

Energy Tidbits

Trump Sets Up US for Higher for Longer Oil & Natural Gas Production as he Appoints Chris Wright and Doug Burgum

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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	\$81	\$76
Retail gasoline price (dollars per gallon)	\$3.50	\$3.30	\$3.20
U.S. crude oil production (million barrels per day)	12.9	13.2	13.5
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%	40%
Coal	17%	15%	15%
Renewables	22%	23%	25%
Nuclear	19%	19%	19%
U.S. GDP (percentage change)	2.9%	2.7%	2.1%
U.S. CO ₂ emissions (billion metric tons)	4.8	4.8	4.8

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

- Global oil consumption. India has emerged as the leading source of growth in global oil consumption in our forecast. Over 2024 and 2025, India accounts for 25% of total oil consumption growth globally. We expect an increase of 1.0 million barrels per day (b/d) in global consumption of liquid fuels in 2024. We expect even more growth next year, with global oil consumption rising by 1.2 million b/d.
- Global oil inventories and prices. We expect that ongoing geopolitical risks and withdrawals from global oil inventories stemming from OPEC+ production cuts will place upward pressure on oil prices over the next few months, with the Brent crude oil price averaging \$78 per barrel (b) in the first quarter of 2025 (1Q25). However, we forecast that global oil production growth means inventories will begin building in 2Q25, reducing crude oil prices through the end of the year. We expect the Brent price will fall to an average of \$74/b in the second half of 2025.
- Natural gas prices. We expect the Henry Hub natural gas spot price to rise in the coming months to average \$2.80 per million British thermal units (MMBtu) in 1Q25, following seasonal patterns during which prices typically rise during the winter. The monthly average Henry Hub daily spot price fell to \$2.20/MMBtu in October and below \$2.00/MMBtu in early November. Low prices reflected warm temperatures, which could delay the beginning of withdrawals of natural gas from storage until mid-November. We expect the Henry Hub price to average around \$2.90/MMBtu in 2025, as global demand for U.S. liquefied natural gas exports, a component of U.S. natural gas demand, continues to increase.

- Natural gas production. Marketed U.S. natural gas production in our forecast averages 113 billion cubic feet per day (Bcf/d) in 2024. Production in 2024 is relatively unchanged from 2023, a contrast to the production growth in the previous three years, as low natural gas prices curtailed production in some regions. We expect U.S. marketed natural gas production to increase by 1% next year, averaging 114 Bcf/d, led by a 6% increase in the Permian region.
- Electricity generation. We expect U.S. electric power sector generation to increase by 3% in 2024. The increase in generation is mostly to supply increased air-conditioning demand compared with last year, driven by hotter summer temperatures this year. The increase in consumption in 2024 is being supplied primarily from growth in use of natural gas (up 3% from 2023) and solar power (up 34%). We forecast that U.S. solar generation will continue growing by another 31% in 2025 as solar generating capacity expands, while higher natural gas prices reduce electricity demand from the natural gas sector.

Notable forecast changes

Current forecast: November 13, 2024; previous forecast: October 8, 2024	2024	2025
Mont Belvieu propane spot price (dollars per gallon)	\$0.80	\$0.80
Previous forecast	\$0.80	\$0.70
Percentage change	3.4%	13.4%
Henry Hub spot price (dollars per million British thermal units)	\$2.20	\$2.90
Previous forecast	\$2.30	\$3.10
Percentage change	-4.8%	-5.2%

Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook* Note: Percentages are calculated from unrounded values.

Global Oil Markets

Global oil prices and inventories

The Brent crude oil spot price averaged \$76 per barrel (b) in October, up \$2/b from the average in September. Crude oil prices increased in October in part because of market concerns that an Israeli response to Iran's missile attack on October 1 would reduce Iran's ability to produce or market oil. However, Brent fell to \$71/b on October 29 after Israel's military response did not target Iran's oil infrastructure.

Despite the drop in oil prices in late October, we still expect that ongoing withdrawals from global oil inventories stemming from OPEC+ production cuts, along with potential for further geopolitical risk, will put upward pressure on oil prices through the first quarter of 2025 (1Q25). We estimate that global oil inventories fell by 0.9 million barrels per day (b/d) in 3Q24, and we estimate they will fall by an average of 0.3 million b/d in 4Q24 and 1Q25. As a result, we expect the Brent price will rise from \$72/b on November 11 to an average of \$78/b in 1Q25.



By 2Q25, we expect OPEC+ production increases and supply growth from countries outside of OPEC+ will outweigh global oil demand growth and cause oil to be put into inventory. We expect that global oil inventories will increase by an average of 0.4 million b/d in 2Q25, before inventories rise by an average of 0.6 million b/d in the second half of 2025 (2H25). We forecast that inventory builds will put downward pressure on crude oil prices, with Brent falling to an average of \$74/b in 2H25. In our forecast, the Brent price averages \$76/b for the full year of 2025.

We see at least two main sources of oil price uncertainty: the future course of the ongoing Middle East conflict and OPEC+ members' willingness to adhere to voluntary production cuts. First, although the volatility and risk premium associated with the conflict in the Middle East has moderated in recent

weeks, the duration and severity of the ongoing conflict remain uncertain, as is the potential for escalation to reduce oil supplies. Second, although we assess that OPEC+ producers will likely continue to limit production below recently announced targets in 2025, the potential for weakening commitment among OPEC+ producers to continue cutting production adds downside risk to oil prices.

Global oil consumption and production

Despite pledges by OPEC+ members to restrict oil production, crude oil prices have been relatively flat this year because of weak growth in oil demand. We forecast that global consumption of liquid fuels will increase by 1.0 million b/d in 2024 and 1.2 million b/d in 2025, which are both below the pre-pandemic 10-year average of 1.5 million b/d of annual growth, as well as below the oil demand growth seen in the pandemic recovery from 2021 to 2023.



Annual change in world petroleum and liquid fuels consumption

Non-OECD countries drive almost all global oil consumption growth in our forecast. Much of this growth is in Asia, where India is now the leading source of global oil demand growth in our forecast. We expect consumption of liquid fuels in India to increase by 0.3 million b/d in both 2024 and 2025, driven by rising demand for transportation fuels. We forecast China's petroleum and liquid fuels consumption will grow by less than 0.1 million b/d in 2024 before recovering to almost 0.3 million b/d 2025. We have revised China's 2024 consumption downward several times over the past year. In China, rapidly expanding electric vehicle ownership, rising use of liquefied natural gas for trucking goods, and decelerating economic growth have limited consumption growth for transportation fuels.



Annual change in world liquid fuels consumption

U.S. Petroleum Products

U.S. distillate fuel consumption

We forecast more distillate fuel consumption in the United States next year after two years of declines, largely because we expect manufacturing activity to increase. Over the past two years, a slight decline in U.S. manufacturing activity has reduced total distillate fuel use in the United States. In 2024, we forecast U.S. distillate consumption will average 3.8 million barrels per day (b/d), down 2% from last year and down 5% from 2022. However, we forecast U.S. consumption in 2025 will increase by 4% (150,000 b/d). Our forecast increase in U.S. distillate consumption is driven by more industrial activity in 2025, supported by a lower Federal Funds rate. The increased consumption largely results from increased demand from manufacturers and truckers that ship goods.



Annual change in U.S. total distillate consumption

U.S. distillate consumption is made up of petroleum distillate fuel, renewable diesel, and biodiesel. In 2023 and 2024, U.S. distillate fuel consumption declined in response to a slight reduction in U.S. manufacturing activity. The petroleum component of distillate consumption declined by even more than the total because of increased substitution from biofuels. Both renewable diesel and biodiesel are biofuels that can be used in place of petroleum distillate fuel oil. Unlike conventional biodiesel, renewable diesel is chemically identical to petroleum diesel and can be blended as a drop-in replacement fuel. More renewable diesel is consumed in the U.S. West Coast (PADD 5) than in any other region of the United States, as measured by product supply, and accounts for 86% of total U.S. renewable diesel fuel consumption as of August 2024 in our *Petroleum Supply Monthly* (PSM). We forecast U.S. renewable diesel consumption will increase to 240,000 b/d by 2025, more than double the consumption level in 2022.

U.S. refinery capacity

Closure announcements from refiners have reduced U.S. refinery capacity in our current STEO forecast. LyondellBasell Industries plans to close its 263,800-b/d Houston Refinery in the first quarter of 2025, citing the high cost of needed overhauls. On October 16, Phillips 66 announced it will stop operations at its 138,700-b/d refinery in the Los Angeles area in 4Q25. We now forecast U.S. operable refinery capacity will average 17.9 million b/d by the end of 2025, down by 0.4 million b/d from the end of 2024. Our STEO forecast does not include temporary reductions in capacity because of maintenance or unplanned outages.



Single-product crack spreads for gasoline and diesel are indicators of refining margins. Other factors equal, lower refinery capacity reduces the production of fuels such as gasoline and diesel. We expect crack spreads for both gasoline and distillate fuel will increase slightly next year. U.S. refinery capacity reductions are one factor that we expect will raise crack spreads. We also expect rising demand for gasoline and diesel in the United States will put upward pressure on margins. However, we assume that refinery capacity additions outside of the United States will limit increases in crack spreads in 2025.



