECD **commercial oil stocks** down by 25.7 mb, m-o-m. At 2,733 mb, they were 80 mb lower than the same time one year ago, 105 mb lower than the latest five-year average and 187 mb below the 2015–2019 average.

Within the components, crude stocks rose by 19.6 mb, while product stocks fell 45.3 mb, m-o-m.

Total commercial oil stocks in February fell in all three OECD regions.

OECD **commercial crude stocks** stood at 1,342 mb in February. This was 41 mb lower than the same time a year ago, 38 mb below the latest five-year average, and 106 mb lower than the 2015–2019 average.

Within the OECD regions, both OECD Europe and OECD Asia Pacific saw crude stock draws of 0.5 mb each, m-o-m, while crude stocks in OECD Americas rose by 20.7 mb.

OECD **total product stocks** fell by 45.3 mb in February to stand at 1,391 mb. This is 39 mb below the same time a year ago, 66 mb lower than the latest five-year average, and 81 mb below the 2015–2019 average.

Within the OECD regions, product stocks in OECD Americas witnessed a draw of 30.1 mb, m-o-m, while OECD Europe and OECD Asia-Pacific product stocks dropped by 10.9 mb and 4.3 mb, respectively.

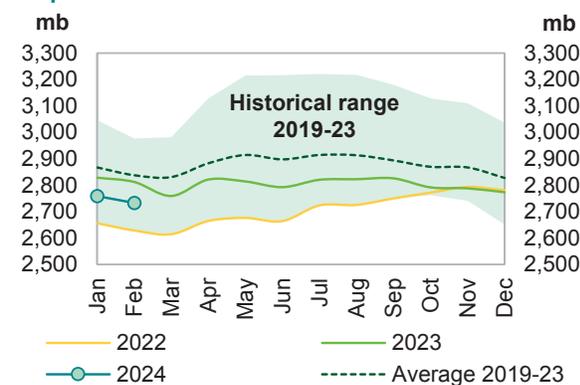
Table 9 - 1: OECD commercial stocks, mb

OECD stocks	Feb 23	Dec 23	Jan 24	Feb 24	Change Feb 24/Jan 24
Crude oil	1,383	1,330	1,322	1,342	19.6
Products	1,430	1,443	1,437	1,391	-45.3
Total	2,813	2,773	2,759	2,733	-25.7
Days of forward cover	61.9	60.8	60.2	59.8	-0.4

Note: Totals may not add up due to independent rounding.

Sources: Argus, EIA, Euroilstock, IEA, METI and OPEC.

Graph 9 - 1: OECD commercial oil stocks



Sources: Argus, EIA, Euroilstock, IEA, METI and OPEC.

In terms of **days of forward cover**, OECD commercial stocks dropped in February by 0.4 days, m-o-m, to stand at 59.8 days. This is 2.1 days lower than the level registered in February 2023, 5.2 days lower than the latest five-year average, and 2.8 days less than the 2015–2019 average.

Within the OECD regions, OECD Americas was 4.9 days and OECD Asia Pacific 1.2 days below the latest five-year average, at 58.9 days and 48.7 days, respectively. OECD Europe was 8.3 days below the latest five-year average, standing at 67.2 days.

OECD Americas

OECD Americas' **total commercial stocks** fell in February by 9.5 mb, m-o-m, to settle at 1,481 mb. This is 41.3 mb lower than the same month in 2023 and 29.4 mb below the latest five-year average.

Commercial **crude oil stocks** in OECD Americas rose in February by 20.7 mb, m-o-m, to stand at 766 mb, which is 20.0 mb less than in February 2023 and 5.3 mb lower than the latest five-year average.

In contrast, **total product stocks** in OECD Americas fell m-o-m by 30.1 mb in February to stand at 715 mb. This is 21.3 mb lower than the same month in 2023 and 24.1 mb below the latest five-year average. Higher consumption in the region was behind the product stock draw.

OECD Europe

OECD Europe's **total commercial stocks** fell in February by 11.4 mb, m-o-m, to settle at 902 mb. This is 41.2 mb lower than the same month in 2023 and 65.0 mb below the latest five-year average.

OECD Europe's **commercial crude stocks** dropped by 0.5 mb, m-o-m, to end February at 392 mb. This is 19.9 mb less than one year ago and 25.9 mb lower than the latest five-year average.

Europe's **total product stocks** fell by 10.9 mb, m-o-m, to end February at 510 mb. This is 21.3 mb less than the same time a year ago and 39.1 mb below the latest five-year average.

OECD Asia Pacific

OECD Asia Pacific's **total commercial oil stocks** fell in February by 4.8 mb, m-o-m, to stand at 350 mb. This is 2.9 mb higher than the same time a year ago, but 10.3 mb below the latest five-year average.

OECD Asia Pacific's **crude stocks** fell by 0.5 mb, m-o-m, to end February at 183 mb. This is 1.1 mb lower than one year ago and 7.3 mb below the latest five-year average.

OECD Asia Pacific's **total product stocks** dropped by 4.3 mb, m-o-m, to end February at 167 mb. This is 4.0 mb higher than one year ago, but 3.0 mb below the latest five-year average.

US

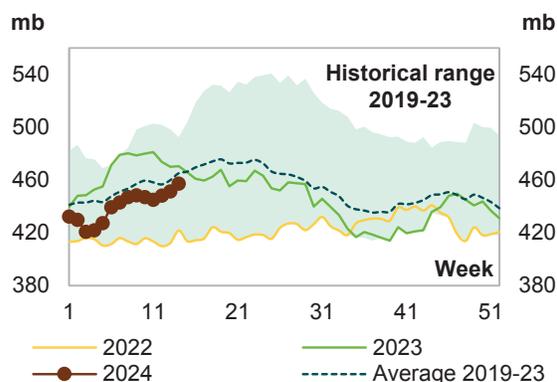
Preliminary data for **March 2024** shows that **total US commercial oil stocks** fell by 7.7 mb, m-o-m, to stand at 1,215 mb. This is 15.7 mb, or 1.3%, lower than the same month in 2023 and 38.5 mb, or 3.1%, below the latest five-year average. Crude stocks rose by 2.9 mb, while product stocks fell by 10.6 mb, m-o-m.

US commercial **crude stocks** in March stood at 451 mb. This is 14.0 mb, or 3.0%, less than the same month in 2023, and 13.5 mb, or 2.9%, below the latest five-year average. The monthly build in crude oil stocks was seen despite higher crude runs.

Total product stocks fell in March to stand at 764 mb. This is 1.7 mb, or 0.2%, lower than March 2023, and 25.0 mb, or 3.2%, below the latest five-year average. The product stock draw can be attributed to higher product consumption.

Gasoline stocks fell in March by 11.9 mb, m-o-m, to settle at 227.8 mb. This is 2.5 mb, or 1.1%, higher than the same month in 2023, but 12.2 mb, or 5.1%, below the latest five-year average.

Graph 9 - 2: US weekly commercial crude oil inventories



Sources: EIA and OPEC.

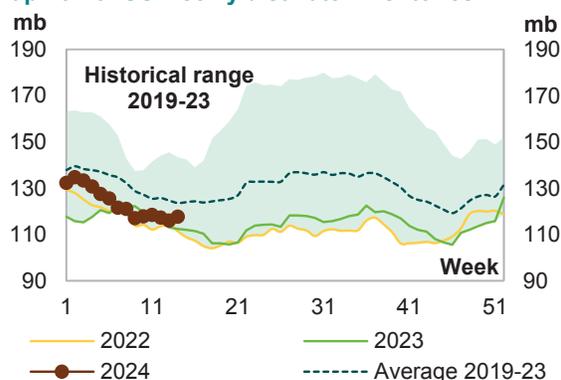
Commercial Stock Movements

Distillate stocks in March dropped by 0.9 mb, m-o-m, to stand at 116.1 mb. This is 3.8 mb, or 3.4%, higher than the same month in 2023, but 10.3 mb, or 8.2%, below the latest five-year average.

By contrast, **jet fuel stocks** rose by 0.8 mb, m-o-m, ending March at 40.9 mb. This is 3.1 mb, or 8.2%, higher than the same month in 2023, and 2.1 mb, or 5.3%, above the latest five-year average.

Residual fuel oil stocks in March increased by 0.2 mb, m-o-m. At 29.7 mb, they were 0.2 mb, or 0.6%, higher than a year earlier, but 0.8 mb, or 2.5%, below the latest five-year average.

Graph 9 - 3: US weekly distillate inventories



Sources: EIA and OPEC.

Table 9 - 2: US commercial petroleum stocks, mb

US stocks					Change
	Mar 23	Jan 24	Feb 24	Mar 24	Mar 24/Feb 24
Crude oil	465.4	427.9	448.5	451.4	2.9
Gasoline	225.3	252.4	239.7	227.8	-11.9
Distillate fuel	112.3	128.7	117.0	116.1	-0.9
Residual fuel oil	29.6	26.9	29.6	29.7	0.2
Jet fuel	37.7	41.6	40.1	40.9	0.8
Total products	765.4	805.9	774.3	763.7	-10.6
Total	1,230.8	1,233.7	1,222.8	1,215.1	-7.7
SPR	371.2	358.0	361.0	363.6	2.7

Sources: EIA and OPEC.

Japan

In Japan, **total commercial oil stocks** in **February 2024** fell by 4.8 mb, m-o-m, to settle at 120.4 mb. This is 2.1 mb, or 1.8%, higher than the same month in 2023, but 1.3 mb, or 1.1%, below the latest five-year average. Crude and product stocks fell by 0.5 mb and 4.3 mb, m-o-m, respectively.

Japanese **commercial crude oil stocks** fell in February by 0.5 mb, m-o-m, to stand at 65.9 mb. This is 0.2 mb, or 0.4%, higher than the same month in 2023 but 0.2 mb, or 0.2%, below the latest five-year average. The fall in crude stocks came despite slightly higher crude imports, which increased in February by 17 tb/d, or 0.7%, m-o-m, to average 2.4 mb/d.

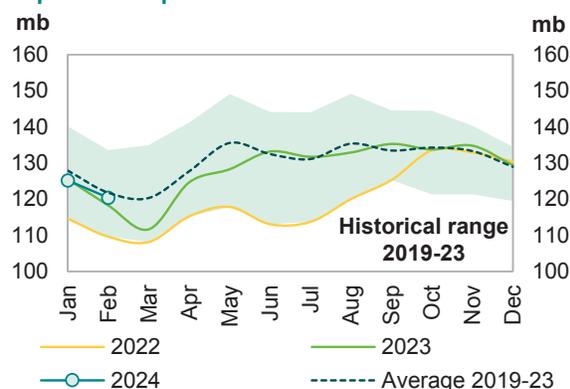
Gasoline stocks fell by 0.5 mb, m-o-m, to stand at 10.8 mb in February. This is 0.2 mb or 2.0%, higher than a year earlier, but 0.5 mb, or 4.4%, lower than the latest five-year average. The drop in gasoline stocks came on the back of lower gasoline output, which fell by 1.7%, m-o-m, in February.

Distillate stocks dropped by 2.5 mb, m-o-m, to end February at 24.4 mb. This is 3.1 mb, or 14.5%, higher than the same month in 2023 and 1.1 mb, or 4.6%, above the latest five-year average.

Within the distillate components, jet fuel and kerosene stocks fell by 7.6% and 17.6%, respectively, while gasoil stocks rose by 1.2%.

Total residual fuel oil stocks fell m-o-m by 0.7 mb to end February at 11.7 mb. This is 0.2 mb, or 1.7%, higher than the same month in 2023, but 0.3 mb, or 2.7%, less than the latest five-year average. Within the components, fuel oil A and fuel oil B.C stocks fell by 2.5% and 7.3%, respectively.

Graph 9 - 4: Japan's commercial oil stocks



Sources: METI and OPEC.

Table 9 - 3: Japan's commercial oil stocks*, mb

Japan's stocks	Feb 23	Dec 23	Jan 24	Feb 24	Change Feb 24/Jan 24
Crude oil	65.7	71.5	66.5	65.9	-0.5
Gasoline	10.5	9.9	11.3	10.8	-0.5
Naphtha	9.2	8.7	8.2	7.6	-0.6
Middle distillates	21.3	26.8	26.9	24.4	-2.5
Residual fuel oil	11.5	12.5	12.4	11.7	-0.7
Total products	52.6	57.9	58.8	54.5	-4.3
Total**	118.3	129.5	125.3	120.4	-4.8

Note: * At the end of the month. ** Includes crude oil and main products only.

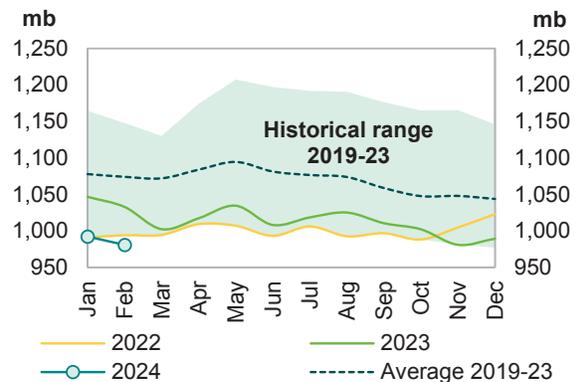
Sources: METI and OPEC.

EU-14 plus UK and Norway

Preliminary data for **February 2024** showed that **total European commercial oil stocks** fell by 11.4 mb, m-o-m, to stand at 981 mb. At this level, they were 51.9 mb, or 5.0%, below the same month in 2023 and 93.3 mb, or 8.7%, less than the latest five-year average. Crude and product stocks fell by 0.5 mb and 10.9 mb, m-o-m, respectively.

European **crude stocks** stood at 416.9 mb in February. This is 10.4 mb, or 2.4%, lower than the same month in 2023 and 34.4 mb, or 7.6%, below the latest five-year average. The drop in crude oil stocks came on the back of lower refinery throughput in the EU-14, plus the UK and Norway, which fell by around 250 tb/d, m-o-m, to stand at 9.4 mb/d.

Graph 9 - 5: EU-14 plus UK and Norway total oil stocks



Sources: Argus, Euroilstock and OPEC.

Total European product stocks declined by 10.9 mb, m-o-m, to end February at 563.8 mb. This is 41.5 mb, or 6.9%, less than the same month in 2023, and 58.9 mb, or 9.5%, below the latest five-year average. The stock draw can be attributed to higher demand in the region.

Gasoline stocks fell in February by 3.8 mb, m-o-m, to stand at 102.1 mb, which is 10.8 mb, or 9.6%, lower than the same time in 2023, and 16.9 mb, or 14.2%, below the latest five-year average.

Middle distillate stocks dropped in February by 4.9 mb, m-o-m, to stand at 377.6 mb. This is 26.6 mb, or 6.6%, less than the same month in 2023, and 34.3 mb, or 8.3%, lower than the latest five-year average.

Residual fuel stocks fell in February by 0.5 mb, m-o-m, to stand at 57.3 mb. This is 3.6 mb, or 5.9%, lower than the same month in 2023 and 5.7 mb, or 9.0%, below the latest five-year average.

Naphtha stocks were down in February by 1.7 mb, m-o-m, ending the month at 26.9 mb. This is 0.5 mb, or 1.8%, below the same month in 2023 and 2.1 mb, or 7.1%, lower than the latest five-year average.

Table 9 - 4: EU-14 plus UK and Norway's total oil stocks, mb

EU stocks	Feb 23	Dec 23	Jan 24	Feb 24	Change Feb 24/Jan 24
Crude oil	427.3	418.4	417.4	416.9	-0.5
Gasoline	112.9	103.7	105.9	102.1	-3.8
Naphtha	27.4	29.5	28.6	26.9	-1.7
Middle distillates	404.2	379.6	382.4	377.6	-4.9
Fuel oils	60.9	58.2	57.8	57.3	-0.5
Total products	605.4	570.9	574.7	563.8	-10.9
Total	1,032.6	989.4	992.1	980.7	-11.4

Sources: Argus, Euroilstock and OPEC.

Singapore, Amsterdam-Rotterdam-Antwerp (ARA) and Fujairah

Singapore

In **February**, **total product stocks** in Singapore rose by 5.2 mb, m-o-m, to stand at 46.7 mb. This is 1.5 mb, or 3.4%, higher than the same month in 2023, but 1.6 mb, or 3.3%, below the latest five-year average.

Light distillate stocks rose in February by 3.8 mb, m-o-m, to stand at 17.0 mb. This is 0.1 mb, or 0.5%, higher than the same month in 2023 and 1.6 mb, or 10.7%, above the latest five-year average.

Middle distillate stocks increased in February by 2.2 mb, m-o-m, to stand at 9.1 mb. This is 1.8 mb, or 23.8%, higher than in February 2023, but 1.7 mb, or 15.6%, below the latest five-year average.

By contrast, **residual fuel oil stocks** fell by 0.8 mb, m-o-m, ending February at 20.6 mb. This is 0.3 mb, or 1.4%, lower than in February 2023, and 1.5 mb, or 7.0%, below the latest five-year average.

ARA

Total product stocks in ARA in February rose by 6.9 mb, m-o-m. At 44.8 mb, they were 1.1 mb, or 2.4%, below the same month in 2023, but 2.1 mb, or 4.8 %, above the latest five-year average.

Gasoline stocks rose by 4.8 mb, m-o-m, ending February at 12.0 mb. This is 0.2 mb, or 1.7%, lower than in February 2023, but 1.4 mb, or 13.5%, above the latest five-year average.

Gasoil stocks in February increased by 4.4 mb, m-o-m, to stand at 17.0 mb. This is 1.9 mb, or 10.2%, less than the same month in 2023, but 0.2 mb, or 1.0%, higher than the latest five-year average.

Jet oil stocks rose by 0.5 mb, m-o-m, to stand at 6.3 mb in February. This is 0.9 mb, or 16.3%, higher than in February 2023 and 0.7 mb, or 12.7% above the latest five-year average.

By contrast, **fuel oil stocks** fell in February by 2.4 mb, m-o-m, to stand at 7.2 mb. This is 0.2 mb, or 2.7%, lower than in February 2023 and 0.3 mb, or 4.6%, less than the latest five-year average.

Fujairah

During the week ending 1 April 2024, **total oil product stocks** in Fujairah rose by 0.48 mb, w-o-w, to stand at 20.27 mb, according to data from FEDCom and S&P Global Commodity Insights. At this level, total oil stocks were 1.07 mb higher than at the same time a year ago.

Middle distillate stocks rose by 1.28 mb, w-o-w, to stand at 3.36 mb, which is 0.29 mb higher than the same time last year.

In contrast, **light distillate stocks** fell by 0.17 mb, w-o-w, to stand at 7.56 mb, which is 1.49 mb higher than a year ago.

Heavy distillate stocks dropped by 0.63 mb, w-o-w, to stand at 9.35 mb, which is 0.70 mb below the same time a year ago.

Balance of Supply and Demand

Demand for DoC crude (i.e. crude from countries participating in the Declaration of Cooperation) is projected to stand at about 43.2 mb/d in 2024, which is around 0.9 mb/d higher than the estimated level for 2023. Demand for DoC crude in 2025 is expected to reach about 44.0 mb/d, an increase of about 0.8 mb/d over the forecast 2024 level.

Demand for OPEC crude in 2024 is projected to stand at about 28.5 mb/d, which is around 1.2 mb/d higher than the estimated level for 2023. Demand for OPEC crude in 2025 is expected to reach about 29.0 mb/d, an increase of about 0.4 mb/d over the forecast 2024 level.

Balance of supply and demand in 2024

Demand for DoC crude

Demand for DoC crude in 2024 is expected to stand at 43.2 mb/d, around 0.9 mb/d higher than the estimated level of 2023.

Compared with the same quarters in 2023, demand for DoC crude in both 1Q24 and 2Q24 is forecast to be 0.4 mb/d higher each. While in 3Q24 and 4Q24, it is expected to increase by 1.5 mb/d and 1.4 mb/d, y-o-y.

Table 10 - 1: DoC supply/demand balance for 2024*, mb/d

	2023	1Q24	2Q24	3Q24	4Q24	2024	Change 2024/23
(a) World oil demand	102.2	103.5	103.8	104.9	105.6	104.5	2.2
Non-DoC liquids production	51.7	52.6	52.7	52.9	53.7	53.0	1.2
DoC NGL and non-conventionals	8.2	8.3	8.3	8.3	8.3	8.3	0.1
(b) Total non-DoC liquids production and DoC NGLs	59.9	60.9	61.0	61.2	62.0	61.2	1.3
Difference (a-b)	42.3	42.7	42.8	43.7	43.6	43.2	0.9
DoC crude oil production	42.0	41.2					
Balance	-0.3	-1.5					

Note: * 2024 = Forecast. Totals may not add up due to independent rounding.

Source: OPEC.

Demand for OPEC crude

Demand for OPEC crude in 2024 is revised up by 0.1 from the previous assessment to stand at 28.5 mb/d, around 1.2 mb/d higher than the level estimated for 2023.

Compared with the same quarters in 2023, demand for OPEC crude in 1Q24 and 2Q24 is forecast to be 0.9 mb/d and 1.0 mb/d higher, respectively. While in 3Q24 and 4Q24, it is expected to increase by 1.4 mb/d each, y-o-y.

Table 10 - 2: OPEC supply/demand balance for 2024*, mb/d

	2023	1Q24	2Q24	3Q24	4Q24	2024	Change 2024/23
(a) World oil demand	102.2	103.5	103.8	104.9	105.6	104.5	2.2
Non-OPEC liquids production	69.5	70.1	69.8	70.6	71.3	70.4	1.0
OPEC NGL and non-conventionals	5.4	5.5	5.5	5.5	5.5	5.5	0.1
(b) Total non-OPEC liquids production and OPEC NGLs	74.9	75.5	75.3	76.0	76.8	75.9	1.1
Difference (a-b)	27.4	28.0	28.5	28.9	28.8	28.5	1.2
OPEC crude oil production	27.0	26.5					
Balance	-0.3	-1.5					

Note: * 2024 = Forecast. Totals may not add up due to independent rounding.

Source: OPEC.

Balance of supply and demand in 2025

Demand for DoC crude

Demand for DoC crude in 2025 is expected to stand at 44.0 mb/d, around 0.8 mb/d higher than the estimated level of 2024.

Compared with the same quarters in 2024, demand for DoC crude in 1Q24 and 2Q24 is forecast to be 0.4 mb/d and 0.8 mb/d higher, respectively. While in 3Q25 and 4Q25, it is expected to increase by 1.1 mb/d and 0.9 mb/d, y-o-y.

Table 10 - 3: DoC supply/demand balance for 2025*, mb/d

	2024	1Q25	2Q25	3Q25	4Q25	2025	Change 2025/24
(a) World oil demand	104.5	105.4	105.6	107.0	107.3	106.3	1.8
Non-DoC liquids production	53.0	54.0	53.7	54.0	54.6	54.1	1.1
DoC NGL and non-conventionals	8.3	8.2	8.3	8.1	8.2	8.2	-0.1
(b) Total non-DoC liquids production and DoC NGLs	61.2	62.2	62.0	62.1	62.8	62.3	1.0
Difference (a-b)	43.2	43.1	43.6	44.9	44.5	44.0	0.8

Note: * 2025 = Forecast. Totals may not add up due to independent rounding.

Source: OPEC.

Demand for OPEC crude

Demand for OPEC crude in 2025 is revised up by 0.2 mb/d from the previous assessment to stand at 29.0 mb/d, an increase of 0.4 mb/d over the level forecast for 2024.

Compared with the same quarters in 2024, demand for OPEC crude in 1Q25, 3Q25, and 4Q25 is forecast to be 0.1 mb/d, 0.9 mb/d, and 0.7 mb/d, y-o-y, higher, while demand for OPEC crude in 2Q25 remains unchanged.

Table 10 - 4: OPEC supply/demand balance for 2025*, mb/d

	2024	1Q25	2Q25	3Q25	4Q25	2025	Change 2025/24
(a) World oil demand	104.5	105.4	105.6	107.0	107.3	106.3	1.8
Non-OPEC liquids production	70.4	71.7	71.4	71.6	72.3	71.7	1.3
OPEC NGL and non-conventionals	5.5	5.5	5.6	5.6	5.6	5.6	0.1
(b) Total non-OPEC liquids production and OPEC NGLs	75.9	77.3	77.0	77.2	77.8	77.3	1.4
Difference (a-b)	28.5	28.1	28.5	29.8	29.5	29.0	0.4

Note: * 2025 = Forecast. Totals may not add up due to independent rounding.

Source: OPEC.

Table 11 - 1: World oil demand and supply balance, mb/d

World oil demand and supply balance	2021	2022	2023	1Q24	2Q24	3Q24	4Q24	2024	1Q25	2Q25	3Q25	4Q25	2025
World demand													
Americas	24.28	24.79	25.06	24.68	25.38	25.58	25.45	25.28	24.74	25.43	25.70	25.53	25.35
of which US	20.03	20.16	20.40	20.09	20.67	20.67	20.85	20.57	20.12	20.70	20.73	20.89	20.61
Europe	13.19	13.51	13.41	13.17	13.58	13.68	13.34	13.44	13.19	13.59	13.70	13.35	13.46
Asia Pacific	7.34	7.38	7.32	7.80	6.97	7.09	7.49	7.34	7.81	6.98	7.10	7.50	7.35
Total OECD	44.81	45.68	45.80	45.65	45.93	46.35	46.28	46.06	45.74	46.01	46.51	46.38	46.16
China	15.10	14.95	16.22	16.35	16.77	17.19	17.29	16.90	16.78	17.15	17.63	17.68	17.31
India	4.77	5.14	5.34	5.66	5.64	5.40	5.59	5.57	5.88	5.88	5.61	5.82	5.80
Other Asia	8.67	9.07	9.28	9.69	9.74	9.49	9.51	9.61	9.98	10.07	9.82	9.81	9.92
Latin America	6.25	6.44	6.69	6.79	6.88	6.97	6.88	6.88	6.99	7.07	7.19	7.07	7.08
Middle East	7.79	8.30	8.63	8.76	8.66	9.28	9.00	8.93	9.14	9.00	9.74	9.35	9.31
Africa	4.22	4.40	4.46	4.64	4.37	4.39	4.82	4.56	4.76	4.47	4.52	4.93	4.67
Russia	3.62	3.75	3.84	3.89	3.80	3.99	4.08	3.94	3.95	3.85	4.05	4.12	3.99
Other Eurasia	1.21	1.15	1.17	1.28	1.24	1.08	1.08	1.22	1.32	1.27	1.12	1.31	1.25
Other Europe	0.75	0.77	0.78	0.82	0.78	0.77	0.84	0.80	0.83	0.79	0.78	0.85	0.81
Total Non-OECD	52.38	53.98	56.42	57.88	57.89	58.55	59.29	58.41	59.61	59.56	60.45	60.95	60.15
(a) Total world demand	97.19	99.65	102.21	103.53	103.82	104.90	105.57	104.46	105.35	105.56	106.96	107.33	106.31
Y-o-y change	5.94	2.46	2.56	2.23	2.07	2.58	2.10	2.25	1.83	1.74	2.06	1.76	1.85
Non-OPEC liquids production*													
Americas	25.46	26.91	28.70	28.88	29.10	29.44	29.94	29.34	29.91	29.68	29.90	30.28	29.94
of which US	18.06	19.28	20.90	20.87	21.24	21.44	21.81	21.34	21.75	21.77	21.82	22.03	21.84
Europe	3.80	3.59	3.65	3.69	3.74	3.72	3.90	3.76	3.94	3.81	3.79	3.90	3.86
Asia Pacific	0.51	0.48	0.44	0.45	0.42	0.43	0.42	0.43	0.43	0.42	0.43	0.43	0.42
Total OECD	29.77	30.98	32.80	33.02	33.26	33.59	34.25	33.53	34.27	33.91	34.12	34.61	34.23
China	4.27	4.42	4.52	4.60	4.59	4.46	4.46	4.53	4.57	4.55	4.51	4.51	4.53
India	0.78	0.77	0.77	0.78	0.79	0.79	0.78	0.78	0.78	0.79	0.80	0.80	0.79
Other Asia	2.44	2.31	2.28	2.29	2.24	2.22	2.22	2.24	2.23	2.19	2.16	2.16	2.19
Latin America	5.96	6.34	6.96	7.36	7.31	7.35	7.39	7.35	7.51	7.55	7.63	7.77	7.62
Middle East	3.19	3.29	3.27	3.20	3.23	3.27	3.27	3.24	3.27	3.30	3.30	3.30	3.29
Africa	2.52	2.48	2.42	2.45	2.40	2.42	2.45	2.43	2.46	2.45	2.45	2.44	2.45
Russia	10.80	11.03	10.93	10.83	10.44	10.85	10.87	10.75	10.89	10.88	10.86	10.89	10.88
Other Eurasia	2.95	2.85	2.93	2.93	2.91	2.99	3.01	2.96	3.08	3.12	3.06	3.10	3.09
Other Europe	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Total Non-OECD	33.01	33.60	34.18	34.54	34.02	34.44	34.56	34.39	34.88	34.93	34.88	35.08	34.94
Total Non-OPEC production	62.79	64.58	66.98	67.57	67.28	68.03	68.81	67.93	69.15	68.84	68.99	69.68	69.17
Processing gains	2.29	2.40	2.47	2.52	2.52	2.52	2.52	2.52	2.58	2.58	2.58	2.58	2.58
Total Non-OPEC liquids production	65.07	66.98	69.45	70.09	69.80	70.55	71.33	70.44	71.73	71.41	71.57	72.26	71.75
OPEC NGL + non-conventional oils	5.25	5.36	5.41	5.45	5.50	5.46	5.46	5.47	5.55	5.61	5.58	5.58	5.58
(b) Total non-OPEC liquids production and OPEC NGLs	70.32	72.34	74.86	75.54	75.31	76.01	76.79	75.92	77.28	77.03	77.15	77.85	77.33
Y-o-y change	0.74	2.02	2.52	1.32	1.07	1.14	0.71	1.06	1.74	1.72	1.14	1.06	1.41
OPEC crude oil production (secondary sources)	25.23	27.73	27.01	26.53									
Total liquids production	95.55	100.06	101.87	102.07									
Balance (stock change and miscellaneous)	-1.65	0.41	-0.34	-1.46									
OECD closing stock levels, mb													
Commercial	2,652	2,781	2,773										
SPR	1,484	1,214	1,207										
Total	4,136	3,995	3,980										
Oil-on-water	1,348	1,546	1,438										
Days of forward consumption in OECD, days													
Commercial onland stocks	58	61	60										
SPR	32	27	26										
Total	91	87	86										
Memo items													
(a) - (b)	26.87	27.32	27.36	27.98	28.52	28.89	28.78	28.55	28.07	28.54	29.81	29.48	28.98

Note: Totals may not add up due to independent rounding.

* Crude production levels/growths for countries participating in DoC (including Azerbaijan, Bahrain, Brunei Darussalam, Kazakhstan, Malaysia, Mexico, Oman, Russia, Sudan, and South Sudan) are subject to their DoC production adjustments in 2024 and 2025.

Source: OPEC.

Oil Market Report - April 2024

About this report

The IEA Oil Market Report (OMR) is one of the world's most authoritative and timely sources of data, forecasts and analysis on the global oil market – including detailed statistics and commentary on oil supply, demand, inventories, prices and refining activity, as well as oil trade for IEA and selected non-IEA countries.

Published April 2024

Highlights

- World oil demand growth continues to lose momentum with 1Q24 growth of 1.6 mb/d, 120 kb/d below our previous forecast due to exceptionally weak OECD deliveries. With the post-Covid rebound now largely complete, and vehicle efficiencies and an expanding EV fleet acting as further drags on oil demand, growth in 2024 and 2025 slows to 1.2 mb/d and 1.1 mb/d, respectively.
- Non-OPEC+, led by the US, is set to drive world supply growth through 2025. For 2024, global output is forecast to rise by 770 kb/d to 102.9 mb/d. Non-OPEC+ production will expand by 1.6 mb/d, while OPEC+ supply could fall 820 kb/d if voluntary cuts remain in place. In 2025, global growth could rise to 1.6 mb/d. Non-OPEC+ is forecast to lead gains, rising 1.4 mb/d, while OPEC+ output could increase by 220 kb/d if curbs stay in place.
- Global refinery throughputs are forecast to rise by 1 mb/d to 83.3 mb/d in 2024, 160 kb/d less than in last month's Report, on lower Russian runs, unplanned outages in Europe and still-tepid Chinese activity. Throughputs are projected to increase by 830 kb/d to 84.2 mb/d in 2025, as non-OECD growth of 1.1 mb/d more than offsets declines in the OECD.
- Global observed oil inventories rose by 43.3 mb in February to a seven-month apex with oil on water at its highest level in 15 months. By contrast, on land stocks fell to their lowest since at least 2016. OECD industry stocks decreased by 7.6 mb in February, remaining 65.1 mb below the five-year average. Early data indicate that they built by 22 mb in March.
- ICE Brent crude futures hit a six-month high of \$90/bbl in early April amid escalating tensions in the Middle East, attacks on Russian refineries and an extension of OPEC+ outputs cuts through June. Crude's price strength was underpinned by bullish investor sentiment, with exchange net fund positions in Brent rising to their highest in a year

Increased spare

Benchmark crude oil prices continued their upward trajectory in March and early April, as heightened geopolitical tensions coincided with the prospect of a tighter supply-demand balance through the remainder of the year. Brent crude futures breached the symbolic \$90/bbl threshold on 5 April, up nearly \$8/bbl from early March, reaching the highest level since October 2023, amid heightened tensions between Israel and Iran. Russian refinery outages added to product market unease, while OPEC+ put pressure on some countries to increase compliance with agreed voluntary production cuts through 2Q24.

Escalating oil supply security concerns are set against a backdrop of solid global oil demand growth of 1.6 mb/d in the first quarter and a more upbeat outlook for the global economy. World oil demand growth has nevertheless been revised down by roughly 100 kb/d since last month's Report, to 1.2 mb/d, following exceptionally weak deliveries in the OECD at the start of the year.

Our newly-released 2025 forecast in this month's Report shows the pace of expansion will decelerate further, to 1.1 mb/d next year as the post-Covid 19 rebound has run its course. Non-OECD countries dominate the outlook, with forecast demand set to increase by 1.3 mb/d in 2024 and 1.2 mb/d in 2025. By contrast, consumption in the OECD will decline by 60 kb/d in both years. China continues to lead the growth even as its share of the global increase slumps from 79% in 2023 to 45% in 2024 and 27% next year.

Sustained output curbs by the OPEC+ alliance mean that non-OPEC+ producers, led by the Americas, will continue to drive world oil supply growth through 2025. OPEC+ market share has already slipped to all-time lows after the alliance removed close to 2 mb/d of supply from the market since the end of 2022, while non-OPEC+ ramped up by nearly the same amount. That trend looks set to continue in 2024, when non-OPEC+ boosts output by a further 1.6 mb/d. OPEC+ supply is projected to fall by 820 kb/d, provided cuts are maintained through the second half of the year. In 2025, global oil supply is forecast to increase by 1.6 mb/d to a new record of 104.5 mb/d, as non-OPEC+ lead gains for a third straight year, rising by 1.4 mb/d.

For context, the additional volumes from the United States, Brazil, Guyana and Canada alone could come close to meeting world oil demand growth for this year and next. These four countries are set to once again produce at records-highs, adding a combined 1.2 mb/d in 2024 and 1 mb/d in 2025. Although momentum slows in the United States, it still ranks as the world's largest source of supply growth in 2024 and 2025, adding 650 kb/d and 540 kb/d, respectively.

Robust production from non-OPEC+ coupled with a projected slowdown in demand growth will lower the call on OPEC+ crude by roughly 300 kb/d in 2025, to an average 41.5 mb/d. If the bloc were to produce in line with that call, effective spare capacity could top 6 mb/d – excluding the Covid-19 period – its largest ever supply buffer.

OPEC+ crude oil production¹
million barrels per day

	Feb 2024 Supply	Mar 2024 Supply	Mar Prod vs Target	Mar-2024 Implied Target ¹	Sustainable Capacity ²	Eff Spare Cap vs Mar ³
Algeria	0.91	0.91	0.0	0.91	0.99	0.08
Congo	0.25	0.26	-0.02	0.28	0.27	0.01
Equatorial Guinea	0.05	0.06	-0.01	0.07	0.06	0.0
Gabon	0.22	0.24	0.07	0.17	0.22	-0.02
Iraq	4.25	4.26	0.26	4.0	4.79	0.53
Kuwait	2.44	2.47	0.06	2.41	2.85	0.38
Nigeria	1.36	1.34	-0.16	1.5	1.46	0.12
Saudi Arabia	8.99	9.02	0.04	8.98	12.11	3.09
UAE	3.22	3.22	0.31	2.91	4.28	1.06
Total OPEC-9⁴	21.69	21.78	0.56	21.22	27.03	5.26
Iran ⁵	3.23	3.25			3.8	
Libya ⁵	1.16	1.16			1.23	0.07
Venezuela ⁵	0.86	0.86			0.85	-0.01
Total OPEC	26.94	27.05			32.91	5.33
Azerbaijan	0.48	0.48	-0.07	0.55	0.54	0.06
Kazakhstan	1.62	1.63	0.16	1.47	1.67	0.04
Mexico ⁶	1.6	1.61			1.63	0.02
Oman	0.76	0.76	0.0	0.76	0.85	0.09
Russia	9.41	9.42	-0.03	9.45	9.78	
Others ⁷	0.81	0.75	-0.12	0.87	0.88	0.13
Total Non-OPEC	14.68	14.65	-0.06	13.1	15.35	0.34
OPEC+ 18 in Nov 2022 deal⁵	34.77	34.82	0.5	34.32	40.74	5.58
Total OPEC+	41.62	41.7			48.25	5.66

1. Includes extra voluntary curbs where announced. 2. Capacity levels can be reached within 90 days and sustained for an extended period. 3. Excludes shut in Iranian, Russian crude. 4. Angola left OPEC effective 1 Jan 2024. 5. Iran, Libya, Venezuela exempt from cuts. 6. Mexico excluded from OPEC+ compliance. 7. Bahrain, Brunei, Malaysia, Sudan and South Sudan.

Oil demand growing at a slower pace as post-Covid rebound runs its course

Toril Bosoni, Head of Oil Industry and Markets Division

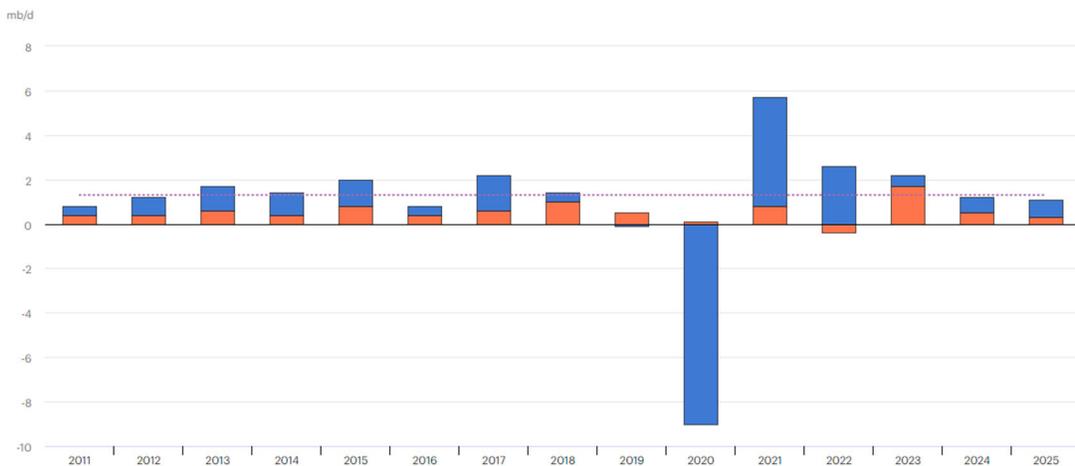
Ciarán Healy, Oil Market Analyst Commentary — 12 April 2024

Global oil demand growth returns to historical trend

Global oil demand growth is currently in the midst of a slowdown and is expected to ease to 1.2 million barrels a day (mb/d) this year and 1.1 mb/d in 2025 – bringing a peak in consumption into view this decade. This is primarily the result of a normalisation of growth following the disruptions of 2020-2023, when oil markets were shaken by the Covid-19 pandemic and then the global energy crisis sparked by Russia's invasion of Ukraine.

Despite the deceleration that is forecast, this level of oil demand growth remains largely in line with the pre-Covid trend, even amid muted expectations for global economic growth this year and increased deployment of clean energy technologies.