Natural Gas

Natural gas consumption

A slightly colder weather forecast for this winter increases the amount of natural gas we expect to be consumed during the 2024–25 winter heating season (November–March). We forecast U.S. natural gas consumption in the residential and commercial sectors this winter, which largely reflects space heating, to average 36 billion cubic feet per day (Bcf/d), 4% more than last winter and close to the five-year (2019–2023) average.



The winter has gotten off to a warm start. Temperatures across much of the country were above normal the first week of November, and forecasts from the National Oceanic and Atmospheric Administration show the eastern half of the United States will be warmer-than-average for much of the month. As a result, we revised our assumption of total heating degree days (HDDs) for this winter down slightly from our October STEO. Our forecast includes 3% more HDDs than last winter but 4% fewer HDDs than the prior 10-year average. Winter weather events or prolonged low temperatures could increase consumption of natural gas by the residential and commercial sectors more than we forecast. At the same time, if temperatures are higher than we forecast, the residential and commercial sectors will likely consume less natural gas than we forecast.

Natural gas production

Annual U.S. marketed natural gas production remained flat in 2024 after growing over the past two years. We estimate marketed natural gas production will average 113 Bcf/d in 2024, relatively unchanged from 2023. Average monthly production peaked this year at 115 Bcf/d in February and has averaged between 111 Bcf/d and 114 Bcf/d for much of the rest of the year. Production cuts announced by natural gas producers early in 2024 resulted in less production from the shale and tight formations so

far this year compared with 2023. At the same time, production in the Permian Basin has increased in 2024.

Production in the Haynesville and Appalachia regions is driven by natural gas prices, which reached record lows in early 2024. Low natural gas prices encouraged producers in the Appalachia and Haynesville regions, in particular, to curtail production until market conditions changed. Natural gas production in the Permian region, which is mostly associated natural gas from oil wells, is driven by crude oil production and has continued to grow amid low natural gas prices.

We expect U.S. marketed natural gas production will resume growing in 2025 and average more than 114 Bcf/d for the year, up 1% from this year's annual average. Growth is led by a 6% increase in the Permian region and a 5% increase in the Eagle Ford compared with 2024. We expect production will decline slightly in the Appalachian Basin and much of the rest of the United States.



Natural gas prices

U.S. natural gas prices fell in October as natural gas consumption declined from September, production remained relatively unchanged, and storage inventories ended the month 6% above the five-year (2019–2023) average. The U.S. benchmark Henry Hub natural gas spot price averaged \$2.20 per million British thermal units (MMBtu) in October, 4% lower than the September average of \$2.28/MMBtu. Natural gas consumption declined last month, led by a 14% (6 Bcf/d) decline in consumption in the electric power sector, offsetting an increase in consumption in the residential and commercial sectors. Even though consumption in the electric power sector was down month over month in October, it was 13% higher than the month's five-year average. High power sector demand for natural gas reflected lower natural gas prices and higher air-conditioning use in parts of the United States experiencing extended summer-like conditions.

We expect the Henry Hub price to rise in the next three months and to average more than \$2.80/MMBtu in the first guarter of 2025. We expect prices to average \$2.90/MMBtu for all of 2025, or 33% higher than the 2024 average of \$2.20/MMBtu, mainly because of increased liquefied natural gas (LNG) exports. Our forecast includes LNG exports increasing by nearly 2 Bcf/d next year with continued strong international demand for LNG as export capacity expands.

Electricity, Coal, and Renewables

Electricity generation

Hotter temperatures this past summer compared with last year, which increased U.S. air-conditioning demand, are helping to drive up generation in the U.S. electric power sector. We expect 3% more U.S. generation in 2024 than in 2023. Increasing electricity demand from the industrial sector and commercial data centers contributes to forecast U.S. generation growth of 1% in 2025. Growth from data centers raises overall consumption of electricity in the commercial sector, offsetting the effects of milder summer temperatures next year and longer-term trends of less commercial sector electricity consumption. Although data centers are rapidly expanding, those facilities currently account for a relatively small share of total U.S. electricity demand.





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

We expect natural gas and solar power to be the largest sources of growth in U.S. electricity generation in 2024. Natural gas use for power generation has risen this year as a result of relatively low fuel prices, while solar is powering more generation as U.S. generating capacity grows. We expect U.S. natural gas generation will grow by 3% in 2024.

Slower growth in U.S. electricity demand and higher natural gas prices in most regions next year is likely to reduce generation from natural gas, which we expect will fall by 5% between 2024 and 2025. Natural gas generation in the Northwest region falls by 13% in 2025 in response to our forecast increase in

hydropower generation, which grows by 23%. The large increase in forecast generation from hydropower next year reflects a return to more normal conditions following drought conditions this year.

U.S. solar generation grows in the forecast by 34% in 2024 and 31% in 2025. Rising solar generation also cuts into natural gas generation next year. Solar generating capacity is growing fastest in Texas along with associated battery storage projects. The forecast regional increase in solar generation, which is growing faster than overall electricity demand, will require less electricity generation from natural gas in Texas.

Wholesale power prices

Prices for wholesale power are likely to trade higher next year in most regions of the United States as a result of higher natural gas prices. We forecast the price of natural gas delivered to electric generators will average almost \$3.20 per million British thermal units in 2025, up 18% from 2024.

We expect wholesale electricity prices in the Northwest region to come down by 9% in 2025 because of an increase in hydropower generation. Despite the increase, hydropower generation in the Northwest remains below the historical average, which along with increased exports of power to Canada and high natural gas prices in the region keep prices in the region the highest in the country, averaging \$57 per megawatthour (MWh) next year.

We expect that the wholesale market operated by the Electric Reliability Council of Texas (ERCOT) will have the lowest prices in the country in 2025, averaging \$28/MWh, which would be down 17% from our forecast price in 2024. Increasing generation from solar power in that region helps to keep wholesale electricity prices low because that energy source does not incur fuel costs and receives tax incentives.



Average annual wholesale electricity prices at selected price hubs

Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2024 eia

Coal markets

Heading into early winter, we expect U.S. coal production will decline slightly at the same time electricity generators consume more coal to service increasing electricity loads, pushing coal stocks held by U.S. power plants down from 139 million short tons (MMst) in November to 131 MMst in December.

We expect coal inventories will be a key source of U.S. supply next year. We forecast that about 370 MMst of coal will be consumed in the U.S. electric power sector in both 2024 and 2025. Power sector coal consumption remains flat as we expect that more overall demand for power next year and higher natural gas prices, which encourage coal dispatch at the margin, will be offset by more renewables generation and some coal plant retirements. However, we expect coal production will drop as electricity generators work down inventories. U.S. coal production in our forecast declines from 505 MMst in 2024 to 469 MMst in 2025. As production falls and consumption remains steady, we expect coal stocks to fall to 101 MMst by the end of 2025.

The September report on exports from the U.S. Census Bureau showed more coal exports than we had forecast. As a result, we increased our expectation of U.S. coal exports. We now forecast coal exports to total 108 MMst in 2024 and then to fall to 104 MMst in 2025. Stronger-than-expected exports in September were driven by an increase in metallurgical exports and likely reflects in part a recovery from a mechanical failure at the Curtis Bay coal terminal in Maryland that disrupted operations in August. We expect U.S. steam and metallurgical coal exports to fall slightly in 2025, but recent fiscal stimulus measures by the Chinese government and continued economic development in India should otherwise limit any major declines in U.S. coal exports. Considerable uncertainty around trade policies and geopolitical developments could affect demand for U.S. metallurgical coal.



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



U.S. monthly change in electric power coal stocks

Economy, CO₂, and Weather

U.S. macroeconomics

The U.S. Bureau of Economic Analysis (BEA) released its annual update to the National Economic Accounts at the end of September, and several of the updates changed our assumptions regarding the macroeconomic forecasts used to produce the STEO. The macroeconomic forecasts in the STEO are based on S&P Global's macroeconomic model. We incorporate STEO energy price forecasts into the model to obtain the final macroeconomic assumptions.

The BEA's annual update showed that real disposable income grew faster than was previously reported. The largest difference occurred in 1Q24. Real disposable income grew at an annual rate of 5.6%, up from the 1.3% initially reported during that quarter. Through 2Q24, real personal disposable income was \$606 billion higher than previously reported, and our forecast now assumes that by the end of 2025 it will be \$506 billion higher than in last month's STEO.



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

We expect the upward revision to real disposable income to support additional consumer spending, one factor that drove the upward revision to GDP growth in 2025, from 1.9% in the October STEO to 2.1%. Total employment was also higher than we assumed in last month's STEO. The upward revision to household disposable income and employment both support gasoline consumption and price; however, demand for gasoline is determined by many factors, and price is determined by both demand for and supply of gasoline.

Emissions

We expect total U.S. energy-related carbon dioxide (CO₂) emissions to be relatively unchanged this winter (November—March) compared with last winter. In our forecast, petroleum-related emissions increase slightly with increased consumption of petroleum products but are offset by a small net decrease coal emissions this winter. Petroleum emissions grow with more consumption of distillate fuel, notably heating oil, which we expect to increase by 4% relative to last year based on our recent *Winter Fuels Outlook*, as well as increasing growth in industrial production. Total CO₂ emissions from natural gas remain unchanged relative to last winter, although some changes have occurred at the sector level. We expect residential and commercial sector natural gas emissions to increase as relatively colder winter weather results in more use of the fuel for space heating, but this increase is offset by less natural gas-fired generation in the electric power sector.

Looking beyond this winter, we forecast total U.S. energy-related CO₂ emissions to remain flat during 2024 and 2025 because of small, counteracting changes in emissions from coal, natural gas, and petroleum products. In 2024, increases in electricity generation and CO₂ emissions from natural gas are offset by decreasing generation and CO₂ emissions from coal. In 2025, less electricity generation and emissions from natural gas are offset by more generation and emissions from coal, as well as rising CO₂ emissions from petroleum, associated mostly with higher diesel consumption.



U.S. winter (November–March) energy-related CO_2 emissions

Weather

The United States will likely experience a warm November this year. Based on initial forecasts and data from NOAA, we expect 420 heating degree days (HDDs) across the United States in November, 17% fewer than November 2023 and 18% fewer than the 10-year monthly average. We expect the warmer start to the 2024–2025 winter heating season (November–March) will be offset by 7% more HDDs from December to March compared with the same period last year, resulting in a slightly cooler winter than the previous winter with an average of about 3,130 HDDs (3% more HDDs). Despite our expected colder weather this season, overall we assume this winter will be a bit milder than normal, with 4% fewer HDDs than the previous 10-winter average, consistent with the observed warming trend in weather patterns.

Table 3a. World Petroleum and Other Liquid Fuels Production, Consumption, and Inventories

U.S. Energy Information Administration S	Short-Term Energy	Outlook	- Noverr	nber 202	4				0005						
		20	23			20	24			20	25			Year	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Production (million barrels per day) (a)															
World total		101.60	101.82	103.09	102.03	102.48	102.62	103.35	103.64	104.38	105.13	105.48	102.02	102.62	104.66
Crude oil		76.32	75.93	77.08	76.70	76.19	76.10	77.04	77.78	77.88	78.48	78.96	76.57	76.51	78.28
Other liquids		25.28	25.89	26.00	25.34	26.29	26.52	26.32	25.85	26.50	26.65	26.52	25.45	26.12	26.38
World total		101.60	101.82	103.09	102.03	102.48	102.62	103.35	103.64	104.38	105.13	105.48	102.02	102.62	104.66
OPEC total (b)		32.44	31.63	31.93	32.16	32.09	32.03	32.10	32.34	32.51	32.60	32.60	32.17	32.09	32.51
Crude oil		27.23	26.37	26.63	26.77	26.82	26.69	26.72	27.00	27.18	27.27	27.27	26.90	26.75	27.18
Other liquids	5.33	5.21	5.26	5.30	5.40	5.26	5.34	5.38	5.33	5.33	5.33	5.33	5.27	5.35	5.33
Non-OPEC total		69.16	70.19	71.16	69.87	70.39	70.59	71.26	71.30	71.87	72.54	72.88	69.84	70.53	72.15
Crude oil		49.09	49.56	50.45	49.93	49.37	49.41	50.32	50.78	50.70	51.22	51.69	49.67	49.76	51.10
Other liquids		20.07	20.63	20.70	19.94	21.03	21.18	20.94	20.52	21.17	21.32	21.19	20.18	20.77	21.05
Consumption (million barrels per day) (c)															
World total	101.27	102.12	102.56	102.59	102.20	103.13	103.52	103.68	103.87	104.02	104.70	104.80	102.14	103.13	104.35
OECD total (d)	45.26	45.52	45.90	46.00	44.80	45.55	46.15	46.22	45.44	45.22	46.05	46.16	45.67	45.68	45.72
Canada		2.48	2.63	2.37	2.37	2.28	2.56	2.50	2.43	2.38	2.49	2.46	2.45	2.43	2.44
Europe		13.57	13.69	13.39	12.85	13.62	13.88	13.51	13.14	13.30	13.71	13.47	13.45	13.47	13.40
Japan		3.05	3.06	3.38	3.44	2.96	3.01	3.38	3.48	2.89	2.99	3.31	3.29	3.20	3.17
United States		20.35	20.32	20.59	19.80	20.36	20.55	20.57	20.12	20.53	20.72	20.64	20.28	20.32	20.51
U.S. Territories		0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Other OECD		5.96	6.09	6.16	6.22	6.21	6.04	6.14	6.15	6.01	6.03	6.16	6.10	6.16	6.09
Non-OECD total		56.60	56.66	56.59	57.40	57.59	57.37	57.46	58.44	58.80	58.66	58.65	56.47	57.45	58.64
China		16.55	16.24	16.48	16.75	16.65	16.10	16.45	16.87	16.91	16.49	16.72	16.40	16.49	16.75
Eurasia		4.82	5.16	5.06	4.71	4.87	5.21	5.11	4.74	4.91	5.26	5.16	4.93	4.98	5.02
Europe		0.76	0.77	0.77	0.75	0.77	0.77	0.77	0.75	0.77	0.78	0.78	0.76	0.76	0.77
Other Asia		14.44	13.91	14.14	15.04	14.89	14.44	14.74	15.51	15.49	14.85	15.19	14.26	14.77	15.26
Other non-OECD	19.71	20.02	20.59	20.13	20.15	20.41	20.84	20.39	20.56	20.72	21.28	20.81	20.12	20.45	20.84
Total crude oil and other liquids inventory net withd	rawals (million barrels	per day)													
World total	-0.28	0.52	0.74	-0.49	0.16	0.65	0.90	0.32	0.24	-0.36	-0.43	-0.68	0.12	0.51	-0.31
United States	0.07	-0.10	-0.26	0.30	0.13	-0.64	0.01	0.10	-0.11	-0.38	0.02	0.28	-0.03	-0.10	-0.05
Other OECD	0.33	0.01	-0.17	0.21	-0.13	-0.32	0.28	0.07	0.11	0.00	-0.13	-0.29	0.09	-0.03	-0.08
Other inventory draws and balance	-0.54	0.62	1.17	-1.00	0.16	1.62	0.62	0.15	0.24	0.01	-0.31	-0.67	0.06	0.64	-0.18
End-of-period commercial crude oil and other liquid	s inventories (million b	oarrels)													
OECD total		2,781	2,816	2,766	2,757	2,836	2,800	2,768	2,758	2,789	2,800	2,801	2,766	2,768	2,801
United States		1,263	1,282	1,251	1,230	1,280	1,269	1,243	1,243	1,275	1,273	1,247	1,251	1,243	1,247
Other OECD		1,518	1,534	1,515	1,527	1,556	1,531	1,525	1,515	1,515	1,527	1,554	1,515	1,525	1,554
(a) Includes crude oil lease condensate natural das n	ant liquids other liquids	refinery r	rocessing	nain and	other unac	counted-fo	r liquids D	ifferences	in the rend	rted histor	ical produc	tion data a		ntries coul	d result in

(a) Includes crude oil, lease condensate, natural gas plant liquids, other liquids, refinery processing gain, and other unaccounted-for liquids. Differences in the reported historical production data across countries could result in some inconsistencies in the delineation between crude oil and other liquid fuels.

(b) OPEC = Organization of the Petroleum Exporting Countries: Algeria, Congo (Brazzaville), Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, United Arab Emirates, and Venezuela. (c) Consumption of petroleum by the OECD countries is the same as "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.

(d) 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, Turkiye, United Kingdom, and United States. Notes:

EIA completed modeling and analysis for this report on November 7, 2024.

- = no data available

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

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

Sources:

Historical data: Energy Information Administration International Energy Statistics (https://www.eia.gov/international/data/world).