Annual oil demand growth, 2011-2025



[Terms of Use for N](#)

● China demand growth ● Non-China demand growth ● Average 2011-2019

In both 2022 and 2023, global oil consumption rose by more than 2 mb/d as economies continued their recoveries from the Covid-19 shock and saw spikes in personal mobility, along with exceptional releases of pent-up demand for travel and tourism. While there are reasonable grounds for uncertainty about how complete the global recovery is, both oil demand data and mobility indicators suggest that its pace has slowed sharply and that the period of demand growth above the historical average is coming to an end.

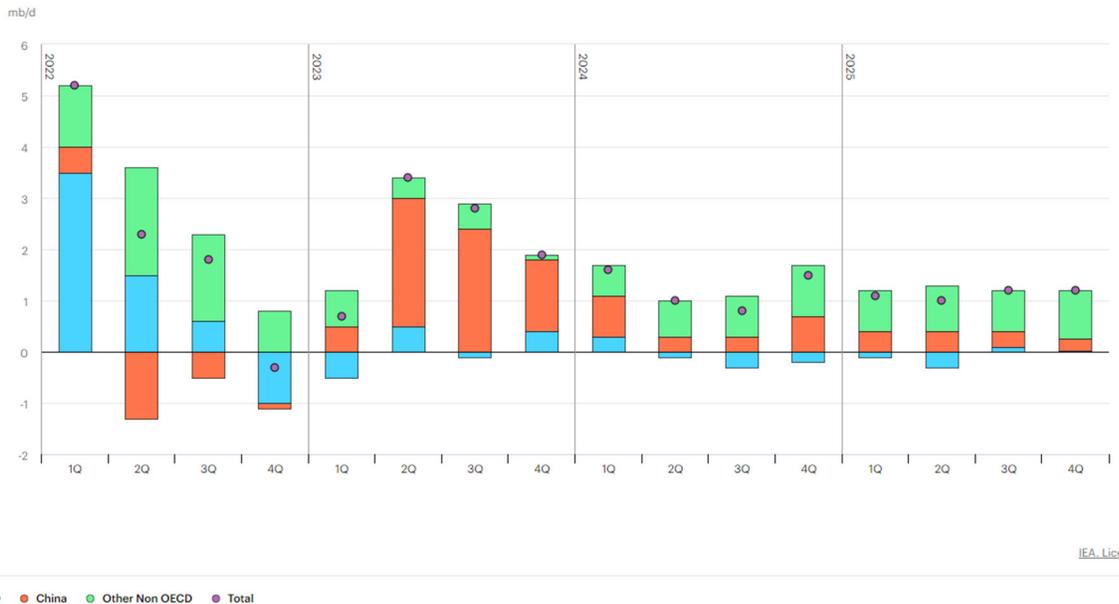
China's post-Covid rebound is running out of steam

Without a steep fall in oil prices, a sudden resurgence in the post-pandemic recovery or an acceleration in economic activity, it is unlikely that global oil demand growth will approach the

levels seen in 2022 and 2023. Indeed, the pace of gains slowed substantially in the second half of 2023, and the latest data shows that the trend continued at the beginning of 2024.

Oil use increased by an estimated 1.6 mb/d year-on-year in the first quarter of 2024, down from 1.9 mb/d in the fourth quarter of 2023 and more than 3 mb/d during the middle of last year. Given that China was the last major economy to lift public health restrictions related to the pandemic and saw an abrupt economic recovery in mid-2023, this easing of year-on-year demand growth is likely to continue during 2024.

Quarterly oil demand growth, 2022-2025



Indeed, because the timing of Chinese lockdowns was quite different from the rest of the world, global oil demand growth in 2023 was extremely dependent on the country. With the explosive phase of the pandemic rebound largely complete elsewhere, China contributed to more than three-quarters of the global increase in demand (1.7 mb/d out of 2.3 mb/d). The world's second largest economy will remain the mainstay of global expansion this year. However, gains are projected to fall to 540 kb/d. In the absence of a dramatic acceleration in other countries, this will result in a wider global slowdown.

In the decade up to 2023, almost two-thirds of all oil demand growth came from China. Over this period, the nation's GDP grew at an annual average rate of 6%. An expected slackening in economic growth, to a rate of between 4% and 5% in 2024 and 2025 – combined with the rapid domestic uptake of oil-substituting technologies such as electric vehicles (EVs) and high-speed rail – means that in 2024 and 2025, only a little over one-third of oil demand growth is expected to come from China.

Demand for aviation fuel is easing as air traffic stabilises

The other major driver of rising oil consumption in 2022 and 2023 was a steady recovery in air traffic as pandemic-era travel restrictions were relaxed. Demand for jet fuel/kerosene, primarily

from the aviation sector, grew by more than 1 mb/d in both years and contributed almost half of the increase in global oil demand.

However, gains have moderated since the first half of 2023, according to [Airportia](#) data. As a result, the increase in demand for jet fuel/kerosene in 2024 is forecast to be far smaller, at 230 kb/d. In addition to a stabilisation in air traffic, there have also been large gains in the fuel efficiency of aircraft since 2019. This has meant that, despite roughly equivalent activity, fuel demand from the sector was more than 6% lower in the second half of 2023 than in the same period in 2019. This trend is set to continue as more new planes with vastly improved fuel economy enter the global fleet, helping to restrain the impact of increasing demand for air travel on oil use during the medium term.

Demand for jet fuel/kerosene lags global miles flown as aircraft fuel efficiency improves



Global consumption of oil is set to peak, but its centrality remains

While we expect growth in oil consumption in 2024 (1.2 mb/d) and 2025 (1.1 mb/d) to remain robust by historical standards, structural factors will lead to a gradual easing of oil demand growth over the rest of this decade. Continued rapid gains in the market share of EVs, particularly in China; steady improvements in vehicle fuel economies; and, notably, efforts by Middle Eastern economies, especially Saudi Arabia, to reduce the quantity of oil used in power generation are together expected to generate an overall peak in demand by the turn of the decade.

Oil remains extremely important to the global economy, and across some of its key applications, alternatives still cannot easily be substituted. In the absence of additional energy and climate policies and an increased investment push into clean energy technologies, the decline in global oil demand following the peak will not be a steep one, leaving demand close to current levels for some time. Nevertheless, cooling Chinese demand growth and considerable progress on the deployment of clean energy transition technologies mean that the oil market is set to enter a new and consequential period of transformation.

IEA World Oil Supply and Demand Forecasts: Summary (Table)

2024-04-12 08:00:00.1 GMT

By Kristian Siedenburg

(Bloomberg) -- Following is a summary of world oil supply and demand forecasts from the International Energy Agency in Paris:

	4Q	3Q	2Q	1Q	4Q	3Q	2Q	1Q		
	2025	2025	2025	2025	2024	2024	2024	2024	2025	2024
Demand										
Total Demand	105.0	105.1	104.0	103.1	103.8	103.9	103.0	102.0	104.3	103.2
Total OECD	45.9	45.9	45.3	45.4	45.9	45.8	45.6	45.5	45.6	45.7
Americas	25.1	25.3	25.0	24.6	25.1	25.3	25.2	24.7	25.0	25.0
Europe	13.3	13.6	13.3	13.0	13.2	13.5	13.4	13.2	13.3	13.3
Asia Oceania	7.6	7.0	7.0	7.8	7.6	7.0	7.0	7.6	7.3	7.3
Non-OECD countries	59.0	59.2	58.7	57.8	57.9	58.1	57.4	56.5	58.7	57.5
FSU	5.0	5.0	4.8	4.8	4.9	5.0	4.8	4.8	4.9	4.9
Europe	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
China	17.4	17.6	17.4	16.9	17.2	17.3	17.0	16.5	17.3	17.0
Other Asia	15.4	14.9	15.4	15.5	14.9	14.5	14.9	15.1	15.3	14.9
Americas	6.6	6.6	6.5	6.3	6.5	6.5	6.4	6.3	6.5	6.4
Middle East	9.2	9.8	9.3	9.0	9.0	9.6	9.1	8.7	9.3	9.1
Africa	4.6	4.5	4.5	4.5	4.5	4.4	4.4	4.4	4.5	4.4
Supply										
Total Supply	n/a	n/a	n/a	n/a	n/a	n/a	n/a	101.7	n/a	n/a
Non-OPEC	72.7	72.4	71.7	70.6	71.2	70.9	70.2	69.3	71.9	70.4
Total OECD	33.0	32.4	32.4	32.1	32.5	31.9	31.7	31.2	32.5	31.8
Americas	29.2	28.8	28.7	28.4	28.8	28.4	28.0	27.4	28.8	28.1
Europe	3.4	3.2	3.3	3.3	3.2	3.1	3.2	3.3	3.3	3.2
Asia Oceania	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.5
Non-OECD	33.9	33.7	33.3	33.2	33.0	32.9	32.7	33.0	33.5	32.9
FSU	13.8	13.7	13.7	13.6	13.6	13.5	13.4	13.7	13.7	13.5
Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	4.4	4.3	4.4	4.5	4.4	4.3	4.4	4.4	4.4	4.4
Other Asia	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.5	2.6
Americas	7.4	7.2	6.8	6.7	6.7	6.7	6.6	6.5	7.0	6.7
Middle East	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.2	3.1
Africa	2.7	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.6	2.5
Processing Gains	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.5	2.4
Total OPEC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	32.4	n/a	n/a
Crude	n/a	n/a	n/a	n/a	n/a	n/a	n/a	26.9	n/a	n/a
Natural gas										
liquids NGLs	5.7	5.6	5.6	5.6	5.5	5.6	5.5	5.5	5.6	5.5
Call on OPEC crude										
and stock change *	26.6	27.1	26.6	27.0	27.1	27.5	27.3	27.2	26.8	27.3

NOTE: Figures are in million of barrels per day. (*) equals total demand minus non-OPEC supply and OPEC natural gas liquids.

IEA changed the way it measures OPEC supply, adopting the industry-standard approach of counting most of Venezuela's Orinoco heavy oil as "crude oil."

SOURCE: International Energy Agency

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Mark Evans

IEA: March Crude Oil Production in OPEC Countries (Table)

2024-04-12 08:00:00.0 GMT

By Kristian Siedenburg

(Bloomberg) -- Following is a summary of oil production in OPEC countries from the International Energy Agency in Paris:

	March	Feb.	March
	2024	2024	MoM
Total OPEC	27.05	26.94	0.11
Total OPEC9	21.78	21.69	0.09
Algeria	0.91	0.91	0.00
Congo	0.26	0.25	0.01
Equatorial Guinea	0.06	0.05	0.01
Gabon	0.24	0.22	0.02
Iraq	4.26	4.25	0.01
Kuwait	2.47	2.44	0.03
Nigeria	1.34	1.36	-0.02
Saudi Arabia	9.02	8.99	0.03
UAE	3.22	3.22	0.00
Iran	3.25	3.23	0.02
Libya	1.16	1.16	0.00
Venezuela	0.86	0.86	0.00

NOTE: Figures are in million of barrels per day. Monthly level change calculated by Bloomberg. Production data excludes condensates.

OPEC9 excludes Iran, Libya and Venezuela.

SOURCE: International Energy Agency

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IEA REPORT WRAP: Global Oil Output to Rise to Record in 2025

2024-04-12 10:30:08.38 GMT

By Rachel Graham

(Bloomberg) -- The following stories were published Friday from the IEA's monthly Oil Market Report:

* IEA Predicts Slower Global Oil Demand Growth This Year and Next

** In 2025, consumption forecast to rise by 1.1 million b/d to

104.3m b/d globally

** In 2024, global demand is forecast to increase by 1.2m b/d to 103.2m b/d

*** IEA cut 2024 forecast for oil demand growth by 130k b/d

* In 2024, IEA expects global oil output to increase by 770k b/d to 102.9m

** Offshore Oil to Drive Non-OPEC+ Output Growth in 2024-25

*** Non-OPEC to add 1.6m b/d this year

** OPEC supply could fall by 820k b/d this year if cuts remain in place

** Saudi, Kuwait Led OPEC Crude Output Increase Last Month

*** Click here for table showing OPEC March output

** In 2025, global oil supply to rise to record 104.5m b/d, increasing from this year by 1.6m b/d

* Click here for table showing supply and demand forecasts by region

* Click here for global supply and demand forecasts and revisions

REFINING:

* China, India, Nigeria to Lead Oil Refining Growth in 2025

OTHER:

* IEA Warns Attacks on Russia Plants May Disrupt Diesel Market

* Red Sea Attacks Push Oil Tanker Ton-Miles to Record Highs

* NW Europe Light Crudes Slid in March on Weaker Margins

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IEA World Oil Supply/Demand Key Forecasts

2024-04-12 08:00:00.3 GMT

By Kristian Siedenburg

(Bloomberg) -- World oil demand 2025 forecast at 104.3m b/d in Paris-based Intl Energy Agency's latest monthly report.

*** 2024 world demand was unrevised at 103.2m b/d**

* Demand growth in 2025 est. 1.1% y/y or 1.1m b/d

* Non-OPEC supply 2025 estimated at 71.9m b/d

* Call on OPEC crude 2025 estimated at 26.8m b/d

* Call on OPEC crude 2024 was unrevised at 27.3m b/d

** OPEC crude production in March rose by 110k b/d to 27.05m b/d

* Detailed table: FIFW NSN SBTGT0GFR4SH <GO>

* NOTE: Forecasts based off IEA's table providing one decimal point

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***IEA CUTS 2024 GLOBAL OIL DEMAND GROWTH EST. BY ABOUT 130K B/D**

2024-04-12 08:00:00.7 GMT

To view this story in Bloomberg click here:

<https://blinks.bloomberg.com/news/stories/SBTJ8ZD2677K>

***GLOBAL OIL OUTPUT TO RISE BY 770K B/D TO 102.9M IN 2024: IEA**

2024-04-12 08:00:00.16 GMTTo view this story in Bloomberg click here:

<https://blinks.bloomberg.com/news/stories/SBTJNCD2677K>

IEA Predicts Slower Global Oil Demand Growth This Year and Next

2024-04-12 08:00:00.23 GMT

By Alex Longley

(Bloomberg) -- The International Energy Agency cut its oil demand forecast for this year and estimated even slower growth in 2025 due to a lackluster economic outlook and the rising popularity of electric vehicles.

The agency's bearish outlook runs counter to the views of several of the world's top traders, who at a conference this week said oil consumption is surging. Perceived strength in demand has been one of the key factors helping to push Brent crude back above \$90 a barrel, along with heightened geopolitical risks and tighter supplies.

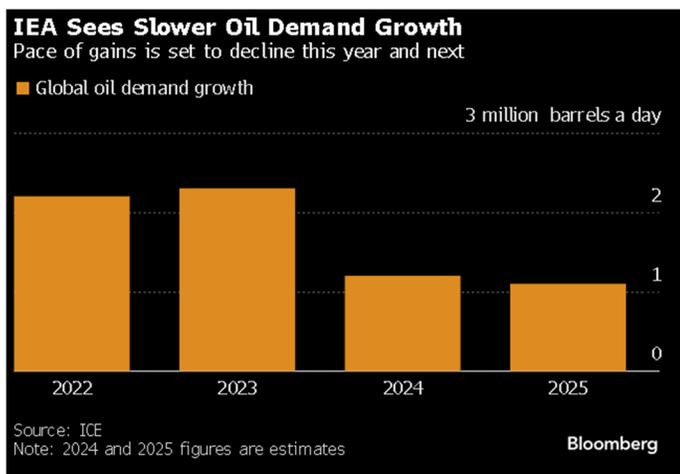
In its first forecast for 2025, the Paris-based IEA predicted demand growth of 1.1 million barrels a day in 2025. It also trimmed its estimate for this year's expansion in consumption by 130,000 barrels a day to 1.2 million, citing exceptionally weak deliveries in developed economies in the

first quarter.

The agency's growth estimate is below the 1.9 million barrels a day predicted by world's largest independent oil trader, Vitol Group, and about 1 million barrels a day less than the increase foreseen by OPEC.

The Organization of Petroleum Exporting Countries forecast "robust" demand growth both this year and next in its monthly report on Thursday. In contrast, the IEA predicted that the OPEC+ alliance will see its buffer of idle production capacity swell to one of the highest levels ever seen in 2025 as rival supplies expand.

"Robust production from non-OPEC+, coupled with a projected slowdown in demand growth, will lower the call on OPEC+," the IEA said in its monthly report on Friday. "If the bloc were to produce in line with that call, effective spare capacity could top 6 million barrels a day — excluding the Covid-19 period — its largest ever supply buffer."



Despite the downbeat tone on oil demand, the IEA still forecasts inventory declines for much of this year if OPEC+ keeps its current supply curbs in place. The largest decline in stockpiles would come in the third quarter, coinciding with peak summer demand season in the northern hemisphere, when many traders have also been expecting a price rally.

Even with the slower pace of growth, the IEA expects global demand to surpass 105 million barrels a day for the first time in the second half of 2025. Much of that increase will come from China and India, which remain the two engines of oil demand growth. In contrast, consumption is expected to decline for a second year in developing economies.

There should be ample new supply to satisfy demand growth next year, the IEA said.

The US, Canada, Brazil and Guyana will add a combined 1.2 million barrels a day of supply this year and 1 million barrels a day next, nearly enough to meet world demand growth by themselves. The US alone will account for about half of those

volumes, even as the pace of its production growth declines from historically high levels.

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Saudi, Kuwait Led OPEC Crude Output Increase Last Month: IEA

2024-04-12 08:00:00.38 GMT

By Julian Lee

(Bloomberg) -- OPEC's March crude output rose 110k b/d from a month earlier to 27.05m b/d, led by modest increases from key Middle East producers Saudi Arabia and Kuwait, the IEA said in its monthly market report.

* Saudi volumes edged up to 9.02m b/d from 8.99m b/d in February

* Kuwaiti output was also up, recovering to 2.47m b/d, while the UAE held steady at 3.22m b/d

* Iraqi production was little changed at 4.26m b/d, still above its OPEC+ quota

* Iranian supply inched up to 3.25m b/d from a revised 3.23m b/d in February

* Nigeria's production fell again, down 20k b/d to 1.34m b/d

* Venezuelan volumes were steady at 860k b/d

* NOTE: OPEC released its own figures for March on Thursday, with secondary sources estimating its 12 members pumped 26.6m b/d

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Offshore Oil to Drive Non-OPEC+ Output Growth in 2024-25: IEA

2024-04-12 08:00:00.30 GMT

By Julian Lee

(Bloomberg) -- Growth in oil production from non-OPEC+

countries will come mostly from conventional offshore projects in 2024 and 2025, the IEA says in its latest monthly report.

*** New non-OPEC+ conventional projects will add more than 3m b/d in output between the start of 2023 and the end of 2025, with almost half of the increase coming next year**

* The biggest contribution will come from Brazil, where capacity is expected to rise by more than 1m b/d over the next two years from seven projects

* Five start-ups will add a combined capacity of 350k b/d in the Gulf of Mexico by the end of next year

* Guyana will make the biggest single-field contribution, with the 250k b/d Yellowtail project, the 4th development on the Exxon-led Stabroek block, due to begin production in 2025

* Norway will add a similar amount from three projects, with most of the increase coming from the 190k b/d Johan Castberg field

* China is expected to add about 130k b/d from new developments in Bohai Bay

* West African countries outside the OPEC+ group, including Angola which departed at the end of 2023, should add a combined 230k b/d of new capacity by the end of next year

** The biggest contribution is expected Senegal, which will join the ranks of oil producing countries when its 90k b/d Sangomar development comes into operation in 3Q 2024

* The US shale patch is expected to contribute only a quarter of the new non-OPEC+ production this year and 20% in 2025, down from 40% of the growth in 2023

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Red Sea Attacks Push Oil Tanker Ton-Miles to Record Highs: IEA

2024-04-12 08:00:00.35 GMT

By Jack Wittels

(Bloomberg) -- "Liquid tanker ton-miles have soared to their highest level over the past five years, reaching 49.1 billion ton-miles per day," the IEA said in its monthly Oil Market Report.

* That's a 6.5% increase vs January

* Average in 2018-2019 was 44.5b ton-miles per day

* Increase is fueled by attacks on ships passing through the Bab el-Mandeb strait at the southern end of the Red Sea, forcing

ships to go around the Cape of Good Hope

** This follows upheaval in trade flows from Russian oil sanctions implemented in 2022-2023

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IEA Warns Attacks on Russia Plants May Disrupt Diesel Market (1)

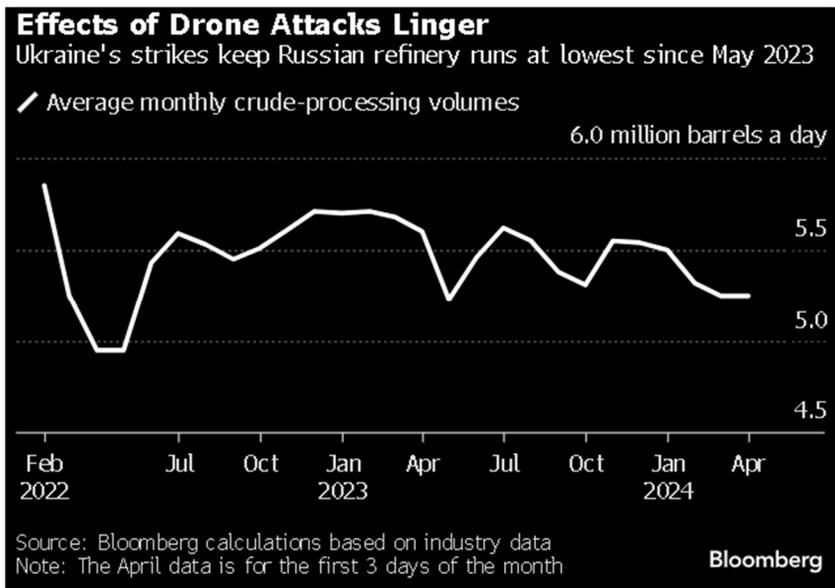
2024-04-12 08:51:34.688 GMT

By Bloomberg News

(Bloomberg) -- The flurry of Ukrainian drone attacks on Russia's oil refineries risks disrupting global markets for petroleum products, the International Energy Agency said. Ukrainian drones have ramped up attacks on Russia's oil industry this year in an attempt to disrupt fuel supplies to the military and curb the Kremlin's revenue. About 500,000 to 600,000 barrels a day of the country's crude processing capacity could be offline this quarter on a gross basis, before offsets, according to the IEA's monthly report.

The shutdown of damaged refineries or units of between four to eight weeks for repairs "could mean a significant loss" of Russian oil-product exports, the Paris-based agency said on Friday. International markets "rely on Russian exports of diesel, naphtha and jet fuel, while refining systems in Asia absorb substantial quantities of the country's straight-run and cracked residue to boost upgrading unit feedstocks."

The IEA was echoing an earlier statement from the US Defense Secretary Lloyd Austin, who warned that Ukrainian attacks "could have a knock-on effect" on the global energy market.



So far the actual drop in refinery runs was much lower. Russia's official weekly refinery output data through late March is consistent with crude runs at 5 million to 5.2 million barrels a day, rather than the 4.6 million barrels a day that a bottom-up assessment of the refinery outages would indicate, according to the IEA.

Some of the nation's facilities have been relatively quick to repair the damaged equipment. Only Rosneft PJSC's Tuapse refinery near the Black Sea — attacked in late January — remains offline, but it isn't clear whether that's due to the drone strike or initial planned maintenance. It's likely to resume operations in mid-May, the IEA said, citing reports.

Russia's refiners have also deployed spare or underused crude-processing units to mitigate the impact of drone attacks before the uptick in seasonal demand. "It seems reasonable that the Russian refining system is large enough that some outages could be offset by the deferral of planned maintenance or increased runs elsewhere in the system," the IEA said.

In the first three days of April, Russian refiners churned through an average of 5.25 million barrels a day, Bloomberg reported last week. While recovering since the middle of March, daily refinery runs remain significantly below 5.78 million barrels of crude processed in first days of April a year ago, according to Bloomberg calculations based on historic data.

Output Curbs

Russia's crude oil production averaged 9.42 million barrels a day in March, or some 30,000 barrels lower than the nation's target, according to the IEA. In 2023, the nation pledged to cut daily output by 500,000 barrels to 9.45 million barrels until the end of 2024. It also promised to curb exports of crude and

petroleum products by 500,000 barrels a day in the first quarter.

Starting this month, Russia will roll back some of those exports reductions while also deepening its production cuts, as part of an agreement with some nations in the Organization of Petroleum Exporting Countries.

In April, Russia will curb crude output by an additional 350,000 barrels a day, but withhold just 121,000 barrels a day from exports. In May, the split will be 400,000 barrels a day of production and 71,000 of exports. In June the curbs will come from production only.

The IEA estimates that Russia's crude production will average about 9.1 million barrels a day in the second quarter, down 300,000 barrels a day from previous three months.

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China, India, Nigeria to Lead Oil Refining Growth in 2025: IEA

2024-04-12 08:00:00.21 GMT

By Rachel Graham

(Bloomberg) --

Global crude throughput will increase by 830k b/d in 2025, led by capacity additions in India, China and Nigeria, the IEA said in its monthly Oil Market Report.

* Non-OECD nations are forecast to boost throughput by 1.1m b/d

** China is forecast to increase refinery runs by 180k b/d next

year; it might also see some capacity closures including

Sinopec's 230k b/d Yueyang refinery and CNPC's 200k Dalian

petchem plant

** Indian crude processing rates to increase by 190k b/d in 2025

* OECD crude throughput is forecast to drop by 300k b/d in 2025

** OECD Europe and Asia will see cuts, partially offset by

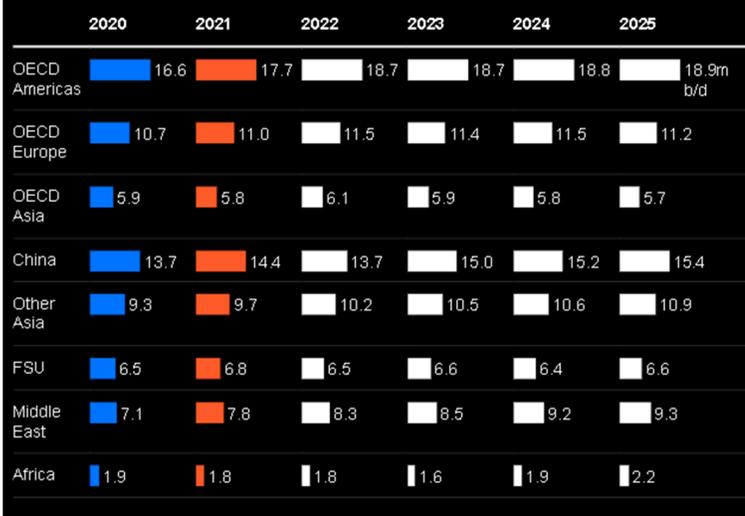
higher runs in the Americas led by Mexico

* In 2024, crude throughput is forecast to increase by 1m b/d,

with the Middle East alone adding 610k

China and India Among Nations Set to Boost Crude Runs in 2025

Growth in the Middle East will slow next year, the IEA says



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NW Europe Light Crudes Slid in March on Weaker Margins, IEA Says

2024-04-12 08:01:38.900 GMT

By Bill Lehane

(Bloomberg) -- Premiums for light sweet crudes in northwest Europe fell to nine-month lows last month, as seasonal refinery maintenance in Europe and weaker margins weighed on differentials, the IEA said in its monthly Oil Market Report.

Sales of WTI were sluggish.

* The transatlantic arbitrage for WTI Houston to North Sea Dated M2 narrowed in March from -\$3.09/bbl to -\$2.68/bbl, reflecting lower freight rates combined with tepid demand for crude cargoes into Europe

** As a result, the WTI CIF Rotterdam premium to Dated narrowed by \$1.35/bbl to \$1.47/bbl against North Sea Dated

* Ekofisk differentials dropped by 61c/bbl while Oseberg fell by 75c/bbl

** Forties tumbled from a high of \$2.05/bbl to -76c/bbl by the end of March

* Johan Sverdrup rebounded in March on increased interest from Chinese buyers

** Its discount was -\$3.22 in early March, strengthening to -

\$1.45/bbl by the end of the month

- * West African crude prices remained relatively stable for most of March, although many cargoes remained unsold into April
- ** High turnarounds in Europe, a surplus of WTI and lower middle distillate margins were offset by increased buying in Asia and stronger demand from Dangote
- *** Forcados dropped by 45c/bbl to \$4.30/bbl, hitting a low of \$3.90 by the end of March
- *** Bonny Light dipped by 19c/bbl to +\$2.80
- *** Angola's medium, sweet gas-oil-rich crudes were in strong demand, particularly from India, with spreads moving higher in early March
- *** Girassol added 40c to +\$1.90/bbl, while Cabinda rose by \$1.50/bbl over the month
- * Price differentials for key light sweet grades in the Mediterranean eased due to European refinery turnarounds
- ** Azeri BTC Blend declined by \$1.79 to Dated +\$3.20/bbl, its lowest premium since December 2021
- ** Libya's Es Sider slipped by 5c to +75c/bbl
- * Naphtha-rich Caspian CPC Blend strengthened by 62c to - \$7.35/bbl against North Sea Dated, fueled by robust gasoline cracks
- * READ: (April 10), Traders Buy Record Amounts of WTI Midland in Oil-Trading Window
- * Also see NSEA CRUDE and WAF CRUDE and MED CRUDE daily reports

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<https://blinks.bloomberg.com/news/stories/SBTJ6ZT0G1KW>

[LINK]



The Commander of the Faithful and the Commander of the Faithful

The evil Zionist regime will regret this crime.

April 3, 2004, 13:11

News Code: 85432891



Tehran, IRNA - In a message on the occasion of the attack on the Iranian consulate in Syria and the martyrdom of Maj. Gen. Zahedi and his comrades, the Supreme Leader of the Islamic Revolution emphasized that we will regret the usurping and hated Zionist regime of this crime and the like.

In a message on the occasion of the martyrdom of General Rashid Islam, Maj. Gen. Mohammad Reza Zahedi and a group of his comrades by the usurping and hated Zionist regime, Ayatollah Khamenei emphasized in a message on the occasion of the martyrdom of General Rashid Islam, and a group of his comrades by the usurping and hated Zionist regime.

The message of the Leader of the Islamic Revolution is as follows:

In the name of Allah, the Beneficent, the Merciful, the Commander of the Faithful and devoted to Islam, the Maj. Gen. Mohammad Reza Zahedi, were martyred along with his noble comrade General Mohammad Hadi Haj Rahimi, with the crime of the usurping and hated Zionist regime. Peace, mercy, and peace be upon them and those who are martyred in this incident, and curse the leaders of the ruthless regime and the aggressor.

Our Savior is the Savior of our people and they are now in the presence of God and they are in the presence of God.

Since the 1980s, Sardar Zahedi had been waiting for martyrdom in the fields of danger and struggle. They have lost nothing and have received their reward, but their loss is heavy for the Iranian nation, especially those who know them.

The evil regime will be punished by our brave men. We will be able to forgive them for their sins and the power of God.

Peace be upon you.
Seyyed Ali Khamenei
3 April 1403

[LINK]



Chairman: This crime will not go unanswered.



Tehran, IRNA – In response to the terrorist crimes of the Zionist regime, the president reiterated: "Zionists should know that with such inhumane actions, they will never achieve their sinister goals, and day by day they will witness the strengthening of the resistance front and hatred and hatred of free nations against their illegitimate nature, and this cowardly crime will not go unanswered."

According to the [IRNA](#) government, [Seyyed Ebrahim Raisi](#) in a statement condemning the inhumane invasion and blatant violation of international regulations by the Zionist regime in the attack on our consulate building in Damascus, stated: "These Mujahedeen generals, who were commanders, warriors and veterans of the holy defense era, were in the position of senior advisors in defense of the shrine of the Ahlulbayt, and purity against peace and in the protection of high Islamic and human values. They were in Syria and proudly joined the caravan of martyrs."

The President's statement is as follows;

Praise the Lord and the Savior.

Once again, in a terrorist crime and in gross violation of international law, the evil hands of the usurping Zionist regime were stained with the blood of several of our country's generals and officers.

The Israeli regime's aggressive and despicable act in the attack on the consulate building of the Islamic Republic of Iran in Damascus led to the martyrdom of Brigadier General Mohammad Reza Zahedi and Brigadier General Mohammad Hadi Haji Rahimi and five of their companions. These Mujahedeen generals, who were commanders, warriors and veterans of the holy defense, were present as senior advisors in defense of the shrine of Ahl al-Baysmat and purity of peace and in protecting high Islamic and human values in Syria and proudly joined the caravan of martyrs.

Condemning this inhumane invasion that is a clear violation of international law, I express my condolences to the martyrs of these children of the Islamic homeland to the Supreme Leader, the martyr-breeding nation of Iran, the martyrs of the Islamic Revolutionary Guard Corps, and especially their honorable families.

After repeated defeat and failure against the faith and will of the Resistance Front, the Zionist regime has put blind assassinations on the agenda in the struggle to save itself, but it must know that with such inhumane measures it will never achieve its ominous goals, and day by day it has witnessed the strengthening of the resistance front and the hatred and hatred of free nations against its illegitimate nature, **and this cowardly crime will not go unanswered.**

Seyyed Ebrahim Raeesi President of the Islamic Republic of Iran

IRGC chief: Much harsher response awaits Israel should it attack Iran

Sunday, 14 April 2024 7:51 AM [Last Update: Sunday, 14 April 2024 10:26 AM]



The chief commander of the Islamic Revolution Guards Corps (IRGC) Major General Hossein Salami (File photo)

The chief commander of the Islamic Revolution Guards Corps (IRGC) has warned the Israeli regime that Iran’s reaction will be “certainly much harsher” if the regime responds to Iran’s retaliatory operation.

“The Zionist regime must stop its past behavior and learn from this [attack]. If the Zionist regime shows any response, our reaction will certainly be much harsher based on this new experience we have gained from their capabilities,” Major General Hossein Salami said on Sunday.

“From now on, if the Zionist regime attacks our interests, assets, figures, and citizens at any point, it will face counterattack from within the Islamic Republic of Iran,” he added.

On Saturday night, the IRGC launched extensive missile and drone strikes against the occupied territories in response to Israel’s deadly attack on the Iranian diplomatic premises in Syria early this month.

On Saturday night, the IRGC launched extensive missile and drone strikes against the occupied territories in response to Israel’s deadly attack on the Iranian diplomatic premises in Syria early this month that killed seven members of its armed forces including two generals.

Salami highlighted that Iran could carry out an operation in a larger scale but the attack “was limited” to the military bases of the Zionist regime, from the Golan Heights to the Negev desert, that were used in the terrorist attack on the Iranian consulate in Damascus.

According to Salami, the operation was “more successful than expected.”

“So far, we have not collected all the data relating to the strikes [against Israeli targets], but detailed, documented reports from the scene show that the operation was more successful than we expected,” he said.

The IRGC general explained that the operation was “unknown” and “unclear”, but had “opened a new chapter” for Iran in the fight against the Israeli regime.

He noted that Israel has a multilayered air-defense system which includes the Arrow, designed to intercept long-range missiles, David’s Sling, meant to intercept medium-range missiles, and Patriot, which is used to shoot down aircraft, such as drones.

Israel's defense system was also coping with incoming rocket, drone and missile attacks from Iran with assistance from the US, he added.

"The deep and multilayered air defense with the assistance from the US was stretching from Iraqi air space to Jordan and even parts of Syria and Palestine.

"Israel was using its F-15, F-16, and state-of-the-art F-35 fighter jets, Gulfstream jets as well as aerial refueling aircraft [...] they were all deployed to defend Israel's positions," he added.

Penetrating these systems was "extremely difficult", according to Salami.

Moreover, Israel and US electronic warfare could have represented a landmark in deciding the fate of the war crafts, so the operation took tactical ingenuity to render the enemy's defense systems ineffective, Salami added.

"Dozens of ballistic and cruise missiles manage to break into deep layers of Israel's seemingly safe air defense system, impact the aerial coalition between the US, France and Israel and reach the designated targets," he said.

Iran's retaliatory missile and drone strikes on Israel were launched after two weeks of strategic patience and meticulous planning and execution.

The operation included at least four waves of drone attacks. It is estimated that a total of 400 to 500 drones were launched.

The retaliatory military operation also included the launch of a series of cruise and ballistic missiles, which were reportedly accompanied by simultaneous drone and missile strikes by the Axis of Resistance groups from Iraq, Yemen, and Lebanon.

On Sunday morning, the chief of staff of the Iranian Armed Forces, Major General Mohammad Baqeri, said Iran has concluded its retaliatory strikes on the occupied territories.

Baqeri downplayed the extent of the operation compared to what Iran is capable of, saying that it was merely a punishment and the country's response to any further military action by the Israeli regime "will be much greater."

Axis of Resistance's mission is to defend Palestine: IRGC's Navy Cmd.

- By Al Mayadeen English
- Source: Al Mayadeen
- Today 15:26

In an exclusive interview with Al Mayadeen, the Commander of the IRGC's Navy, Alireza Tangsiri discusses Iran's development as a world power, the efforts of the Axis of Resistance to champion and defend Gaza, and the fate of "Israel" and its allies.



- The commander of the IRGC's Navy, Rear Admiral Alireza Tangsiri. (Al Mayadeen Net)

Al Mayadeen conducted an interview, which was broadcast on Tuesday, with the commander of the IRGC's Navy, Admiral Alireza Tangsiri. You can find the full, translated text of the Admiral's answers below:

I welcome you here, as well as our dear viewers, and welcome to the city of Bandar Abbas and the Strait of Hormuz.

Following the Islamic Revolution's victory, Washington imposed a complete embargo on Iran, which did not own any material capabilities at the time. Most of our equipment and arsenal were US-made. Later, they would embroil us in an inadequate war against Saddam's regime, in addition to an abundance of internal conflicts. However, with the grace of God, we managed to persevere and move forward after eight years of war, which prepared us for the upcoming confrontations.

Despite the embargo, sanctions, and economic predicaments Iran was faced with, it was able to [advance in multiple military fields](#), build up its combat strength, manpower, special military training, and manufacture its own equipment."

"Right now, we are at a level that allows us to export weapons, including rockets, warships, and radars, to naval forces, defense ministries, and armed forces, and we take pride in this capability, which makes rocket and ship manufacturing possible amid the embargo. We also take pride in the size, speed, assimilation, and resistive characteristics of our home-produced ships, which expedites their abilities throughout maritime battles."

"Today, after over 40 years, we have emerged as a world power, and are the primary decision-makers in West Asia, whether it's derived from the quality of our manufactured equipment or the preparedness of our armed forces. Today, we are proud to say that Iran is at the forefront in regional power, and produces all it needs to defend its sovereignty," he said.

On 'Israel's' crushing defeat in Gaza

Speaking on the genocide in Gaza, Tangsiri described "Israel's" extensive war as "heinous crimes against the oppressed yet brave and resilient Gaza".

He revisited the Israeli war objectives from the war and affirmed that the occupation did not manage to achieve a single one.

In detail, the Rear Admiral said:

"They claim three determinants for their success in Gaza:

1. Defeating Hamas, but Hamas is stronger than ever, and sustained fewer losses.

2. The people's desperation and hopelessness; but look at the highly spirited people in Gaza, who have lost their homes and their loved ones but remained resilient and faithful. The Zionists failed to break Gaza's defiant and steadfast spirit.

3. The swift elimination of Gaza; but the entire world opposes the Zionists today. The "army" that claimed to be the strongest in West Asia, and third strongest in the world, being supported by the US military with aid and developed weapons used in modern wars, employed to kill Gazan children, has failed to achieve victory, whether militarily, politically, or socially."

When asked about how such an entity could be fought, Tangsiri stressed the importance of Muslim unity.

"The only way to fight the Zionists is through the formation of an Islamic power and a coalition of Islamic armies. To quote Imam Khomeini, may his soul rest in peace, If every Muslim poured a bucket of water on Israel, it would be washed away. Unfortunately, this isn't the case. Here, I speak to all Muslim nations that think they would attain greater glory by counting on the Zionists' friendship. The solution to removing the corruptive and criminal parasite is the unification of all Muslim nations and their armies. If we were united, we could bring an end to it. But this is not what is happening. The Zionists are not only treating Muslims this monstrously but have also shown our Christian brothers and sisters no mercy.

They destroyed churches and massacred Christians in Lebanon. The Zionists are not merciful towards anyone, not even their own supporters.

Unfortunately, the Zionists are striking Muslims with warplanes loaded with fuel supplied by Muslim nations. This is a disgrace, and the solution remains in unity against Zionism to ultimately remove it from existence."