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 - November 2024

		20	23		2024				2025		Year				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Supply (million barrels per day)															
U.S. total crude oil production (a)	12.67	12.76	13.05	13.25	12.94	13.23	13.27	13.47	13.47	13.53	13.54	13.60	12.93	13.23	13.53
Alaska	0.44	0.43	0.40	0.43	0.43	0.42	0.40	0.42	0.42	0.40	0.39	0.41	0.43	0.42	0.41
Federal Gulf of Mexico (b)	1.88	1.77	1.92	1.88	1.78	1.80	1.75	1.81	1.85	1.85	1.80	1.81	1.87	1.79	1.83
Lower 48 States (excl GOM) (c)	10.35	10.56	10.72	10.94	10.73	11.01	11.12	11.24	11.20	11.27	11.35	11.38	10.64	11.02	11.30
Appalachia region	0.15	0.15	0.15	0.16	0.15	0.16	0.16	0.19	0.20	0.22	0.22	0.23	0.15	0.16	0.22
Bakken region	1.13	1.16	1.25	1.30	1.22	1.23	1.23	1.32	1.33	1.33	1.35	1.36	1.21	1.25	1.34
Eagle Ford region	1.15	1.18	1.18	1.11	1.07	1.18	1.20	1.20	1.18	1.17	1.16	1.14	1.16	1.16	1.16
Haynesville region	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Permian region	5.76	5.82	5.91	6.12	6.11	6.26	6.36	6.42	6.40	6.49	6.54	6.60	5.91	6.29	6.51
Rest of Lower 48 States	2.12	2.20	2.20	2.21	2.15	2.15	2.13	2.08	2.06	2.04	2.04	2.02	2.18	2.13	2.04
Total Supply	10.83	20.35	20 32	20 50	10 70	20.36	20 55	20 58	20.12	20 53	20 72	20.64	20.27	20.32	20 51
Crude oil input to refineries	15.25	16.15	16.52	15.93	15.39	16.47	16.54	16.06	15.28	16.08	16.29	15.60	15.97	16.12	15.82
U.S. total crude oil production (a)	12.67	12.76	13.05	13.25	12.94	13.23	13.27	13.47	13.47	13.53	13.54	13.60	12.93	13.23	13.53
Transfers to crude oil supply	0.42	0.47	0.64	0.56	0.50	0.64	0.57	0.51	0.49	0.53	0.55	0.53	0.53	0.56	0.53
Crude oil net imports (d)	2.43	2.44	2.50	2.26	2.12	2.62	2.64	2.15	1.63	1.90	1.89	1.43	2.41	2.38	1.71
SPR net withdrawals (e)	0.01	0.26	-0.04	-0.04	-0.10	-0.10	-0.11	-0.17	-0.12	-0.03	0.00	0.00	0.05	-0.12	-0.04
Commercial inventory net withdrawals	-0.39	0.12	0.40	-0.09	-0.23	0.08	0.19	-0.02	-0.33	0.06	0.24	-0.05	0.01	0.00	-0.02
Crude oil adjustment (f)	0.10	0.11	-0.03	-0.01	0.16	0.01	-0.03	0.12	0.14	0.10	0.07	0.10	0.04	0.07	0.10
Refinery processing gain	0.97	1.00	1.06	1.05	0.91	0.97	0.98	1.05	0.97	1.04	1.08	1.05	1.02	0.98	1.04
Natural Gas Plant Liquids Production	6.17	6.43	6.64	6.74	6.51	7.01	6.94	6.81	6.76	6.93	6.90	6.94	6.50	6.82	6.88
Renewables and oxygenate production (g)	1.24	1.29	1.31	1.35	1.34	1.33	1.40	1.40	1.38	1.40	1.41	1.44	1.30	1.37	1.41
Fuel ethanol production	1.00	1.00	1.01	1.05	1.04	1.01	1.07	1.08	1.05	1.04	1.05	1.06	1.02	1.05	1.05
Petroleum products adjustment (h)	0.20	0.22	0.23	0.23	0.21	0.22	0.22	0.22	0.20	0.21	0.21	0.21	0.22	0.22	0.21
Petroleum products transfers to crude oil supply	-0.42	-0.47	-0.64	-0.56	-0.50	-0.64	-0.57	-0.51	-0.49	-0.53	-0.55	-0.53	-0.53	-0.56	-0.53
Petroleum product net imports (d)	-3.89	-3.79	-4.19	-4.59	-4.53	-4.40	-4.88	-4.74	-4.33	-4.19	-4.39	-4.40	-4.12	-4.64	-4.33
Hydrocarbon gas liquids	-2.48	-2.48	-2.50	-2.59	-2.59	-2.68	-2.73	-2.72	-2.86	-3.01	-2.91	-2.78	-2.51	-2.68	-2.89
Unfinished oils	0.28	0.27	0.21	0.18	0.09	0.21	0.19	0.27	0.21	0.27	0.27	0.20	0.24	0.19	0.24
Other hydrocarbons and oxygenates	-0.04	-0.06	-0.04	-0.05	-0.06	-0.08	-0.07	-0.08	-0.11	-0.11	-0.09	-0.09	-0.05	-0.07	-0.10
Total motor gasoline	-0.28	0.08	-0.11	-0.40	-0.36	0.00	-0.19	-0.25	-0.19	0.21	0.08	-0.16	-0.18	-0.20	-0.01
Jet fuel	-0.04	0.01	-0.06	-0.09	-0.09	-0.08	-0.11	-0.11	-0.12	-0.03	-0.03	-0.06	-0.05	-0.10	-0.06
Distillate fuel oil	-0.75	-0.96	-1.06	-1.02	-0.86	-1.20	-1.33	-1.16	-0.65	-0.84	-0.98	-0.83	-0.95	-1.14	-0.83
Residual fuel oil	0.01	-0.03	-0.03	-0.01	-0.03	-0.04	-0.05	-0.02	-0.01	-0.01	-0.05	-0.03	-0.02	-0.03	-0.03
Other oils (i)	-0.59	-0.61	-0.60	-0.62	-0.64	-0.54	-0.59	-0.67	-0.60	-0.67	-0.68	-0.65	-0.60	-0.61	-0.65
Petroleum product inventory net withdrawals	0.31	-0.48	-0.61	0.43	0.46	-0.62	-0.07	0.30	0.34	-0.41	-0.23	0.33	-0.09	0.02	0.01
Consumption (million barrels per day)															
U.S. total petroleum products consumption	19.83	20.35	20.32	20.59	19.80	20.36	20.55	20.57	20.12	20.53	20.72	20.64	20.28	20.32	20.51
Hydrocarbon gas liquids	3.53	3.32	3.32	3.85	3.80	3.39	3.33	3.82	3.84	3.33	3.37	3.88	3.50	3.58	3.01
Other hydrocarbons and oxygenates	0.22	0.28	0.28	0.29	0.30	0.33	0.33	0.31	0.30	0.32	0.32	0.33	0.27	0.32	0.32
Motor gasoline	8.69	9.13	9.02	8.94	8.57	9.12	9.18	8.90	8.60	9.11	9.16	8.82	8.94	8.94	8.92
Jet luel	1.55	1.08	1.72	1.00	1.58	1.73	1.80	1.08	1.01	1.79	1.81	1.71	1.05	1.70	1.73
Distillate fuel oil	4.03	0.02	0.00	0.00	0.02	0.20	0.02	0.20	4.02	0.00	0.06	4.00	3.92	0.02	0.07
	1.50	1.70	1.00	1.65	0.20	1 77	1.29	1.60	0.20	1.20	1.00	1.62	0.27	1.66	1.69
	1.52	1.79	1.00	1.05	1.44	1.77	1.60	1.03	1.49	1.75	1.00	1.03	1.71	1.00	1.00
Total petroleum and other liquid fuels net imports (d)	-1.46	-1.35	-1.69	-2.33	-2.41	-1.78	-2.20	-2.47	-2.70	-2.29	-2.51	-2.97	-1.71	-2.22	-2.62
End-of-period inventories (million barrels)															
Total commercial inventory	1230.0	1263.1	1282.4	1251.4	1230.3	1279.6	1268.8	1243.4	1243.2	1274.5	1273.1	1247.4	1251.4	1243.4	1247.4
Crude oil (excluding SPR)	465.2	454.7	417.9	426.5	447.2	440.2	422.7	424.8	454.7	449.0	426.5	431.4	426.5	424.8	431.4
Hydrocarbon gas liguids	173.9	225.7	277.2	223.3	169.2	235.1	284.7	236.3	195.4	245.0	283.2	239.9	223.3	236.3	239.9
Unfinished oils	88.9	87.3	88.4	84.2	91.7	87.8	81.9	75.5	86.7	86.1	84.5	79.6	84.2	75.5	79.6
Other hydrocarbons and oxygenates	34.5	30.2	30.3	33.1	38.2	33.4	32.5	35.0	38.3	35.6	34.9	36.9	33.1	35.0	36.9
Total motor gasoline	225.2	222.1	227.9	240.7	233.4	232.4	214.9	236.8	232.7	224.6	219.9	237.5	240.7	236.8	237.5
Jet fuel	37.8	42.4	43.5	39.8	42.2	45.3	44.1	41.0	39.1	37.8	38.6	35.1	39.8	41.0	35.1
Distillate fuel oil	111.7	112.0	118.8	130.5	121.2	123.1	118.5	122.5	114.3	116.3	116.2	116.0	130.5	122.5	116.0
Residual fuel oil	29.6	30.5	27.8	24.1	29.9	27.5	24.1	23.4	24.8	24.9	23.2	23.1	24.1	23.4	23.1
Other oils (i)	63.2	58.2	50.6	49.3	57.3	54.9	45.4	48.0	57.3	55.3	46.2	47.8	49.3	48.0	47.8
Crude oil in SPR (e)	371.2	347.2	351.3	354.7	363.9	373.1	382.9	398.8	409.2	412.2	412.2	412.2	354.7	398.8	412.2

(a) Includes lease condensate.

(b) Crude oil production from U.S. Federal leases in the Gulf of Mexico (GOM).

(c) Regional production in this table is based on geographic regions and not geologic formations.

(d) Net imports equal gross imports minus gross exports.

(e) SPR: Strategic Petroleum Reserve

(f) The crude oil adjustment equals the sum of disposition items (e.g. refinery inputs) minus the sum of supply items (e.g. production).