Iran advocates security in region

Tangsiri also detailed the West's interests in the region, specifically the United States, and emphasized that Iran has always sought peace and security in the spirit of good neighborliness. However, he did not shy away from condemning the actions Iran's neighboring countries have undertaken, particularly inviting Zionists into the region.

During talks with neighboring countries regarding the Strait of Hormuz, our message has always been that of peace and friendliness. Iran suffered under the oppression of a tyrant, so it revolted and offered martyrs in the quest for victory, but since then, we have been faced with the enmity of those same countries, as well as the United States and more. The US Army has now come to the Strait of Hormuz and the Persian Gulf, but they do not belong in our waters. We previously told our neighbors that the Persian Gulf and Oman's Sea are national concerns of both them and Iran and that Iran's security is theirs. We told them the West does not want this region to be stable or secure. The West considers these countries as a "milk cow", but when the milk runs out, as in oil and gas resources in the region, it would slaughter us.

"Therefore, we have always advocated for the security of the region, and have assured that we can host joint military exercises in the Strait, in collaboration with our brothers from the Persian Gulf's neighboring countries. We can maintain the region's peace and security. Our oil and gas terminals are close to those of the neighboring countries. If we really wanted to, we could close these waterways down.

But we do not do this, because as long as we use this waterway and strait, then our neighbors would also have to, and should. But they have to recognize that we will not accept the presence of Zionist supporters in their governments because this is considered a security threat to Iran. We hope they do not make such errors, and reconsider their choices. Should the enemy come and restrain us, and act provocatively in an attempt to incite change in the region, then that is a different issue, to which a different decision would be made, at a later time.

Zionists in countries neighboring Iran

He revealed that Iran is now the main proponent for security of the region and that of the Hormuz Strait, and the constant traffic of more than 85 tankers carrying oil and gas cargo that safely pass through the strait every day.

However, he revealed that the arrival of the Zionists to the region, and their settlement within countries neighboring Iran, does not speak to peace or good neighborliness.

"Iran has relations with Arab countries, and the seven nations of Oman, the UAE, Qatar, Bahrain, Saudi Arabia, Kuwait, and Iraq, but bringing Zionists to our region... We know full well that they do not come for economic purposes or to establish bilateral relations between those countries and the child-killing criminals the world has begun rejecting."

"What does it mean for a country to take pride in welcoming Zionists to the region?", he asked.

"What are we to understand from such a gesture to us, to a country whose sea spans the entire length of the Persian Gulf, to a country that has beaches in the sea of Oman, to a country with such glory and greatness? Should we not consider this a threat? Is bringing Zionists to a neighboring country not a threat? They should acknowledge that if harm comes in our country's way, then the place they came from will cease to exist. If they [neighboring countries] were indeed looking for security, then they would know that there is no room for Zionists in the region.

"I assure you, once again, that we would not attack a Muslim country unless it attacked us... Before the Islamic Revolution's triumph, Iran had a Ministry of War. Today, we have a Ministry of Defense instead, which signifies that we would not attack any country if we were not attacked or conspired against. Those who choose to conspire and attack us though, will receive a hard blow, just like Saddam and his movement did.

"Therefore, we do not make threats and do not accept threats. Sometimes, a threat is merely speech. The Zionists' presence in neighboring countries, which we fully acknowledge is not for economic purposes, but rather military and security ones, is a threat that should not materialize. This is a consideration we should always keep in mind.

US forces present in our neighbors' waters

On the role of the US in the region, Tangsiri affirmed that it is but a plot to incite rifts and destabilize the region and its peace.

The US forces, he stated, are not present in Iran's waters or territory. However, they are unfortunately present in Iran's neighbors' waters, not international ones.

"The United States should realize that the Persian Gulf is not an international sea, but Iran's and its neighboring countries'. The US does not sail in international waters strait passing through our islands. We are constantly monitoring them, their movements, actions, and behavior. Our naval mission, under the Islamic Revolutionary Guard Corps, is to defend our facilities in the Persian Gulf. We believe that if they enter the region, with their nuclear equipment, then the waters would not be viable for use for years after. We would be the ones affected by their presence.

But it is of their nature to create enemies, why? First, for weapons. And for an excuse to sell weapons. If there was no enemy to fight, then the region would not need weapons. Second, to ensure their presence in the region... If they did not claim an enemy was present in the region, then they would not need to remain in it. If they did, then it would be unjustifiable.

"Therefore, the constant sales of arms and weapons and their illegal presence in the region necessitates their claim of Iran being an enemy to its neighboring countries. If one of these countries gets attacked tomorrow, they will set fire to this land, leave it, and leave us affected. Which is why we should all remain careful and wary."

The Resistance's Mission

When asked about the Axis of Resistance, its emergence, and its role in the region, the IRGC commander stated that the Resistance's mission has always been to champion Palestine and its liberation against "Israel" and its allies.

"The Axis of Resistance has always responded to threats in defense of the Palestinian people, because their lands are occupied and because Gaza's resilient people are oppressed. We had never seen a people as resistant as that of Gaza. Countries backing the Zionists should be ashamed of themselves. The US supplied the Zionists with special bombs, which were dropped on women and children in Gaza. France, Britain, and others rushed to back the criminal, dirty, malicious, and child-killing Netanyahu... I do not know, are they really human? Do they call themselves human? A little child in fear, and shaking like that... a torn up child and a mother holding her children... I saw a father holding his martyred children in his hands... These countries are only helping this criminal. I believe the blood of over 14,000 children and women and all those innocents will seek retribution for their sins and will be the reason for "Israel's" demise and end.

Their message was clear: Defend the occupation. And they announced the reason for their presence in the region in the Mediterranean and the Red Sea. If you recall, in the early days of the war, a US aircraft carrier traveled through the Strait of Gibraltar and remained stationed in the Mediterranean.

What is the message it is carrying? That it intends to defend the Israeli occupation, which marks an eternal disgrace for them [the US]. The United States, in all its might - as it claims - and capabilities, and Britain and its capabilities, as well as

France... They all came to murder innocent people. How could they raise their heads high as a moral army? Every army has pride, but it comes from respecting and adhering to the laws of war. But this is not a war. This is a people, in a very small land, surrounded and defenseless. But God is with them, and through Him, they will prevail.

At the start of this interview, I noted that the Zionists are so far defeated, and have not achieved any of their war objectives. Did they retrieve their captives? No. Did they destroy Hamas? No. Were they able to achieve their goal of victory? No, they did not emerge victorious, defeat Hamas, or release the hostages. So, they lost. It has been six months. And we cannot forget that six Arab Muslim nations did not achieve victory in the six-day war," the leader reiterated.

Yemen, Hezbollah role in war

During the interview, Tangsiri was also asked about Yemen and Hezbollah's role in the war against "Israel".

To that, he stated that Hezbollah today is heroic, it is far stronger than it was at the beginning of the war, but until this moment, Hezbollah has not responded to the Zionist enemy, and were it to respond, it would have been an onslaught. Sayyed Hassan Nasrallah had previously announced that Hezbollah's response would be fierce. Yemen today is much more solid than before, and Iraq and Iraqi Hezbollah are far stronger than before... [The Resistance movements](#) that surround the Zionist entity are the more powerful...

He called for trust in the Resistance, saying, "Do not worry about the Resistance; it is today capable of doing everything, and it is far stronger than it was in the earlier days of the war."

Attack on Iranian consulate

Commenting on the Israeli attack on the Iranian consulate in Syria, he denounced the deliberate airstrike and highlighted the West's hypocrisy in that regard.

According to Tangsiri, this crime did not happen in any other war. Embassies are meant to be safe places and are considered the territory of their respective countries. In that embassy, there were not only military advisors, but also women, children, and men.

"This attack is a crime. First of all, if we had done this, which we would never have, they would have strongly condemned us for committing such a crime. Look at the world, at the Europeans who watch these crimes and support the most corrupt people, and at the US which plays a very democratic and liberating role... We expected the United Nations to confront this crime more firmly, but they paved the way for us to do away with this ugliness."

He also reaffirmed that Iran intends to respond to "Israel" for its crime.

"As our dear leader said, it will be responded to, but we do not act impulsively or hastily. We are not the kind of people who turn the other cheek after being hit. At the appropriate time, the relevant officials will deliver a strong blow, God willing. At the head of our armed forces is a scholar who knows God, is patient, wise, and rational and logically governs the Iranian armed forces. We act and respond when we see fit. But we will definitely respond, and as the leader said, we will not leave the matter unanswered.

"We are a force ready for battle. We are military men. We are ready for any mission they order us to carry out. Do you expect me to say what we will do? That is not correct. We are 100% ready for any order that may be issued. Today, the naval forces of the Islamic Revolution Guards Corps and our heroic army are ready to pluck out the eye of anyone who wants to harm our country and will carry out the orders that may be issued at the appropriate time."

Western powers have brought in their ships to support the occupation, but the brave Yemenis withstood against them. As our leader said, if Yemen was not under siege, we would have certainly aided it. Yemen today produces its own artillery, missiles, and boats, and is standing strong against the enemies, against the US and Britain, in support of the oppressed people of Palestine and Gaza.

Glorious Yemen

Discussing Yemen's development as a Resistance power as well, Tangsiri said that after eight years of an imposed and harsh war against the country, Ansar Allah, and the Yemeni Army, it has now reached a level where it can confront great powers such as the United States.

He said that Ansar Allah is manufacturing missiles and unmanned aerial vehicles (UAVs) and has established a naval force, despite the embargo and sanctions imposed on the country.

[Sayyed Abdul-Malik al-Houthi](#) affirmed that they could target the West's ships, even if they were in Southern Africa. Today, Tangsiri said, Ansar Allah is targeting ships 600, 700, and even 1,000 kilometers away. Day after day, Ansar Allah keeps developing its capabilities. There are brave men taking control of the force and defending their country.

He stressed Yemen's independence from Iran despite being allied and part of the Axis of Resistance, against claims that Resistance factions in the region serve as Iran's proxies.

"Yemen is an independent country, and the Resistance is an independent force that was born to crush oppression. Yemen and its Resistance do not wait for our orders, but we are indeed concerned with the Resistance.

"We love the Palestinians, and we support anyone who takes a stance against oppression and struggles in the fight for the cause. We saw injustice in Bosnia and Herzegovina, and although we did not have common borders with them, and their population included both Muslims and non-Muslims, we helped them and offered them moral support, and never fell short in the help we could offer. We stand with the oppressed. We love and appreciate the men of the Resistance in Yemen, and take pride in them. The Islamic world must take pride in them. They do not need a force that leads them, because they have a leader. Just like Hezbollah has a leader, and Yemen and Iraq have leaders, and [they act based on their interests](#). They have enough wisdom to know when and how to act."

The Final Message

Before concluding the interview, the IRGC admiral called on Muslim nations, specifically those neighboring Iran, and said 'Life is fleeting, and if we do not defend those that are oppressed, we will be asked about it on Judgment Day. I am addressing Muslim leaders who own the means of governing. Take the opportunity, because while Christians and followers of other religions protest in solidarity with Gaza, it is a disgrace that Arab countries do not hold such marches and protests.'

I also wish to address the [leaders that are fueling the Zionist enemy's jetplanes](#)... [How can] they take our oil and turn it into fuel for a bomb they drop over the heads of Muslims who say 'There is no god but God, God is great, and God is sufficient for us'? Are they not the people that are dropping bombs on Gaza's people? The war will end, and God willing, The people of Gaza will emerge victorious. But what have we offered during this time?

"We ask God to raise the martyrs of Gaza and the Resistance, whether in our dear Lebanon, dear Iraq, or dear Yemen, to where the prophet of God and his holy Imams rest."

In his last address to the **Al Mayadeen crew** conducting the interview, he expressed his thanks, saying "I profoundly thank you, particularly for coming here twice. Forgive us for the warm weather, and perhaps the circumstances were more difficult for you, but we fully know that your cameras are important, and powerful, just like **Al Mayadeen**. It is the voice of the oppressed, and you represent their voices. God willing, He will note what you have done for the oppressed, and you will hold your heads high before the Resistance's martyrs and the oppressed people of Gaza."

Iran's IRGC seizes 'Israeli-linked' ship near Strait of Hormuz

IRGC forces conducted an operation via helicopter to take control of the commercial vessel, state media reports.



A commando with Iran's Islamic Revolutionary Guard Corps is seen rappelling down to the MSC Aries near the Strait of Hormuz, on April 13, 2024 [AP Photo]

By **Maziar Motamedi**

Published On 13 Apr 2024 13 Apr 2024

|
Updated:
3 hours ago

Tehran, Iran – Iranian armed forces have seized a container ship near the Strait of Hormuz amid rising tensions across the region after a deadly Israeli attack on Iran's consulate in Syria.

The ship was commandeered by the Islamic Revolutionary Guard Corps (IRGC), the elite force that [lost seven members](#), including two generals, in the Syria strike, Iranian state media reported on Saturday.

KEEP READING

“The ship has now been guided towards the territorial waters of our country,” state-run IRNA reported.

The vessel was identified as the Portugal-flagged MSC Aries, which reportedly departed from a port in the United Arab Emirates en route to India. It is associated with the London-based Zodiac Maritime, a part of the Zodiac Group run by Israeli billionaire Eyal Ofer and his family.

Footage from the deck of the vessel obtained by The Associated Press news agency on Saturday showed soldiers rappelling down from a helicopter.

The helicopter appeared to be a Soviet-designed Mil Mi-17, which is operated by the naval forces of the IRGC.

Zodiac Maritime said in a statement that MSC, an Italian-Swiss shipping group, was responsible for all vessel activities.

MSC confirmed there were 25 crew members on board the ship, adding in a statement that it is “working closely with the relevant authorities to ensure their wellbeing, and safe return of the vessel”.

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The United Kingdom Maritime Trade Operations (UKMTO) had said a vessel was seized by “regional authorities” 50 nautical miles (92km) northeast of the UAE’s Fujairah in a waterway vital to world trade.

Another Israeli-linked container ship was [attacked and damaged](#) by a drone in the Indian Ocean in late November, which the United States blamed on Iran.

Israeli Foreign Minister Israel Katz said in a post on X that the move by Iran was “a pirate operation in violation of international law”.

He called on the European Union and “the free world to immediately declare” the IRGC a “terrorist organization and to sanction Iran now”.

Soaring regional tensions

The US military is moving more military assets to the Middle East as it anticipates an Iranian response to the Israeli attack on the consulate in Syria.

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A US defence official told Al Jazeera that the move is mainly aimed at better protecting US troops in the region, but also to ramp up regional deterrence.

US media confirmed the move but the Pentagon has not officially said which assets it is moving to the region.

The Wall Street Journal quoted unnamed US officials as saying on Friday that it includes repositioning two destroyers, with one of the warships already in the region and another redirected there.

US President Joe Biden said he expected an Iranian retaliation to come “[sooner than later](#)” and that Washington will continue to defend Israel.

“Don’t,” he said when asked by reporters if he had a message for Iran.

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Since the start of the war on Gaza after the Hamas-led October 7 attacks in Israel, the US has sent thousands of bombs and ammunition to its ally Israel despite growing international criticism, along with moving warships and troops to the region.

John Kirby, the White House’s national security spokesman, said on Friday that Iran’s threats to retaliate against Israel remain “real” and viable”.

General Erik Kurilla, the head of US Central Command in the region, arrived in Israel on Friday to discuss a potential Iranian attack and met with top officials, including Israeli military chief of staff Herzi Halevi.

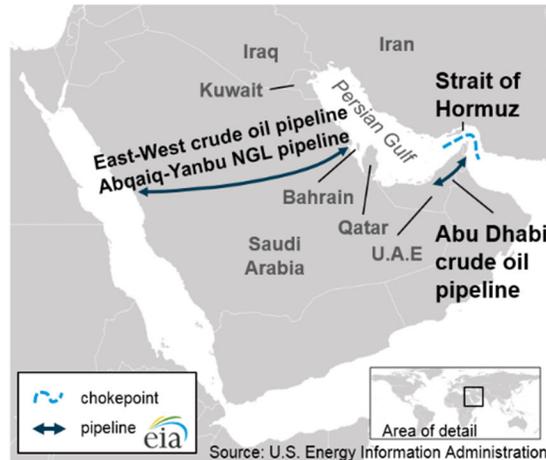
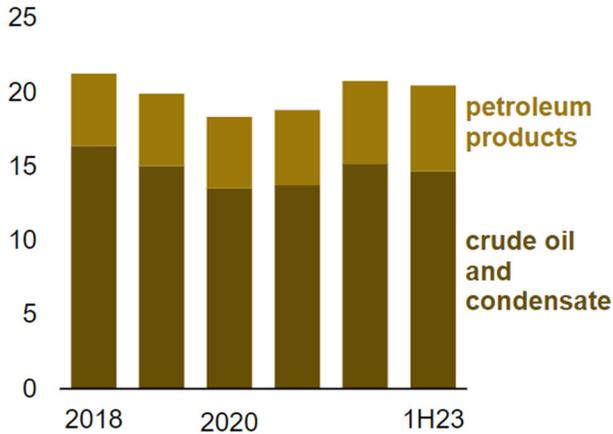
Israeli military spokesperson Daniel Hagari said that “Iran funds, trains, and arms terror proxies across the Middle East and beyond”, adding that the Islamic republic doesn’t just threaten the people of Israel, Gaza, Lebanon, and Syria”, but “fuels the war in Ukraine and beyond”.

He said that Israel was on “high alert” and was “prepared to respond” to what he called “any Iranian aggression”.

NOVEMBER 21, 2023

The Strait of Hormuz is the world's most important oil transit chokepoint

Annual volumes of crude oil, condensate and petroleum products transported through the Strait of Hormuz (2018–1H23)
million barrels per day



Data source: U.S. Energy Information Administration analysis based on Vortexa tanker tracking and FACTS Global Energy
Note: 1H23=first half of 2023

The Strait of Hormuz, located between Oman and Iran, connects the Persian Gulf with the Gulf of Oman and the Arabian Sea. The Strait of Hormuz is the world's most important oil chokepoint because large volumes of oil flow through the strait. In 2022, its oil flow averaged 21 million barrels per day (b/d), or the equivalent of about 21% of global petroleum liquids consumption. In the first half of 2023, total oil flows through the Strait of Hormuz remained relatively flat compared with 2022 because increased flows of oil products partially offset declines in crude oil and condensate.

Chokepoints are narrow channels along widely used global sea routes that are critical to global energy security. The inability of oil to transit a major chokepoint, even temporarily, can create substantial supply delays and raise shipping costs, increasing world energy prices. Although most chokepoints can be circumvented by using other routes, which often add significantly to transit time, some chokepoints have no practical alternatives.

Between 2020 and 2022, volumes of crude oil, condensate, and petroleum products transiting the Strait of Hormuz rose by 2.4 million b/d as oil demand recovered after the economic downturn from the COVID-19 pandemic. In the first half of 2023, shipments of crude oil and condensates dropped because OPEC+ members implemented crude oil production cuts starting in November 2022. Flows through the Strait of Hormuz in 2022 and the first half of 2023 made up more than one-quarter of total global seaborne traded oil. In addition, around one-fifth of global liquefied natural gas trade also transited the Strait of Hormuz in 2022.

Volume of crude oil, condensate, and petroleum products transported through the Strait of Hormuz (2018–1H23)
million barrels per day

	2018	2019	2020	2021	2022	1H23
Total oil flows through Strait of Hormuz	21.3	19.9	18.3	18.8	20.8	20.5
Crude oil and condensate	16.4	15.0	13.5	13.7	15.2	14.7
Petroleum products	4.9	4.9	4.8	5.1	5.6	5.8
World maritime oil trade	77.4	77.1	71.9	73.2	75.2	76.3
World total petroleum and other liquids consumption	100.1	100.9	91.6	97.1	99.6	100.3
LNG flows through Strait of Hormuz (billion cubic feet per day)	10.3	10.6	10.4	10.6	10.9	10.8

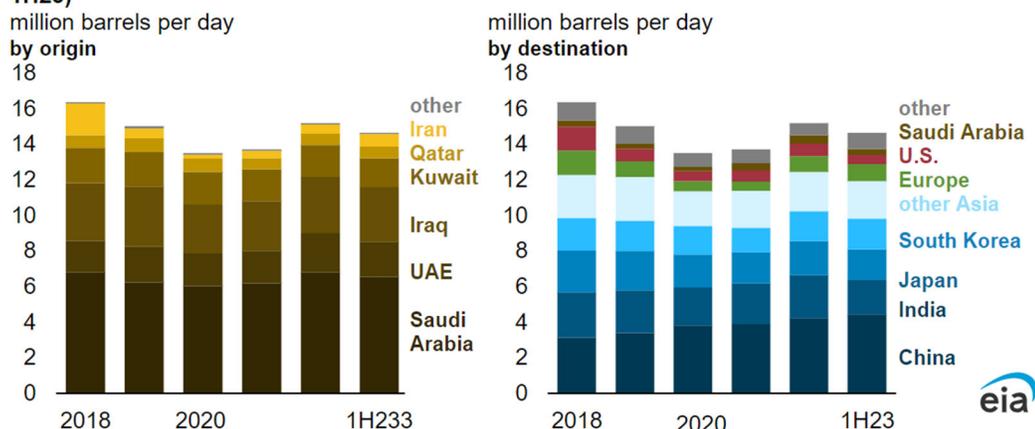
Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, and U.S. Energy Information Administration analysis based on Vortexa tanker tracking and FACTS Global Energy
 Note: World maritime oil trade excludes intra-country volumes except those volumes that transit the Strait of Hormuz.
 LNG=liquefied natural gas. 1H23=first half of 2023.

Only Saudi Arabia and the United Arab Emirates (UAE) have operating pipelines that can circumvent the Strait of Hormuz. Saudi Aramco operates the 5-million-b/d East-West crude oil pipeline and temporarily expanded the pipeline’s capacity to 7 million b/d in 2019 when it converted some natural gas liquids pipelines to accept crude oil. The UAE links its onshore oil fields to the Fujairah export terminal on the Gulf of Oman with a 1.5 million b/d pipeline.

Iran inaugurated the Goreh-Jask pipeline and the Jask export terminal on the Gulf of Oman with a single export cargo in July 2021. The pipeline’s capacity was 0.3 million b/d at that time, although Iran has not used the pipeline since then. We estimate that around 3.5 million b/d of effective unused capacity from these pipelines could be available to bypass the strait in the event of a supply disruption. Based on tanker tracking data published by Vortexa, Saudi Arabia moves more crude oil and condensate through the Strait of Hormuz than any other country, most of which is exported to other countries. Around 0.5 million b/d transited the strait in 2022 from Saudi ports in the Persian Gulf to Saudi ports in the Red Sea.

We estimate that 82% of the crude oil and condensate that moved through the Strait of Hormuz went to Asian markets in 2022. China, India, Japan, and South Korea were the top destinations for crude oil moving through the Strait of Hormuz to Asia, accounting for 67% of all Hormuz crude oil and condensate flows in 2022 and the first half of 2023.

Annual volumes (crude oil and condensate) transported through the Strait of Hormuz (2018–1H23)



Data source: U.S. Energy Information Administration analysis based on Vortexa tanker tracking data
 Note: 1H23=first half of 2023.

In 2022, the United States imported about 0.7 million b/d of crude oil and condensate from Persian Gulf countries through the Strait of Hormuz, accounting for about 11% of U.S. crude oil and condensate imports and 3% of U.S. petroleum liquids consumption. U.S. crude oil imports from countries in the Persian Gulf have fallen by half since 2018 as domestic production has increased.

Principal contributors: Candace Dunn, Justine Barden

<https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/oil/041024-new-libyan-oil-minister-expected-to-unfreeze-key-projects-but-political-risks-remain>

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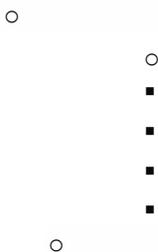
Feature: New Libyan oil minister expected to unfreeze key projects, but political risks remain

HIGHLIGHTS

Sadiq takes over after Aoun suspended due to 'legal violations'

Move will streamline ministry-NOC ties amid NC-7, Waha talks

Libyan output stable at 1.14 mil b/d, but exposed to political rows



- Author
- Editor
- Commodity

The suspension of Libyan Oil Minister Mohamed Aoun and the appointment of his well-connected deputy could unblock major hydrocarbons projects, but also demonstrates the oil and gas sector's vulnerability to the country's chronic political instability, analysts said.

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Aoun was suspended March 25 by the Administrative Control Agency, a government oversight body, due to "legal violations" and quickly replaced by Deputy Oil Minister Khalifa Abdul Sadiq, an associate of the nephew of Prime Minister Abdul Hamid al-Dbeiba.

Although Aoun **contested the suspension**, which sources said was likely politically motivated, it is unlikely to be undone. Libya has been chaotic since the NATO-backed uprising against Moammar Qadhafi in 2011 and is run by parallel governments in the east and west. The oil sector, which accounts for 95% of government revenue, is the primary arena for political wrangling.

Hamish Kinnear, senior Middle East and North Africa analyst at Verisk Maplecroft, said Aoun's dismissal was "a mixed bag for Libya's oil sector and IOCs."

"On the one hand, the suspension could unblock progress on major oil projects -- Aoun was behind a halt to the development of the NC7 Hamada field on the basis that it granted excessive concessions to foreign operators," said Kinnear. "On the other hand, Aoun retains the support of parties with the ability to disrupt Libya's oil and gas production."

Aoun did not respond to a request for comment.

IOC negotiations

The health of Libya's oil sector depends on relationships between key industry participants, including the oil minister, Prime Minister Dbeiba, National Oil Company Chairman Farhat Bengdara and the powerful Central Bank Chairman, Siddiq al-Kabir.

Meanwhile, Khalifa Haftar, head of the self-styled Libyan National Army, dominates the eastern Benghazi-based government and has in the past disrupted oil production. A 2022 LNA oil blockade caused production to sink to 650,000 b/d.

Output has since recovered to 1.14 million b/d, according to the Platts OPEC Survey from S&P Global Commodity Insights, but remains well short of the 1.6 million b/d pre-2011.

Rows between Aoun and other stakeholders in recent months have left investors jittery. The suspended minister accused international oil companies of stalling development plans and attempting to squeeze better contractual terms out of the government.

TotalEnergies and ConocoPhillips are hoping to renegotiate their terms at Waha, which produces more than 300,000 b/d, while Italy's ENI, the UAE's ADNOC and TotalEnergies are negotiating with NOC over the large NC-7 Hamada gas field. Aoun questioned the costs and investor selection process for Hamada.

Libya oil output volatile since 2011 uprising



Source: Platts OPEC Survey

The departing minister also criticized the \$8 billion A&E Structures gas deal with Eni, arguing that the cost recovery provisions were too generous and said the NOC had exceeded its mandate in taking decisions meant for the ministry.

Under his successor, opposition from the oil and gas ministry will likely be reduced, said Jessica Leyland, a senior S&P Global analyst.

"Abdul Sadiq will probably seek to withdraw complaints which were launched by Aoun, against various deals, including the Waha and Hamada projects, indicating Abdul Sadiq's appetite to work alongside NOC rather than against it," she said.

More broadly, Aoun's departure "will most likely streamline oil policy between the NOC and the oil ministry, reducing barriers to enacting exploration deals," and giving investors more certainty, said Leyland.

"Abdul Sadiq was formerly a chairman of Zallaf Oil Company, a subsidiary of NOC, and is likely to support Dbeiba and Bengdara's aspirations to open up exploration deals." The rift between the ministry and NOC appears to be an important factor in holding up "a lot of the promised FDI."

Dbeiba has already formed a committee to negotiate with TotalEnergies and ConocoPhillips on the Waha field, headed by Sadiq.

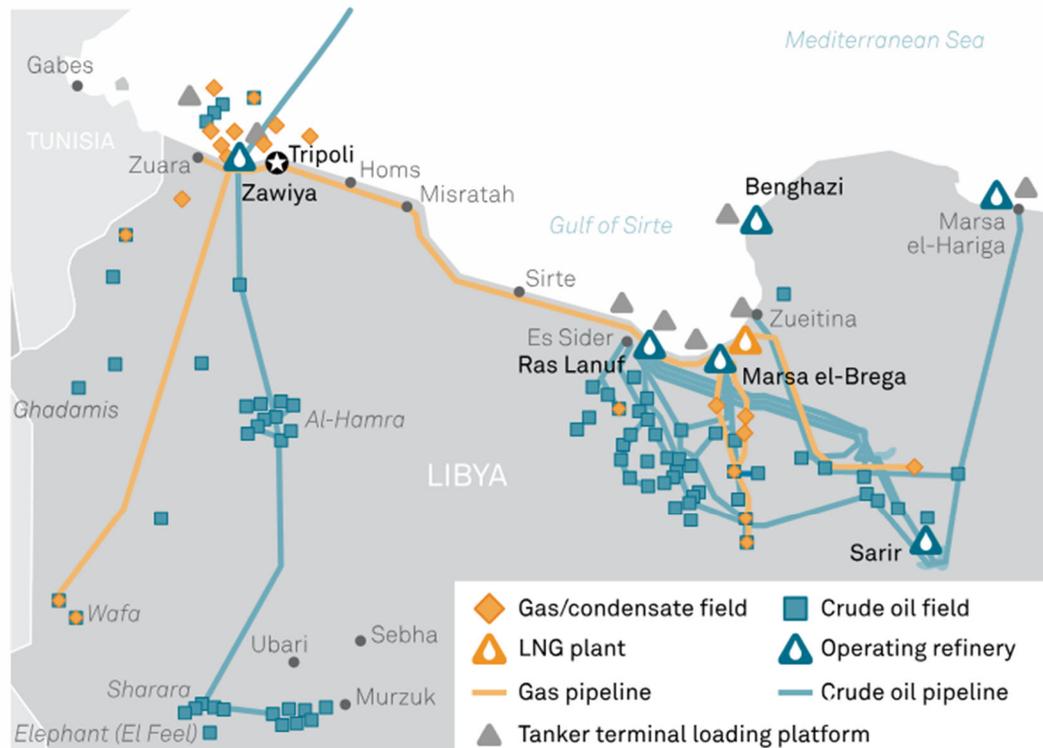
Nevertheless, corruption remains a challenge, particularly within the NOC, which has taken greater control over its budget and Libyan oil revenues under Bengdara. Libya's fuel subsidy and crude for fuel swaps have opened new avenues for corruption, with Libyan fuel even **smuggled into Sudan**, as reported by S&P Global.

NOC is targeting 2 million b/d of production within five years, buoyed by a year of stable production in 2023 and the recent lifting of force majeure by IOCs. Libya holds Africa's largest proven oil reserves and significant gas deposits. Its light, sweet Sharara and Es Sider export crudes yield a large proportion of middle distillates and gasoline, making them popular with refiners in the Mediterranean and Northwest Europe. With insufficient refining capacity, Libya imported 184,000 b/d of refined products in the first quarter, according to **S&P Global Commodities at Sea** data.

Political chaos

Friction in the oil sector comes amid parallel political processes that have sought to unify its rival governments. A UN-backed process is hoping to steer Libya toward long-delayed elections, while the Arab League hosted talks between the eastern House of Representatives speaker Aguila Saleh and western Libyan officials in Cairo March 10. The parties agreed to establish a single government body to oversee the electoral process.

Libyan oil and gas infrastructure



Source: S&P Global Commodity Insights

Meanwhile, analysts point to a reorientation of Libyan politics around Dbeiba, Haftar and Bengdara, which could usher in a period of economic, political and oil sector stability, but would fall short of a reunification.

Still, the two-week closure by protesters of the 300,000 b/d Sharara oil field in January showed the ability of political actors to hinder crude output. Aoun's suspension, which Saleh called unconstitutional and politically motivated, could also result in protests.

"The Libyan General Syndicate of Oil has expressed support for Aoun – and has in the past threatened disruptive protests and strikes at Libya's oil and gas facilities," said Kinnear.

Meanwhile, Kabir, who like Aoun expressed concern at the growing NOC authority, has overseen the devaluation of the Libyan dinar, reducing revenue flows to NOC and straining his tense relationship with Bengdara.

As a result, disagreements between key parties risk derailing Libya's slow oil sector revival just as IOCs are reengaging with the conflict-plagued country.

"[Aoun's suspension] speaks to the ongoing vulnerability of Libya's oil and gas sector to the country's endemic political instability," said Kinnear. "Until there is, at a minimum, a re-unification of Libya's competing governments, political uncertainty will continue to complicate the operating landscape for IOCs."

Oil demand growing at a slower pace as post-Covid rebound runs its course

Toril Bosoni, Head of Oil Industry and Markets Division

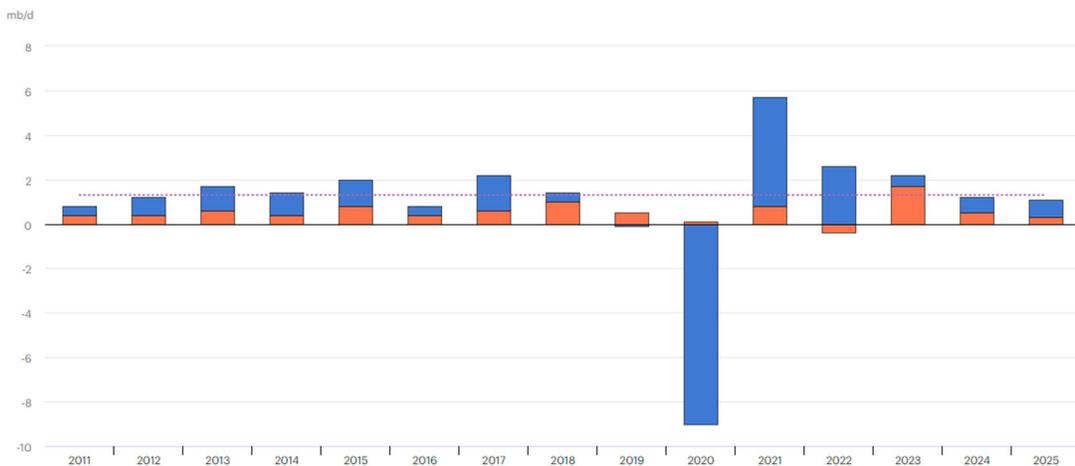
Ciarán Healy, Oil Market Analyst Commentary — 12 April 2024

Global oil demand growth returns to historical trend

Global oil demand growth is currently in the midst of a slowdown and is expected to ease to 1.2 million barrels a day (mb/d) this year and 1.1 mb/d in 2025 – bringing a peak in consumption into view this decade. This is primarily the result of a normalisation of growth following the disruptions of 2020-2023, when oil markets were shaken by the Covid-19 pandemic and then the global energy crisis sparked by Russia's invasion of Ukraine.

Despite the deceleration that is forecast, this level of oil demand growth remains largely in line with the pre-Covid trend, even amid muted expectations for global economic growth this year and increased deployment of clean energy technologies.

Annual oil demand growth, 2011-2025



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● China demand growth ● Non-China demand growth ● Average 2011-2019

In both 2022 and 2023, global oil consumption rose by more than 2 mb/d as economies continued their recoveries from the Covid-19 shock and saw spikes in personal mobility, along with exceptional releases of pent-up demand for travel and tourism. While there are reasonable grounds for uncertainty about how complete the global recovery is, both oil demand data and mobility indicators suggest that its pace has slowed sharply and that the period of demand growth above the historical average is coming to an end.

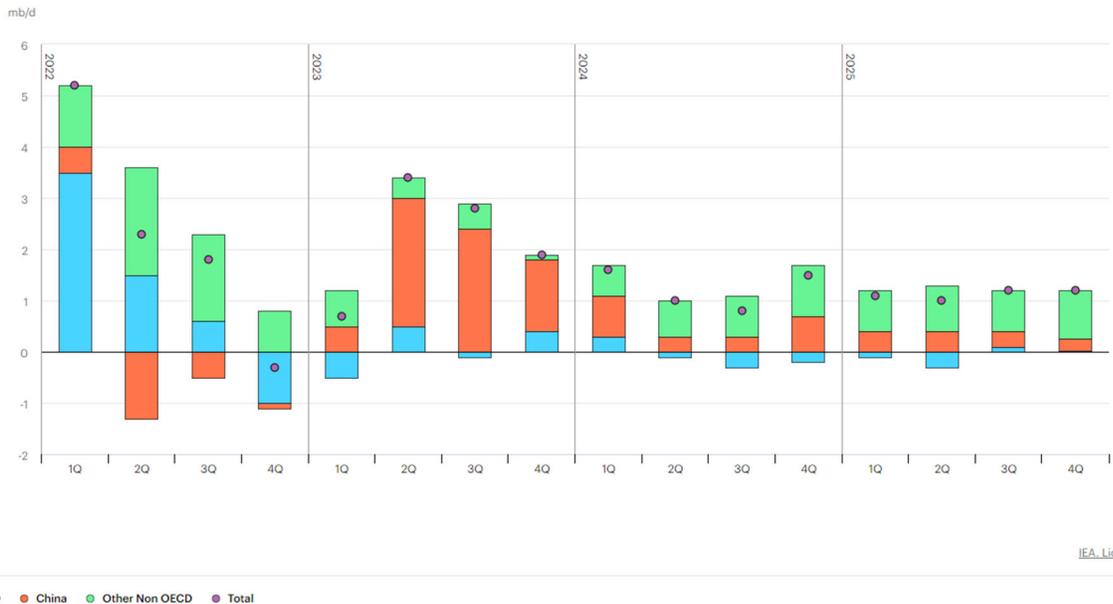
China's post-Covid rebound is running out of steam

Without a steep fall in oil prices, a sudden resurgence in the post-pandemic recovery or an acceleration in economic activity, it is unlikely that global oil demand growth will approach the

levels seen in 2022 and 2023. Indeed, the pace of gains slowed substantially in the second half of 2023, and the latest data shows that the trend continued at the beginning of 2024.

Oil use increased by an estimated 1.6 mb/d year-on-year in the first quarter of 2024, down from 1.9 mb/d in the fourth quarter of 2023 and more than 3 mb/d during the middle of last year. Given that China was the last major economy to lift public health restrictions related to the pandemic and saw an abrupt economic recovery in mid-2023, this easing of year-on-year demand growth is likely to continue during 2024.

Quarterly oil demand growth, 2022-2025



Indeed, because the timing of Chinese lockdowns was quite different from the rest of the world, global oil demand growth in 2023 was extremely dependent on the country. With the explosive phase of the pandemic rebound largely complete elsewhere, China contributed to more than three-quarters of the global increase in demand (1.7 mb/d out of 2.3 mb/d). The world's second largest economy will remain the mainstay of global expansion this year. However, gains are projected to fall to 540 kb/d. In the absence of a dramatic acceleration in other countries, this will result in a wider global slowdown.

In the decade up to 2023, almost two-thirds of all oil demand growth came from China. Over this period, the nation's GDP grew at an annual average rate of 6%. An expected slackening in economic growth, to a rate of between 4% and 5% in 2024 and 2025 – combined with the rapid domestic uptake of oil-substituting technologies such as electric vehicles (EVs) and high-speed rail – means that in 2024 and 2025, only a little over one-third of oil demand growth is expected to come from China.

Demand for aviation fuel is easing as air traffic stabilises

The other major driver of rising oil consumption in 2022 and 2023 was a steady recovery in air traffic as pandemic-era travel restrictions were relaxed. Demand for jet fuel/kerosene, primarily

from the aviation sector, grew by more than 1 mb/d in both years and contributed almost half of the increase in global oil demand.

However, gains have moderated since the first half of 2023, according to [Airportia](#) data. As a result, the increase in demand for jet fuel/kerosene in 2024 is forecast to be far smaller, at 230 kb/d. In addition to a stabilisation in air traffic, there have also been large gains in the fuel efficiency of aircraft since 2019. This has meant that, despite roughly equivalent activity, fuel demand from the sector was more than 6% lower in the second half of 2023 than in the same period in 2019. This trend is set to continue as more new planes with vastly improved fuel economy enter the global fleet, helping to restrain the impact of increasing demand for air travel on oil use during the medium term.

Demand for jet fuel/kerosene lags global miles flown as aircraft fuel efficiency improves



Global consumption of oil is set to peak, but its centrality remains

While we expect growth in oil consumption in 2024 (1.2 mb/d) and 2025 (1.1 mb/d) to remain robust by historical standards, structural factors will lead to a gradual easing of oil demand growth over the rest of this decade. Continued rapid gains in the market share of EVs, particularly in China; steady improvements in vehicle fuel economies; and, notably, efforts by Middle Eastern economies, especially Saudi Arabia, to reduce the quantity of oil used in power generation are together expected to generate an overall peak in demand by the turn of the decade.

Oil remains extremely important to the global economy, and across some of its key applications, alternatives still cannot easily be substituted. In the absence of additional energy and climate policies and an increased investment push into clean energy technologies, the decline in global oil demand following the peak will not be a steep one, leaving demand close to current levels for some time. Nevertheless, cooling Chinese demand growth and considerable progress on the deployment of clean energy transition technologies mean that the oil market is set to enter a new and consequential period of transformation.

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Opinion Oil & Gas industry

Peak fossil fuel demand will happen this decade

But the decline in oil, gas and coal will not be steep enough to limit global warming to 1.5C

Fatih Birol YESTERDAY

The writer is executive director of the International Energy Agency

There's a taboo in the traditional energy sector against suggesting that demand for the three fossil fuels — oil, gas and coal — could go into permanent decline. Despite recurring talk of peak oil and peak coal over the years, both fuels are hitting all-time highs, making it easier to push back against any assertions that they could soon be on the wane.

But according to new projections from the International Energy Agency, this age of seemingly relentless growth is set to come to an end this decade, bringing with it significant implications for the global energy sector and the fight against climate change.

Every year, the IEA's World Energy Outlook maps out potential pathways the global energy system could take in the coming decades to help inform decision-making. This year's report, to be released next month, shows the world is on the cusp of a historic turning point. Based only on today's policy settings by governments worldwide — even without any new climate policies — demand for each of the three fossil fuels is set to hit a peak in the coming years. This is the first time that a peak in demand is visible for each fuel this decade — earlier than many people anticipated.

These remarkable shifts will bring forward the peak in global greenhouse gas emissions. They are primarily driven by the spectacular growth of clean energy technologies such as solar panels and electric vehicles, the structural shifts in China's economy and the ramifications of the global energy crisis.

Global demand for coal has remained stubbornly high for the past decade. But it is now set to peak in the next few years, with big investments drying up outside China as solar and wind dominate the expansion of electricity systems. Even in China, the world's largest coal consumer, the impressive growth of renewables and nuclear power, alongside a slower economy, point to a decrease in coal use soon.

Some pundits suggested global oil demand might have peaked after it plunged during the pandemic. The IEA was wary of such premature calls, but our latest projections show that the growth of electric vehicles around the world, especially in China, means oil demand is on course to peak before 2030. Electric buses and two- and three-wheelers are also growing strongly, especially in emerging economies, further eating into demand.

The "Golden Age of Gas", which we called in 2011, is nearing an end, with demand in advanced economies set to fall away later this decade. This is the result of renewables increasingly outmatching gas for producing electricity, the rise of heat pumps and Europe's accelerated shift away from gas following Russia's invasion of Ukraine.

Peaks for the three fossil fuels are a welcome sight, showing that the shift to cleaner and more secure energy systems is speeding up and that efforts to avoid the worst effects of climate change are making headway. But there are some important issues to bear in mind.

For starters, the projected declines in demand we see based on today's policy settings are nowhere near steep enough to put the world on a path to limiting global warming to 1.5C. That will require significantly stronger and faster policy action by governments.

Demand for the different fuels is set to vary considerably among regions. The drop in advanced economies will be partially offset by continued growth in some emerging and developing economies, particularly for gas. But the global trends are clear: low-emissions electricity and fuels, as well as energy efficiency improvements, are increasingly taking care of the world's rising energy needs.

The declines in demand also won't be linear. Although fossil fuels are set to hit their peaks this decade in structural terms, there can still be spikes, dips and plateaus on the way down. For example, heatwaves and droughts can cause temporary jumps in coal demand by pushing up electricity use while choking hydropower output.

And even as demand for fossil fuels falls, energy security challenges will remain as suppliers adjust to the changes. The peaks in demand we see based on today's policy settings don't remove the need for investment in oil and gas supply, as the natural declines from existing fields can be very steep. At the same time, they undercut the calls from some quarters to increase spending and underline the economic and financial risks of major new oil and gas projects — on top of their glaring risks for the climate.

With today's policies already bringing the fossil fuel peaks into sight, decision makers need to be nimble. The clean energy transition may well accelerate even further through stronger climate policies. But the energy world is changing fast and for the better.

Executive summary

Electric car sales break new records with momentum expected to continue through 2023

Electric car markets are seeing exponential growth as sales exceeded 10 million in 2022. A total of 14% of all new cars sold were electric in 2022, up from around 9% in 2021 and less than 5% in 2020. Three markets dominated global sales. China was the frontrunner once again, accounting for around 60% of global electric car sales. More than half of the electric cars on roads worldwide are now in China and the country has already exceeded its 2025 target for new energy vehicle sales. In Europe, the second largest market, electric car sales increased by over 15% in 2022, meaning that more than one in every five cars sold was electric. Electric car sales in the United States – the third largest market – increased 55% in 2022, reaching a sales share of 8%.

Electric car sales are expected to continue strongly through 2023. Over 2.3 million electric cars were sold in the first quarter, about 25% more than in the same period last year. We currently expect to see 14 million in sales by the end of 2023, representing a 35% year-on-year increase with new purchases accelerating in the second half of this year. As a result, electric cars could account for 18% of total car sales across the full calendar year. National policies and incentives will help bolster sales, while a return to the exceptionally high oil prices seen last year could further motivate prospective buyers.

There are promising signs for emerging electric vehicle (EV) markets, albeit from a small base. Electric car sales are generally low outside the major markets, but 2022 was a growth year in India, Thailand and Indonesia. Collectively, sales of electric cars in these countries more than tripled compared to 2021, reaching 80 000. For Thailand, the share of electric cars in total sales came in at slightly over 3% in 2022, while both India and Indonesia averaged around 1.5% last year. In India, EV and component manufacturing is ramping up, supported by the government's USD 3.2 billion incentive programme that has attracted investments totalling USD 8.3 billion. Thailand and Indonesia are also strengthening their policy support schemes, potentially providing valuable experience for other emerging market economies seeking to foster EV adoption.

Landmark EV policies are driving the outlook for EVs closer to climate ambitions

Market trends and policy efforts in major car markets are supporting a bright outlook for EV sales. Under the IEA Stated Policies Scenario (STEPS), the global outlook for the share of electric car sales based on existing policies and firm objectives has increased to 35% in 2030, up from less than 25% in the previous outlook. In the projections, China retains its position as the largest market for electric cars with 40% of total sales by 2030 in the STEPS. The United States doubles its market share to 20% by the end of the decade as recent policy announcements drive demand, while Europe maintains its current 25% share.

Projected demand for electric cars in major car markets will have profound implications on energy markets and climate goals in the current policy environment. Based on existing policies, oil demand from road transport is projected to peak around 2025 in the STEPS, with the amount of oil displaced by electric vehicles exceeding 5 million barrels per day in 2030. In the STEPS, emissions of around 700 Mt CO₂-equivalents are avoided by the use of electric cars in 2030.

The European Union and the United States have passed legislation to match their electrification ambitions. The European Union adopted new CO₂ standards for cars and vans that are aligned with the 2030 goals set out in the Fit for 55 package. In the United States, the Inflation Reduction Act (IRA), combined with adoption of California's Advanced Clean Cars II rule by a number of states, could deliver a 50% market share for electric cars in 2030, in line with the national target. The implementation of the recently proposed emissions standards from the US Environmental Protection Agency is set to further increase this share.

Battery manufacturing continues to expand, encouraged by the outlook for EVs. As of March 2023, announcements on battery manufacturing capacity delivered by 2030 are more than sufficient to meet the demand implied by government pledges and would even be able to cover the demand for electric vehicles in the Net Zero Emissions by 2050 Scenario. It is therefore well possible that higher shares of sales are achievable for electric cars than those anticipated on the basis of current government policy and national targets.

As spending and competition increase, a growing number of more affordable models come to market

Global spending on electric cars exceeded USD 425 billion in 2022, up 50% relative to 2021. Only 10% of the spending can be attributed to government support, the remainder was from consumers. Investors have also maintained confidence in EVs, with the stocks of EV-related companies consistently

outperforming traditional carmakers since 2019. Venture capital investments in start-up firms developing EV and battery technologies have also boomed, reaching nearly USD 2.1 billion in 2022, up 30% relative to 2021, with investments increasing in batteries and critical minerals.

SUVs and large cars dominate available electric car options in 2022. They account for 60% of available BEV options in China and Europe and an even greater share in the United States, similar to the trend towards SUVs seen in internal combustion engine (ICE) car markets. In 2022, ICE SUVs [emitted](#) over 1 Gt CO₂, far greater than the 80 Mt net emissions reductions from the electric vehicle fleet that year. Battery electric SUVs often have batteries that are two- to three-times larger than small cars, requiring more critical minerals. However, last year electric SUVs resulted in the displacement of over 150 000 barrels of oil consumption per day and avoided the associated tailpipe emissions that would have been generated through burning the fuel in combustion engines.

The electric car market is increasingly competitive. A growing number of new entrants, primarily from China but also from other emerging markets, are offering more affordable models. Major incumbent carmakers are increasing ambition as well, especially in Europe, and 2022-2023 saw another series of important EV announcements: fully electric fleets, cheaper cars, greater investment, and vertical integration with battery-making and critical minerals.

Consumers can choose from an increasing number of options for electric cars. The number of available electric car models reached 500 in 2022, more than double the options available in 2018. However, outside of China, there is a need for original equipment manufacturers (OEMs) to offer affordable, competitively priced options in order to enable mass adoption of EVs. Today's level of available electric car models is still significantly lower than the number of ICE options on the market, but the number of ICE models available has been steadily decreasing since its peak in the mid-2010s.

Focus expands to electrification of more vehicle segments as electric cars surge ahead

Electrification of road transport goes beyond cars. Two or three-wheelers are the most electrified market segment today; in emerging markets and developing economies, they outnumber cars. Over half of India's three-wheeler registrations in 2022 were electric, demonstrating their growing popularity due to government incentives and lower lifecycle costs compared with conventional models, especially in the context of higher fuel prices. In many developing economies, two/three-wheelers offer an affordable way to get access to mobility, meaning their electrification is important to support sustainable development.

The commercial vehicle stock is also seeing increasing electrification. Electric light commercial vehicle (LCV) sales worldwide increased by more than 90% in 2022 to more than 310 000 vehicles, even as overall LCV sales declined by nearly 15%. In 2022, nearly 66 000 electric buses and 60 000 medium- and heavy-duty trucks were sold worldwide, representing about 4.5% of all bus sales and 1.2% of truck sales. Where governments have committed to reduce emissions from public transport, such as in dense urban areas, electric bus sales reached even higher shares; in Finland, for example, electric bus sales accounted for over 65% in 2022.

Ambition with respect to electrifying heavy-duty vehicles is growing. In 2022, around 220 electric heavy-duty vehicle models entered the market, bringing the total to over 800 models offered by well over 100 OEMs. A total of 27 governments have [pledged to achieve 100% ZEV bus and truck sales by 2040](#) and both the United States and European Union have also proposed stronger emissions standards for heavy-duty vehicles.

EV supply chains and batteries gain greater prominence in policy-making

The increase in demand for electric vehicles is driving demand for batteries and related critical minerals. Automotive lithium-ion (Li-ion) battery demand increased by about 65% to 550 GWh in 2022, from about 330 GWh in 2021, primarily as a result of growth in electric passenger car sales. In 2022, about 60% of lithium, 30% of cobalt and 10% of nickel demand was for EV batteries. Only five years prior, these shares were around 15%, 10% and 2%, respectively. Reducing the need for critical materials will be important for supply chain sustainability, resilience and security, especially given recent price developments for battery material.

New alternatives to conventional lithium-ion are on the rise. The share of lithium-iron-phosphate (LFP) chemistries reached its highest point ever, driven primarily by China: around 95% of the LFP batteries for electric LDVs went into vehicles produced in China. Supply chains for (lithium-free) sodium-ion batteries are also being established, with over 100 GWh of manufacturing capacity either currently operating or announced, almost all in China.

The EV supply chain is expanding, but manufacturing remains highly concentrated in certain regions, with China being the main player in battery and EV component trade. In 2022, 35% of exported electric cars came from China, compared with 25% in 2021. Europe is China's largest trade partner for both electric cars and their batteries. In 2022, the share of electric cars manufactured in China and sold in the European market increased to 16%, up from about 11% in 2021.

EV supply chains are increasingly at the forefront of EV-related policy-making to build resilience through diversification. The Net Zero Industry Act, proposed by the European Union in March 2023, aims for nearly 90% of the European Union’s annual battery demand to be met by EU battery manufacturers, with a manufacturing capacity of at least 550 GWh in 2030. Similarly, India aims to boost domestic manufacturing of electric vehicles and batteries through Production Linked Incentive (PLI) schemes. In the United States, the Inflation Reduction Act emphasises the strengthening of domestic supply chains for EVs, EV batteries and battery minerals, laid out in the criteria to qualify for clean vehicle tax credits. As a result, between August 2022 and March 2023, major EV and battery makers announced cumulative post-IRA investments of at least USD 52 billion in North American EV supply chains – of which 50% is for battery manufacturing, and about 20% each for battery components and EV manufacturing.

Trends and developments in EV markets

Electric light-duty vehicles

Electric car sales continue to increase, led by China

Electric car sales¹ saw another record year in 2022, despite supply chain disruptions, macro-economic and geopolitical uncertainty, and high commodity and energy prices. The growth in electric car sales took place in the context of globally contracting car markets: total car sales in 2022 dipped by 3% relative to 2021. Electric car sales – including battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs) – exceeded 10 million last year, up 55% relative to 2021.² This figure – 10 million EV sales worldwide – exceeds the total number of cars sold across the entire European Union (about 9.5 million vehicles) and is nearly half of the total number of cars sold in China in 2022. In the course of just five years, from 2017 to 2022, EV sales jumped from around 1 million to more than 10 million. It previously took five years from 2012 to 2017 for EV sales to grow from 100 000 to 1 million, underscoring the exponential nature of EV sales growth. The share of electric cars in total car sales jumped from 9% in 2021 to 14% in 2022, more than 10 times their share in 2017.

Over 26 million electric cars were on the road in 2022, up 60% relative to 2021 and more than 5 times the stock in 2018

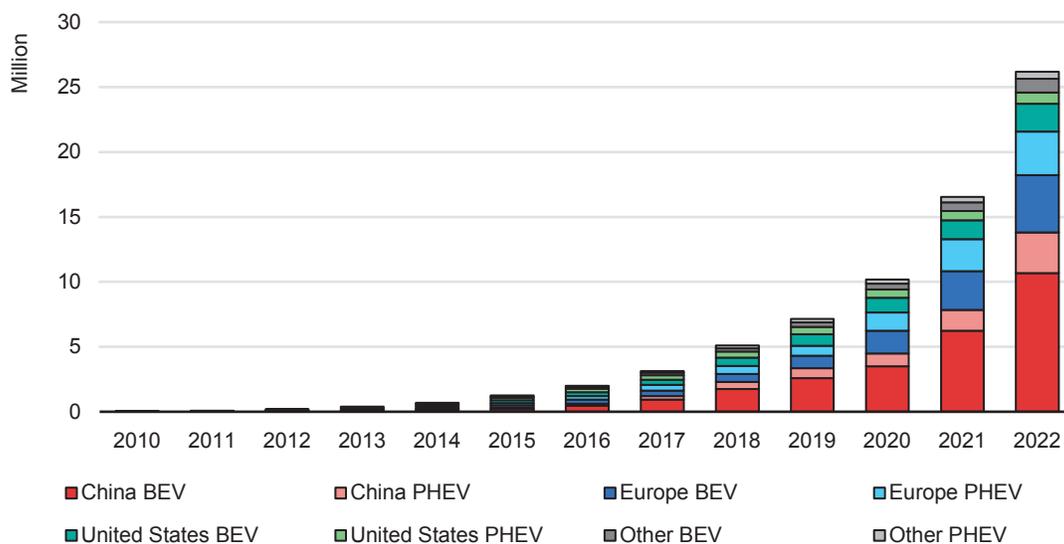
Increasing sales pushed the total number of electric cars on the world's roads to 26 million, up 60% relative to 2021, with BEVs accounting for over 70% of total annual growth, as in previous years. As a result, about 70% of the global stock of electric cars in 2022 were BEVs. The increase in sales from 2021 to 2022 was just as high as from 2020 to 2021 in absolute terms – up 3.5 million – but relative growth was lower (sales doubled from 2020 to 2021). The exceptional boom in 2021 may be explained by EV markets catching up in the wake of the coronavirus

¹ The term sales, as used in this report, represents an estimate of the number of new vehicles hitting the roads. Where possible, data on new vehicle registrations is used. In some cases, however, only data on retail sales (such as sales from a dealership) are available. See Box 1.2 for further details. The term car is used to represent passenger light-duty vehicles and includes cars of different sizes, sports utility-vehicles and light trucks.

² Unless otherwise specified, the term electric vehicle is used to refer to both battery electric and plug-in hybrid electric vehicles but does not include fuel cell electric vehicles. For a brief description of the trends related to fuel cell electric vehicles, see Box 1.3.

(Covid-19) pandemic. Seen in comparison to recent years, the annual growth rate for electric car sales in 2022 was similar to the average rate over 2015-2018, and the annual growth rate for the global stock of electric cars in 2022 was similar to that of 2021 and over the 2015-2018 period, showing a robust recovery of EV market expansion to pre-pandemic pace.

Figure 1.1 Global electric car stock in selected regions, 2010-2022



IEA. CC BY 4.0.

Notes: BEV = battery electric vehicle; PHEV = plug-in hybrid electric vehicle. Electric car stock in this figure refers to passenger light-duty vehicles. In “Europe”, European Union countries, Norway, and the United Kingdom account for over 95% of the EV stock in 2022; the total also includes Iceland, Israel, Switzerland and Türkiye. Main markets in “Other” include Australia, Brazil, Canada, Chile, Mexico, India, Indonesia, Japan, Malaysia, New Zealand, South Africa, Korea and Thailand.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Source: IEA analysis based on country submissions, ACEA, EAFO, EV Volumes and Marklines.

Over 26 million electric cars were on the road in 2022, up 60% relative to 2021 and more than five times the stock in 2018.

Half of the world’s electric cars are in China

The increase in electric car sales varied across regions and powertrains, but remains dominated by the People’s Republic of China (hereafter “China”). In 2022, BEV sales in China increased by 60% relative to 2021 to reach 4.4 million, and PHEV sales nearly tripled to 1.5 million. The faster growth in PHEV sales relative to BEVs warrants further examination in the coming years, as PHEV sales still remain lower overall and could be catching up on the post-Covid-19 boom only now; BEV sales in China tripled from 2020 to 2021 after moderate growth over 2018-2020. Electric car sales increased even while total car sales dipped by 3% in 2022 relative to 2021.

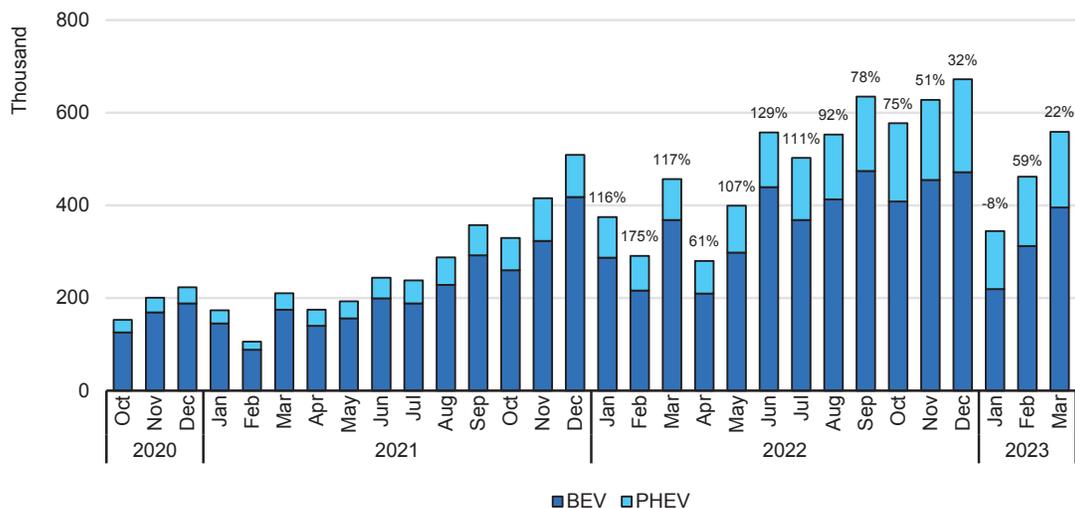
China accounted for nearly 60% of all new electric car registrations globally. For the first time in 2022, China accounted for more than 50% of all the electric cars on the world's roads, a total of 13.8 million. This strong growth results from more than a decade of sustained policy support for early adopters, including an [extension of purchase incentives](#) initially planned for phase-out in 2020 to the end of 2022 due to Covid-19, in addition to non-financial support such as rapid roll-out of charging infrastructure and stringent registration policies for non-electric cars.

In 2022, the share of electric cars in total domestic car sales reached 29% in China, up from 16% in 2021 and under 6% between 2018 and 2020. China has therefore [achieved](#) its 2025 national target of a 20% sales share for so-called new energy vehicles (NEVs)³ well in advance. All indicators point to further growth: although the national NEV sales target is yet to be updated by China's Ministry of Industry and Information Technology (MIIT), which is responsible for the automotive industry, the objective of greater road transport electrification is re-affirmed in multiple strategy documents. China aims to reach a [50%](#) sales share by 2030 in so-called "key air pollution control regions", and [40% across the country](#) by 2030 to support the national action plan for carbon peaking. If recent market trends continue, China's 2030 targets may also be reached ahead of time. Provincial governments are also supporting adoption of NEVs, with 18 provinces to date having set NEV targets.

Support at the regional level in China has also helped to advance some of the world's largest EV makers. Shenzhen-based BYD has supplied most of the city's electric buses and taxis, and its leading position is also reflected in Shenzhen's ambition of reaching a [60%](#) NEV sales share by 2025. Guangzhou, which has a 50% NEV sales share by 2025 target, [facilitated](#) the expansion of Xpeng Motors to become one of the national EV frontrunners.

³ NEVs (China) include BEVs, PHEVs and fuel cell electric vehicles.

Figure 1.2 Monthly new electric car registrations in China, 2020-2023



IEA. CC BY 4.0.

Note: BEV = battery electric vehicle; PHEV = plug-in hybrid electric vehicle. Percentage labels in 2022-2023 refer to year-on-year growth rates relative to the same month in the previous year.

Source: IEA analysis based on EV Volumes.

Electric car sales in China have been steadily increasing since 2020, but future trends will warrant further examination given that purchase incentives ended in 2022.

Whether China’s electric car sales share will remain significantly above the 20% target in 2023 remains uncertain, as sales may have been especially high in anticipation of incentives being phased out at the end of 2022. Sales in January 2023 [plunged](#), and while this is in part due to the timing of the Chinese New Year, they were nearly 10% lower than sales in January 2022. However, electric car sales caught up in February and March 2023, standing nearly 60% above sales in February 2022 and more than 25% above sales in March 2022, thereby bringing sales in the first quarter of 2023 more than 20% higher than in the first quarter of 2022.

Growth remained steady in Europe despite disruptions

In Europe,⁴ electric car sales increased by more than 15% in 2022 relative to 2021 to reach 2.7 million. Sales grew more quickly in previous years: annual growth stood at more than 65% in 2021 and averaged 40% over 2017-2019. In 2022, BEV sales rose by 30% relative to 2021 (compared to 65% growth in 2021 relative to 2020) while PHEV sales dipped by around 3%. Europe accounted for 10% of global growth in new electric car sales. Despite slower growth in 2022, electric car

⁴ Europe includes European Union countries, Iceland, Israel, Norway, Switzerland, Türkiye, and the United Kingdom.

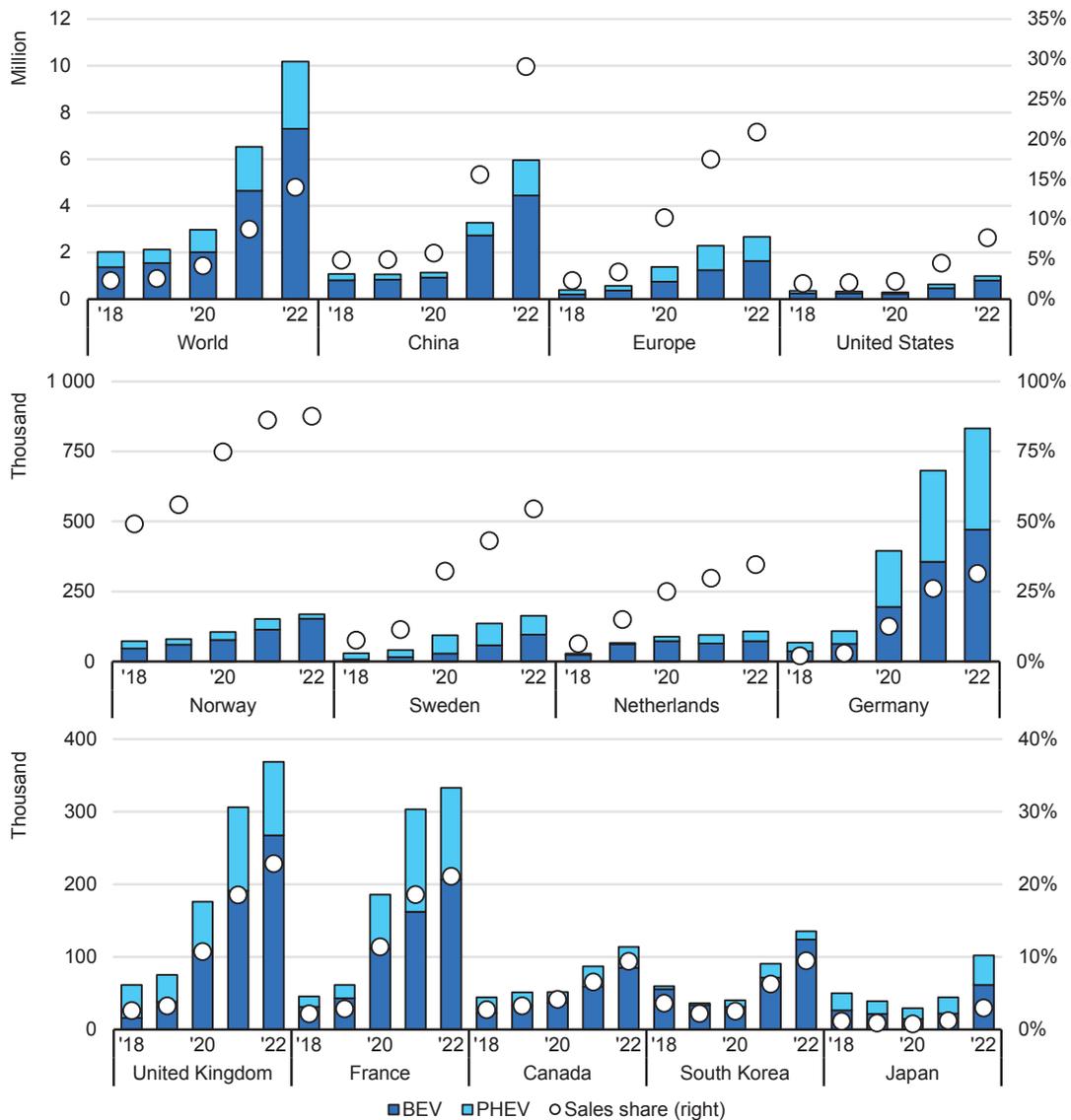
sales are still increasing in Europe in the context of continued contraction in car markets: total car sales in Europe dipped by 3% in 2022 relative to 2021.

The slowdown seen in Europe relative to previous years was, in part, a reflection of the exceptional growth in electric car sales that took place in 2020 and 2021 in the European Union, as manufacturers quickly adjusted corporate strategy to comply with the CO₂ emission [standards](#) passed in 2019. These standards covered the 2020-2024 period, with EU-wide emission targets becoming stricter only from 2025 and 2030 onwards.

High energy prices in 2022 had a mixed impact on the competitiveness of EVs relative to internal combustion engine (ICE) cars. Gasoline and diesel prices for ICE cars spiked, but residential electricity tariffs (with relevance for charging) also increased in some cases. Higher electricity and gas prices also increased manufacturing costs for both ICE and EV cars, with some carmakers arguing that high energy prices could [restrict](#) future investment for new battery manufacturing capacity.

Europe remained the world's second largest market for electric cars after China in 2022, accounting for 25% of all electric car sales and 30% of the global stock. The sales share of electric cars reached 21%, up from 18% in 2021, 10% in 2020 and under 3% prior to 2019. European countries continued to rank highly for the sales share of electric cars, led by Norway at 88%, Sweden at 54%, the Netherlands at 35%, Germany at 31%, the United Kingdom at 23% and France at 21% in 2022. In volume terms, Germany is the biggest market in Europe with sales of 830 000 in 2022, followed by the United Kingdom with 370 000 and France with 330 000. Sales also exceeded 80 000 in Spain. The share of electric cars in total car sales has increased tenfold in Germany since before the Covid-19 pandemic, which can in part be explained by increasing support post-pandemic, such as purchase incentives through the [Umweltbonus](#), and a frontloading of sales in 2022 in [expectation](#) of subsidies being further reduced from 2023 onwards. However, in Italy, electric car sales decreased from 140 000 in 2021 to 115 000 in 2022, and they also decreased or stagnated in Austria, Denmark and Finland.

Figure 1.3 Electric car registrations and sales share in selected countries and regions, 2018-2022



IEA. CC BY 4.0.

Notes: BEV = battery electric vehicle; PHEV = plug-in hybrid electric vehicle. Passenger light-duty vehicles only. Major markets at the top. Other countries (middle, bottom) ordered by the share of electric car sales in total car sales. Y-axes do not have the same scale to improve readability.

Source: IEA analysis based on country submissions, ACEA, EAFO, EV Volumes and Marklines.

Electric car sales exceeded 10 million in 2022, up 55% relative to 2021. Sales in China increased by 80% and accounted for 60% of global growth. Growth in Europe remained high (up 15%) and accelerated in the United States (up 55%).

Sales are expected to continue increasing in Europe, especially following [recent policy](#) developments under the 'Fit for 55' package. New rules set stricter CO₂ emission standards for 2030-2034 and target a 100% reduction in CO₂ emissions for new cars and vans from 2035 relative to 2021 levels. In the nearer term, an

incentive mechanism operating between 2025 and 2029 will reward manufacturers that achieve a 25% car sales share of zero- and low-emission cars (17% for vans). In the first two months of 2023, battery electric car sales were already [up](#) by over 30% year-on-year, while overall car sales increased by just over 10% year-on-year.

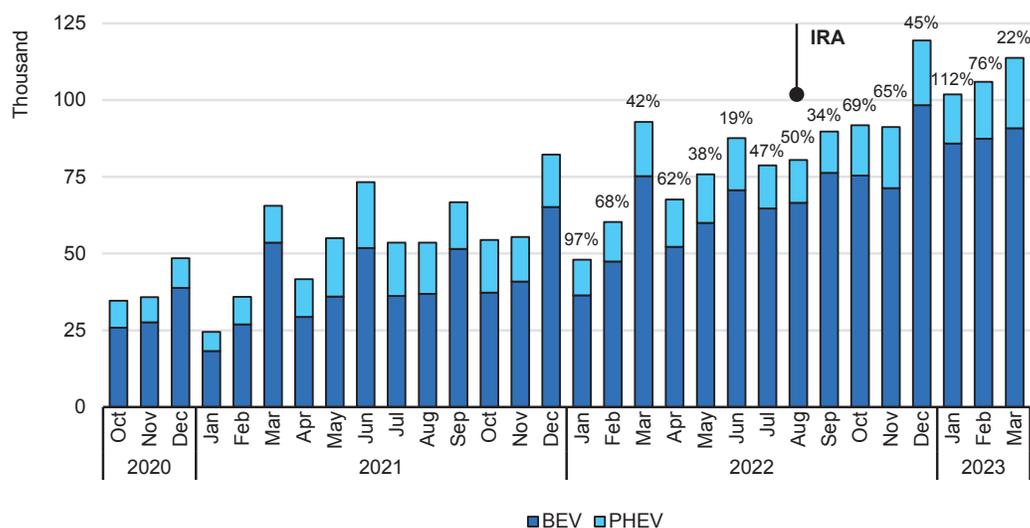
The United States confirms return to growth

In the United States, electric car sales increased 55% in 2022 relative to 2021, led by BEVs. Sales of BEVs increased by 70%, reaching nearly 800 000 and confirming a second consecutive year of strong growth after the 2019-2020 dip. Sales of PHEVs also grew, albeit by only 15%. The increase in electric car sales was particularly high in the United States, considering that total car sales dropped by 8% in 2022 relative to 2021, a much sharper decrease than the global average (minus 3%). Overall, the United States accounted for 10% of the global growth in sales. The total stock of electric cars reached 3 million, up 40% relative to 2021 and accounting for 10% of the global total. The share of electric cars in total car sales reached nearly 8%, up from just above 5% in 2021 and around 2% between 2018 and 2020.

A number of factors are helping to increase sales in the United States. A greater number of available models, beyond those offered by Tesla, the historic leader, helped to close the [supply](#) gap. Given that major companies like Tesla and General Motors had already reached their subsidy cap under US support in previous years,⁵ new models from other companies being available means that more consumers can benefit from purchase incentives, which can be as high as USD 7 500. Awareness is increasing as government and companies lean towards electrification: in 2022, a quarter of Americans expect that their next car will be electric, [according](#) to the American Automobile Association. Although charging infrastructure and driving range have improved over the years, they remain major [concerns](#) for US drivers given the typically long travel distances and lower popularity and limited availability of alternatives such as rail. However, in 2021 the Bipartisan Infrastructure Law strengthened support for EV charging, allocating USD 5 billion in total funding over the 2022-2026 period through the National Electric Vehicle Infrastructure Formula Program, as well as USD 2.5 billion in competitive grants over the same period through the Charging and Fueling Infrastructure Discretionary Grant Program.

⁵ Manufacturer caps were [still in place](#) for sales taking place in 2022, with models by carmakers having sold over 200 000 EVs losing eligibility for the purchase incentive, even if they were manufactured in North America following [requirements](#) under the IRA. Caps were removed starting from 2023.

Figure 1.4 Monthly new electric car registrations in the United States, 2020-2023



IEA. CC BY 4.0.

Notes: BEV = battery electric vehicle; PHEV = plug-in hybrid electric vehicle; "IRA" refers to the Inflation Reduction Act. Percentage labels in 2022-2023 refer to year-on-year growth rates relative to the same month in the previous year. Source: IEA analysis based on EV Volumes.

Monthly sales of electric cars have been steadily increasing in the United States, with further growth expected in 2023 as a result of strengthened policy support.

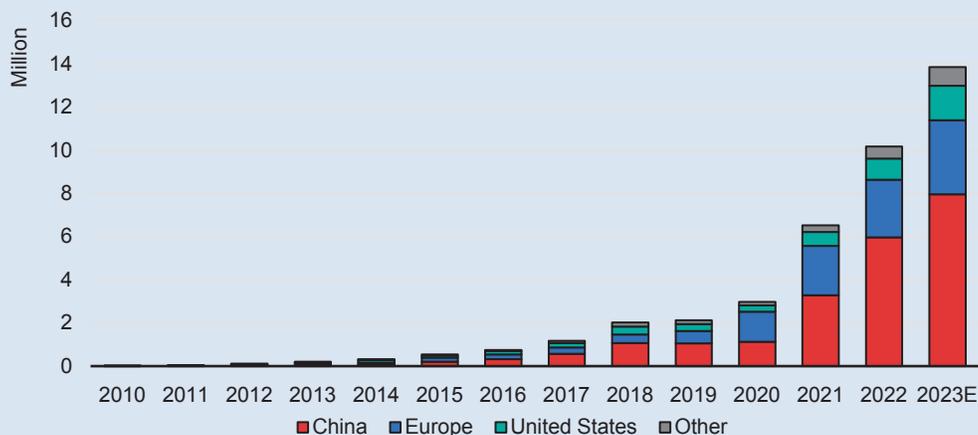
The acceleration in sales growth could continue in 2023 and beyond thanks to recent new [policy](#) support (see [Prospects for electric vehicle deployment](#)). The Inflation Reduction Act (IRA) has triggered a [rush by global electromobility companies](#) to expand US manufacturing operations. Between August 2022 and March 2023, major EV and battery makers announced cumulative post-IRA investments of [USD 52 billion](#) in North American EV supply chains, of which 50% is for battery manufacturing, and about 20% each for battery components and EV manufacturing. Overall, company announcements including tentative commitments for US investments for future battery and EV production add up to around [USD 75-108 billion](#). As an example, Tesla plans to [relocate](#) its Berlin-based lithium-ion battery gigafactory to Texas, where it will work in [partnership](#) with China's CATL, and to manufacture next-generation EVs [in Mexico](#). Ford also announced a [deal with CATL](#) for a battery plant in Michigan, and [plans](#) to increase electric car manufacturing sixfold by the end of 2023 relative to 2022, at 600 000 vehicles per year, scaling up to 2 million by 2026. BMW is seeking to [expand](#) EV manufacturing at its plant in South Carolina following the IRA. Volkswagen chose Canada for its [first battery plant outside Europe](#), which will begin operations in 2027, and is also investing USD 2 billion in its plant in South Carolina. While these investments can be expected to lead to high growth in the years to come, the impact may only fully be seen from 2024 onwards as plants come online.

In the immediate term, the IRA has [constrained](#) eligibility requirements for purchase incentives, as vehicles need to be produced in North America in order to qualify for a subsidy. However, electric car sales have remained strong since August 2022 (Figure 1.4), and the first months of 2023 have been no exception: In the first quarter of 2023, electric car sales increased 60% compared to the same period in 2022, potentially boosted by the January 2023 removal of the subsidy caps for manufacturers, which means models by market leaders can now benefit from purchase incentives. In the longer-term, the list of models eligible for subsidies is expected to expand.

Box 1.1 The 2023 outlook for electric cars is bright

Early indications from first quarter sales of 2023 point to an upbeat market, supported by cost declines as well as strengthened policy support in key markets such as the United States. Globally, our current estimate is therefore for nearly 14 million electric cars to be sold in 2023, building on the more than 2.3 million already sold in the first quarter of the year. This represents a 35% increase in electric car sales in 2023 compared to 2022 and would bring the global electric sales share to around 18%, up from 14% in 2022.

Electric car sales, 2010-2023



IEA. CC BY 4.0.

Note: 2023 sales ("2023E") are estimated based on market trends through the first quarter of 2023.
 Source: IEA analysis based on EV Volumes.

Electric car sales in the first three months of 2023 have shown strong signs of growth compared to the same period in 2022. In the United States, more than 320 000 electric cars were sold in the first quarter of 2023, 60% more than over the same period in 2022. Our current expectation is for this growth to be sustained throughout the year, with electric car sales reaching over 1.5 million in 2023, bringing the electric car sales share in the United States up to around 12% in 2023.

In China, electric car sales were off to a rough start in 2023, with January sales being 8% lower than in January 2022. The latest available data suggests a quick recovery: over the entire first quarter of 2023, electric car sales in China were more than 20% higher than in the first quarter of 2022, with more than 1.3 million electric cars being registered. For the remainder of 2023, we expect the generally favourable cost structure of electric cars to outweigh the effects of the phase-out of the NEV subsidy. As a result, our current expectation is for electric car sales in China to be more than 30% higher than in 2022 and reach around 8 million by the end of 2023, reaching a sales share of over 35% (from 29% in 2022).

Based on recent trends and tightening CO₂ targets not going into effect until 2025, the growth of electric car sales in Europe is expected to be the lowest of the three largest markets. In the first quarter of 2023, electric car sales in Europe increased by around 10% compared to the same period in 2022. For the full year, we currently expect electric car sales to increase by over 25%, with one-in-four cars sold in Europe being electric.

Outside of the major EV markets, electric car sales are expected to reach around 900 000 in 2023 – 50% higher than in 2022. Electric car sales in India in the first quarter of 2023 are already double what they were in the same period in 2022. In India and across all regions outside the three major EV markets, electric car sales are expected to represent 2-3% of car sales in 2023, a relatively small yet growing share.