(g) Renewables and oxygenate production includes pentanes plus, oxygenates (excluding fuel ethanol), and renewable fuels. Beginning in January 2021, renewable fuels includes biodiesel, renewable diesel, renewable jet fuel, renewable heating oil, renewable naphtha and gasoline, and other renewable fuels. For December 2020 and prior, renewable fuels includes only biodiesel.

(h) Petroleum products adjustment includes hydrogen/oxygenates/renewables/other hydrocarbons, motor gasoline blending components, and finished motor gasoline.

(i) Other oils includes aviation gasoline blending components, finished aviation gasoline, kerosene, petrochemical feedstocks, special naphthas, lubricants, waxes, petroleum coke, asphalt and road oil, still gas, and miscellaneous products.

Notes:

EIA completed modeling and analysis for this report on November 7, 2024.

– no data available

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

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

Sources:

Historical data: Latest data available from Energy Information Administration databases supporting the following reports: *Petroleum Supply Monthly*, DOE/EIA-0109; Petroleum Supply Annual, DOE/EIA-0340/2; and Weekly Petroleum Status Report, DOE/EIA-0208.

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 5a. U.S. Natural Gas Supply, Consumption, and Inventories IIS Er

		201	23			203	24			203	25			Year	
	Q1	02	03	Q4	Q1	02	Q3	04	Q1	02	03	04	2023	2024	2025
Supply (billion cubic feet per day)				<u> </u>	<u> </u>	~-	40	<u> </u>	<u> </u>			~ .	2020		
U.S. total marketed natural gas production	111.2	112.5	113.6	115.2	113.3	112.1	113.5	113.6	113.9	114.6	114.2	114.6	113.1	113.1	114.4
Alaska	1.1	1.0	0.9	1.0	1.1	1.0	0.9	1.0	1.0	1.0	0.9	1.0	1.0	1.0	1.0
Federal Gulf of Mexico (a)	2.1	1.9	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	2.0	1.8	1.8
Lower 48 States (excl GOM) (b)	108.0	109.6	110.7	112.2	110.4	109.3	110.8	110.8	111.1	111.9	111.6	111.9	110.1	110.3	111.6
Appalachia region	35.4	35.7	36.0	36.7	35.9	34.9	35.4	35.2	35.7	35.5	34.8	34.9	35.9	35.4	35.2
Bakken region	2.9	3.0	3.2	3.3	3.2	3.3	3.3	3.3	3.3	3.3	3.4	3.4	3.1	3.3	3.3
Eagle Ford region	6.5	6.6	6.7	6.7	6.6	6.7	6.8	6.7	6.7	7.1	7.1	7.2	6.6	6.7	7.0
Haynesville region	16.5	16.7	16.5	16.1	15.7	14.4	14.9	14.9	14.8	14.8	15.2	15.6	16.5	15.0	15.1
Permian region	21.5	22.4	23.0	23.9	23.9	24.5	24.8	25.1	25.1	26.2	26.4	26.5	22.7	24.6	26.1
Rest of Lower 48 States	25.1	25.2	25.2	25.5	25.1	25.5	25.5	25.5	25.4	25.0	24.7	24.3	25.3	25.4	24.9
Total primary supply	102.9	77.9	84.0	91.8	104.1	78.7	85.6	91.6	105.7	77.5	83.6	92.1	89.1	90.0	89.6
Balancing item (c)	0.4	-0.6	-1.2	-0.5	-0.2	-1.6	-1.3	-0.3	0.0	-1.4	0.5	0.3	-0.5	-0.8	-0.1
Total supply	102.6	78.5	85.2	92.3	104.3	80.3	86.9	91.9	105.6	78.9	83.0	91.7	89.6	90.9	89.8
U.S. total dry natural gas production	102.2	103.2	104.1	105.5	104.0	102.0	103.5	103.8	104.2	104.7	104.3	104.7	103.8	103.3	104.5
Net inventory withdrawals	12.0	-11.7	-6.4	0.3	12.7	-9.6	-4.9	2.2	15.7	-10.7	-6.3	3.3	-1.5	0.1	0.5
Supplemental gaseous fuels	0.2	0.2	0.2	0.2	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3
Net imports	-11.8	-13.2	-12.6	-13.7	-12.7	-12.4	-12.1	-14.4	-14.5	-15.4	-15.3	-16.5	-12.8	-12.9	-15.4
LNG gross imports (d)	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1
LNG gross exports (d)	11.4	11.8	11.4	13.0	12.4	11.3	11.4	13.2	13.8	13.3	13.0	14.9	11.9	12.1	13.8
Pipeline gross imports	8.4	7.3	7.9	8.2	8.9	7.8	8.3	7.9	8.6	7.4	7.6	7.9	8.0	8.2	7.9
Pipeline gross exports	8.9	8.7	9.2	8.9	9.4	8.9	9.0	9.2	9.4	9.5	9.9	9.6	8.9	9.1	9.6
Consumption (billion cubic feet per day)															
Total consumption	102.9	77.9	84.0	91.8	104.1	78.7	85.6	91.6	105.7	77.5	83.6	92.1	89.1	90.0	89.6
Residential	23.5	7.3	3.6	15.0	22.8	6.7	3.5	14.8	24.2	7.3	3.8	16.1	12.3	11.9	12.8
Commercial	14.5	6.4	4.7	10.7	14.3	6.3	5.0	10.7	15.1	6.8	5.3	11.4	9.1	9.1	9.6
Industrial	24.8	22.4	22.0	24.3	24.9	22.3	22.2	23.9	24.9	22.1	21.7	24.1	23.4	23.3	23.2
Electric power (e)	30.7	33.3	45.0	32.7	32.7	34.9	46.1	33.2	31.9	32.8	43.9	31.3	35.5	36.7	35.0
Lease and plant fuel	5.3	5.4	5.4	5.5	5.4	5.4	5.4	5.4	5.4	5.5	5.5	5.5	5.4	5.4	5.5
Pipeline and distribution	3.9	2.9	3.1	3.4	3.9	3.0	3.2	3.5	4.0	2.9	3.1	3.5	3.3	3.4	3.4
Vehicle	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
F	- () ()														
End-of-period working natural gas inventories (billion cubic te	et) (f)	2 002	2 400	2 457	2 206	2 475	2 645	2 400	1 006	2.066	2 5 4 2	2 226	2 457	2 400	2 226
Fast region	1,050	2,902	3,450	3,437 707	2,300	670	3,013	700	2/1	2,900	025	3,230	3,437	700	3,230
Last region	447	704	000	050	509	701	1 0 2 5	010	420	606	000	000	050	010	000
South Control region	417	1 1 2 9	1 002	1 1 9 0	1 007	1 1 7 2	1,025	1 1 9 9	420	1 1 2 4	993	008	950	1 1 9 9	000
Mountoin region	919	1,138	1,092	1,103	1,007	1,172	1,123	1,102	150	1,131	1,145	1,123	1,103	1,102	1,123
Posific region	79	216	239	220	224	200	204	229	102	222	200	220	220	229	220
	74	210	218	200	201	200	293	200	190	201	202	228	200	200	228
Alaska	27	30	35	30	24	28	32	20	24	27	32	28	30	20	

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

(b) Regional production in this table is based on geographic regions and not geologic formations.

(c) The balancing item is the difference between total natural gas consumption (NGTCPUS) and total natural gas supply (NGPSUPP).

(d) LNG: liquefied natural gas

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

(f) 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).

Notes:

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- = no data available

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Sources:

Historical data: Latest data available from Energy Information Administration databases supporting the following reports: Natural Gas Monthly, DOE/EIA-0130; and Electric Power Monthly, DOE/EIA-0226. Forecasts: EIA Short-Term Integrated Forecasting System.

https://www.adnocgas.ae/en/news-and-media/press-releases/2024/gail-agreement

ADNOC Gas Signs 10-Year LNG Sales and Purchase Agreement with India's GAIL

Agreement for 0.52 mtpa is ADNOC Gas' first LNG SPA with GAIL and reinforces ADNOC Gas' position as a reliable and responsible global LNG provider

SPA converts previous Heads of Agreement into a definitive agreement

ADNOC Gas' operated LNG production capacity will increase to over 15 mtpa after expected acquisition of ADNOC's 60% stake in Ruwais LNG in 2028

Abu Dhabi, UAE – November 14, 2024: ADNOC Gas has signed a 10-year Sales and Purchase Agreement (SPA) with GAIL India Limited, India's largest natural gas company, to supply up to 0.52 million metric tonnes per annum (mtpa) of liquefied natural gas (LNG), starting in 2026. The SPA converts the previous Heads of Agreement between ADNOC Gas and GAIL, announced in January, into a definitive agreement.

The LNG will be supplied from ADNOC Gas' Das Island liquefaction facility, which has an LNG production capacity of 6.0 mtpa. It is the third longest established LNG plant still in production globally. Since 1977, when operations began over 3,500 LNG cargoes have been shipped to customers around the world.

Rashid Khalfan Al Mazrouei, ADNOC Gas Senior Vice President, Marketing, said: "This agreement strengthens ADNOC Gas' role as a reliable and responsible global natural gas provider and reflects our ambition to capture future growth opportunities in gas demand. It also reinforces our position as a preferred partner for energy solutions in India.