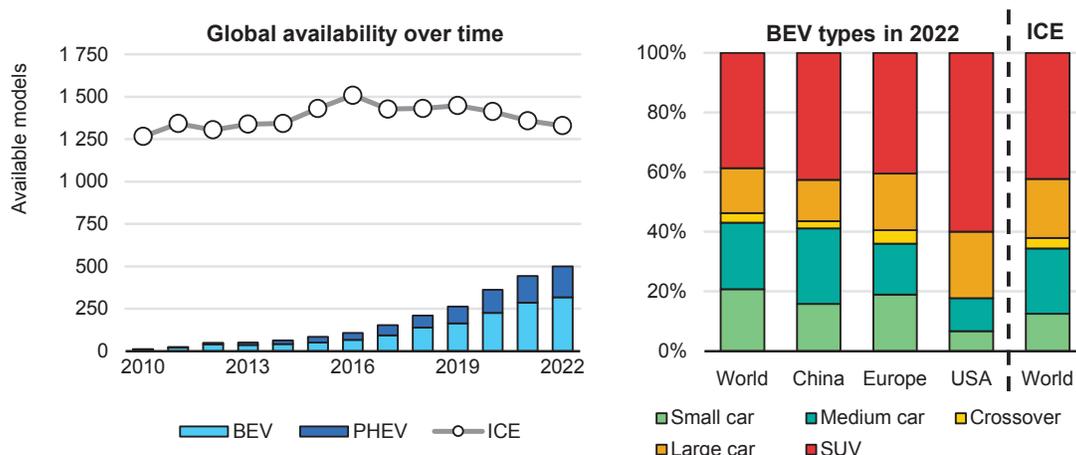
There are, of course, downside risks to the 2023 outlook: a sluggish global economy and the phase-out of subsidies for NEVs in China could reduce 2023 growth in global electric car sales. On the upside, new markets may open up more quickly than anticipated, as persistent high oil prices make the case for EVs stronger in an increasing number of settings. And new policy developments, such as the April 2023 proposal from the US Environmental Protection Agency (EPA) to strengthen GHG emissions standards for cars, may send signals that boost sales even before going into effect.

The number of electric car models rises, especially for large cars and SUVs, at the same time as it decreases for conventional cars

The race to electrification is increasing the number of electric car models available on the market. In 2022, the number of available options reached 500, up from below 450 in 2021 and more than doubling relative to 2018-2019. As in previous years, China has the broadest portfolio with nearly 300 available models, double the number available in 2018-2019, prior to the Covid-19 pandemic. This remains nearly twice as many as in Norway, the Netherlands, Germany, Sweden, France and the United Kingdom, which all have around 150 models available, more than

three times as many as before the pandemic. In the United States, there were fewer than 100 models available in 2022, but twice as many as before the pandemic; and 30 or fewer were available in Canada, Japan and Korea.

Figure 1.5 Car model availability by powertrain, 2010-2022 (left), and breakdown of available cars by powertrain and segment in 2022 (right)



IEA. CC BY 4.0.

Notes: BEV = battery electric vehicle; PHEV = plug-in hybrid vehicle; ICE = internal combustion engine; SUV = sports utility vehicle; USA = United States. Analysis based on models for which there was at least one new registration in a given year; a model on sale but never sold is not counted, and as such actual model availability may be underestimated. In the chart on the right-hand side, distribution is based on the number of available models, not sales-weighted. Small cars include A and B segments. Medium cars include C and D segments. Crossovers are a type of sports utility vehicle (SUV) built on a passenger car platform. Large cars include E and F segments and multi-purpose vehicles.

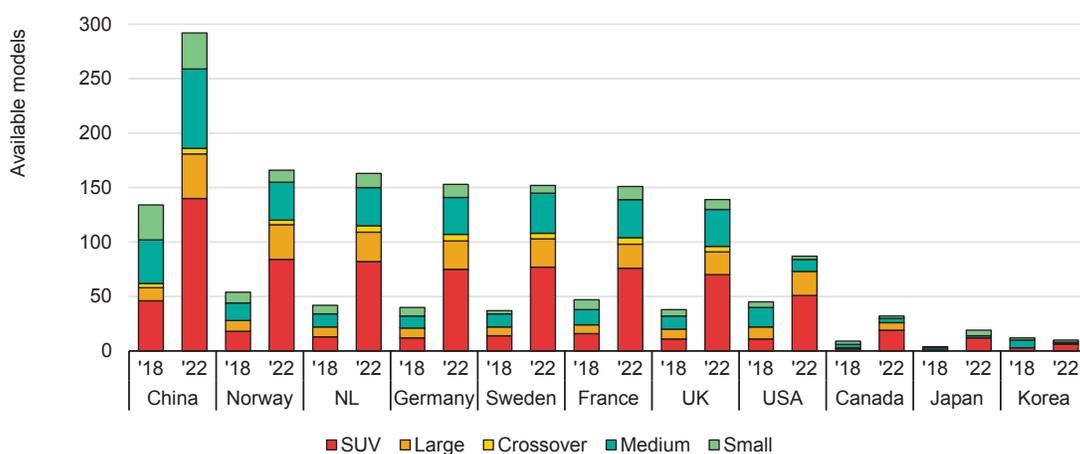
Source: IEA analysis based on Marklines.

The number of available electric car models reached 500 in 2022 but remains far below the number of ICE options. Large cars and SUVs still account for over half of available BEVs.

The 2022 trend reflects the increasing maturity of EV markets and demonstrates that carmakers are responding to increasing consumer demand for electric cars. However, the number of electric car models available remains much lower than that of conventional ICE cars, which has remained above 1 250 since 2010 and peaked at 1 500 in the middle of the past decade. In recent years, the number of ICE models sold has been steadily [decreasing](#), at a compound annual growth rate of minus 2% over the 2016-2022 period, reaching about 1 300 models in 2022. This dip varies across major car markets and is most pronounced in China, where the number of available ICE options was 8% lower in 2022 than in 2016, versus 3-4% lower in the United States and Europe over the same period. This could result from contracting car markets and a progressive shift towards EVs among major carmakers. Looking forward, the total number of ICE models available could remain stable, while the number of [new models](#) shrinks, if carmakers focus on electrification and keep selling existing ICE options rather than increasing budgets to develop new models.

In contrast to ICE models, EV model availability has been growing quickly, at a compound annual growth rate of 30% over the 2016-2022 period. Such growth is to be expected in a nascent market with a large number of new entrants bringing innovative products to the market, and as incumbents diversify their portfolios. Growth has been slightly lower in recent years: the annual growth rate stood at around 25% in 2021 and 15% in 2022. In the future, the number of models can be expected to continue to increase quickly, as major carmakers expand their EV portfolios and new entrants strengthen their positions, particularly in emerging markets and developing economies (EMDEs). The historic number of ICE models available on the market suggests that the current number of EV options could double, at least, before stabilising.

Figure 1.6 Electric car model availability in selected countries by size, 2018-2022



IEA. CC BY 4.0.

Notes: NL = the Netherlands; UK = United Kingdom; USA = United States; SUV = sports utility vehicle. Includes battery electric vehicles and plug-in hybrid electric vehicles. Countries are ordered by the number of available models in 2022. Analysis based on models for which there was at least one new registration in a given year; a model on sale but never sold is not counted, and as such actual model availability may be underestimated.

Source: IEA analysis based on Marklines.

In 2022, 7 countries had around 150 EV models or more available for sale, up from 50 in 2018. The number of large models is increasing more quickly than that of small models.

SUVs and large car models dominate both EV and ICE markets

A major concern for global car markets – both EV and ICE – is the overwhelming dominance of SUVs and large models among available options. Carmakers are able to generate higher revenues from such models, given higher profit margins, which can cover some of the investments made in developing electric options. In certain cases, such as in the United States, larger vehicles can also benefit from less stringent fuel economy standards, hence creating an incentive for carmakers to slightly increase the vehicle size of a car for it to qualify as a light truck.

However, large models are more expensive, which poses significant affordability issues across the board, and all the more so in EMDEs. Large models also have

implications for sustainability and supply chains, being equipped with larger batteries that require more critical minerals. In 2022, the sales-weighted average battery size of small battery electric cars ranged from 25 kWh in China to 35 kWh across France, Germany and the United Kingdom, and about 60 kWh in the United States. In comparison, the average for battery electric SUVs was around 70-75 kWh in these countries, and within the 75-90 kWh range for large car models.

[Transitioning](#) from ICE to electric is a priority for achieving net zero emissions targets, regardless of vehicle size, but mitigating the impacts of higher battery sizes will also be important. In France, Germany and the United Kingdom in 2022, the sales-weighted average weight of a battery electric SUV was 1.5 times higher than the average small battery electric car, requiring greater amounts of steel, aluminium and plastic; the battery in the SUV was twice as large, requiring about 75% more critical minerals. The CO₂ emissions associated with materials processing, manufacturing and assembly can be estimated at more than 70% higher as a result.

At the same time, in 2022, electric SUVs resulted in the displacement of over 150 000 barrels per day of oil consumption and avoided the associated tailpipe emissions that would have been generated through burning the fuel in combustion engines. Although electric SUVs represented roughly 35% of all electric passenger light-duty vehicles (PLDVs) in 2022, their share of oil displacement was even higher (about 40%), as SUVs tend to be driven more than smaller cars. Of course, smaller vehicles generally require less energy to operate and less materials to build, but electric SUVs certainly remain favourable to ICE vehicles.

In 2022, ICE SUVs [emitted](#) more than 1 Gt CO₂, far greater than the 80 Mt net emissions reductions from the electric vehicle fleet that year. While total car sales decreased by 0.5% in 2022, SUV sales increased by 3% relative to 2021, accounting for about 45% of total car sales, with noticeable growth in the United States, India and Europe. Of the 1 300 available options for ICE cars in 2022, more than 40% were SUVs, compared to fewer than 35% for small and medium cars. The total number of available ICE options went down from 2016 to 2022, but the drop was only for small and medium cars (down 35%) while large cars and SUVs increased (up 10%).

Similar trends are observed in EV markets. Around 16% of all SUVs sold were electric in 2022, which is above the overall market share of EVs and demonstrates consumer preferences for SUVs regardless of whether they are an ICE vehicle or EV. Nearly 40% of all BEV models available in 2022 were SUVs, which is equivalent to the shares of small and medium car options combined. Other large models accounted for more than 15%. Just 3 years before, in 2019, small and medium models accounted for 60% of all available models, and SUVs just 30%.

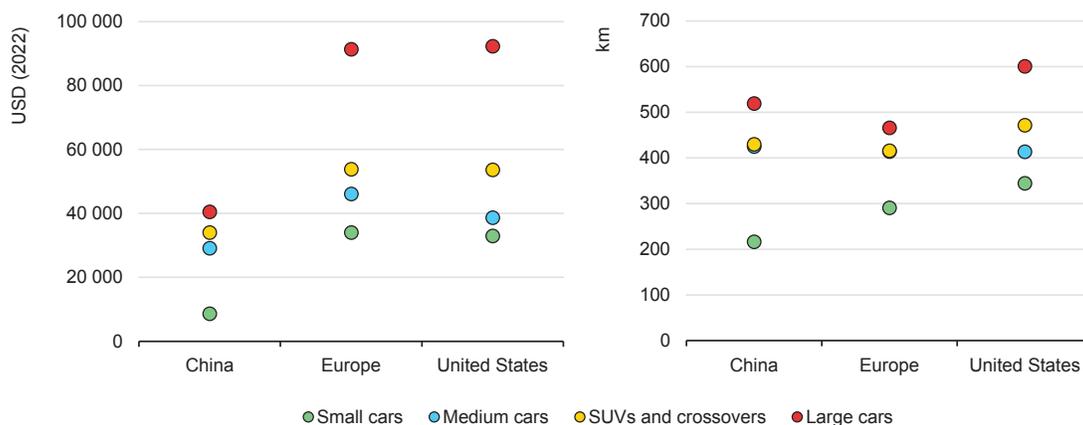
In China and Europe, SUVs and large models accounted for 60% of available BEV options in 2022, on par with the world average. As a comparison, ICE SUVs and large models accounted for about 70% of available ICE options in these regions,

suggesting that electric cars currently remain somewhat smaller than their ICE equivalents. Announcements by some major European carmakers indicate that there could be a greater focus on smaller, more popular models in the years to come. For example, [Volkswagen](#) has announced the launch of a compact model for the European market under EUR 25 000 by 2025 and under EUR 20 000 by 2026-2027, as a means to appeal to a broader consumer base. In the United States, over 80% of available BEV options in 2022 were SUVs or large car models, which is greater than the share of ICE SUVs or large models at 70%. Looking ahead, more electric SUVs are to be expected in the United States, should recent policy announcements on [expansion](#) of IRA incentives to more SUVs be implemented. Following the IRA, the US Treasury has been [revising](#) vehicle classifications, and in 2023 changed the eligibility criteria for clean vehicle credits relevant to smaller SUVs, which are now eligible if priced under USD 80 000, up from the previous limit of USD 55 000.

Electric cars remain much cheaper in China

The growth in electric car sales in China has been underpinned by sustained policy support, but also cheaper retail prices. In 2022, the sales-weighted average price of a small BEV in China was below USD 10 000. This is significantly less than the prices of small BEVs found in Europe and the United States, where the sales-weighted average price exceeded USD 30 000 in the same year.

Figure 1.7 Sales-weighted average retail price (left) and driving range (right) of BEV passenger cars in selected countries, by size, in 2022



IEA. CC BY 4.0.

Notes: BEV = battery electric vehicle; SUV = sports utility vehicle. 'Europe' is based on data only from France, Germany and the United Kingdom. Retail prices collected in 2022-2023, before subsidy.

Source: IEA analysis based on EV Volumes.

In 2022, BEV passenger cars remained much cheaper in China, which explains in part higher adoption rates there.

In China, the best-selling electric cars in 2022 were the Wuling Mini BEV, a small model priced at under USD 6 500, and BYD's Dolphin, another small model, below USD 16 000. Together, these two models accounted for nearly 15% of Chinese BEV passenger car sales, illustrating the appetite for smaller models. To compare, the best-selling small BEVs across France, Germany and the United Kingdom – Fiat's 500, Peugeot's e-208 and Renault's Zoe – were all priced above USD 35 000. Few small BEVs were sold in the United States, limited mainly to Chevrolet's Bolt and the Mini Cooper BEV, which are priced around USD 30 000. Tesla's Y Model was the best-selling BEV passenger car in both the selected European countries (priced at more than USD 65 000) and the United States (more than USD 50 000).⁶

Chinese carmakers have focused on developing smaller and more affordable models in advance of their international peers, cutting down costs following years of tough competition domestically. Hundreds of small EV manufacturers have entered the market since the 2000s, benefitting from a variety of public support schemes, including subsidies and incentives for both consumers and manufacturers. The majority of these firms went bankrupt due to competition as subsidies were gradually phased out, and the market has since consolidated around a dozen frontrunners, which have succeeded in developing small and cheap electric cars for the Chinese market. Vertical integration of battery and EV supply chains from mineral processing to battery and EV manufacturing, as well as cheaper labour, manufacturing and access to finance across the board, have also contributed to developing cheaper models.

Meanwhile, carmakers in Europe and the United States – both early developers such as Tesla and incumbent major manufacturers – have mostly focused on larger or more luxurious models to date, hence offering few options affordable for mass-market consumers. However, the small options available in these countries typically offer greater performance than those in China, such as longer driving range. In 2022, the sales-weighted average range of small BEVs sold in the United States was nearly 350 km, while in France, Germany and the United Kingdom it was just under 300 km, compared to under 220 km in China. For other segments, the differences are less significant. The broader availability of public charging points in China may, in part, explain why consumers there have been more willing to opt for lower driving ranges than their European or American counterparts.

In 2022, Tesla heavily reduced the price of its models on two occasions as competition increased, and many carmakers have also announced cheaper options in the coming years. While these announcements warrant further examination, this trend could indicate that the price gap between small electric cars and incumbent ICE options could progressively close during this decade.

⁶ However, Tesla has decreased car prices several times since the publication of the IRA in the United States, in part to boost sales as competition gets tougher (see [section on corporate strategy and finance](#)).

Actual vehicle range depends on the loaded vehicle weight, duty cycle, aerodynamics and drivetrain efficiency, as well as environmental factors such as temperature. In addition, as no harmonised test procedure currently exists to measure electric range for medium- and heavy-duty vehicles in any of the major markets where deployment of electric trucks has begun, manufacturers can determine their own methods to declare the electric range of the commercially available and announced models. However, any standardised test procedure would need to consider complicated issues of non-motive energy consumption (e.g. heating ventilation and air conditioning in buses, cooling in refrigerated trucks), as well as the potential for buses and trucks to be used in vehicle-to-grid applications (as [has been demonstrated](#), for instance, with [electric school buses](#) in the United States). In light of such considerations, a first regulatory step could be to mandate that electric medium- and heavy-duty vehicle makers measure and disclose the usable battery energy according to a yet-to-be-developed standardised measurement procedure.

Charging infrastructure

Public charging points are increasingly necessary to enable wider EV uptake

While most of the charging demand is currently met by home charging, publicly accessible chargers are increasingly needed in order to provide the same level of convenience and accessibility as for refuelling conventional vehicles. In dense urban areas, in particular, where access to home charging is more limited, public charging infrastructure is a key enabler for EV adoption. At the end of 2022, there were 2.7 million public charging points worldwide, more than 900 000 of which were installed in 2022, about a 55% increase on 2021 stock, and comparable to the pre-pandemic growth rate of 50% between 2015 and 2019.

Slow chargers

Globally, more than 600 000 public slow charging points¹¹ were installed in 2022, 360 000 of which were in China, bringing the stock of slow chargers in the country to more than 1 million. At the end of 2022, China was home to more than half of the global stock of public slow chargers.

Europe ranks second, with 460 000 total slow chargers in 2022, a 50% increase from the previous year. The Netherlands leads in Europe with 117 000, followed by around 74 000 in France and 64 000 in Germany. The stock of slow chargers

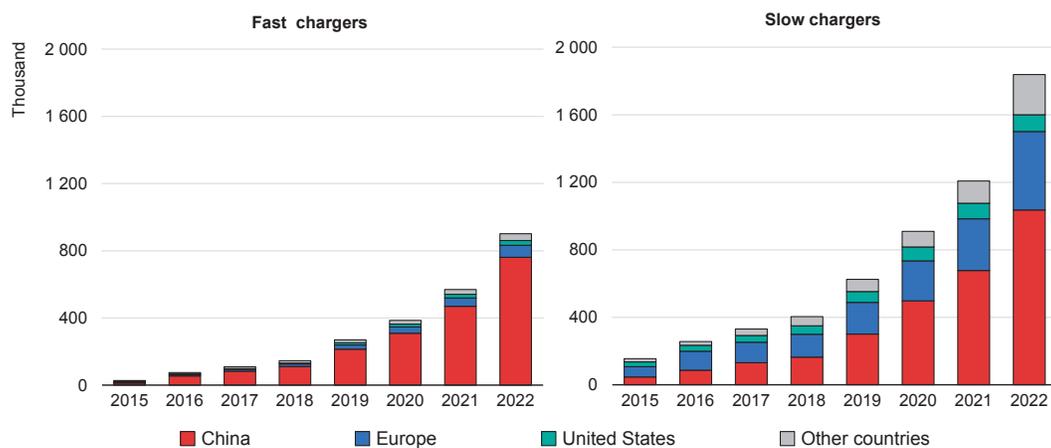
¹¹ Slow chargers have power ratings less than or equal to 22 kW. Fast chargers are those with a power rating of more than 22 kW and up to 350 kW. "Charging points" and "chargers" are used interchangeably and refer to the individual charging sockets, reflecting the number of EVs that can charge at the same time. "Charging stations" may have multiple charging points.

in the United States increased by 9% in 2022, the lowest growth rate among major markets. In Korea, slow charging stock has doubled year-on-year, reaching 184 000 charging points.

Fast chargers

Publicly accessible fast chargers, especially those located along motorways, enable longer journeys and can address range anxiety, a barrier to EV adoption. Like slow chargers, public fast chargers also provide charging solutions to consumers who do not have reliable access to private charging, thereby encouraging EV adoption across wider swaths of the population. The number of fast chargers increased by 330 000 globally in 2022, though again the majority (almost 90%) of the growth came from China. The deployment of fast charging compensates for the lack of access to home chargers in densely populated cities and supports China’s goals for rapid EV deployment. China accounts for total of 760 000 fast chargers, but more than [70%](#) of the total public fast charging pile stock is situated in just ten provinces.

Figure 1.13 Installed publicly accessible light-duty vehicle charging points by power rating and region, 2015-2022



IEA. CC BY 4.0.

Note: Values shown represent number of charging points.
 Source: IEA analysis based on country submissions.

Installed publicly accessible charging points have increased by around 55%, with accelerated deployment led by China and Europe.

In Europe the overall fast charger stock numbered over 70 000 by the end of 2022, an increase of around 55% compared to 2021. The countries with the largest fast charger stock are Germany (over 12 000), France (9 700) and Norway (9 000). There is a clear ambition across the European Union to further develop the public charging infrastructure, as indicated by provisional agreement on the proposed

Alternative Fuels Infrastructure Regulation (AFIR), which will set electric charging coverage requirements across the trans-European network-transport (TEN-T).¹² An [agreement](#) between the European Investment Bank and the European Commission will make over EUR 1.5 billion available by the end of 2023 for alternative fuels infrastructure, including electric fast charging.

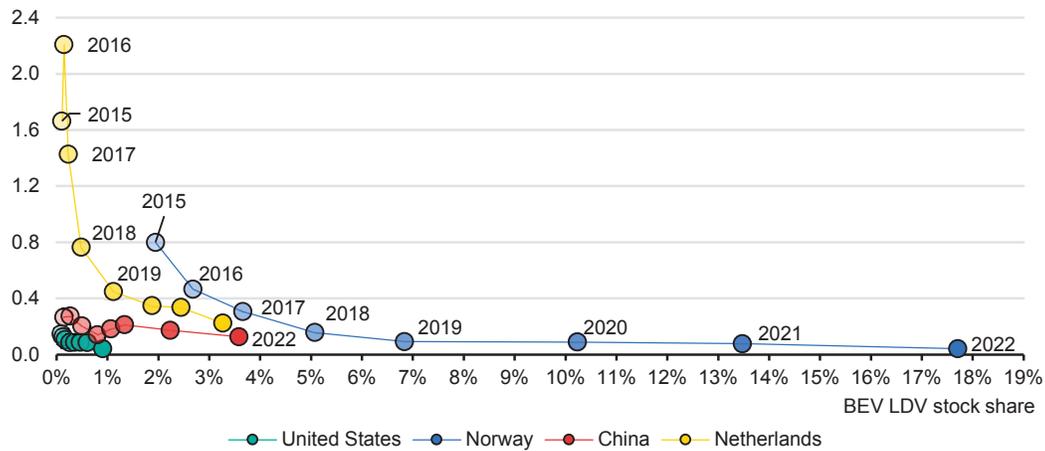
The United States installed 6 300 fast chargers in 2022, about three-quarters of which were Tesla Superchargers. The total stock of fast chargers reached 28 000 at the end of 2022. Deployment is expected to accelerate in the coming years following government approval of the [National Electric Vehicle Infrastructure Formula Program](#) (NEVI). All US states, Washington DC, and Puerto Rico are participating in the programme, and have already been allocated USD 885 million in funding for 2023 to support the build-out of chargers across 122 000 km of highway (see [Policy support for EV charging infrastructure](#)). The US Federal Highway Administration has announced new national standards for federally funded EV chargers to ensure consistency, reliability, accessibility and compatibility. [As a result](#) of the new standards, Tesla has announced it will open a portion of its US Supercharger (where Superchargers represent 60% of the total stock of fast chargers in the United States) and Destination Charger network to non-Tesla EVs.

Ratio of electric LDVs per public charger

Deployment of public charging infrastructure in anticipation of growth in EV sales is critical for widespread EV adoption. In Norway, for example, there were around 1.3 battery electric LDVs per public charging point in 2011, which supported further adoption. At the end of 2022, with over 17% of LDVs being BEVs, there were 25 BEVs per public charging point in Norway. In general, as the stock share of battery electric LDVs increases, the charging point per BEV ratio decreases. Growth in EV sales can only be sustained if charging demand is met by accessible and affordable infrastructure, either through private charging in homes or at work, or publicly accessible charging stations.

¹² Previously a directive, the proposed AFIR, once formally approved, would become a binding legislative act, stipulating, among other things, a maximum distance between chargers installed along the TEN-T, the primary and secondary roads within the European Union.

Figure 1.14 Public charging points per battery electric light-duty vehicle ratio in selected countries against battery electric light-duty vehicle stock share, 2015-2022



IEA. CC BY 4.0.

Notes: BEV = battery electric vehicle; LDV = light-duty vehicle. Charging points include only publicly available chargers, both fast and slow. Shading grows darker each year.

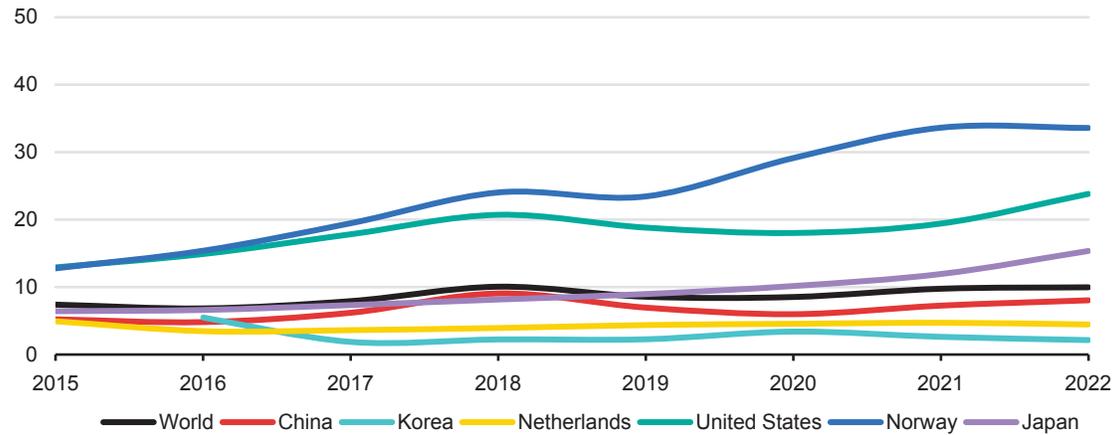
Source: IEA analysis based on country submissions.

In many advanced markets, as the stock share of battery electric LDVs increased, the charging point per BEV ratio has decreased.

While PHEVs are less reliant on public charging infrastructure than BEVs, policy-making relating to the sufficient availability of charging points should incorporate (and encourage) public PHEV charging. If the total number of electric LDVs per charging point is considered, the global average in 2022 was about ten EVs per charger. Countries such as China, Korea and the Netherlands have maintained fewer than ten EVs per charger throughout past years. In countries that rely heavily on public charging, the number of publicly accessible chargers has been expanding at a speed that largely matches EV deployment.

However, in some markets characterised by widespread availability of home charging (due to a high share of single-family homes with the opportunity to install a charger) the number of EVs per public charging point can be even higher. For example, in the United States, the ratio of EVs per charger is 24, and in Norway is more than 30. As the market penetration of EVs increases, public charging becomes increasingly important, even in these countries, to [support](#) EV adoption among drivers who do not have access to private home or workplace charging options. However, the optimal ratio of EVs per charger will differ based on local conditions and driver needs.

Figure 1.15 Electric light-duty vehicle per public charging point, 2010-2022



IEA. CC BY 4.0.

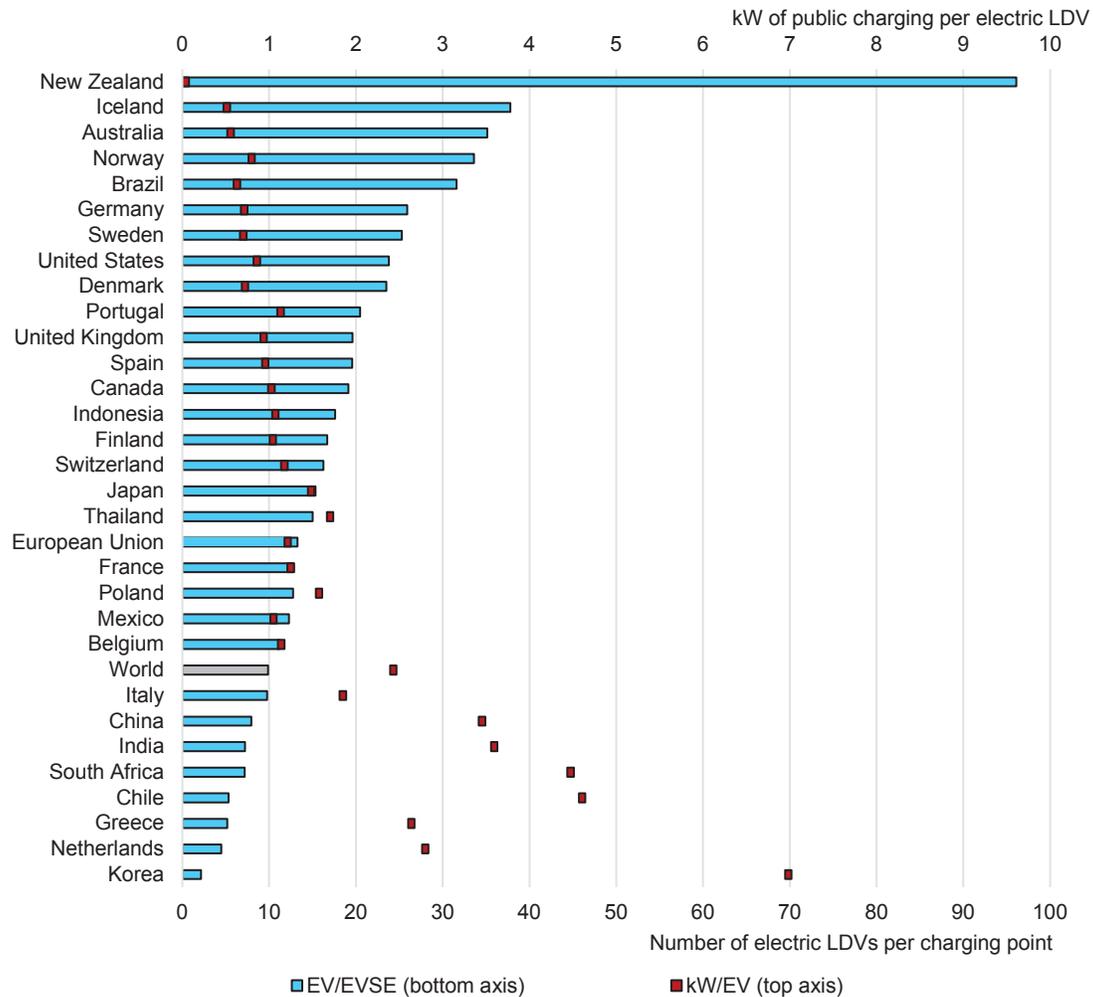
Note: Charging points include only publicly available chargers, both fast and slow.
 Source: IEA analysis based on country submissions.

Countries show different speeds in public charging deployment as the number of EVs on the road increases.

Perhaps more important than the number of public chargers available is the total public charging power capacity per EV, given that fast chargers can serve more EVs than slow chargers. During the early stages of EV adoption, it makes sense for available charging power per EV to be high, assuming that charger utilisation will be relatively low until the market matures and the utilisation of infrastructure becomes more efficient. In line with this, the European Union’s [provisional agreement](#) on the AFIR includes requirements for the total power capacity to be provided based on the size of the registered fleet.

Globally, the average public charging power capacity per electric LDV is around 2.4 kW per EV. In the European Union, the ratio is lower, with an average around 1.2 kW per EV. Korea has the highest ratio at 7 kW per EV, even with most public chargers (90%) being slow chargers.

Figure 1.16 Number of electric light-duty vehicles per public charging point and kW per electric light-duty vehicle, 2022



IEA. CC BY 4.0.

Notes: EV = electric vehicle; EVSE = electric vehicle supply equipment; LDV = light-duty vehicle. Kilowatts per EV are estimated assuming 11 kW for slow and 50 kW for fast chargers. Official national metrics might differ from these values as they can rely on more granular data.

Source: IEA analysis based on country submissions.

The number of electric light-duty vehicles per public EV charging point varies dramatically between countries, ranging from about 2 vehicles per charging point in Korea to almost 100 in New Zealand.

Charging needs for heavy-duty vehicles

In the regions where electric trucks are becoming commercially available, battery electric trucks can compete on a TCO basis with conventional diesel trucks for a growing range of operations, not only urban and regional, but also in the [heavy-duty](#) tractor-trailer regional and long-haul segments. Three parameters that determine the time at which [TCO parity](#) is reached are tolls; fuel and operations

costs (e.g. the difference between diesel and electricity prices faced by truck operators, and reduced maintenance costs); and CAPEX subsidies to reduce the gap in the upfront vehicle purchase price. Since electric trucks can provide the same operations with lower lifetime costs (including if a discounted rate is applied), the [time horizon](#) in which vehicle owners expect to recuperate upfront costs is a key factor in determining whether to purchase an electric or conventional truck.

The economics for electric trucks in long-distance applications can be substantially improved if charging costs can be reduced by maximising “off-shift” (e.g. night-time or other longer periods of downtime) slow charging, securing bulk purchase contracts with grid operators for “mid-shift” (e.g. during breaks), fast (up to 350 kW), or ultra-fast (>350 kW) charging, and exploring smart charging and vehicle-to-grid opportunities for extra income.

Electric trucks and buses will rely on off-shift charging for the majority of their energy. This will be largely achieved at private or semi-private charging depots or at public stations on highways, and often overnight. Depots to service growing demand for heavy-duty electrification will need to be developed, and in many cases may require distribution and transmission grid upgrades. Depending on vehicle range requirements, depot charging will be sufficient to cover most operations in urban bus as well as urban and regional truck operations.

The [major constraint](#) to rapid commercial adoption of electric trucks in [regional and long-haul operations](#) is the [availability of “mid-shift” fast charging](#). Although the majority of energy requirements for these operations could come from “off-shift” charging, fast and ultra-fast charging will be needed to extend range such that operations currently covered by diesel can be performed by battery electric trucks with little to no additional dwell time (i.e. waiting). Regulations that mandate rest periods can also provide a time window for mid-shift charging if fast or ultra-fast charging options are available en route: the European Union requires 45 minutes of break after every 4.5 hours of driving; the United States mandates 30 minutes after 8 hours.

Most commercially available direct current (DC) fast charging stations currently enable power levels ranging from 250-350 kW. The European Union’s Alternative Fuels Infrastructure Regulation (AFIR) aims to enable mid-shift charging across the EU’s core TEN-T network, which covers 88% of total long-haul freight activity, and along other key freight corridors. The [provisional agreement](#) reached by the European Council and Parliament includes a gradual process of infrastructure deployment for electric heavy-duty vehicles starting in 2025. Recent studies of power requirements for regional and long-haul truck operations in the [United States](#) and [Europe](#) find that charging power higher than 350 kW, and as high as 1 MW, may be required to fully recharge electric trucks during a 30- to 45-minute break.

Recognising the need to scale up fast or ultra-fast charging as a prerequisite for making both regional and, in particular, long-haul operations technically and economically viable, in 2022 Traton, Volvo, and Daimler established an independent joint venture, [Milence](#). With EUR 500 million in collective investments from the three heavy-duty manufacturing groups, the initiative aims to deploy more than 1 700 fast (300 to 350 kW) and ultra-fast (1 MW) charging points across Europe.

Multiple charging standards are currently in use, and technical specifications for ultra-fast charging are under development. Ensuring maximum possible convergence of charging standards and interoperability for heavy-duty EVs will be needed to avoid the cost, inefficiency, and challenges for vehicle importers and international operators that would be created by manufacturers following divergent paths.

In China, co-developers China Electricity Council and CHAdeMO's "ultra ChaoJI" are developing a charging standard for heavy-duty electric vehicles for up to several megawatts. In Europe and the United States, specifications for the CharIN Megawatt Charging System (MCS), with a potential maximum power of [4.5 MW](#), are under development by the International Organization for Standardization (ISO) and other organisations. The final MCS specifications, which will be needed for commercial roll-out, are expected for 2024. After the first megawatt charging site offered by Daimler Trucks and Portland General Electric (PGE) in 2021, at least [twelve high-power charging projects](#) are planned or underway in the United States and Europe, including charging of an electric Scania truck in Oslo, Norway, at a speed of [over 1 MW](#), [Germany's HoLa project](#), and the Netherlands Living Lab Heavy-Duty and [Green Transport Delta](#) Charging Stations, as well as investments and projects in Austria, Sweden, Spain and the United Kingdom.

Commercialisation of chargers with rated power of 1 MW will require significant investment, as stations with such high-power needs will incur significant costs in both installation and grid upgrades. Revising public electric utility business models and power sector regulations, co-ordinating planning across stakeholders and smart charging can all help to [manage grid impacts](#). Direct support through pilot projects and financial incentives can also accelerate demonstration and adoption in the early stages. A recent study outlines some [key design considerations](#) for developing MCS rated charging stations:

- Planning charging stations at highway depot locations near transmission lines and substations can be an optimal solution for minimising costs and increasing charger utilisation.
- "Right-sizing" connections with direct connections to transmission lines at an early stage, thereby anticipating the energy needs of a system in which high shares of freight activity have been electrified, rather than upgrading distribution grids on an

ad-hoc and short-term basis, will be critical to reduce costs. This will require structured and co-ordinated planning between grid operators and charging infrastructure developers across sectors.

- Since transmission system interconnections and grid upgrades can take 4-8 years, siting and construction of high-priority charging stations will need to begin as soon as possible.

[Alternative solutions](#) include installing stationary storage and integrating local renewable capacity, combined with smart charging, which [can help reduce](#) both infrastructure costs related to grid connection and electricity procurement costs (e.g. by enabling truck operators to minimise cost by arbitraging price variability throughout the day, taking advantage of vehicle-to-grid opportunities, etc.).

Other options to provide power to electric heavy-duty vehicles (HDVs) are [battery swapping](#) and electric road systems. Electric road systems can transfer power to a truck either via inductive coils¹³ in a road, or through conductive connections between the vehicle and road, or via catenary (overhead) lines. Catenary and other dynamic charging options may hold promise for [reducing the uncertainty](#) of system-level costs in the transition to zero-emission regional and long-haul trucks, [competing](#) favourably in terms of total capital and operating costs. They can also help to reduce battery capacity needs. [Battery demand](#) can be further reduced, and utilisation further improved, if electric road systems are designed to be compatible not only with trucks but also electric cars. However, such approaches would require inductive or in-road designs that come with greater hurdles in terms of technology development and design, and are more capital intensive. At the same time, electric road systems pose significant challenges resembling those of the rail sector, including a greater need for standardisation of paths and vehicles (as illustrated with trams and trolley buses), compatibility across borders for long-haul trips, and appropriate infrastructure ownership models. They provide less flexibility for truck owners in terms of routes and vehicle types, and have high development costs overall, all affecting their competitiveness relative to regular charging stations. Given these challenges, such systems would most effectively be deployed first on heavily used freight corridors, which would entail close co-ordination across various public and private stakeholders. Demonstrations on public roads to date in [Germany](#) and [Sweden](#) have relied on champions from both [private](#) and public entities. Calls for electric road system pilots are also being considered in the China, India, the [United Kingdom](#) and the United States.

¹³ Inductive solutions are further from commercialisation and face challenges to deliver sufficient power at highway speeds.

in 2022, and the company has set a target of 4 000 battery swap stations globally by 2025. The company [claims](#) their swap stations can perform over 300 swaps per day, charging up to 13 batteries concurrently at a power of 20-80 kW.

NIO also announced plans to [build battery swap stations in Europe](#) as their battery swapping-enabled car models became available in European markets towards the end of 2022. The first NIO battery swap station in Sweden was opened in [November 2022](#), and by the end of 2022, ten NIO battery swap stations had been opened across Norway, Germany, Sweden and the Netherlands. In contrast to NIO, whose swapping stations service NIO cars, the Chinese battery swapping station operator Aulton's stations support [30 models from 16 different vehicle companies](#).

Battery swapping could also be a particularly attractive option for LDV taxi fleets, whose operations are more sensitive to recharging times than personal cars. US start-up Ample currently operates [12 battery swapping stations](#) in the San Francisco Bay area, mainly serving Uber rideshare vehicles.