"Global LNG demand is expected to rise by 15% over the next decade, driven by industrial coal-to-gas switching in China and the increased use of LNG for power generation across Southern and Southeast Asia. We are committed to more than doubling our LNG production capacity as part of our strategy to capture a larger share of the growing global demand for lower carbon intensity products like ours."

Sanjay Kumar, Director (Marketing) at GAIL, said: "India is witnessing a growing demand for LNG to meet its increasing natural gas demand in a diversified sectoral pattern. GAIL plans to significantly increase its term LNG portfolio in the coming years to meet this rising demand. This SPA with ADNOC Gas is a crucial step in this direction, enabling GAIL to augment its existing LNG portfolio to better serve its diverse consumer base."

To support its international growth ambitions, ADNOC Gas announced this week it expects to acquire ADNOC's 60% stake in the Ruwais LNG plant, at cost, in H2 2028 when first production is due.

Ruwais LNG, which includes two LNG trains, each with a production capacity of 4.8 mtpa of LNG, will be the first LNG export facility in the Middle East and Africa region to run on clean grid electricity, making it one of the lowest-carbon intensity LNG plants in the world.

The production plant will leverage artificial intelligence and other advanced digital technologies to enhance safety, minimize emissions and drive efficiency. When it is fully operational in 2029, ADNOC Gas' operated LNG production capacity will more than double to over 15 mtpa.

In 2023, India ranked as the fourth-largest importer of LNG globally, with expectations for further growth in LNG imports over the next decade. India aims to increase the share of natural gas in the country's total primary energy mix to 15 per cent by 2030, from about 6 per cent today. India's LNG regasification infrastructure has also enhanced to double capacity last year, rising from 21 MMTPA in 2014.

About ADNOC Gas

ADNOC Gas, listed on the ADX (ADX symbol: "ADNOCGAS" / ISIN: "AEE01195A234"), is a world-class, large-scale integrated gas processing company operating across the gas value chain, from receipt of feedstock from ADNOC through large, long-life operations for gas processing and fractionation to the sale of products to domestic and international customers. ADNOC Gas supplies approximately 60% of the UAE's sales gas needs and supplies end-customers in over 20 countries.

(X) @ADNOCGas

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Snapshot of India's Oil & Gas data

Monthly Ready Reckoner October 24



Petroleum Planning & Analysis Cell

(Ministry of Petroleum & Natural Gas)

Highlights for the month

Indigenous crude oil and condensate production during October 2024 was 2.4 MMT. OIL registered a production of 0.3 MMT, ONGC registered a production of 1.6 MMT whereas PSC/RSC registered production of 0.5 MMT during October 2024. There is a de-growth of 4.9 % in crude oil and condensate production during October 2024 as compared with the corresponding period of the previous year.

Total Crude oil processed during October 2024 was 21.3 MMT which is 3.6 % higher than October 2023, where PSU/JV refiners processed 14.1 MMT and private refiners processed 7.2 MMT of crude oil. Total indigenous crude oil processed was 2 MMT and total Imported crude oil processed was 19.3 by all Indian refineries (PSU+JV+PVT). There was a growth of 2 % in total crude oil processed in April-October FY 2024-25 as compared to same period of previous Financial Year.

Crude oil imports increased by 4.2% and 3.5% during October 2024 and April-October FY 2024-25 respectively as compared to the corresponding period of the previous year. As compared to net import bill for Oil & Gas for Oct 2023 of \$ 11.8 billion, the net import bill for Oil & Gas for Oct 2024 was \$ 10.6 billion. Out of which, crude oil imports constitutes \$ 10.6 billion, LNG imports \$1.2 billion and the exports were \$ 3.3 billion during Oct 2024.

The price of Brent Crude averaged \$75.66/bbl during Oct 2024 as against \$74.33/bbl during Sept 2024 and \$91.05/bbl during Oct 2023. The Indian basket crude price averaged \$75.12/bbl during Oct 2024 as against \$73.69/bbl during Sept 2024 and \$90.08 /bbl during Oct 2023.

Production of petroleum products was 23 MMT during October 2024 which is 5.2% higher than October 2023. Out of 23 MMT, 22.7 MMT was from refinery production & 0.3 MMT was from fractionator. There was a growth of 2.8 % in production of petroleum products in April-October FY 2024 – 25 as compared to same period of FY 2023 – 24. Out of total POL production, in October 2024, share of major products including HSD is 41 %, MS 16.8 %, Naphtha 6.7 %, ATF 6.6 %, Pet Coke 5.3 %, LPG 4.5 %, and rest is shared by Bitumen, FO/LSHS, LDO, Lubes & others.

POL products imports decreased by 2.2% and increased by 7.7% during October 2024 and April-October FY 2024-25 respectively as compared to the corresponding period of the previous year. Increase in POL products imports during April-October FY 2024-25 were mainly due to increase in imports of petcoke, liquified petroleum gas (LPG) and lubes/LOBS etc.

- Exports of POL products increased by 12.7% and 4.2% during October 2024 and April-October FY 2024-25 respectively as compared to the corresponding period of the previous year. Increase in POL products exports during April-October FY 2024-25 were mainly on account of increase in exports of petcoke/CBFS, fuel oil (FO), motor spirit (MS) and aviation turbine fuel (ATF) etc.
- The consumption of petroleum products during April-Oct 2024, with a volume of 137.6 MMT, reported a growth of 3.0 % compared to the volume of 133.7 MMT during the same period of the previous year. This growth was led by 7.4% growth in MS, 6.6% in LPG, 10.2% growth in ATF, 0.8% in HSD ,15.5% growth in Lubes, 10.0% growth in Petcoke and 1.4% in Naphtha and consumption besides growth in FO/LSHS during the period. The Consumption of petroleum products for the month of Oct-2024 recorded growth of 2.9% with a volume of 20.0 MMT compared to the same period of the previous year.
- Total Natural Gas Consumption (including internal consumption) for the month of October 2024 was 6005 MMSCM which was 4.2% higher than the corresponding month of the previous year. The cumulative consumption of 43033 MMSCM for the current financial year till October 2024 was higher by 11.2% compared with the corresponding period of the previous year.
- Gross production of natural gas for the month of October2024 (P) was 3111 MMSCM which was lower by 1.6% compared with the corresponding month of the previous year. The cumulative gross production of natural gas of 21271 MMSCM for the current financial year till October 2024 was higher by 1.1% compared with the corresponding period of the previous year.
- LNG import for the month of October 2024 (P)are calculated on prorata basis and was 2932 MMSCM which was 10.5% higher than the corresponding month of the previous year. The cumulative import of 22085(P) MMSCM for the current financial year till October 2024 is higher by 22.2 % compared with the corresponding period of the previous year.

	1. Selected indicators of the Indian economy												
	Economic indicators	Unit/ Base	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25					
1	Population (basis RGI projections)	Billion	1.337	1.351	1.365	1.377	1.388	1.405					
2	GDP at constant (2011-12 Prices)	Growth %	4.0	-6.6	9.1	7.2	7.6	6.7					
2			1st RE	1st RE	1st RE	PE	(E)	Q1 (E)					
		MMT	297.5	310.7	315.7	329.7	332.3	164.7					
3	Agricultural Production				4th AE	FE	FE	1st AE (H1)					
	(Food grains)	Growth %	4.3	4.5	1.6	4.4	0.8	10.9					
Λ	Gross Fiscal Deficit	%	4.6	9.5	6.7	6.4	5.9	4.9					
4	(as percent of GDP)			RE	RE	RE	RE	OE					
	Economic indicators	Unit/ Base	2022-23	2023-24	October		3-24 October Ap		April-C	october			
					2023-24	2024-25(P)	2023-24	2024-25 (P)					
5	Index of Industrial Production (Base: 2011-12)	Growth %	5.2	5.9	2023-24 6.4	2024-25(P) 3.1* QE	2023-24 6.2#	2024-25 (P) 4.0#					
5 6	Index of Industrial Production (Base: 2011-12) Imports^	Growth % \$ Billion	5.2 714.2	5.9 677.2	2023-24 6.4 54.5	2024-25(P) 3.1* QE 55.4	2023-24 6.2# 330.3	2024-25 (P) 4.0# 350.7					
5 6 7	Index of Industrial Production (Base: 2011-12) Imports^ Exports^	Growth % \$ Billion \$ Billion	5.2 714.2 451.0	5.9 677.2 437.1	2023-24 6.4 54.5 34.4	2024-25(P) 3.1* QE 55.4 34.6	2023-24 6.2# 330.3 211.1	2024-25 (P) 4.0# 350.7 213.2					
5 6 7 8	Index of Industrial Production (Base: 2011-12) Imports^ Exports^ Trade Balance	Growth % \$ Billion \$ Billion \$ Billion	5.2 714.2 451.0 -263.2	5.9 677.2 437.1 -240.1	2023-24 6.4 54.5 34.4 -20.1	2024-25(P) 3.1* QE 55.4 34.6 -20.8	2023-24 6.2# 330.3 211.1 -119.2	2024-25 (P) 4.0# 350.7 213.2 -137.4					

Population projection by RGI is taken as on 1st July for the year. IIP is for the month of *Sept'24 and #April-Sept'23 and Apr-Sept'24; @ 2022-23 as on March 31, 2023,2023-24 as on March 29,2024, Oct 2023 as on Oct' 27, 2023 and Oct, 2024 as on Oct 25, 2024; ^Imports & Exports are for Merchandise for the month of Sept 2023 & Sept 2024 and Apr-Sept 2023 and Apr-Sept 2024.;Agricultural growth for 24-25 is w.r.t. 1st AE for 23-24; E: Estimates; PE: Provisional Estimates; AE-Advanced Estimates; RE-Revised Estimates; QE-Quick Estimates; FE-Final Estimates.