Batteries

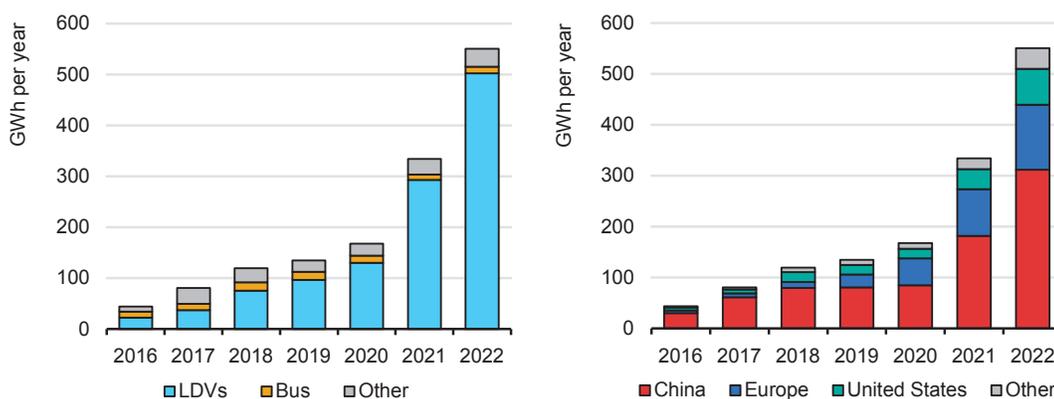
Battery demand for EVs continues to rise

Automotive lithium-ion (Li-ion) battery demand increased by about 65% to 550 GWh in 2022, from about 330 GWh in 2021, primarily as a result of growth in electric passenger car sales, with new registrations increasing by 55% in 2022 relative to 2021.

In China, battery demand for vehicles grew over 70%, while electric car sales increased by 80% in 2022 relative to 2021, with growth in battery demand slightly tempered by an increasing share of PHEVs. Battery demand for vehicles in the United States grew by around 80%, despite electric car sales only increasing by around 55% in 2022. While the average battery size for battery electric cars in the United States only grew by about 7% in 2022, the average battery electric car battery size remains about 40% higher than the global average, due in part to the higher share of SUVs in US electric car sales relative to other major markets,¹⁴ as well as manufacturers' strategies to offer longer all-electric driving ranges. Global sales of BEV and PHEV cars are outpacing sales of hybrid electric vehicles (HEVs), and as BEV and PHEV battery sizes are larger, battery demand further increases as a result.

¹⁴ For more information on the climate impact of SUVs, refer to the IEA's [27 February 2023 commentary](#) on the subject.

Figure 1.17 Battery demand by mode and region, 2016-2022



IEA. CC BY 4.0.

Notes: LDVs = light-duty vehicles, including cars and vans; In the left chart, “Other” includes medium- and heavy-duty trucks and two/three-wheelers. Battery demand refers to automotive lithium-ion batteries. This analysis does not include conventional hybrid vehicles.

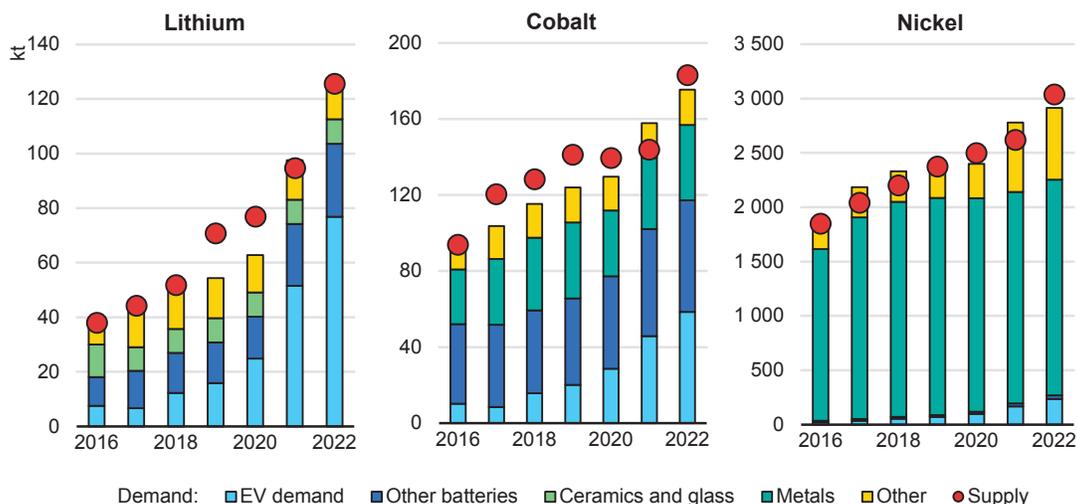
Source: IEA analysis based on EV Volumes.

Global battery demand increased by 65% in 2022, mainly as a result of electric car sales in China.

The increase in battery demand drives the demand for critical materials. In 2022, lithium demand exceeded supply (as in 2021) despite the 180% increase in production since 2017. In 2022, about 60% of lithium, 30% of cobalt and 10% of nickel demand was for EV batteries. Just five years earlier, in 2017, these shares were around 15%, 10% and 2%, respectively. As has already been seen for lithium, mining and processing of these critical minerals will need to increase rapidly to support the energy transition, not only for EVs but more broadly to keep up with the pace of demand for clean energy technologies.¹⁵ Reducing the need for critical materials will also be important for supply chain sustainability, resilience and security. Accelerating innovation can help, such as through advanced battery technologies requiring smaller quantities of critical minerals, as well as measures to support uptake of vehicle models with optimised battery size and the development of battery recycling.

¹⁵ For more information on the future of supply and demand of critical minerals, refer to the [Energy Technology Perspective 2023](#) report.

Figure 1.18 Overall supply and demand of battery metals by sector, 2016-2022



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Note: EV = electric vehicle. The metals category includes alloying applications. Supply refers to refinery output and not mining output.

Source: IEA analysis based on [Mineral Commodity Summary 2022](#) by USGS, lithium and cobalt global supply-demand balance (January 2023) and nickel global supply-demand balance (January 2023) from S&P Global and World Metal Statistics Yearbook by the World Bureau of Metal Statistics.

In 2022, supply of nickel and cobalt exceeded demand, while lithium demand outpaced supply by a small margin.

Battery chemistries are diversifying

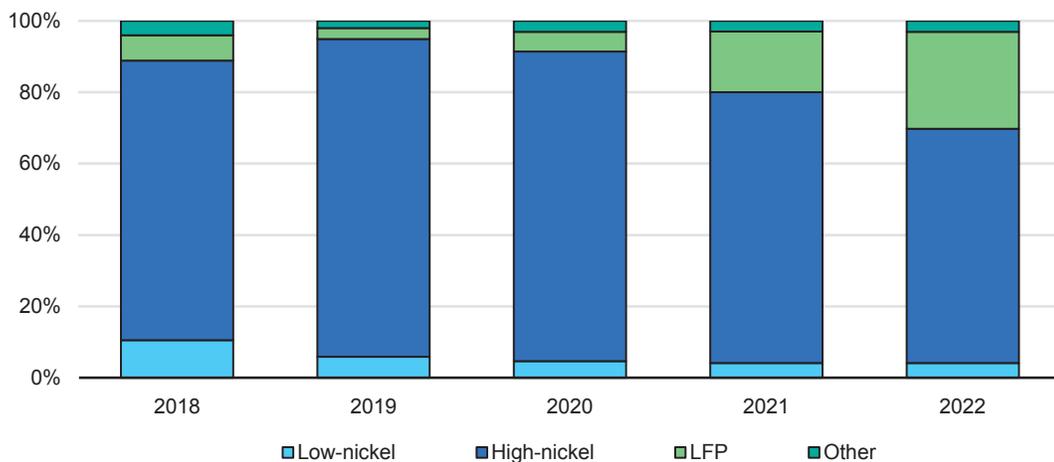
New alternatives to conventional lithium-ion are on the rise

In 2022, lithium nickel manganese cobalt oxide (NMC) remained the dominant battery chemistry with a market share of 60%, followed by lithium iron phosphate (LFP) with a share of just under 30%, and nickel cobalt aluminium oxide (NCA) with a share of about 8%.

Lithium iron phosphate (LFP) cathode chemistries have reached their highest share in the past decade (Figure 1.19). This trend is driven mainly by the preferences of Chinese OEMs. Around 95% of the LFP batteries for electric LDVs went into vehicles produced in China, and BYD alone represents 50% of demand. Tesla accounted for 15%, and the share of LFP batteries used by Tesla increased from 20% in 2021 to 30% in 2022. Around 85% of the cars with LFP batteries manufactured by Tesla were manufactured in China, with the remainder being manufactured in the United States with cells imported from China. In total, only around 3% of electric cars with LFP batteries were manufactured in the United States in 2022.

LFP batteries contrast with other chemistries in their use of iron and phosphorus rather than the nickel, manganese and cobalt found in NCA and NMC batteries. The downside of LFP is that the energy density tends to be lower than that of NMC. LFP batteries also contain phosphorus, which is used in food production. If all batteries today were LFP, they would account for nearly 1% of current agricultural phosphorus use by mass, suggesting that conflicting demands for phosphorus may arise in the future as battery demand increases.

Figure 1.19 Electric light-duty vehicle battery capacity by chemistry, 2018-2022



IEA. CC BY 4.0.

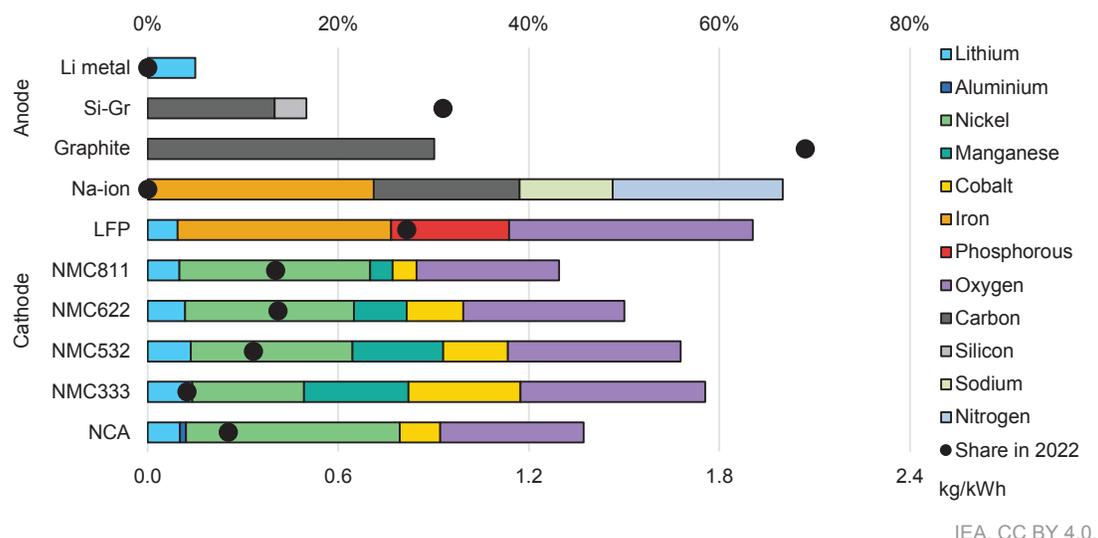
Notes: LFP = Lithium iron phosphate. Low-nickel includes: NMC333. High-nickel includes: NMC532, NMC622, NMC721, NMC811, NCA and NMCA. Cathode sales share is based on battery capacity.

Source: IEA analysis based on EV Volumes.

The share of lithium iron phosphate reached its highest ever point, accounting for almost 30% of new electric LDV battery capacity in 2022.

With regards to anodes, a number of chemistry changes have the potential to improve energy density (watt-hour per kilogram, or Wh/kg). For example, silicon can be used to replace all or some of the graphite in the anode in order to make it lighter and thus increase the energy density. Silicon-doped graphite already entered the market a few years ago, and now around 30% of anodes contain silicon. Another option is innovative lithium metal anodes, which could yield even greater energy density when they become commercially available (Figure 1.20).

Figure 1.20 Material content in different anode and cathodes



Notes: Li metal = Lithium metal anode; Si-Gr = Silicon-graphite anode; Graphite = Pure graphite anode; Na-ion = Sodium-ion; LFP = Lithium iron phosphate; NMC = Lithium nickel manganese cobalt oxide; NCA = Lithium nickel cobalt aluminium oxide. Materials composing the battery casing and the electrolyte are excluded. Chemistry shares are based on demand. The share of NCA battery includes every NCA type and Si-Gr includes every degree of silicon-graphite mix. Carbon covers the graphite composing anodes. The Na-ion cathode shown is the Prussian white.

Source: IEA analysis based on *Lithium-Ion Batteries: State of the Industry 2022* by BNEF, *BatPaC v4* by Argonne Laboratory and *Sodium-ion batteries: disrupt and conquer?* by Wood Mackenzie.

Lithium iron phosphate cathodes do not rely on nickel, manganese or cobalt, which has contributed to their increased market share.

In recent years, alternatives to Li-ion batteries have been emerging, notably sodium-ion (Na-ion). This battery chemistry has the dual advantage of relying on lower cost materials than Li-ion, leading to cheaper batteries, and of completely avoiding the need for critical minerals. It is currently the only viable chemistry that does not contain lithium. The Na-ion battery developed by China’s CATL is estimated to cost 30% [less](#) than an LFP battery. Conversely, Na-ion batteries do not have the same energy density as their Li-ion counterpart (respectively [75](#) to [160](#) Wh/kg compared to 120 to 260 Wh/kg). This could make Na-ion relevant for urban vehicles with lower range, or for stationary storage, but could be more challenging to deploy in locations where consumers prioritise maximum range autonomy, or where charging is less accessible. There are nearly 30 Na-ion battery manufacturing plants currently operating, planned or under construction, for a combined capacity of over [100 GWh](#), almost all in China. For comparison, the current manufacturing capacity of Li-ion batteries is around 1 500 GWh.

Multiple carmakers have already announced Na-ion electric cars, such as the [Seagull by BYD](#), which has an announced range of 300 km and is sold for USD 11 600 (with possible discounts bringing the price down to USD 9 500), and the Sehol EX10, produced by the VW-JAC joint venture, with a 250 km range.

While these first models are likely to be slightly more expensive than the cheapest small BEV models in China – such as the Wuling Mini BEV, [sold](#) for as little as USD 5 000 to 6 500 – they are still cheaper than equivalent options with similar driving range. To compare, the Wuling Mini BEV's range stands at 170 km, but BYD's Dolphin BEV, the second best-selling small BEV in China in 2022, with a similar range to the announced Na-ion cars, can [cost](#) more than USD 15 000. BYD plans to progressively integrate Na-ion batteries into all its models below USD 29 000 as battery production ramps up. These announcements suggest that electric vehicles powered by Na-ion will be available for sale and driven for the first time in 2023-2024, hence bringing the technology to a readiness level (TRL¹⁶) of 8-9, between first-of-a-kind commercial and commercial operation in the relevant environment. In 2022, it was [assessed](#) at TRL 6 (full prototype at scale) in the IEA [Clean Technology Guide](#), compared to only TRL 3-4 (small prototypes) in the assessment from 2021, highlighting quick technological progress.

Critical mineral prices can have an impact on chemistry choice

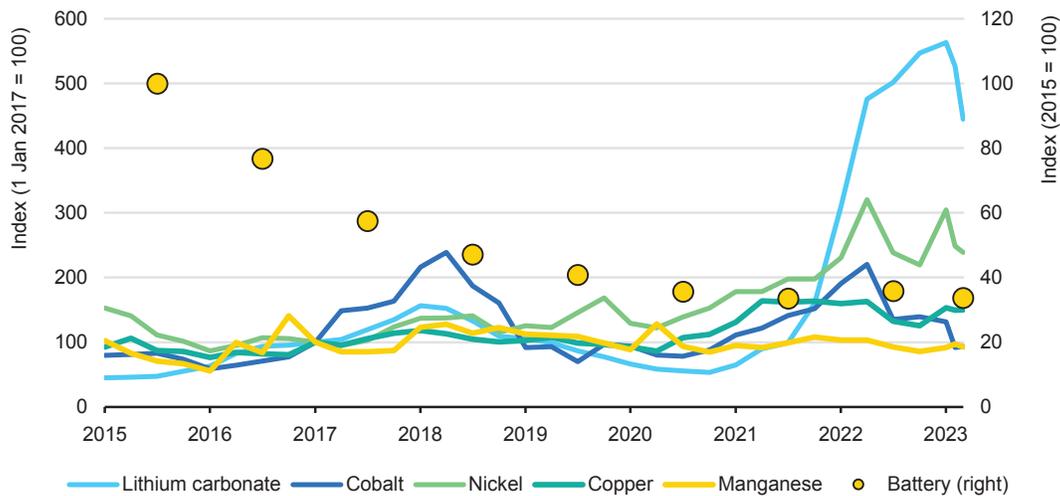
The variability in price and availability of critical minerals can also explain some of the developments in battery chemistry from the last few years (Figure 1.21). NMC chemistries using an equal ratio of nickel, manganese, and cobalt (NMC333 or NMC111) were popular until 2015. Since then, cobalt price increases and concerns affecting public acceptance of cobalt mining have contributed to a shift towards lower-cobalt ratios, such as NMC622, and then NMC811, which are nevertheless more difficult to manufacture. In 2022, the price of nickel increased, reaching a peak twice as high as the 2015-2020 average. This created incentives to use chemistries that are less reliant on nickel, such as LFP, despite their lower energy density.

Lithium carbonate prices have also been steadily increasing over the past two years. In 2021, prices multiplied four- to five-fold, and continued to rise throughout 2022, nearly doubling between 1 January 2022 and 1 January 2023. At the beginning of 2023, lithium prices stood six times above their average over the 2015-2020 period. In contrast to nickel and lithium, manganese prices have been relatively stable. One reason for the increase in prices for lithium, nickel and cobalt was the insufficient supply compared to demand in 2021 (Figure 1.18). Although nickel and cobalt supply surpassed demand in 2022, this was not the case for lithium, causing its price to rise more strongly over the year. Between January and March 2023, lithium prices dropped 20%, returning to their late 2022 level. The combination of an expected 40% [increase](#) in supply and slower growth in demand, especially for EVs in China, has contributed to this trend. This drop – if sustained – could translate into lower battery prices.

¹⁶ Technology Readiness Level (TRL) provides a snapshot of the maturity of a given technology. It has 11 steps ranging from initial idea at step 1 to proof of stability reached at step 11. For more information, refer to the [IEA Clean Technology Guide](#).

Beyond those materials, global commodity prices have surged in the last few years, as a [result](#) of supply disruptions in the wake of the Covid-19 pandemic, rising demand as the global economy started to recover, and Russia's invasion of Ukraine in February 2022, among other factors.

Figure 1.21 Price of selected battery materials and lithium-ion batteries, 2015-2023



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Notes: Data until March 2023. Lithium-ion battery prices (including the pack and cell) represent the global volume-weighted average across all sectors. Nickel prices are based on the London Metal Exchange, used here as a proxy for global pricing, although most nickel trade takes place through direct contracts between producers and consumers. The 2023 battery price value is based on cost estimates for NMC 622.

Source: IEA analysis based on material price data by S&P, 2022 Lithium-Ion Battery Price Survey by BNEF and Battery Costs Drop as Lithium Prices in China Fall by BNEF.

From 2021 to the end of 2022, the price of critical materials such as lithium, cobalt and nickel increased dramatically, putting pressure on historical Li-ion battery price decreases.

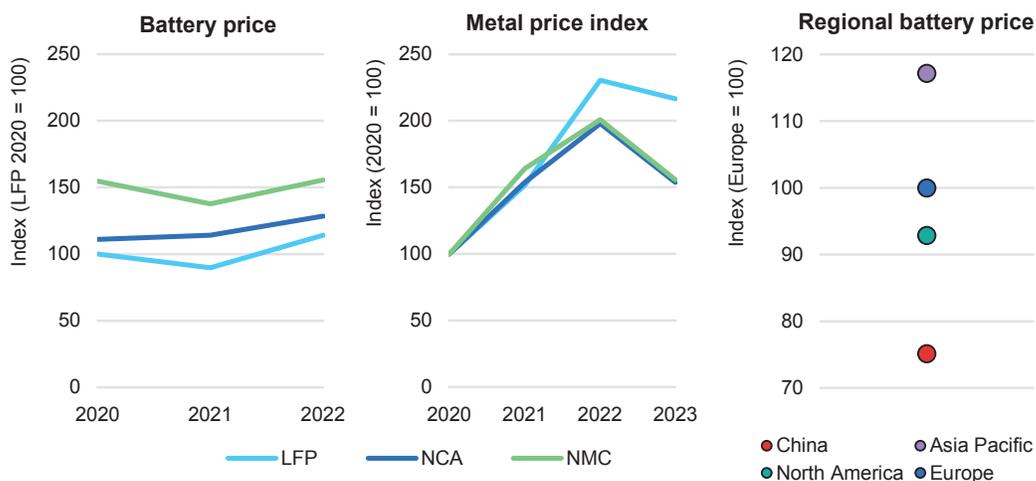
In 2022, the estimated average battery price [stood](#) at about USD 150 per kWh, with the cost of pack manufacturing accounting for about 20% of total battery cost, compared to more than 30% a decade earlier. Pack production costs have continued to decrease over time, down 5% in 2022 compared to the previous year. In contrast, cell production costs increased in 2022 relative to 2021, returning to 2019 levels. This can be explained in part by the increasing prices of materials, which account for a significant portion of cell price, and of electricity, which affects manufacturing costs, whereas efficiency gains in pack manufacturing help decrease costs. Bloomberg New Energy Finance (BNEF) sees pack manufacturing costs dropping further, by about 20% by 2025, whereas cell production costs decrease by only 10% relative to their historic low in 2021. This warrants further analysis based on future trends in material prices.

The effect of increased battery material prices differed across various battery chemistries in 2022, with the strongest increase being observed for LFP batteries

(over 25%), while NMC batteries experienced an increase of less than 15% (Figure 1.21). Since LFP batteries contain neither nickel nor cobalt, which are relatively expensive compared to iron and phosphorus, the price of lithium plays a relatively larger role in determining the final cost. Given that the price of lithium increased at a higher rate than the price of nickel and cobalt, the price of LFP batteries increased more than the price of NMC batteries. Nonetheless, LFP batteries remain less expensive than NCA and NMC per unit of energy capacity.

The price of batteries also varies across different regions, with China having the lowest prices on average, and the rest of the Asia Pacific region having the highest (Figure 1.21). This price discrepancy is influenced by the fact that around 65% of battery cells and almost 80% of cathodes are manufactured in China.

Figure 1.22 Price index for selected battery chemistries, regions and metal price, 2020-2023



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Note: LFP = Lithium iron phosphate; NMC = Lithium nickel manganese cobalt oxide; NCA = Lithium nickel cobalt aluminium oxide. The metal price index is based on the price evolution of four commodities (lithium carbonate, cobalt, nickel and copper) weighted by their use in each battery chemistry. For this metal price index, NMC uses the NMC622 chemistry. The 2023 value of the metal price index covers only the first 3 months of the year. Asia Pacific excludes China. Regional battery (pack) price refers to 2022.

Source: IEA analysis based on material price data by S&P, 2022 Lithium-Ion Battery Price Survey by BNEF, [BatPaC v4](#) by Argonne Laboratory and Lithium-Ion Batteries: State of the Industry 2022 by BNEF.

Despite a higher relative increase in price compared to other battery chemistries, LFP batteries remain the lowest price per kWh.

Prospects for electric vehicle deployment

Several pathways to electrify road transport in the period to 2030 are explored in this section. First, deployment of electric vehicles (EVs) is projected by region and road segment for the Stated Policies and Announced Pledges scenarios, and globally by segment for the Net Zero Emissions by 2050 Scenario. These projections are then compared to announcements by original equipment manufacturers (OEMs). Then the corresponding battery demand is projected, followed by roll-out requirements for charging infrastructure. Finally, the impacts of EV deployment are assessed, including increased electricity demand, oil displacement, implications for tax revenues, and net well-to-wheels GHG emissions.

Outlook for electric mobility

Scenarios

A scenario-based approach is used to explore road transport electrification and its impact, based on the latest market data, policy drivers and technology perspectives. Two IEA scenarios – the Stated Policies and Announced Pledges scenarios – inform the outlooks, which are examined in relation to the Net Zero Emissions by 2050 Scenario at the global level.¹ These scenarios are based on announced policies, ambitions and market trends through the first quarter of 2023.

The purpose of the scenarios is to assess plausible futures for global EV markets and the implications they could have. The scenarios do not make predictions about the future. Rather, they aim to provide insights to inform decision-making by governments, companies and stakeholders about the future of EVs.

These scenario projections incorporate GDP and population assumptions from the [International Monetary Fund](#) (2022) and [United Nations](#) (2022), respectively.

Stated Policies Scenario

The [Stated Policies Scenario](#) (STEPS) reflects existing policies and measures, as well as firm policy ambitions and objectives that have been legislated by

¹ The projections in the Stated Policies and Announced Pledges scenarios are based on historical trends through the end of 2022 as well as stated policies and ambitions as of the end of March 2023. The Net Zero Emissions by 2050 Scenario is consistent with the [World Energy Outlook 2022](#) publication.

governments around the world. It includes current EV-related policies, regulations and investments, as well as market trends based on the expected impacts of technology developments, announced deployments and plans from industry stakeholders. The STEPS aims to hold up a mirror to the plans of policy makers and illustrate their consequences.

Announced Pledges Scenario

The [Announced Pledges Scenario](#) (APS) assumes that all announced ambitions and targets made by governments around the world are met in full and on time. With regards to electromobility, it includes all recent major announcements of electrification targets and longer-term net zero emissions and other pledges, regardless of whether these have been anchored in legislation or in updated Nationally Determined Contributions (NDCs). For example, the APS assumes that countries that have signed on to the Conference of the Parties (COP 26) declaration on accelerating the transition to [100% zero emissions cars and vans](#) will achieve this goal, even if there are not yet policies or regulations in place to support it. In countries that have not yet made a net zero emissions pledge or set electrification targets, the APS considers the same policy framework as the STEPS. Non-policy assumptions for the APS, including population and economic growth, are the same as in the STEPS.

The difference between the APS and the STEPS represents the “implementation gap” that exists between the policy frameworks and measures required to achieve country ambitions and targets, and the policies and measures that have been legislated.

Net Zero Emissions by 2050 Scenario

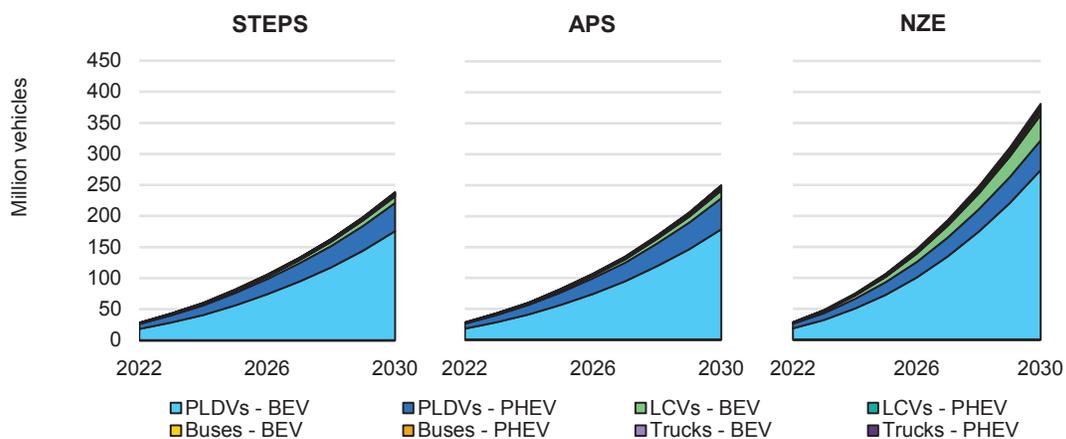
The [Net Zero Emissions by 2050 Scenario](#) (NZE Scenario) is a normative scenario that sets out a narrow but achievable pathway for the global energy sector to achieve net zero CO₂ emissions by 2050. The scenario is compatible with limiting the global temperature rise to 1.5°C with no or limited temperature overshoot, in line with reductions assessed by the Intergovernmental Panel on Climate Change in its [Special Report on Global Warming of 1.5°C](#). There are many possible paths to achieve net zero CO₂ emissions globally by 2050 and many uncertainties that could affect them. The NZE Scenario is therefore a path and not *the* path to net zero emissions.

The difference between the NZE Scenario and the APS highlights the “ambition gap” that needs to be closed to achieve the goals under the 2015 Paris Agreement.

Electric vehicle fleet to grow by a factor of eight or more by 2030

The total fleet of EVs (excluding two/three-wheelers) grows from almost 30 million in 2022 to about 240 million in 2030 in the Stated Policies Scenario (STEPS), achieving an average annual growth rate of about 30%. In this scenario, EVs account for over 10% of the road vehicle fleet by 2030. Total EV sales reach over 20 million in 2025 and over 40 million in 2030, representing over 20% and 30% of all vehicle sales, respectively.

Figure 3.1. Electric vehicle stock by mode and scenario, 2022-2030



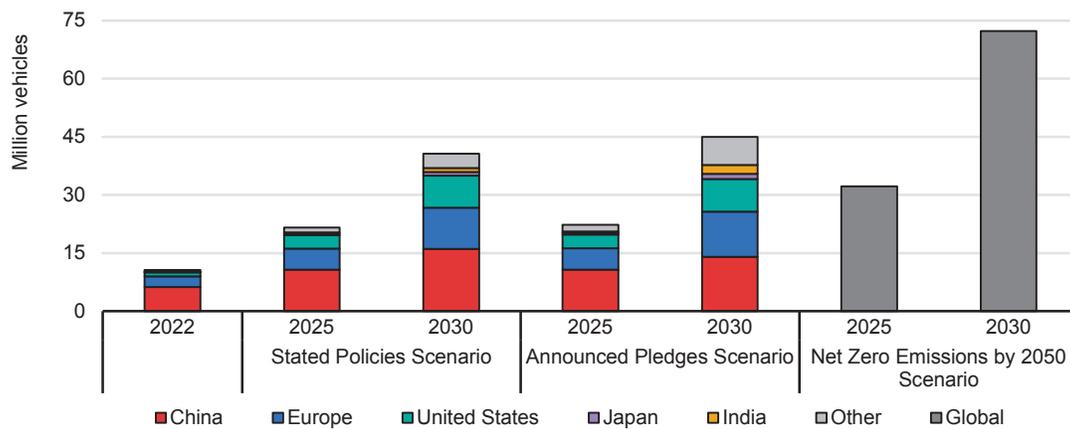
IEA. CC BY 4.0.

Notes: STEPS = Stated Policies Scenario; APS = Announced Pledges Scenario; NZE = Net Zero Emissions by 2050 Scenario; BEV = battery electric vehicle; PHEV = plug-in hybrid electric; PLDV = passenger light-duty vehicle; LCV = light commercial vehicle.

EV deployment commensurate with government pledges is only 5% above what stated policies would imply by 2030.

In the Announced Pledged Scenario (APS), based on announced government targets and pledges that go beyond existing policies, the global EV fleet reaches almost 250 million in 2030, around 5% higher than in the STEPS. The average annual growth rate in the APS is nearly 35%, with the result that one in seven vehicles on the road is an EV in 2030. Total EV sales reach 45 million in 2030, representing over 35% of all vehicle sales.

Figure 3.2. Electric vehicle sales by region, 2022-2030

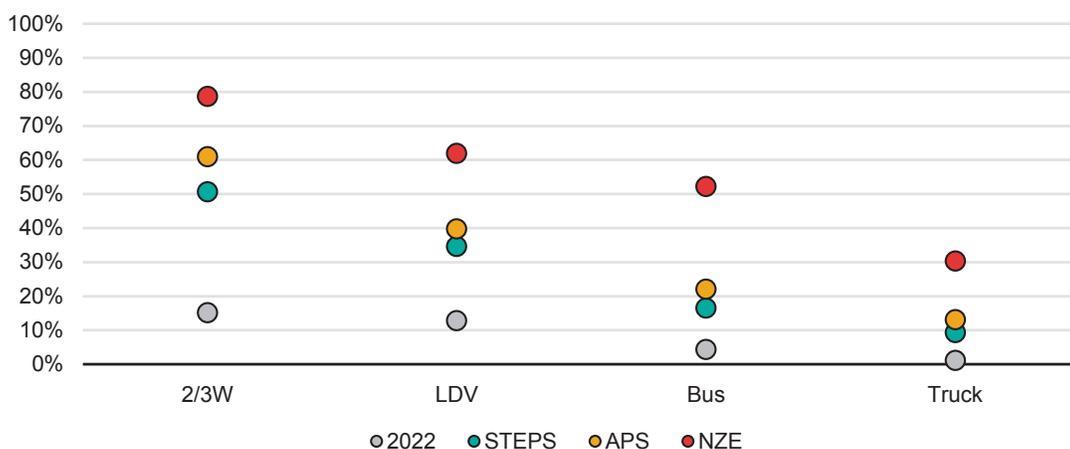


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Global EV sales increase around fourfold from 2022 to 2030 under both stated policies and announced ambitions.

The global EV sales share in 2030 in the STEPS is about half that in the NZE Scenario, in which the fleet of EVs grows more rapidly, at an average annual rate of around 40%, reaching 380 million EVs on the road in 2030. Electric vehicle sales reach over 30 million in 2025 and over 70 million in 2030, a total of approximately 30% and 60% of all vehicle sales, respectively.

Figure 3.3. Electric vehicle sales shares by mode and scenario, 2030



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Notes: 2/3W = two/three-wheeler; LDV = light-duty vehicle; STEPS = Stated Policies Scenario; APS = Announced Pledges Scenario; NZE = Net Zero Emissions by 2050 Scenario.

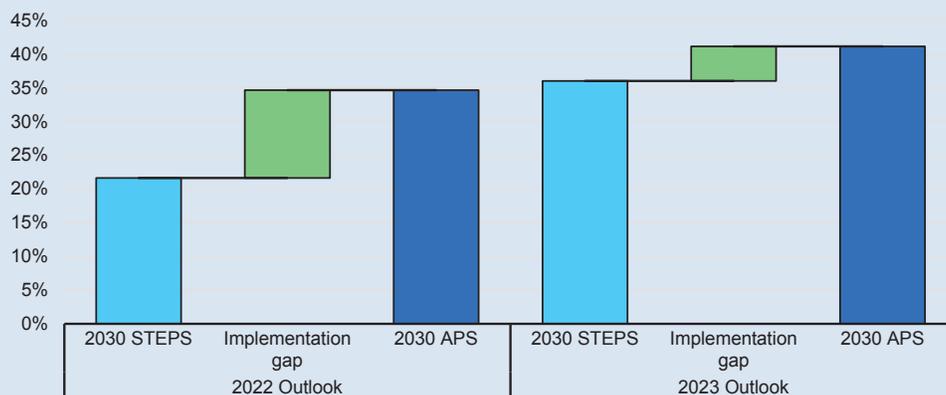
Existing policies are projected to yield market shares almost in line with country pledges across all modes of transport.

Box 3.1 Closing the implementation gap: how EV policy is catching up with targets

Targets and ambitions for clean energy technology deployment are generally more easily formulated than they are achieved, but in the case of EVs, the momentum is clearly on the side of achievement. Strong market uptake in 2022, combined with major policy announcements over the past year, have led to a significant upward revision of EV deployment to 2030 in the STEPS presented in this edition of the Global EV Outlook compared to the [2022 edition](#). The projected sales shares of EVs based on stated policies and market trends are now coming close to country stated ambitions for EVs, meaning that the policy implementation gap – the difference between country deployment ambitions and the policies currently in place – in the 2023 Outlook is much smaller than in the 2022 edition.

This is most notable for light-duty vehicles, where recent policies such as the US Inflation Reduction Act (IRA) and new EU CO₂ standards for cars and vans have resulted in a significantly higher EV sales share in 2030 in the STEPS. In this year’s Outlook, under announced ambitions, the electric car sales share exceeds 40% in 2030 compared to 35% under stated policies: this gap has more than halved in the past year. For trucks and buses, the EV sales share in 2030 in the STEPS also increased faster than ambition. As a result, the gap between ambition and legislated policies for HDVs is half of what it was in the 2022 Outlook.

Electric car sales share implementation gap, 2030



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Realising the potential of EVs to support government climate (as well as energy security) ambitions is thus almost in reach under current policy frameworks. In particular, the gap between policy and ambition has closed in three of the largest EV markets: the European Union, the United States and China. At the global level, oil displacement by EVs reaches 1.8 million barrels per day in 2025 (over 5 mb/d in 2030) under stated policies. As a result, global demand for oil-based road transport fuels will peak by 2025.

The momentum seen over the past year in terms of increasing EV sales and new supportive policies being introduced, along with funding designated for the necessary infrastructure (for example, the USD 5 billion allocated in the US IIJA to support EV charger installation), have also led industry players to invest more in EV supply chains. Notably, planned EV battery manufacturing expansions are set to increase capacity more than fourfold, reaching 6.8 TWh/year of production capacity in 2030, 65% higher than is needed to enable the level of EV deployment in the APS. Taken together, this suggests that even higher EV deployment than is implied by the APS is achievable by 2030 if policy efforts are sustained and critical potential bottlenecks (such as around recharging infrastructure and mining) are addressed early on.

Light-duty vehicles

Light-duty vehicles (LDVs), including passenger light-duty vehicles (PLDVs) and light commercial vehicles (LCVs), continue to make up the majority of electric vehicles (excluding two/three-wheelers). This is a result of strong policy support, including light-duty vehicle fuel economy or CO₂ standards, the availability of EV models, and the size of the LDV market. In the STEPS, electric LDV sales are projected to reach over 20 million in 2025, doubling the number of sales in 2022, and to quadruple to 40 million in 2030. The sales share of electric LDVs thus increases from 13% in 2022 to over 20% in 2025 and around 35% in 2030. The stock of electric LDVs reaches about 230 million in 2030, meaning that about one in every seven LDVs on the road is electric.

In the APS, the fleet of electric LDVs reaches over 240 million in 2030, a 15% stock share. Of these, 230 million are electric PLDVs, with only 6% being LCVs. Sales of electric LDVs reach almost 45 million in 2030 in the APS, representing a sales share of 40%. These results reflect government electrification ambitions and net zero pledges, including the [2021 COP 26 declaration target](#) to achieve 100% zero-emission LDV sales by 2040, and by 2035 in leading markets, which 40 national governments have committed to.

In the NZE Scenario, the sales share of electric LDVs reaches 30% in 2025, four years earlier than in the STEPS. In 2030, the sales share is over 60%, about 80% higher than in the STEPS and 55% higher than in the APS.

Buses

Governments have made significant progress in electrifying public bus fleets. In 2022, there were more than 800 000 electric buses on the road, representing over 3% of all buses. As such, buses are the most electrified road segment, excluding two/three-wheelers. In the STEPS, the electric bus fleet reaches 1.4 million in 2025 and 2.7 million in 2030, at which point around one in ten buses will be electric. In the near term, electrification is expected to progress most rapidly within the publicly owned urban bus fleet, which is covered by government procurement

regulations and, in some cases, government funding. For example, Canada is aiming to put 5 000 electric public and school buses on the road by the end of 2025 via the CAD 2.75 billion [Zero Emission Transit Fund](#).

In the APS, the electric bus fleet exceeds 3 million in 2030, reaching a stock share of over 10%. In 2030, about a quarter of buses sold are electric, which is about 35% higher than the sales share in the STEPS. In part, this increase is due to the [proposed EU heavy-duty vehicle CO₂ standards](#), which would require 100% zero-emission city bus sales from 2030. In the NZE Scenario, the electrification of buses is even more rapid, with one in two buses sold in 2030 being electric.

Medium- and heavy-duty trucks

Medium- and heavy-duty trucks are more difficult to electrify than other road segments, due in part to the size, weight and cost of the batteries needed to fully electrify this segment. However, progress is being made: around 320 000 electric trucks were on the road in 2022. By 2030, the fleet of electric trucks reaches almost 3.5 million in the STEPS, over 3% of the total truck fleet.

In the APS, the stock of electric trucks exceeds 4 million in 2030, a stock share of 4%. Electric truck sales increase from a negligible share today to over 9% in the STEPS in 2030 and 13% in the APS. The increased sales in the APS are driven in particular by the [Global Memorandum of Understanding \(MoU\) on Zero-Emission Medium- and Heavy-Duty Vehicles](#), through which 27 countries have now pledged to reach 30% zero-emission medium- and heavy-duty vehicle² sales by 2030 and 100% by 2040. In addition, the European Union has proposed HDV CO₂ standards that would require a 45% reduction in emissions in 2030 compared to 2019 levels.

In the NZE Scenario, electric trucks reach 30% of sales in 2030, which is aligned with the Global MoU on Zero-Emission Medium- and Heavy-Duty vehicles. However, this sales share is still two-and-a-half times that in the APS, and over three times that in the STEPS.

Two/three-wheelers

Two/three-wheelers are currently the most electrified road transport segment. Given the vehicles' light weight and limited daily driving distance, battery electrification is relatively easy and makes economic sense on a total cost of ownership basis in many regions. In 2022, the electric two/three-wheeler fleet totalled over 50 million, reaching a stock share of around 7%.

In the STEPS, the fleet of electric two/three-wheelers reaches 220 million in 2030, or a quarter of the total two/three-wheeler fleet. In the APS, the stock grows to 280 million, and almost 30% of all two/three-wheelers are electric. The electric sales share in 2030 reaches 50% in the STEPS and 60% in the APS. In the NZE Scenario, the electric two/three-wheeler sales share reaches almost 80% in 2030.

²Includes buses.

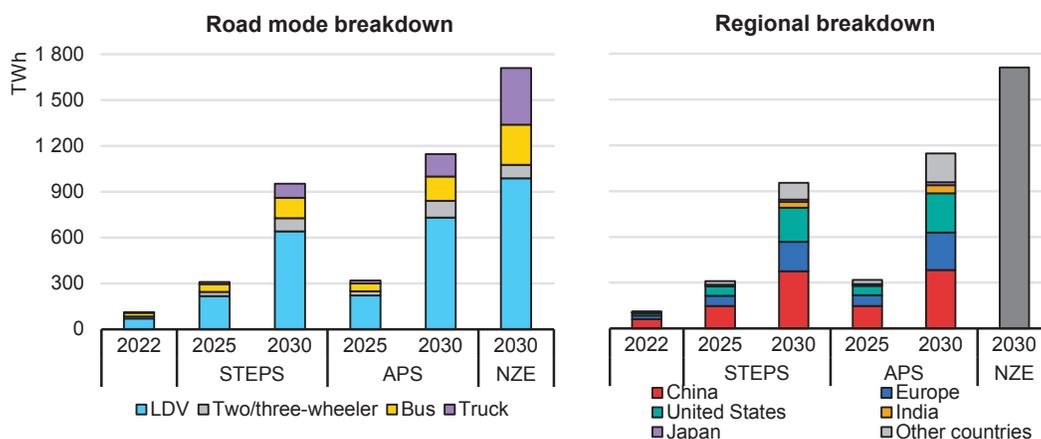
To power the growing stock of electric trucks, the number of depot chargers increases from around 300 000 today to 3.5 million in 2030 in the STEPS and 4.2 million in the APS. The installed capacity of truck depot chargers is about 310 GW in the STEPS and 380 GW in the APS in 2030. As with buses, the number of depot chargers needed in 2030 is far greater than the number of opportunity chargers. In the STEPS, the number of opportunity truck chargers is about 13 500 (6.5 GW installed capacity), increasing to 25 000 (13 GW installed capacity) in the APS in 2030.

Impact on energy demand and emissions

Electricity demand

The global EV fleet consumed about 110 TWh of electricity in 2022, which equates roughly to the current total electricity demand in the Netherlands. Almost a quarter of the total EV electricity consumption was for electric cars in China, and a fifth for electric buses in the same country. Electricity demand for EVs accounts for less than half a percent of current total final electricity consumption worldwide, and still less than one percent of China's final electricity consumption.

Figure 3.12. Electricity demand by mode and region, 2022-2030



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Notes: STEPS = Stated Policies Scenario; APS = Announced Pledges Scenario; NZE = Net Zero Emissions by 2050 Scenario; LDV = light-duty vehicle; RoW = rest of the world. The analysis is carried out for each region in the transport model within the IEA's Global Energy and Climate Model (GEC-Model) separately and then aggregated for global results. For the Net Zero Emissions by 2050 Scenario, only global values are reported. Regional data can be interactively explored via the [Global EV Data Explorer](#).

Electricity demand for EVs accounts for only a minor share of global electricity consumption in 2030 in the Announced Pledges Scenario.

Electricity demand for EVs is projected to reach over 950 TWh in the STEPS and about 1 150 TWh in the APS in 2030. Notably, electricity demand in the APS is

about 20% higher than in the STEPS, despite the stock of EVs only being about 15% higher. This is in part due to higher rates of electrification in many high-average vehicle mileage markets such as the United States, but also to greater electrification in the truck and bus segments, which contribute incrementally to vehicle stock, but have a high electricity demand per vehicle. In addition, it is assumed that in countries with net zero pledges, a larger share of energy consumption in PHEVs is provided by electricity (as opposed to gasoline or diesel). This is particularly relevant for cars and vans, which account for about two-thirds of demand in both scenarios.

By 2030, electricity demand for EVs accounts for less than 4% of global final electricity consumption in both scenarios. As shown in the [World Energy Outlook 2022](#), in 2030 the share of electricity for EVs is relatively small compared to demand for industrial applications, appliances or cooling and heating.

Table 3.1 Share of electricity consumption from electric vehicles relative to final electricity demand by region and scenario, 2022 and 2030

Country/region	2022	Stated Policies Scenario 2030	Announced Pledges Scenario 2030
China	0.8%	3.8%	4.0%
Europe	0.7%	4.7%	5.7%
United States	0.4%	5.4%	6.3%
Japan	0.1%	1.7%	2.2%
India	0.1%	1.7%	2.5%
Global	0.5%	3.2%	3.8%

Note: Non-road electricity consumption from the [World Energy Outlook 2022](#).

China remains the largest consumer of electricity for EVs in 2030, although its share of global EV electricity demand decreases significantly from about 55% in 2022 to less than 40% in the STEPS, and around 30% in the APS. This reflects wider adoption of electromobility across other countries in the period to 2030.

The size of the EV fleet becomes an important factor for power systems in both scenarios, with implications for peak power demand, transmission and distribution capacity. Careful planning of electricity infrastructure, peak load management, and smart charging will be critical. Reducing dependence on fast charging will allow for optimal planning and resiliency of power systems, mitigating peak power demand. More than 80% of the electricity demand for electric LDVs in 2030 in both scenarios is via slow chargers (private and public).

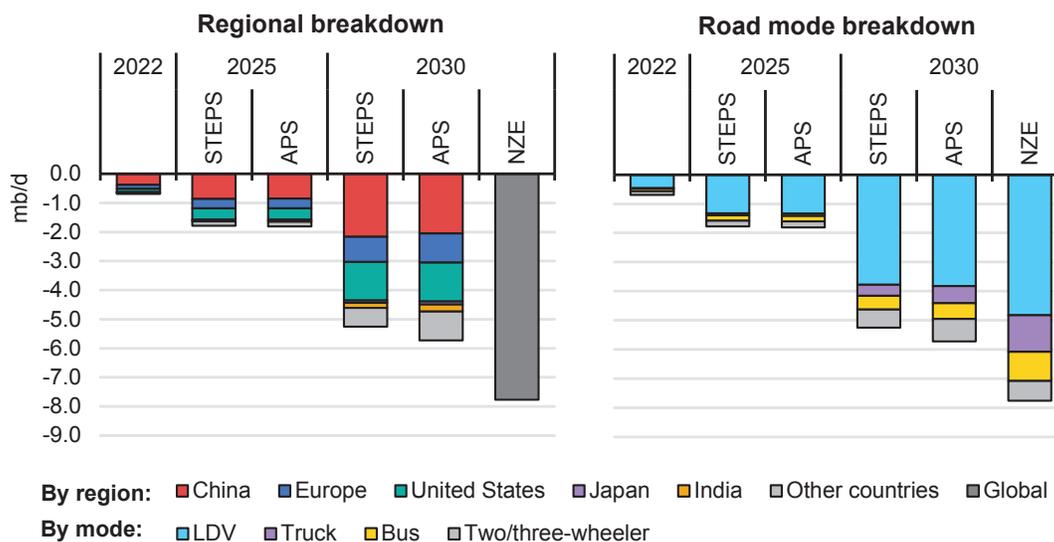
To help policy makers prioritise charging strategies according to the size of their EV fleet and their power system configuration, the IEA has developed a [guiding framework](#) and [online tool](#) for EV grid integration.

Oil displacement

The growing EV stock will reduce oil use, which today accounts for over 90% of total final consumption in the transport sector. Globally, the projected EV fleet in 2030 displaces more than 5 million barrels per day (mb/d) of diesel and gasoline in the STEPS and almost 6 mb/d in the APS, up from about 0.7 mb/d in 2022. For reference, Australia consumed around 1 mb/d of oil products across all sectors in 2021.

However, recent price volatility for critical minerals that are important inputs to battery manufacturing, and market tension affecting supply chains, are a stark reminder that in the transition to electromobility, energy security considerations evolve and require regular reconsideration.

Figure 3.13. Oil displacement by region and mode, 2022-2030



IEA. CC BY 4.0.

Notes: STEPS = Stated Policies Scenario; APS = Announced Pledges Scenario; NZE = Net Zero Emissions by 2050 Scenario; LDV = light-duty vehicle. Oil displacement based on internal combustion engine (ICE) vehicle fuel consumption to cover the same mileage as the EV fleet.

Oil displacement increases from 0.7 mb/d in 2022 to nearly 6 mb/d in 2030 if pledges supporting electromobility in road transport around the world are fulfilled.

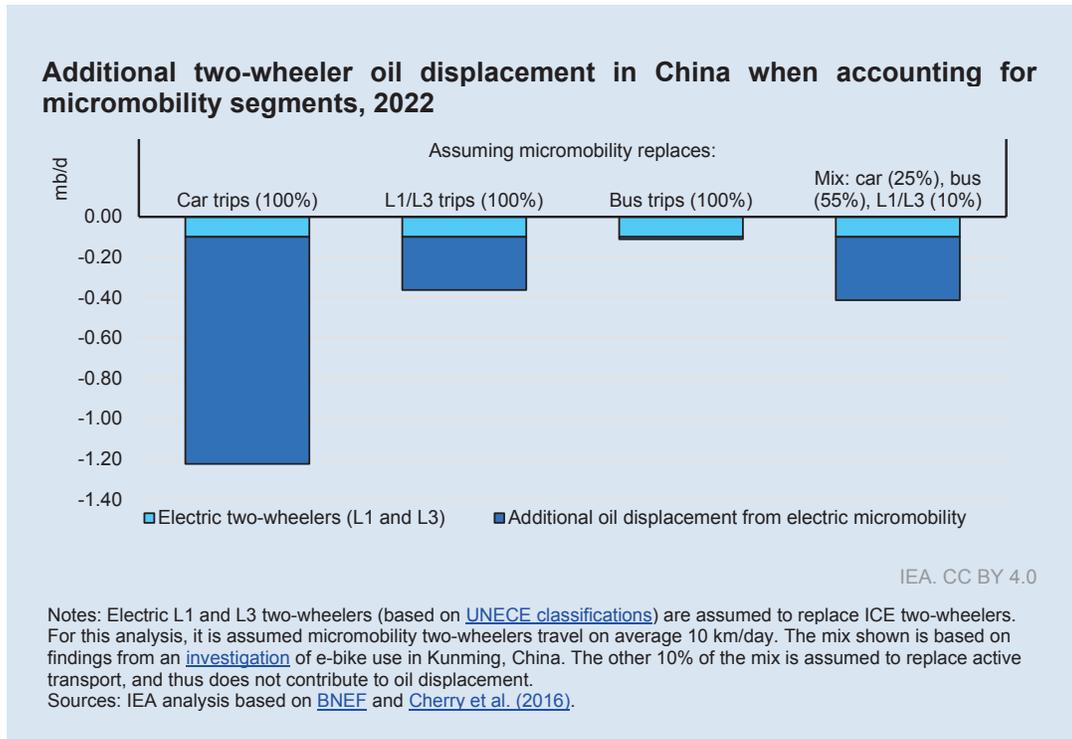
Box 3.2 How much oil really gets displaced by electric vehicles?

Oil displacement through the use of EVs can be estimated by assuming that the distance (total kilometres) travelled by EVs by segment each year would have otherwise been travelled by ICE vehicles or hybrid electric vehicles (HEVs) (based on the stock shares of each). In the case of PHEVs, only the distance covered by electricity gets included. The stock average fuel consumption of gasoline and diesel vehicles determines the total liquid fuel displacement, where the biofuel portion is taken out of the estimate based on regional blending rates. As a result, it can be estimated that in 2022, the stock of EVs displaced 700 000 barrels of oil per day.

This method of estimation assumes that EVs replace ICE or hybrid vehicles of the same segment, as opposed to some other means of transport, i.e. an electric car replaces an ICE car. The accuracy of this assumption is uncertain, in particular with respect to two-wheelers. In IEA analysis, only two-wheelers that fit the United Nations Economic Commission for Europe (UNECE) classification of L1 or L3 are considered. This definition excludes micromobility options such as electric-assisted bicycles and low-speed electric scooters, leading to a significantly lower stock (around 80% lower) than when including micromobility segments.

Whether or not electric micromobility avoids oil use is uncertain, as it might displace manual bicycles or walking rather than ICE two-wheelers. At the same time, there is evidence that in some cases micromobility [displaces personal car or taxi trips](#). The estimate of the amount of oil use that is avoided by two-wheeled micromobility therefore strongly depends on the assumptions about the mode that is being displaced.

The case of China, which represents over 95% of the global stock of two-wheeled electric micromobility, is a good example. Assuming that all two-wheeled micromobility in China replaces conventional ICE two-wheelers would increase oil displacement by 260 kb/d (or 160%). If instead electric micromobility was assumed to replace only bus trips, then the total oil displacement from two-wheelers in China would increase by just 10 kb/d (10%). However, if it was assumed that they displaced car trips, then oil use avoided by two-wheelers in China would be more than 1 mb/d higher. Including oil displacement from the two-wheeled electric micromobility segment in China alone can therefore increase the estimated 2022 global oil displacement from all electric vehicles anywhere from 1% to 160%. But there is significant uncertainty as to whether any oil is displaced at all.



Tax revenues

Taxes on petroleum-based road fuels can be a significant source of income for governments,⁷ and are often used to support investments in transport infrastructure, such as roads and bridges. Given the levels of oil displacement discussed above, the transition to EVs will reduce these tax revenues. Additional tax revenue from electricity will not be sufficient to fully compensate for this reduction, both because taxes on electricity tend to be lower on an energy basis and because EVs are more efficient and thus use less energy than ICE vehicles.

In 2022, the transition to electric vehicle stock displaced around USD 11 billion in gasoline and diesel tax revenues globally. At the same time, the use of EVs generated around USD 2 billion in electricity tax revenue, meaning there was a net loss of around USD 9 billion. Although China has the greatest stock of EVs, the greatest impact on tax revenues was seen in Europe, a trend which is expected to continue into the future. This is because Europe has some of the highest taxes on gasoline and diesel; for example, the gasoline tax rate in Germany is almost ten times the rate in China.

As the number of EVs increases globally, government fuel tax revenues are expected to decline, with global net tax losses increasing by around two-and-a-

⁷ While the share of total government revenue from fuel taxes may be small, for example it has recently been [less than 3%](#) in the United Kingdom, in many cases it represents a large share of the budget allocations for transportation infrastructure.

Vitol 2023 volumes and review

- Turnover \$400bn in 2023 (2022 \$505bn)
- 546mTOE delivered (2022 527mTOE)
- 7.3mbpd of crude oil and products delivered (2022 7.4mbpd)
- \$2.5bn committed to sustainable investments

Statement from Russell Hardy, CEO:

The geopolitical turmoil which characterised 2022 continued in 2023. In contrast, volatility across energy markets subsided and prices retreated from earlier peaks as physical market participants restructured trade flows worldwide.

The scale of this realignment should not be underestimated, the rerouting of 5 million barrels per day (mbpd) of Russian crude oil and products from Europe to India and China displaced flows which have had to find new homes. In gas, 120bcm per annum of Russian pipeline gas which used to flow to Europe has, to date, been replaced by an additional 62bcmpa LNG and significant demand destruction. Flows of LNG to Europe in 2023 were equivalent to half the global LNG market volume as recently as 2010, illustrating the rapid evolution of this market.

With Russian products no longer flowing to Europe, Europe has had to look further afield, most notably for gasoil. The increase in distance travelled, as a result of the rerouting of Russian product and Houthi attacks in the Suez Canal, has resulted in all-time highs of oil products on-water. Thus, while European road transport demand will begin to wane by the mid-2020s, in the near term we anticipate continued tightness in the market and an ongoing call on European refining.

Longer term, we have revised our outlook, pushing back peak oil demand by a few years to the early 2030s. The pace of EV adoption has moderated and oil demand from some developing markets may be higher than anticipated.

In this context our strategy is to deploy our capital, expertise and global footprint to deliver energy solutions. Energy requirements, in the near and medium term, vary markedly across geographies. By spanning traditional, transitional and sustainable solutions we are able to address these diverse requirements.

In growing demand centres, we are continuing to supply and invest in infrastructure, from refining in Asia, to storage and an expanding retail footprint across Africa, as our downstream company Vivo Energy works towards completing its acquisition of Engen South Africa. Similarly, our Turkish downstream company, Petrol Ofisi, is aiming to acquire BP's downstream business in Turkey. On completion, Vitol will be invested in circa 9,000 service stations worldwide.

Even in developed markets, ensuring stable supply in the face of sustained demand will require investment in both upstream and refining capacity. In 2023 we consolidated our US upstream activities in VTX and in early 2024 announced our intention to acquire Saras SpA, a leading Italian energy company with a 300kbd refinery.

Similarly, we recognise that ensuring a supply of sustainable energy for the future requires investment today. We have committed over \$2.5bn to sustainable investments to date and continue to seek appropriate opportunities. As with the traditional businesses, we will invest where our capital,

expertise and footprint can be deployed to best effect; enabling the scaling of nascent markets and sustainable propositions.

At our core we remain an energy trading company and our people are our most valuable asset. In 2023 our turnover was \$400bn and we delivered 546mTOE, up 4% on 2022 an increase largely driven by increases in gas and LNG volumes.

Last year oil demand finally recovered to pre-pandemic levels, though some products, such as jet fuel, have taken longer. Our crude oil and product volumes fell slightly (1.6%) to 349mT or 7.3mbpd with a 10% decline in crude volumes being partly offset by increases in gasoline and gasoil volumes. This year we anticipate refined product demand will increase by 1.5mbpd, taking overall oil demand to almost 105mbpd.

Natural gas and LNG volumes grew by 19% and 24% respectively. We continue to see gas as a transitional fuel for the medium term, both in its displacement of coal in power generation and as a necessary complement to intermittent renewable generation.

Power will be the primary form of energy in the future. Our power volumes traded remained stable as we continue to expand our presence. On the trading side we have leveraged expertise to facilitate access to renewable power, whilst investing further in renewable generation to grow our current renewable generation capacity of 1.1GW. Our UK based power company, VPI, is evolving from generation to the provision of power related services, from flexible generation to storage and carbon capture, required for the successful running of the decarbonised grid in future.

Notwithstanding recent concerns, we continue to believe that carbon offsets have a role to play in the transition. Since we established our carbon team almost 20 years ago, our focus has been on working with local stakeholders to develop high quality carbon projects. We very much hope that a strong internationally recognised framework evolves in the near term.

The world of energy is becoming ever more important and ever more complex. The decisions made today may impact generations to come. Geopolitics, energy security and the need for an energy transition present complicated and often competing priorities for government and societies. There is an ongoing need for clear and constructive dialogue, alongside farsighted leadership. Business can be part of the solution, but the effective deployment of capital requires a pragmatic approach, long-term policy and regulatory clarity. We are committed to investing in the future of energy, and will deploy our capital and expertise as best we can.

LDV Total Sales of PEV and HEV by Month (updated through March 2024)

Month	PEV		HEV	Total LDV
	BEV	PHEV		
Dec-10	19	326	28,592	1,144,840
Jan-11	103	321	19,540	819,938
Feb-11	83	281	23,306	993,535
Mar-11	298	608	34,533	1,246,668
Apr-11	573	493	25,602	1,157,928
May-11	1,150	481	17,419	1,061,841
Jun-11	1,708	561	12,655	1,053,414
Jul-11	932	125	19,621	1,059,730
Aug-11	1,363	302	21,181	1,072,379
Sep-11	1,031	723	17,625	1,053,761
Oct-11	866	1,108	20,057	1,021,185
Nov-11	773	1,139	26,110	994,786
Dec-11	1,212	1,529	31,100	1,243,784
Jan-12	824	603	21,779	913,284
Feb-12	639	1,023	36,222	1,149,432
Mar-12	961	3,200	48,206	1,404,623
Apr-12	479	3,116	39,901	1,184,567
May-12	612	2,766	37,184	1,334,642
Jun-12	863	2,455	34,558	1,285,499
Jul-12	479	2,537	31,611	1,153,759
Aug-12	866	3,878	38,369	1,285,292
Sep-12	1,306	4,503	34,836	1,188,899
Oct-12	2,240	4,994	33,290	1,092,294
Nov-12	2,614	4,544	35,002	1,143,916
Dec-12	2,704	4,965	43,690	1,356,070
Jan-13	2,372	2,354	34,611	1,043,238
Feb-13	2,666	2,789	40,173	1,192,299
Mar-13	4,553	3,079	46,327	1,453,038
Apr-13	4,403	2,735	42,804	1,285,446
May-13	4,545	3,209	48,796	1,443,311
Jun-13	4,573	4,169	44,924	1,403,121
Jul-13	3,943	3,499	45,494	1,313,844
Aug-13	4,956	6,407	53,020	1,501,294
Sep-13	3,650	4,477	33,576	1,137,206
Oct-13	3,733	6,367	33,570	1,206,182
Nov-13	3,930	4,903	36,085	1,243,852
Dec-13	4,770	5,020	36,155	1,358,734
Jan-14	2,971	2,934	27,555	1,011,187
Feb-14	3,324	3,721	30,561	1,192,467
Mar-14	4,578	4,594	43,790	1,537,270
Apr-14	4,187	4,718	39,430	1,391,303
May-14	5,802	6,651	52,227	1,609,678

Note:

- PEV** Plug-in Electric Vehicles
- BEV** Battery Electric Vehicles
- PHEV** Plug-in Hybrid Electric Vehicles
- HEV** Hybrid Electric Vehicles
- LDV** Light-Duty Vehicles (car & light truck, including all powertrain types)

Jun-14	4,982	6,511	39,225	1,421,963
Jul-14	5,693	5,740	44,488	1,435,805
Aug-14	6,483	5,920	48,208	1,586,374
Sep-14	5,983	3,357	31,385	1,245,786
Oct-14	5,927	3,735	30,892	1,281,132
Nov-14	6,176	3,609	31,109	1,302,655
Dec-14	7,419	3,867	33,302	1,507,928
Jan-15	3,977	2,113	25,312	1,152,480
Feb-15	4,435	2,589	27,038	1,258,570
Mar-15	5,715	3,020	33,654	1,545,710
Apr-15	6,037	2,962	32,379	1,455,242
May-15	7,057	4,416	40,257	1,634,952
Jun-15	6,975	3,409	32,330	1,476,472
Jul-15	5,143	3,836	35,666	1,510,941
Aug-15	5,224	3,786	37,633	1,577,179
Sep-15	6,704	3,038	32,106	1,442,113
Oct-15	5,740	4,081	30,485	1,455,153
Nov-15	6,103	4,275	25,153	1,318,210
Dec-15	7,954	5,483	32,387	1,641,913
Jan-16	3,576	3,137	20,967	1,148,087
Feb-16	4,424	3,909	24,371	1,343,922
Mar-16	7,115	5,319	28,756	1,595,065
Apr-16	6,266	5,842	28,988	1,506,431
May-16	6,526	5,619	30,573	1,535,670
Jun-16	7,678	6,113	27,681	1,512,996
Jul-16	7,762	6,525	32,633	1,521,245
Aug-16	8,601	6,372	32,206	1,511,405
Sep-16	10,032	6,037	31,286	1,434,483
Oct-16	5,408	5,943	26,484	1,370,721
Nov-16	6,266	7,858	28,497	1,378,635
Dec-16	13,077	10,211	34,507	1,688,368
Jan-17	5,398	5,669	22,630	1,142,568
Feb-17	5,846	6,247	28,355	1,333,128
Mar-17	10,171	7,384	32,012	1,554,998
Apr-17	5,961	7,300	30,949	1,426,883
May-17	8,038	8,645	33,729	1,519,793
Jun-17	8,814	7,787	30,073	1,474,970
Jul-17	7,802	7,407	29,050	1,416,743
Aug-17	8,850	7,668	34,850	1,484,826
Sep-17	13,421	7,719	37,319	1,525,522
Oct-17	6,792	6,665	29,451	1,356,789
Nov-17	8,435	8,408	30,075	1,399,640
Dec-17	14,959	10,289	32,187	1,605,527
Jan-18	9,154	6,241	21,718	1,151,011
Feb-18	6,653	8,783	24,609	1,293,763
Mar-18	11,060	11,601	28,165	1,647,090

Apr-18	12,794	9,931	24,827	1,353,546
May-18	12,232	11,403	31,602	1,586,493
Jun-18	12,997	10,485	31,038	1,543,716
Jul-18	15,387	9,269	28,203	1,362,964
Aug-18	20,222	10,132	30,182	1,482,215
Sep-18	24,163	10,777	31,985	1,432,136
Oct-18	29,937	9,937	28,614	1,360,281
Nov-18	24,089	11,580	27,453	1,382,553
Dec-18	28,374	13,744	29,753	1,617,778
Jan-19	26,942	6,010	19,153	1,133,157
Feb-19	10,644	6,610	22,730	1,251,513
Mar-19	17,281	8,074	30,926	1,598,811
Apr-19	20,113	5,908	33,082	1,326,555
May-19	18,012	7,949	44,162	1,581,479
Jun-19	23,421	7,999	39,247	1,509,674
Jul-19	23,559	7,197	36,341	1,396,460
Aug-19	18,864	8,433	42,830	1,638,722
Sep-19	21,812	5,816	29,848	1,267,150
Oct-19	23,072	6,388	32,457	1,333,995
Nov-19	11,421	7,733	32,962	1,403,153
Dec-19	18,681	7,674	35,706	1,512,243
Jan-20	26,391	5,104	27,166	1,136,560
Feb-20	11,151	6,111	32,309	1,350,570
Mar-20	18,234	3,481	23,591	989,954
Apr-20	8,058	2,015	14,268	715,322
May-20	8,626	3,911	27,740	1,119,089
Jun-20	16,809	4,206	41,590	1,101,169
Jul-20	23,075	5,228	43,738	1,236,643
Aug-20	17,291	6,478	42,191	1,318,070
Sep-20	28,101	6,670	43,293	1,341,099
Oct-20	29,959	7,755	47,611	1,358,922
Nov-20	22,225	7,369	47,724	1,199,137
Dec-20	28,620	10,721	63,846	1,605,497
Jan-21	25,103	7,463	46,843	1,106,286
Feb-21	26,215	9,046	54,045	1,193,776
Mar-21	40,755	12,261	78,123	1,597,152
Apr-21	33,547	18,604	76,397	1,518,415
May-21	29,796	20,807	82,511	1,570,313
Jun-21	45,913	16,648	65,960	1,302,213
Jul-21	42,013	15,669	74,298	1,280,803
Aug-21	35,499	14,067	67,976	1,092,661
Sep-21	42,020	12,554	60,102	1,015,935
Oct-21	42,485	18,275	63,482	1,051,015
Nov-21	46,687	14,170	59,326	1,014,411
Dec-21	49,441	16,553	69,983	1,203,993
Jan-22	42,780	11,983	63,093	991,573

Feb-22	46,859	12,563	58,175	1,045,624
Mar-22	64,160	16,200	76,683	1,257,821
Apr-22	52,537	17,875	71,849	1,236,432
May-22	52,502	15,263	68,737	1,108,063
Jun-22	74,262	14,838	61,039	1,143,820
Jul-22	64,310	13,932	59,229	1,126,523
Aug-22	59,836	13,797	58,869	1,134,265
Sep-22	69,811	13,415	55,892	1,124,297
Oct-22	71,739	17,603	66,661	1,181,540
Nov-22	69,924	16,183	57,086	1,135,484
Dec-22	79,262	19,759	69,099	1,268,897
Jan-23	72,944	15,593	60,069	1,046,919
Feb-23	81,158	17,789	66,320	1,138,756
Mar-23	92,077	21,397	94,289	1,374,992
Apr-23	92,631	23,355	100,528	1,361,694
May-23	92,897	25,134	103,832	1,362,535
Jun-23	100,745	23,181	100,762	1,368,178
Jul-23	99,259	23,840	103,757	1,298,913
Aug-23	92,277	28,148	107,325	1,316,366
Sep-23	101,719	29,632	109,269	1,331,167
Oct-23	90,509	22,037	103,799	1,193,974
Nov-23	102,323	24,530	108,549	1,235,583
Dec-23	121,647	41,121	117,098	1,458,853
Jan-24	81,317	25,759	91,929	1,066,907
Feb-24	81,712	28,567	105,919	1,238,572
Mar-24	101,720	33,315	122,332	1,438,012

Statement from President Joe Biden on the March Consumer Price Index

Today's report shows inflation has fallen more than 60% from its peak, but we have more to do to lower costs for hardworking families. Prices are still too high for housing and groceries, even as prices for key household items like milk and eggs are lower than a year ago. I have a plan to lower costs for housing—by building and renovating more than 2 million homes—and I'm calling on corporations including grocery retailers to use record profits to reduce prices.

Fighting inflation remains my top economic priority. We're making progress: wages are rising faster than prices, incomes are higher than before the pandemic, and unemployment has remained below 4% for the longest stretch in 50 years. But we have more to do: my agenda is lowering costs for prescription drugs, health care, student debt, and hidden junk fees. Rather than proposing solutions for hardworking families, Congressional Republicans want to slash taxes for billionaires and big corporations, while helping special interests and Big Pharma raise prices. I won't let them.

<https://www.bls.gov/news.release/cpi.nr0.htm>

Table A. Percent changes in CPI for All Urban Consumers (CPI-U): U.S. city average

US MARCH CPI

	Seasonally adjusted changes from preceding month							Un-adjusted 12-mos. ended Mar. 2024
	Sep. 2023	Oct. 2023	Nov. 2023	Dec. 2023	Jan. 2024	Feb. 2024	Mar. 2024	
All items	0.4	0.1	0.2	0.2	0.3	0.4	0.4	3.5
Food	0.2	0.3	0.2	0.2	0.4	0.0	0.1	2.2
Food at home	0.1	0.3	0.0	0.1	0.4	0.0	0.0	1.2
Food away from home(1)	0.4	0.4	0.4	0.3	0.5	0.1	0.3	4.2
Energy	1.2	-2.1	-1.6	-0.2	-0.9	2.3	1.1	2.1
Energy commodities	1.8	-4.3	-3.8	-0.7	-3.2	3.6	1.5	0.9
Gasoline (all types)	1.6	-4.3	-4.0	-0.6	-3.3	3.8	1.7	1.3
Fuel oil	6.4	-6.4	-1.1	-3.3	-4.5	1.1	-1.3	-3.7
Energy services	0.3	0.4	1.0	0.3	1.4	0.8	0.7	3.1
Electricity	0.8	0.4	1.0	0.6	1.2	0.3	0.9	5.0
Utility (piped) gas service	-1.4	0.3	1.2	-0.6	2.0	2.3	0.0	-3.2
All items less food and energy	0.3	0.2	0.3	0.3	0.4	0.4	0.4	3.8
Commodities less food and energy commodities	-0.2	0.0	-0.2	-0.1	-0.3	0.1	-0.2	-0.7
New vehicles	0.2	-0.1	0.0	0.2	0.0	-0.1	-0.2	-0.1
Used cars and trucks	-1.8	-0.4	1.4	0.6	-3.4	0.5	-1.1	-2.2
Apparel	-0.3	0.0	-0.6	0.0	-0.7	0.6	0.7	0.4
Medical care commodities(1)	-0.3	0.4	0.5	-0.1	-0.6	0.1	0.2	2.5
Services less energy services	0.5	0.3	0.5	0.4	0.7	0.5	0.5	5.4
Shelter	0.6	0.3	0.4	0.4	0.6	0.4	0.4	5.7
Transportation services	0.7	0.9	1.0	0.1	1.0	1.4	1.5	10.7
Medical care services	0.2	0.2	0.5	0.5	0.7	-0.1	0.6	2.1

Handwritten notes: "GASOLINE" in red with an arrow pointing to the Gasoline (all types) row. A red checkmark is next to the Mar. 2024 value for Gasoline (all types).

Footnotes

(1) Not seasonally adjusted.

Weekly commentary

April 8, 2024

BlackRock

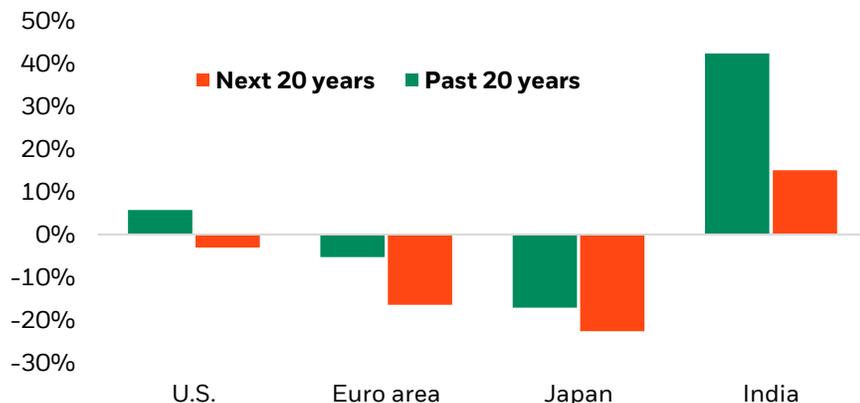
Playing demographic divergence now

- Working-age populations are declining in major economies. We favor countries that are better adapting and sectors set to benefit from spending shifts.
- U.S. yields jumped last week but U.S. stocks remain near all-time highs. The strong March U.S. jobs data supports our view of only two or three cuts this year.
- We eye this week's U.S. CPI. We see goods inflation pulling down overall inflation while services remain sticky. We watch for how soon the ECB will cut rates.

Working-age populations are shrinking across developed markets (DMs) but still growing in emerging markets (EMs). That hurts DM economic growth and favors EM growth – a divergence that is broadly reflected in asset prices, in our view. **Yet we think the demographic mega force is also driving structural shifts in sectors – like healthcare and real estate – that are not priced in.** We get selective, seeking EMs capitalizing on their younger populations and DMs better adapting to aging.

Mind the DM-EM gap

Change in domestic working-age population, next 20 years vs. past 20 years



Forward-looking estimates may not come to pass. Source: BlackRock Investment Institute, United Nations, with data from Haver Analytics, April 2024. Notes: The chart shows the percentage change in the domestic working-age population (aged 15-64), 2003-2023 vs. 2024-2044. The domestic working-age population is calculated by subtracting the UN's migration projections from the UN's population projections that include migration, assuming the overall age structure does not change.

Life expectancy is rising and birth rates are falling across the globe. In many DMs, that means the working-age population is set to shrink over the next 20 years. See the chart. That has vast macro implications. Fewer workers means slower growth. It is also inflationary, in our view. Retirees stop producing economic output, but do not typically spend less, historical data show. Plus, governments are likely to spend more on healthcare and pensions. The resulting inflationary pressure is one reason why we expect central bank policy rates to stay above pre-pandemic levels. Aging-related spending also threatens to push up government debt, with global public debt having already tripled since the mid-1970s to 92% of global GDP in 2022. And that debt is likely to be subject to higher interest costs. The economic picture looks quite different in EMs, like India, where the working-age population is still growing.



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BlackRock Investment Institute

We think the broad growth impact of diverging population trends is well understood by markets. Yet as we outline in our new research paper, countries can respond differently – creating an uncertain outlook. We believe this will affect asset prices as markets adjust to how countries adapt. Within EMs, we seek those more likely to capitalize on their demographic advantage by bringing more working-age people into the workforce or that look to ramp up investment in productive capital, like public infrastructure. Growing populations consume more energy, so we expect rising spending on energy infrastructure in places like India and Indonesia. We think higher returns are likely in EMs with stronger growth and greater investment demand.

In DMs, we look for those that could better adapt and outperform the growth outlook markets have priced. DMs can mitigate the hit to growth by finding more workers – from other countries, or among women and other groups underrepresented in the workforce. Japan has somewhat lessened the impact of aging by substantially raising female participation. The recent immigration surge in the U.S., UK and Canada is boosting their workforces, as reflected in last week’s bumper U.S. jobs report, but it would have to persist for years to fully offset working-age population declines – unlikely, in our view. We’re monitoring how much artificial intelligence (AI) can boost the productivity of a smaller workforce.

Even less understood by markets, we believe, is the sectoral impact of mega forces – or big structural shifts driving returns. Older populations spend differently than younger ones. For example, healthcare spending rises with age. Real estate demand could change since older people typically move less frequently. Yet research shows even predictable spending shifts are not priced in until they hit. That was true for healthcare in Japan, where valuations have risen broadly in lockstep with the well-signposted growth of the country’s retired population. That appears true now in the U.S. and Europe – one reason we like healthcare in both regions. We also think AI names will benefit from investment in automation to boost worker productivity.

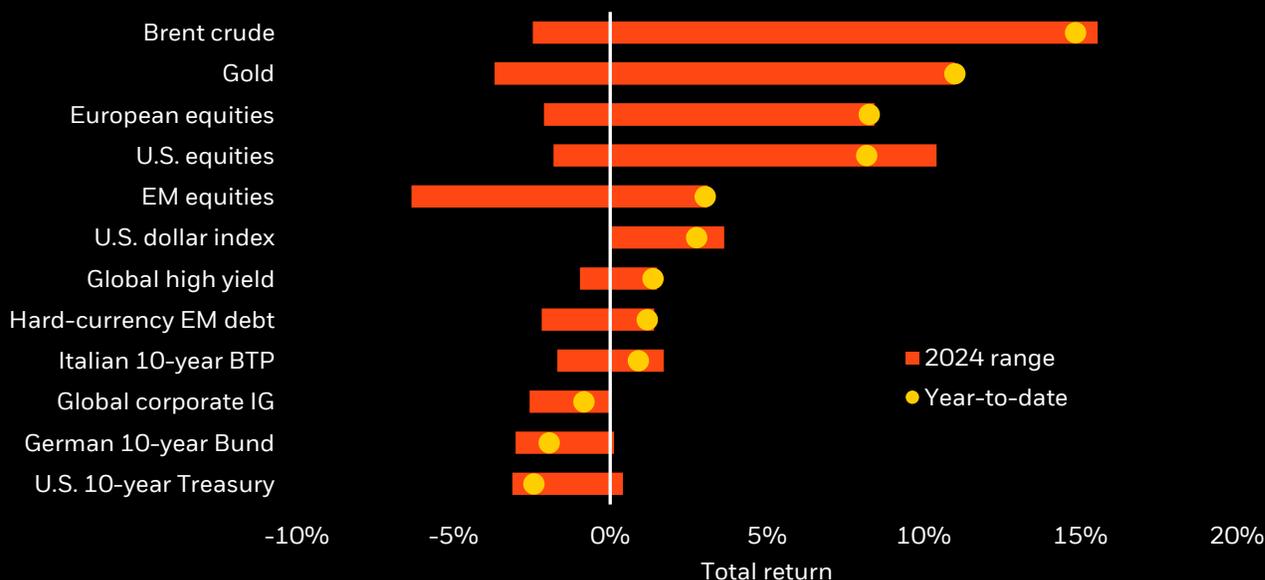
Bottom line: In EM, we favor countries best able to capitalize on their demographic advantage. We prefer DMs whose responses to aging could be underappreciated. We target sectors and firms poised to benefit from new spending patterns.

Market backdrop

The S&P 500 dipped 1% last week but was near a record high and 10-year Treasury yields jumped to their highs of the year near 4.40%. The March U.S. payrolls data showed job gains easily beating expectations. We think this reflects an unexpected surge in immigration helping expand the workforce. Markets are pricing in between two and three quarter-point Fed rate cuts this year. We think June is no longer a given for the Fed to start cutting rates – but see rate cuts coming as inflation falls.

Assets in review

Selected asset performance, year-to-date return and range



Past performance is not a reliable indicator of current or future results. Indexes are unmanaged and do not account for fees. It is not possible to invest directly in an index.

Sources: BlackRock Investment Institute, with data from LSEG Datastream as of April 4, 2024. Notes: The two ends of the bars show the lowest and highest returns at any point year to date, and the dots represent current year-to-date returns. Emerging market (EM), high yield and global corporate investment grade (IG) returns are denominated in U.S. dollars, and the rest in local currencies. Indexes or prices used are: spot Brent crude, ICE U.S. Dollar Index (DXY), spot gold, MSCI Emerging Markets Index, MSCI Europe Index, LSEG Datastream 10-year benchmark government bond index (U.S., Germany and Italy), Bank of America Merrill Lynch Global High Yield Index, J.P. Morgan EMBI Index, Bank of America Merrill Lynch Global Broad Corporate Index and MSCI USA Index.