Source: Registrar General India, Ministry of Commerce & Industry, Ministry of Statistics and Programme Implementation, Ministry of Agriculture & Farmer's Welfare, Ministry of Finance, Reserve Bank of India

	2. Crude oil, LNG and petroleum products at a glance													
	Details	Unit/ Base	2022-23	2023-24	Octo	ober	April-C	October						
			(P)	(P)	2023-24 (P)	2024-25 (P)	2023-24 (P)	2024-25 (P)						
1	Crude oil production in India [#]	MMT	29.2	29.4	2.5	2.4	17.2	16.7						
2	Consumption of petroleum products*	MMT	223.0	234.3	19.5	20.0	133.7	137.6						
3	Production of petroleum products	MMT	266.5	276.1	21.8	23.0	158.4	162.9						
4	Gross natural gas production	MMSCM	34,450	36,438	3,161	3,111	21,040	21,271						
5	Natural gas consumption	MMSCM	59,969	67,512	5,764	6,005	38,684	43,033						
6	Imports & exports:													
	Crude oil imports	MMT	232.7	234.3	18.7	19.5	135.4	140.2						
	crude on imports	\$ Billion	157.5	133.4	11.9	10.6	75.9	81.7						
	Petroleum products (POL)	MMT	44.6	48.7	4.5	4.4	27.9	30.1						
	imports*	\$ Billion	26.9	22.9	2.4	2.2	13.0	14.1						
	Gross petroleum imports	MMT	277.3	283.0	23.3	24.0	163.3	170.2						
	(Crude + POL)	\$ Billion	184.4	156.3	14.3	12.7	88.9	95.8						
	Petroleum products (POL)	MMT	61.0	62.6	4.5	5.1	35.3	36.8						
	export	\$ Billion	57.3	47.7	3.6	3.3	27.3	25.4						
	ING imports*	MMSCM	26,304	31,795	2,653	2,932	18,070	22,085						
		\$ Billion	17.1	13.3	1.1	1.2	7.6	8.9						
	Net oil & gas imports	\$ Billion	144.2	121.9	11.8	10.6	69.2	79.3						
7	Petroleum imports as percentage of India's gross imports (in value terms)^^	%	25.8	23.1	26.2	23.0	23.1	23.4						
8	Petroleum exports as percentage of India's gross exports (in value terms)^^	%	12.7	10.9	10.5	9.5	11.1	10.2						
9	Import dependency of crude oil (on POL consumption basis)	%	87.4	87.8	87.7	89.0	87.6	88.1						

#Includes condensate; *Private direct imports are prorated for the period Sept'24 to Oct'24 for POL. LNG Imports figure from DGCIS are prorated for Sept'24 to Oct'24.Total may not tally due to rounding off. ^^ Import and Exports for Oct'24 is prorated.

3. Indigenous crude oil production (Million Metric Tonnes)												
Details	2022-23	2023-24		October			April-Octobe	r				
	(P)	(P)	2023-24 (P)	2024-25 Target*	2024-25 (P)	2023-24 (P)	2024-25 Target*	2024-25 (P)				
ONGC	18.4	18.1	1.5	1.7	1.4	10.6	11.5	10.3				
Oil India Limited (OIL)	3.2	3.3	0.3	0.3	0.3	1.9	2.2	2.0				
Private / Joint Ventures (JVs)	6.2	5.7	0.5	0.7	0.4	3.4	4.4	3.1				
Total Crude Oil	27.8	27.2	2.3	2.7	2.2	15.9	18.0	15.4				
ONGC condensate	1.0	1.1	0.1	0.0	0.1	0.6	0.0	0.6				
PSC condensate 0.3 1.1			0.1	0.0	0.1	0.6	0.0	0.7				
Total condensate	Total condensate 1.4 2.2		0.2	0.0	0.2	1.2	0.0	1.3				
Total (Crude + Condensate) (MMT)	29.2	29.4	2.5	2.7	2.4	17.2	18.0	16.7				
Total (Crude + Condensate) (Million Bbl/Day)	0.59	0.59	0.64	0.56	0.59	0.62	0.57					
*Provisional targets inclusive of condensate.												
4. Domestic	and over	seas oil 8	k gas proc	duction (l	by Indian	Companie	es)					
Details			2022-23	2023-24	Oct	ober	April-C	october				
			(P)	(P)	2023-24 (P)	2024-25 (P)	2023-24 (P)	2024-25 (P)				
Total domestic production (MMTOE)			63.6	65.8	5.7	5.5	38.2	38.0				
Overseas production (MMTOE)			19.5	19.9	1.6	1.6	11.5	11.3				
Source: ONGC Videsh GAIL OIL LOCL HPCI	& BPRI	9 Lou C	ubbur /10) orudo o	il prococo	ing (14147	-)					
5. High Sul	mur (ns)	a LUW SI			on process	ing (iviivii						
Details			2022-23	2023-24			April-C	ctober				
			(P)	(P)	2023-24 (P)	2024-25 (P)	2023-24 (P)	2024-25 (P)				
1 High Sulphur crude			197.9	205.2	16.2	16.9	116.4	120.1				
2 Low Sulphur crude			57.4	56.3	4.4	4.5	34.0	33.3				
Total crude processed (MMT)		255.2	261.5	20.6	21.3	150.4	153.4					
Total crude processed (Million Bbl/Day			5.13	5.25	4.86	5.04	5.15	5.25				
Percentage share of HS crude in total of	cessing	77.5%	78.5%	78.6%	79.1%	77.4%	78.3%					

6. Quantity and value of crude oil imports											
Year	Quantity (MMT)	\$ Million	Rs. Crore								
2021-22	212.4	120675	9,01,262								
2022-23	232.7	157531	12,60,372								
2023-24 (P)	234.3	133366	11,05,176								
April-October 2024-25(P)	140.2	81734	6,84,176								

	7. Self-sufficiency in petroleum products (Million Metric Tonnes)												
	Particulars	2022-23	2023-24(P)	Octo	ober	April-C	October						
	Fai ticulars	(P)		2023-24 (P)	2024-25 (P)	2023-24 (P)	2024-25 (P)						
1	Indigenous crude oil processing	26.5	26.9	2.3	2.0	15.6	15.3						
2	Products from indigenous crude (93.3% of crude oil processed)	24.7	25.1	2.1	1.9	14.5	14.2						
3	Products from fractionators (Including LPG and Gas)	3.5	3.5	0.3	0.3	2.0	2.1						
4	Total production from indigenous crude & condensate (2 + 3)	28.2	28.6	2.4	2.2	16.6	16.4						
5	5 Total domestic consumption		234.3	19.5	20.0	133.7	137.6						
% Self	-sufficiency (4 / 5)	12.6%	12.2%	12.3%	11.0%	12.4%	11.9%						

	8. Re	fineries: In	stalled ca	pacity an	d crude c	oil proces	sing (MM	TPA / MI	MT)	
Sl. no.	Refinery	Installed			Crı	ide oil prod	essing (MN	/ІТ)		
		capacity	2022-23	2023-24		October		А	pril-Octobe	er
		(01.04.2024)	(P)	(P)	2023-24 2024-25 2024-25			2023-24	2024-25	2024-25
		ΜΜΤΡΑ			(P)	(Target)	(P)	(P)	(Target)	(P)
1	Barauni (1964)	6.0	6.8	6.6	0.5	0.6	0.6	3.8	3.8	3.9
2	Koyali (1965)	13.7	15.6	15.2	1.3	0.8	1.4	8.8	8.6	9.3
3	Haldia (1975)	8.0	8.5	8.1	0.7	0.7	0.4	4.5	4.2	3.4
4	Mathura (1982)	8.0	9.6	9.2	0.9	0.9	0.0	5.2	4.6	4.4
5	Panipat (1998)	15.0	13.8	14.3	1.3	1.2	1.4	8.7	9.2	8.8
6	Guwahati (1962)	1.2	1.1	1.0	0.0	0.1	0.1	0.6	0.8	0.7
7	Digboi (1901)	0.65	0.7	0.7	0.1	0.1	0.1	0.4	0.4	0.4
8	Bongaigaon(1979)	2.70	2.8	3.0	0.3	0.3	0.3	1.8	1.5	1.5
9	Paradip (2016)	15.0	13.6	15.2	0.7	1.4	1.3	8.5	9.1	7.8
	IOCL-TOTAL	70.3	72.4	73.3	5.7	6.0	5.4	42.2	42.2	40.3
10	Manali (1969)	10.5	11.3	11.6	1.0	1.0	0.7	6.7	6.1	5.6
11	CBR (1993)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	CPCL-TOTAL	10.5	11.3	11.6	1.0	1.0	0.7	6.7	6.1	5.6
12	Mumbai (1955)	12.0	14.5	15.1	0.7	1.3	1.4	8.8	8.9	9.3
13	Kochi (1966)	15.5	16.0	17.3	1.5	1.2	1.0	9.9	9.5	9.6
14	Bina (2011)	7.8	7.8	7.1	0.7	0.7	0.7	3.8	4.2	4.4
	BPCL-TOTAL	35.3	38.4	39.5	3.0	3.2	3.1	22.5	22.6	23.3
15	Numaligarh (1999)	3.0	3.1	2.5	0.29	0.3	0.3	1.1	1.8	1.7