Week ahead

April 10

U.S. CPI

April 12

University of Michigan consumer sentiment survey; China trade data; UK GDP

April 11

China CPI and PPI; European Central Bank policy decision

April 10-17

China total social financing

U.S. inflation data is in focus this week. We expect inflation to fall toward the Federal Reserve's 2% policy target this year as goods prices keep falling from pandemic highs. Yet we still see inflation on a rollercoaster back up in 2025, led by stubborn services inflation. We think core inflation will settle closer to 3% – higher than pre-pandemic levels. We watch for the European Central Bank (ECB) to give more clues on the timing of rate cuts at next week's policy meeting.

Big calls

Our highest conviction views on tactical (6-12 month) and strategic (long-term) horizons, April 2024

Tactical	Reasons
U.S. equities	<ul style="list-style-type: none"> Our macro view has us neutral at the benchmark level. But the AI theme and its potential to generate alpha – or above-benchmark returns – push us to be overweight overall.
Income in fixed income	<ul style="list-style-type: none"> The income cushion bonds provide has increased across the board in a higher rate environment. We like short-term bonds and are now neutral long-term U.S. Treasuries as we see two-way risks ahead.
Geographic granularity	<ul style="list-style-type: none"> We favor getting granular by geography and like Japan equities in DM. Within EM, we like India and Mexico as beneficiaries of mega forces even as relative valuations appear rich.
Strategic	Reasons
Private credit	<ul style="list-style-type: none"> We think private credit is going to earn lending share as banks retreat – and at attractive returns relative to public credit risk.
Inflation-linked bonds	<ul style="list-style-type: none"> We see inflation staying closer to 3% in the new regime on a strategic horizon.
Short- and medium-term bonds	<ul style="list-style-type: none"> We overall prefer short-term bonds over long term. That's due to more uncertain and volatile inflation, heightened bond market volatility and weaker investor demand.

Note: Views are from a U.S. dollar perspective, April 2024. This material represents an assessment of the market environment at a specific time and is not intended to be a forecast of future events or a guarantee of future results. This information should not be relied upon by the reader as research or investment advice regarding any particular funds, strategy or security.

Tracking five mega forces

Mega forces are big, structural changes that affect investing now – and far in the future. As key drivers of the new regime of greater macroeconomic and market volatility, they change the long-term growth and inflation outlook and are poised to create big shifts in profitability across economies and sectors. This creates major opportunities – and risks – for investors. See our [web hub](#) for our research and related content on each mega force.

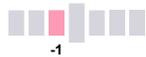
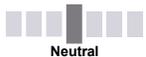
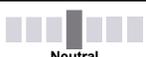
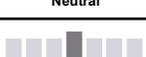
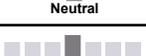
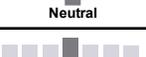
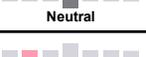
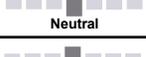
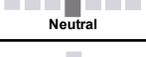
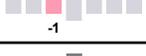
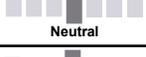
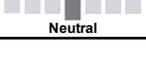
- Demographic divergence:** The world is split between aging advanced economies and younger emerging markets – with different implications.
- Digital disruption and artificial intelligence (AI):** Technologies that are transforming how we live and work.
- Geopolitical fragmentation and economic competition:** Globalization is being rewired as the world splits into competing blocs.
- Future of finance:** A fast-evolving financial architecture is changing how households and companies use cash, borrow, transact and seek returns.
- Transition to a low-carbon economy:** The transition is set to spur a massive capital reallocation as energy systems are rewired.

Granular views

Six- to 12-month tactical views on selected assets vs. broad global asset classes by level of conviction, April 2024

Our approach is to first determine asset allocations based on our macro outlook – and what’s in the price. **The table below reflects this and, importantly, leaves aside the opportunity for alpha, or the potential to generate above-benchmark returns.** The new regime is not conducive to static exposures to broad asset classes, in our view, but is creating more space for alpha.

Underweight
Neutral
Overweight
● Previous view

Asset	View	Commentary
Developed markets		
United States	Benchmark  Neutral	We are neutral in our largest portfolio allocation. Falling inflation and coming Fed rate cuts can underpin the rally’s momentum. We are ready to pivot once the market narrative shifts.
	Overall  +1	We are overweight overall when incorporating our U.S.-centric positive view on artificial intelligence (AI). We think AI beneficiaries can still gain while earnings growth looks robust.
Europe	 -1	We are underweight. While valuations look fair to us, we think the near-term growth and earnings outlook remain less attractive than in the U.S. and Japan – our preferred markets.
UK	 Neutral	We are neutral. We find attractive valuations better reflect the weak growth outlook and the Bank of England’s sharp rate hikes to fight sticky inflation.
Japan	 +2	We are overweight. Mild inflation, strong earnings growth and shareholder-friendly reforms are all positives. We see the BOJ policy shift as a normalization, not a shift to tightening.
Emerging markets		
China	 Neutral	We are neutral. We see growth on a weaker trajectory and see only limited policy stimulus from China. We prefer EM debt over equity.
Short U.S. Treasuries	 +1	We are overweight. We prefer short-term government bonds for income as interest rates stay higher for longer
Long U.S. Treasuries	 Neutral	We are neutral. The yield surge driven by expected policy rates has likely peaked. We now see about equal odds that long-term yields swing in either direction.
U.S. inflation-linked bonds	 Neutral	We are neutral. We see higher medium-term inflation, but cooling inflation and growth may matter more near term.
Euro area inflation-linked bonds	 Neutral	We are neutral. Market expectations for persistent inflation in the euro area have come down.
Euro area govt bonds	 Neutral	We are neutral. Market pricing reflects policy rates in line with our expectations and 10-year yields are off their highs. Widening peripheral bond spreads remain a risk.
UK gilts	 Neutral	We are neutral. Gilt yields have compressed relative to U.S. Treasuries. Markets are pricing in Bank of England policy rates closer to our expectations.
Japanese govt bonds	 -2	We are underweight. We find more attractive returns in equities. We see some of the least attractive returns in Japanese government bonds, so we use them as a funding source.
China govt bonds	 Neutral	We are neutral. Bonds are supported by looser policy. Yet we find yields more attractive in short-term DM paper.
U.S. agency MBS	 Neutral	We are neutral. We see agency MBS as a high-quality exposure in a diversified bond allocation and prefer it to IG.
Global IG credit	 -1	We are underweight. Tight spreads don’t compensate for the expected hit to corporate balance sheets from rate hikes, in our view. We prefer Europe over the U.S.
Global high yield	 Neutral	We are neutral. Spreads are tight, but we like its high total yield and potential near-term rallies. We prefer Europe.
Asia credit	 Neutral	We are neutral. We don’t find valuations compelling enough to turn more positive.
Emerging hard currency	 +1	We are overweight. We prefer EM hard currency debt due to its relative value and quality. It is also cushioned from weakening local currencies as EM central banks cut policy rates.
Emerging local currency	 Neutral	We are neutral. Yields have fallen closer to U.S. Treasury yields. Central bank rate cuts could hurt EM currencies, dragging on potential returns.

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Not FDIC Insured • May Lose Value • No Bank Guarantee

SAF Dan Tsubouchi @Energy_Tidbits · 58m
Saudi Aramco shares only up small today.

Saudi exchange closes in about 30 min at 6am MT.

#OOTT



SAF Dan Tsubouchi @Energy_Tidbits · 8h
 Saudi stock markets open in just over 3 hrs.
Will #1 oil company in the world, @saudi_aramco , fully reflect that #Oil prices should be up strong tomorrow night? ...

2 4 1.1K

SAF Dan Tsubouchi @Energy_Tidbits · 8h
Saudi stock markets open in just over 3 hrs.

Will #1 oil company in the world, @saudi_aramco , fully reflect that #Oil prices should be up strong tomorrow night?

Or will that be tempered as Saudi is located in almost direct fighting line between Iran vs Israel.

#OOTT



5 9 3.2K

SAF **Dan Tsubouchi**  @Energy_Tidbits · 9h ...

Defense only!

Post Biden/Netanyahu call @mj_lee just said official told her Biden told Netanyahu US will not be involved in any offensive attacks vs Iran.

New WH statement Biden "..... reaffirm America's ironclad commitment to the security of Israel"

#OOTT

  1  3  1.7K  

SAF **Dan Tsubouchi**  @Energy_Tidbits · 1h ...

"the matter can be deemed concluded" says Iran .

it's only 3:40am in Israel so no one knows how many people are hurt & damage impact from massive missile/drones fired from Iran at Israel.

But hard to see Israel not hitting back hard.

#OOTT

https://twitter.com/Iran_UN/status/1779269993043022053

Post

 Pinned

 **Permanent Mission of I.R.Iran to UN, NY**  Follow ...

@Iran_UN

Conducted on the strength of Article 51 of the UN Charter pertaining to legitimate defense, Iran's military action was in response to the Zionist regime's aggression against our diplomatic premises in Damascus. The matter can be deemed concluded. However, should the Israeli regime make another mistake, Iran's response will be considerably more severe. It is a conflict between Iran and the rogue Israeli regime, from which the U.S. MUST STAY AWAY!

4:06 PM · Apr 13, 2024 · **7M** Views

 2.7K  10K  12K  2K 

  1  7  1.3K  

SAF — Dan Tsubouchi  @Energy_Tidbits · 4h ...
More breaking news!

[@CNN](#) reporting Iran state media saying Iran has just launched ballistic missiles at Israel.

[#OOTT](#)



   4  1.4K  

SAF — Dan Tsubouchi  @Energy_Tidbits · 5h ...
Breaking update!

[@CNN](#) just reporting it's not just slow moving drones, but Iran also launched unknown number of cruise missiles towards Israel ie. be there in a couple hours.

[#OOTT](#)

SAF — Dan Tsubouchi  @Energy_Tidbits · 5h

Breaking!

Iran has launched drone attacks at Israel

[#OOTT...](#)

[Show more](#)

  1  2  2K  

SAF — Dan Tsubouchi [@EnergyTidbits](#) · 5h ...
Will Iran proxies (ie. in Iraq, Houthis) try to support Iran or be opportunistic while Israel/US prepare to defend against the slow moving drones.

Map courtesy of [@Alissanyt](#) [@LazaroGamio](#)

#OOTT



SAF — Dan Tsubouchi [@EnergyTidbits](#) · 5h
Breaking!
Iran has launched drone attacks at Israel
#OOTT...

🗨️ 🔄 ❤️ 2 📊 1.7K 📌 📤

SAF — Dan Tsubouchi [@EnergyTidbits](#) · 7h ...
Daily Europe air traffic creeping back closer to pre-Covid.

Now only 3.7% below pre-Covid as of Apr 11, vs 6.2% below as of Apr 4, and 7.0% below as of Mar 28. Thx [@eurocontrol](#).

#OOTT



🗨️ 🔄 1 ❤️ 1 📊 1K 📌 📤

SAF

Dan Tsubouchi @EnergyTidbits · 10h

US gasoline prices keep creeping higher.

US +\$0.04 WoW, +\$0.23 MoM to \$3.63,

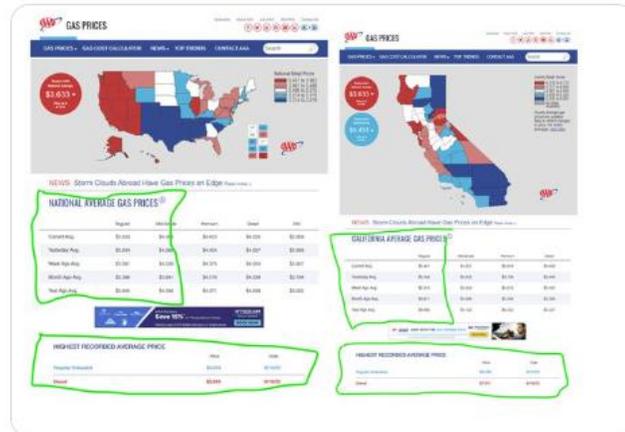
California +\$0.13 WoW, +\$0.57 MoM to \$5.45.

Plus US gasoline prices normally seasonally increase into June.

Biden doesn't want \$4 gas in election year.

...

Show more



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1.2K



SAF

Dan Tsubouchi @EnergyTidbits · 11h

It's temporary but North Dakota warns Mar road restrictions should impact #Oil production in Mar/Apr.

"March completions fell off pretty dramatically 92 completions in Feb and only 56 in Mar., That's not enough to sustain and grow production" NDIC's Lynn Helms

#OOTT

"March completions fell off pretty dramatically 92 completions in Feb and only 56 in Mar., That's not enough to sustain and grow production"
NDIC's Lynn Helms



North Dakota Oil and Gas
ND Oil and Gas Division
April 2024 Director's Cut and February 2024 Production Numbers

SAF Group created transcript of comments by North Dakota Director of Mineral Resources, Lynn Helms on the monthly Directors Cut webcast on April 12, 2024.

Items in "italics>" are SAF Group created [transcript](#)

At 3:10 min mark, Helms "*March completions fell off pretty dramatically. So we had 92 completions in February and only 56 in March. That's not enough to sustain and grow production. We think again that is a temporary thing. The weather in March was not really very conducive to a lot of truck traffic and movements. Particularly in late March when we had the return of winter weather. My grandmother used to say in like a iamb, out like a lion. That's what we experienced this year.*"

At 4:45 min mark, Helms "*down to 12 track crews today. So again, as we are coming out of winter weather, we're looking at road restrictions, weight restrictions on the road.*"

Prepared by SAF Group <https://safgroup.ca/news-insights/>

Figure 19: North Dakota Oil Production by Month

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Jan	1,175,564	1,403,806	1,430,511	1,167,277	1,088,113	1,065,718	1,102,576	1,102,576	1,102,576	1,102,576	1,102,576	1,102,576
Feb	1,175,316	1,335,091	1,451,681	1,063,654	1,069,091	1,158,837	1,158,837	1,158,837	1,158,837	1,158,837	1,158,837	1,158,837
Mar	1,162,134	1,301,760	1,430,107	1,106,806	1,122,642	1,122,642	1,122,642	1,122,642	1,122,642	1,122,642	1,122,642	1,122,642
Apr	1,221,391	1,392,485	1,221,919	1,071,148	909,687	1,133,435	1,133,435	1,133,435	1,133,435	1,133,435	1,133,435	1,133,435
May	1,246,356	1,394,648	1,069,382	1,120,042	1,059,062	1,135,009	1,135,009	1,135,009	1,135,009	1,135,009	1,135,009	1,135,009
June	1,227,220	1,425,230	1,051,591	1,133,498	1,096,763	1,166,604	1,166,604	1,166,604	1,166,604	1,166,604	1,166,604	1,166,604
July	1,205,290	1,445,934	1,042,091	1,070,664	1,075,032	1,180,611	1,180,611	1,180,611	1,180,611	1,180,611	1,180,611	1,180,611
Aug	1,292,506	1,490,475	1,146,371	1,107,359	1,075,307	1,223,617	1,223,617	1,223,617	1,223,617	1,223,617	1,223,617	1,223,617
Sept	1,359,282	1,443,980	1,223,107	1,114,620	1,121,963	1,280,052	1,280,052	1,280,052	1,280,052	1,280,052	1,280,052	1,280,052
Oct	1,362,369	1,513,936	1,231,848	1,111,819	1,121,754	1,354,476	1,354,476	1,354,476	1,354,476	1,354,476	1,354,476	1,354,476
Nov	1,375,603	1,519,037	1,227,138	1,158,622	1,098,369	1,278,909	1,278,909	1,278,909	1,278,909	1,278,909	1,278,909	1,278,909
Dec	1,402,741	1,476,777	1,191,429	1,144,999	957,864	1,274,809	1,274,809	1,274,809	1,274,809	1,274,809	1,274,809	1,274,809

Source: NDIC, NDPA
Prepared by SAF Group <https://safgroup.ca/news-insights/>

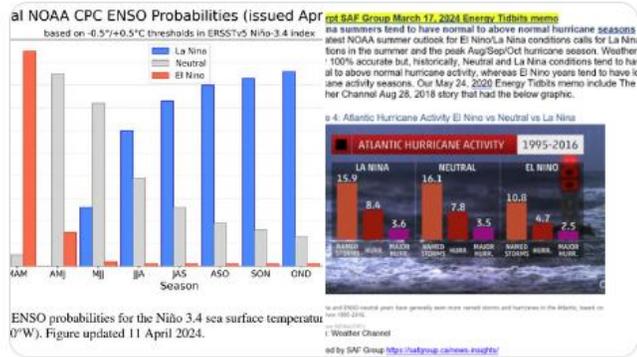
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SAF Dan Tsubouchi @Energy_Tidbits · Apr 12
 Potential for higher than normal Atlantic hurricane activity this summer.

@NOAA latest outlook is for La Nina summer.

Hurricane are far from predictable but La Nina summers tend to have increased hurricane activity. @weatherchannel

#OOTT #NatGas #LNG



2 3 1.6K

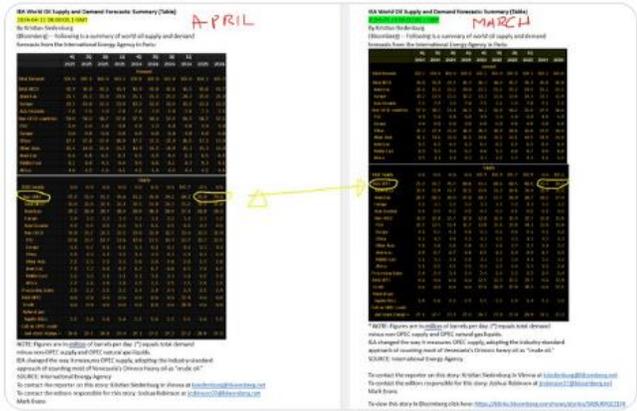
SAF Dan Tsubouchi @Energy_Tidbits · Apr 12
 IEA Non-OPEC supply.

Apr OMR has no change to non-OPEC supply of 70.4 mmbd for 2024.

BUT IEA lowered 2023 starting point to 68.8 mmbd vs Mar OMR of 69.1.

So higher growth rate +1.6 YoY vs +1.3 YoY despite no change to 70.4 mmbd.

Thx @business Kristian Siedenburg #OOTT



2 4 2.3K

SAF Dan Tsubouchi @Energy_Tidbits · Apr 12
No change to @IEA call peak #Oil demand by 2030

See 📌 IEA post

But absent added energy/climate policies & increased \$\$ push into clean energy, "decline in global oil demand following the peak will not be a steep one, leaving demand close to current levels for some time" #OOTT



🗨️ 1 ❤️ 3 📊 2.4K 📌 ⬆️

SAF Dan Tsubouchi @Energy_Tidbits · Apr 12
No new updates posted on Ukrtransgaz JSC website utg.ua as to the extent of damage to the on the ground gas storage infrastructure ie. no idea yet of the impact on the #NatGas storage operations.

Good thing it's not winter.

#OOTT

SAF Dan Tsubouchi @Energy_Tidbits · Apr 11
Why Russia hit Ukraine #NatGas storage.

Putin "In the energy sector, unfortunately, we have seen a series of strikes on our energy facilities recently and had to respond"

...
[Show more](#)

<https://tass.ru/politika/20519199>
11 April, 12:26
Updated April 11, 12:55 p.m.

Putin said the strikes on Ukrainian energy facilities are part of demilitarization

The President of Russia noted that the strikes are related to the impact on the military-industrial complex of Ukraine
MOSCOW, April 11. /TASS/. Strikes on energy facilities in Ukraine are part of the demilitarization process, as they affect Ukraine's defense industry, Russian President Vladimir Putin said at a meeting with Belarusian leader Alexander Lukashenko.

"If everything is looped around the solution of the issues that we talked about initially, and in the energy sector they are related, among other things, to the solution of one of the tasks that we set for ourselves, this is demilitarization. First of all, we proceed from the fact that in this way we influence the defense industry - the military-industrial complex of Ukraine, and directly," Putin said.

At the same time, he added, "If we do move on to some talks about resolving all issues in other ways, of course, as I have said many times in this regard, we are ready for this."

<https://tass.ru/politika/20519183>
11 April, 12:25
Updated April 11, 12:54

Putin said that the Russian Federation was forced to respond to Ukrainian strikes on its energy facilities

The Russian president stressed that Russia, based on humanitarian considerations, "did not strike any blows" in winter
MOSCOW, April 11. /TASS/. Russian President Vladimir Putin said that the Russian Federation was forced to respond to Ukrainian strikes on its energy facilities. The head of state holds talks with President of Belarus Alexander Lukashenko.

"In the energy sector, unfortunately, we have seen a series of strikes on our energy facilities recently and had to respond," Putin said.

He stressed that Russia, based on humanitarian considerations, "did not strike any blows" in winter. "I mean that they did not want to leave social institutions, hospitals and so on without power supply. But after a series of strikes on our energy facilities, we were forced to respond," Putin stressed.

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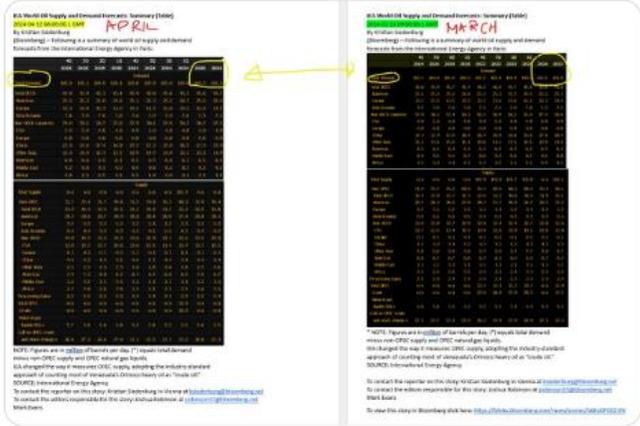
SAF

Dan Tsubouchi @Energy_Tidbits · Apr 12
Two things can be true.

@IEA Apr OMR "oil demand growth has nevertheless been revised down by roughly 100 kb/d since last month's Report, to 1.2 mb/d".

Yet no change to 2024 oil demand of 103.2 mmbd vs Mar OMR.

Why? IEA increased it 2023 oil demand starting point so lower YoY..
[Show more](#)



Dan Tsubouchi @Energy_Tidbits · Apr 9



Will IEA do same on Fri?

EIA Increases oil demand fcast by +0.4 mmbd to 102.9 in 2024 & by +0.5 mmbd to 104.3 in 2025.

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Dan Tsubouchi  @Energy_Tidbits · Apr 11
Why Russia hit Ukraine #NatGas storage.

...

Putin "In the energy sector, unfortunately, we have seen a series of strikes on our energy facilities recently and had to respond"

Ukrtransgaz storage operator "ground infrastructure of 2 gas storage facilities was damaged."

#OOTT

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SAP -- Dan Tsubouchi  @Energy_Tidbits · Apr 11



Europe TTF #NatGas prices up but still down 1/3 YoY.

Russia attacks two Ukraine underground gas storage facilities ... "still operating while specialists assess the impact of the shelling" report @kchoursina ...

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5.9K

🔖 ↗

SAF Dan Tsubouchi @Energy_Tidbits · Apr 11
 What's missing?

Biden CPI inflation fighting agenda incl housing, grocery retailers, Pharma, billionaires & corporations.

Gasoline was #1 factor for the surprise higher MoM CPI. Question is why Biden omitted #Oil #NatGas? Not putting back VEN oil sanctions? What else?

#OOTT

<https://www.whitehouse.gov/the-press-office/2024/04/10/statement-from-president-joe-biden-on-the-march-consumer-price-index-2/>
 APRIL 10, 2024

Statement from President Joe Biden on the March Consumer Price Index
 Today's report shows inflation has fallen more than 60% from its peak, but we have more to do to lower costs for hardworking families. Prices are still too high for housing and groceries, even as prices for key household items like milk and eggs are lower than a year ago. I have a plan to lower costs for housing—by building and renovating more than 2 million homes—and I'm calling on corporations including grocery retailers to use record profits to reduce prices.

Fighting inflation remains my top economic priority. We're making progress: wages are rising faster than prices, incomes are higher than before the pandemic, and unemployment has remained below 4% for the longest stretch in 50 years. But we have more to do: my agenda is lowering costs for prescription drugs, health care, student debt, and hidden junk fees. Rather than proposing solutions for hardworking families, Congressional Republicans want to slash taxes for billionaires and big corporations, while helping special interests and Big Pharma raise prices. I won't let them.

<https://www.bls.gov/news.release/cpi.nr0.htm> **US MARCH CPI**

Table A. Percent changes in CPI for All Urban Consumers (CPI-U), U.S. city average

	Seasonally adjusted changes from preceding month							Unadjusted 12-month change Mar. 2024
	Mar. 2023	Apr. 2023	May 2023	Jun. 2023	Jul. 2023	Aug. 2023	Sep. 2023	
All Items	0.9	0.1	0.2	0.1	0.1	0.4	0.1	0.9
Food	0.2	0.0	0.0	0.1	0.4	0.6	0.1	0.3
Food at home	0.1	0.0	0.0	0.1	0.4	0.6	0.0	0.3
Food away from home	0.4	0.0	0.0	0.2	0.6	0.6	0.1	0.3
Energy	1.0	0.1	0.4	0.0	0.0	0.0	0.0	0.1
Energy commodities	1.9	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0
Gasoline (all types)	1.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Energy services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Utility (gas) gas service	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All Urban Consumer Services	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Government less food and energy commodities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-durable	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Durable goods and services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alcohol	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Medical care commodities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Medical care services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-durable less energy services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shelter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transportation services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Medical care services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Handwritten note: GASOLINE

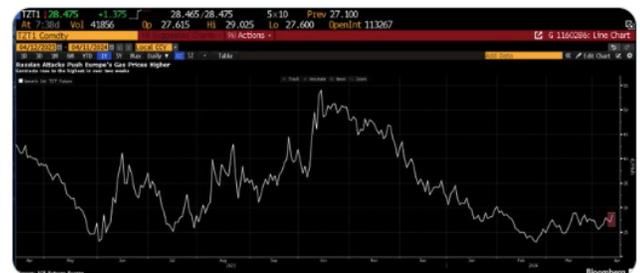
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SAF Dan Tsubouchi @Energy_Tidbits · Apr 11
 Europe TTF #NatGas prices up but still down 1/3 YoY.

Russia attacks two Ukraine underground gas storage facilities ... "still operating while specialists assess the impact of the shelling" report @kchoursina @priazrocha

#OOTT

[bloomberg.com/news/articles/...](https://www.bloomberg.com/news/articles/)



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SAF Dan Tsubouchi @Energy_Tidbits · 12h

For those not near their laptop, @EIAgov just released at 8:30am MT its #Oil #Gasoline #Distillates inventory as of Apr 5. Table below compares EIA data vs @businessexpectations and vs @APlenergy yesterday. Prior to release, WTI was \$85.30. #OOTT

Oil/Products Inventory Apr 5: EIA, Bloomberg Survey Expectations, API (million barrels)	EIA	Expectations	API
Oil	5.84	0.80	3.03
Gasoline	0.72	-2.30	-0.61
Distillates	1.66	-1.38	0.12
	8.22	-2.88	2.54

Note: Oil is commercial. So excludes a +0.6 mmb in SPR for the Apr 5 week
 Note: Included in the oil data, Cushing had a 0.17 mmb draw for Apr 5 week
 Source EIA, Bloomberg
 Prepared by SAF Group <https://safgroup.ca/news-insights/>

2 1 1K

SAF Dan Tsubouchi @Energy_Tidbits · 12h

Note 🟡 Gasoline impact in CPI.

Hard for Biden to pull back on Venezuela licenses ie, stop >150 kbd of VEN oil into Gulf Coast.

Saudi voluntary 1 mmb/d are the 1st OPEC+ cuts that could come back in July. MBS holds what Biden wants.

Thx @Josh_A_Robinson
 #OOTT

US March Inflation Rises More Than Expected to 3.5%
 2024-04-10 12:31:37.438 GMT

By Joshua Robinson (Bloomberg) -- CPI rose 0.4% m/m in March after rising 0.4% m/m in Feb., according to the BLS; est. up 0.3%

- * M/m forecast range from up 0.2% to up 0.5% from 72 estimates
- * CPI y/y rose 3.5%; est. up 3.4%
- ** Y/y forecast range from up 3.1% to up 3.5% from 54 estimates
- * CPI ex. food, energy m/m rose 0.4%; est. up 0.3%
- ** Ex. food, energy y/y rose 3.8%; est. up 3.7%
- * Food index increased 0.1% in March after being unchanged in Feb.
- * Energy index increased 1.1% in March after rising 2.3% in Feb.
- * Shelter index increased 0.4% in March after rising 0.4% in Feb.
- ** Owners' equivalent rent of residence increased 0.4% in March after rising 0.4% in Feb.; up 5.9% y/y

To contact the reporter on this story:
 Joshua Robinson in London at robinson37@bloomberg.net
 To contact the editors responsible for this story:
 Joshua Robinson at robinson37@bloomberg.net
 Kristy Scheuble

To view this story in Bloomberg click here:
<https://blinks.bloomberg.com/news/stories/SBQ84PGENSWD>

1 1 1.1K

Dan Tsubouchi @Energy_Tidbits · 13h
 Treasury yields up, stock futures down post US CPI print post 0.4% MoM vs 0.3% expectations

As of 6:38am MT

Thx @SquawkCNBC

#OOTT

6:38am MT

TREASURYS	FUTURE CHG	FAIR VALUE	IMPLIED OPEN	
30-YR T-BOND YIELD: 4.591%	S&P 500	-67.50	-1.34	-66.16
10-YR T-NOTE YIELD: 4.495%	DJIA	-444.00	-6.33	-437.67
5-YR T-NOTE YIELD: 4.536%	NASDAQ	-256.75	-5.85	-250.90
2-YR T-NOTE YIELD: 4.910%				

Pre CPI *6:29am MT

TREASURYS	FUTURE CHG	FAIR VALUE	IMPLIED OPEN	
30-YR T-BOND YIELD: 4.487%	S&P 500	+7.25	-1.34	+8.59
10-YR T-NOTE YIELD: 4.346%	DJIA	+54.00	-6.33	+60.33
5-YR T-NOTE YIELD: 4.356%	NASDAQ	+25.25	-5.85	+31.10
2-YR T-NOTE YIELD: 4.730%				

Source CNBC

1.1K

Dan Tsubouchi @Energy_Tidbits · 14h
 sounds like "growth is normalizing" is at strong levels

@FerroTV just now on Delta CEO Bastian to @business "no let up in demand"

#OOTT

Dan Tsubouchi @Energy_Tidbits · 15h

Hmmm!

"growth is normalizing and we are in a period of optimization ..."
 Delta Air Lines Outlook

...

[Show more](#)

Key Performance Indicators

Metric	Q1 2023	Q1 2022
Revenue	\$1.1B	\$1.0B
Operating Profit	\$150M	\$100M
Adjusted EBITDA	\$200M	\$150M

Revenue Breakdown and Outlook

Key drivers for revenue growth include: 1) increased demand for Delta's premium service, 2) improved operational efficiency, 3) strategic partnerships with other airlines, and 4) strong performance in the international market.

Operational Performance

Delta's operational performance was strong in Q1 2023, with a 10% increase in on-time arrivals and a 5% decrease in cancellations compared to Q1 2022. This was driven by improved aircraft utilization and enhanced crew scheduling.

Financial Performance

Delta's financial performance was also strong in Q1 2023, with a 15% increase in operating profit and a 10% increase in adjusted EBITDA compared to Q1 2022. This was driven by cost savings from operational improvements and increased revenue from premium services.

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1.5K

Dan Tsubouchi @Energy_Tidbits · 15h
 Hmmm!

"*growth is normalizing and we are in a period of optimization*" Delta Air Lines Outlook

Coming up Delta Air Lines CEO Bastian on @SquawkCNBC

#OOTT

FY Performance	
Revenue Per Share	\$1.27
Adjusted EPS (Diluted)	\$0.80
Adjusted EPS (Basic)	\$0.81
Key Ratios	
EV/Share	17.1x
Operating Margin	14%
Return on Equity	12.1%

Revenue Development and Outlook

"We generated record March quarter revenues, 8 percent higher than the prior year. Total and revenue (TARR) was down 17 percent compared to last year, including a weak one-time headwind from Delta and WDL. This year-end is the highest of our generation with the growth rate improving from points from the December quarter."

"Strong demand for travel in Delta is continuing into the June quarter which we expect total revenue growth will be 7 percent compared to the same quarter (2023) of the same 2 percent. While this outlook, we expect a double digit decline as we see strong performance and continue to profitably invest in the network."

- Record March quarter revenue:** Delta delivered March quarter revenue that was 8 percent higher than 2023 driven by lower ticket operations and strong demand growth. Delta's first quarter revenue performance and lower performance, and improved 25 percent from transportation days in the quarter. Adjusted EBITDA revenue (TARR) growth improved 12 points sequentially from the December quarter (2023) to March quarter.
- Customer travel demand accelerated:** Stronger corporate travel* grew 15 percent year-over-year, fully offsetting a 10 percent decline in leisure travel. Stronger corporate travel* growth was driven by higher volume in the corporate and leisure segments.
- Revenue development improved with record demand:** Corporate and leisure were a March quarter growth of 12 percent compared to the same quarter (2023). Total revenue improved 7 percent sequentially from the December quarter (2023) to March quarter.
- International travel strength continued:** International passenger volume was 2 percent higher versus the March quarter (2023). International passenger volume was 2 percent higher sequentially from the December quarter (2023) to March quarter.
- Revenue development driving Delta's performance:** For the quarter, overall revenue growth, including loyalty, Premium, Delta SkyMiles improved 12 percent of total revenue. Premium revenue grew 12 percent versus the March quarter (2023), continuing to improve from last year. Loyalty revenue was up 10 percent, driven by continued to improve growth and recovery from the December quarter (2023) to March quarter (2023).

*Revenue per available seat mile (RASM) was 10 percent higher sequentially from the December quarter (2023) to March quarter (2023).

Dan Tsubouchi @Energy_Tidbits · Apr 9

China, like US, is seeing Hybrids continuing to to take market share from EVs.

China Mar NEV sales 0.709 million.

NEV splits were released today:

EV: 0.428 million or 60%

Hybrid: 0.281 million or 40%.

...
 Show more

China March 2024 Retail EV vs Hybrid sales

<http://cpcauto.com/newslist.php?types=csjd&id=3424>

新能源车市场-2024年3月产量、零售、批发分析表

产品	零售			批发		
	BEV	PHEV	NEV A11	BEV	PHEV	NEV A11
3月份	48.3	30.6	78.8	42.8	28.1	70.9
2月份	24.8	17.8	42.6	22.0	16.8	38.8
同期	46.8	16.2	62.9	38.7	16.0	54.7
环比	3.2%	83.0%	25.2%	10.5%	75.4%	25.5%
同比	54.7%	71.3%	84.9%	54.4%	67.0%	82.5%
累计	117.6	77.7	195.3	102.6	74.2	176.9
同期累计	110.5	43.9	154.4	89.5	42.3	131.7
同比	6.4%	77.0%	26.5%	14.7%	75.6%	34.2%

Dan Tsubouchi @Energy_Tidbits · Apr 7

Big China EV/Hybrid sales in Q1 but still a long way to go to catch up to ICE.

NEV = EV + PHEV + HEV

...

SAF **Dan Tsubouchi** @Energy_Tidbits · Apr 9
Will IEA do same on Fri?

EIA increases oil demand fcast by +0.4 mmbd to 102.9 in 2024 & by +0.5 mmbd to 104.3 in 2025.

Note this is due to revisions to 2022 & 2023.

So their YoY growth rates in 2024 & 2025 are less than Mar fcast.

Regardless why, #oil demand is up big!..
[Show more](#)



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12

27

5.4K

Share icons



Dan Tsubouchi @Energy_Tidbits · Apr 9



India reality check!

"I was in Mumbai last week and anyone that thinks they're all going to be driving Tesla's in a few years time, hasn't seen the reality on the ground... be sustained & increasing demand for fossil fuels for the next 5, 10 yrs or so"

@trafigura Richard Holtum...

Show more

"I was in Mumbai last week and anyone that thinks they're all going to be driving Tesla's in a few years time, hasn't seen the reality on the ground ...going to be sustained & increasing demand for fossil fuels for the next 5, 10 years or so" Trafigura's Richard Holtum.



SAF Group created transcript of comments by Richard Holtum (Global Head of Gas, Power and Renewables, Trafigura) at FT Commodity Summit posted courtesy of Gulf Intelligence on April 9, 2024
<https://twitter.com/gulfintel/status/1777631376756245965>

Items in "italics" are SAF Group created transcript

Holtum *"Then looking at the rest of the world, I was in Mumbai last week and anyone that thinks they're all going to be driving Tesla's in a few years time, hasn't seen the reality on the ground. There is going to be sustained and increasing demand for fossil fuels for the next five, ten years or so. Because as the developing world develops, they will go through the phase of using fossil fuel driven cars. So, I think what we will see over the next few years is perhaps the emphasis move away from Europe and to a lesser extent the US, and move more towards the developing countries from a fossil fuel perspective for road transportation. But then as you add more renewables into the US and into Europe, you will see significantly more gas demand in those areas."*

Prepared by SAF Group <https://safgroup.ca/news-insights/>

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Dan Tsubouchi @Energy_Tidbits · Apr 9



WOW!

Vitol CEO Hardy sees #Oil demand +1.9 mmb/d YoY in 2024!

Vitol is a lot closer to OPEC's +2.2 mb/d YoY in 2024 .

Wonder how much the IEA increases its +1.3 mmb/d YoY demand forecast on Friday?

Thx @dmitryZ_reuters. #OOTT

Reuters UK @ReutersUK · Apr 9

Vitol sees oil price at \$80-\$100/b, healthy 2024 demand growth
reut.rs/3UaeAaB



1 4 23 4.2K

SAF **Dan Tsubouchi** @Energy_Tidbits · Apr 9
Energy Transition 101: More Renewables = More #NatGas

"if you believe in the Energy Transition, you believe in [Natural] gas. Because the more renewables you add to the grid, the more gas you're going to need to provide that baseload power." @trafigura Richard Holtum

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"Fundamentally to me, if you believe in the Energy Transition, you believe in gas [Natural Gas]. Because the more renewables you add to the grid, the more gas you're going to need to provide that baseload power." Trafigura's Richard Holtum.



SAF Group created transcript of comments by Richard Holtum (Global Head of Gas, Power and Renewables, Trafigura) at FT Commodity Summit posted courtesy of Gulf Intelligence on April 9, 2024
https://twitter.com/gulf_intel/status/1772631376256245955

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Holtum "As we go through the Energy Transition, let's not forget that the fossil fuels have a very, very large role to play. Fundamentally to me, if you believe in the Energy Transition, you believe in gas [Natural Gas]. Because the more renewables you add to the grid, the more gas you're going to need to provide that baseload power. And the best way you decarbonize that baseload power is to make sure it's gas, not coal. So, I think you have a very large scope of opportunity within the developed world."

"But then as you add more renewables into the US and into Europe, you will see significantly more gas demand in those areas."

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SAF **Dan Tsubouchi** @Energy_Tidbits · Apr 8
Oil bulls will like this!

"Instead, now we're getting numbers like 1.7, 1.8 million barrels a day [Oil Demand] because growth globally is holding up" @saadrahim.

Thx @FT @gulf_intel #OOTT

"Instead, now we're getting numbers like 1.7, 1.8 million barrels a day [Oil Demand] because growth globally is holding up. Like I said, it's not just US or China, it's also a lot of the other" Trafigura Chief Economist Rahim Saad



SAF Group created transcript of comments by Saad Rahim (Chief Economist Trafigura) at FT Commodity Summit, video courtesy of Gulf Intelligence Daily Energy Markets on April 8, 2024.
https://twitter.com/gulf_intel/status/17739909051729829

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At 2:05 min mark, Rahim "if you look around these commodity markets, you know we're at \$90 oil. We're at \$8,500 on copper. And that's tell you again something about the state of the market. Right, I think where we've moved to, especially an oil was coming in the year the market was fairly balanced. 1.1 million barrels a day was the consensus number on growth, on demand I should say. 1.1 million of non-OPEC supply. So that's a balanced market. Instead, now we're getting numbers like 1.7, 1.8 million barrels a day because growth globally is holding up. Like I said, it's not just US or China, it's also a lot of the other emerging economies, we're seeing India in particular doing extremely well. That's going to be a big driver of growth."

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