Sl. no.	Refinery	Installed			Cruc	de oil proce	essing (MN	IT)		
		capacity	2022-23	2023-24		October		A	pril-Octob	er
		(01.04.2024)	(P)	(P)	2023-24	2024-25	2024-25	2023-24	2024-25	2024-25
		ΜΜΤΡΑ			(P)	(Target)	(P)	(P)	(Target)	(P)
16	Tatipaka (2001)	0.07	0.07	0.07	0.005	0.006	0.006	0.04	0.04	0.04
17	MRPL-Mangalore (1996)	15.0	17.1	16.5	1.4	1.5	1.5	9.0	10.1	10.3
	ONGC-TOTAL	15.1	17.2	16.6	1.4	1.5	1.5	9.0	10.1	10.3
18	Mumbai (1954)	9.5	9.8	9.6	0.9	0.8	0.9	5.9	5.5	5.6
19	Visakh (1957)	13.7	9.3	12.7	1.0	1.2	1.2	7.2	7.6	8.6
20	HMEL-Bathinda (2012)	11.3	12.7	12.6	1.1	1.0	1.1	7.6	7.0	7.6
	HPCL- TOTAL	34.5	31.8	35.0	3.0	3.0	3.2	20.7	20.0	21.8
21	RIL-Jamnagar (DTA) (1999)	33.0	34.4	34.4	2.9	2.9	2.8	20.1	20.1	20.3
22	RIL-Jamnagar (SEZ) (2008)	35.2	27.9	28.3	1.6	1.6	2.6	16.2	16.2	18.1
23	NEL-Vadinar (2006)	20.0	18.7	20.3	1.7	1.7	1.7	11.8	11.8	12.0
All India	(MMT)	256.8	8 255.2 261.5 20.6 21.2 21.3 150.4 15						151.0	153.4
All India	(Million Bbl/Day)	5.02	5.13	5.24	4.86	5.02	5.04	5.15	5.17	5.25

Note: Provisional Targets; Some sub-totals/ totals may not add up due to rounding off at individual levels. The Inputs to Refinery includes both Crude Oil and Other Inputs (OI), however Other Inputs (OI) do not form part of the above data.

9. Major crude oil and product pipeline network (as on 01.11.2024)										
Details		ONGC	OIL	Cairn	HMEL	IOCL	BPCL	HPCL	Others*	Total
Crude Oil	Length (KM)	1,284	1,195	688	1,017	5,822	937			10,943
	Cap (MMTPA)	60.6	9.0	10.7	11.3	53.8	7.8			153.1
Products	Length (KM)		654			12,807	2,600	5,133	2,399	23,593
	Cap (MMTPA)		1.7			70.6	22.6	35.2	10.2	140.3

*Others include GAIL and Petronet India. HPCL and BPCL lubes pipeline included in products pipeline data

	11. Production and consumption of petroleum products (Million Metric Tonnes)											
Due du ete	2022-	2022-23 (P)		2023-24 (P)		r 23 (P)	October 24 (P)		Apr-Oc	t'23 (P)	Apr-Oc	t'24 (P)
Products	Prod	Cons	Prod	Cons	Prod	Cons	Prod	Cons	Prod	Cons	Prod	Cons
LPG	12.8	28.5	12.8	29.7	1.0	2.5	1.0	2.7	7.3	16.6	7.4	17.7
MS	42.8	35.0	45.1	37.2	3.3	3.1	3.9	3.4	25.7	21.7	27.2	23.3
NAPHTHA	17.0	12.2	18.3	13.8	1.4	1.2	1.5	1.2	10.3	7.8	10.9	7.9
ATF	15.0	7.4	17.1	8.2	1.3	0.7	1.5	0.8	9.7	4.7	10.3	5.1
SKO	0.9	0.5	1.0	0.5	0.0	0.03	0.08	0.03	0.58	0.29	0.6	0.24
HSD	113.8	85.9	115.9	89.6	9.4	7.6	9.4	7.6	66.7	51.6	66.9	52.0
LDO	0.6	0.7	0.7	0.8	0.06	0.1	0.1	0.1	0.4	0.5	0.4	0.5
LUBES	1.3	3.7	1.4	4.1	0.1	0.3	0.1	0.4	0.8	2.3	0.7	2.7
FO/LSHS	10.4	7.0	10.3	6.5	0.7	0.5	0.9	0.6	6.6	3.8	6.7	3.9
BITUMEN	4.9	8.0	5.2	8.8	0.4	0.7	0.3	0.7	2.8	4.8	2.6	4.4
PET COKE	15.4	18.3	15.1	20.3	1.1	1.6	1.2	1.7	8.6	11.3	8.6	12.5
OTHERS	31.5	15.8	33.3	14.7	3.0	1.0	3.0	0.8	19.0	8.3	20.7	7.4
ALL INDIA	266.5	223.0	276.1	234.3	21.8	19.5	23.0	20.0	158.4	133.7	162.9	137.6
Growth (%)	4.8%	10.6%	3.6%	5.0%	3.2%	4.8%	5.2%	2.9%	4.0%	6.1%	2.8%	3.0%

Note: Prod - Production; Cons - Consumption

15. LPG consumption (Thousand Metric Tonne)														
LPG category	2022	2-23	2023	3-24			Octobe	r			A	pril-Octo	ber	
					202	3-24	2024-	-25(P)	Growth (%)	202	3-24	2024-	25 (P)	Growth (%)
1. PSU Sales :														
LPG-Packed Domestic	Packed Domestic 25,381.5		26,2	07.5	2,	187.6	2,	381.3	8.9%	14,	631.5	15,6	555.5	7.0%
LPG-Packed Non-Domestic	2,60	06.0	2,76	50.2	238.7			239.7	0.4%	1,	598.3	1,5	535.9	-3.9%
LPG-Bulk	408	8.9	593	3.8		62.0		91.8	48.2%		346.1		390.5	12.8%
Auto LPG	10	6.7	88	3.0		7.5		6.2	-16.6%		55.2		43.7	-20.9%
Sub-Total (PSU Sales)	28,5	03.1	29,6	49.4	2,	495.7	2,	719.1	8.9%	16,	631.1	17,6	525.6	6.0%
2. Direct Private Imports*	0.	1	0.	.1		0.00		7.72	#DIV/0!	0.04		ç	94.01	244648.5%
Total (1+2)	28,5	03.2	29,6	49.5	2,	495.7	2,	726.8	9.3%	16,631.1		17,7	719.6	6.5%
*Sept'24-Oct'24import data from DGCIS data is prorated.														
16. LPG marketing at a glance														
Particulars	Unit	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	01.11.24
(As on 1st of April)														(P)
LPG Active Domestic	(Lakh)			1486	1663	1988	2243	2654	2787	2895	3053	3140	3242	3283.4
Customers	Growth				11.9%	19.6%	12.8%	18.3%	5.0%	3.9%	5.5%	2.9%	3.2%	3.8%
LPG Coverage (Estimated)	(Percent)			56.2	61.9	72.8	80.9	94.3	97.5	99.8	-	-	-	-
LFG COVErage (LStimated)	Growth				10.1%	17.6%	11.1%	16.5%	3.4%	2.3%	-	-	-	-
DMUX Repoficiarios	(Lakh)					200.3	356	719	802	800	899.0	958.6	1032.7	1033
PIVIOT Deficiciaries	Growth						77.7%	101.9%	11.5%	-0.2%	12.2%	6.6%	7.7%	6.9%
	(No.)	12610	13896	15930	17916	18786	20146	23737	24670	25083	25269	25386	25481	25532
	Growth	9.8%	10.2%	14.6%	12.5%	4.9%	7.2%	17.8%	3.9%	1.7%	0.7%	0.5%	0.4%	0.4%
Auto LPG Dispensing	(No.)	667	678	681	676	675	672	661	657	651	601	526	468	446
Stations	Growth	2.3%	1.6%	0.4%	-0.7%	-0.1%	-0.4%	-1.6%	-0.6%	-0.9%	-8.5%	-12.5%	-11.0%	-10.1%
Pottling Plants	(No.)	185	187	187	188	189	190	192	196	200	202	208	210	212
	Growth	0.5%	1.1%	0.0%	0.5%	0.5%	0.5%	1.1%	2.1%	2.0%	1.0%	4.5%	1.0%	1.0%

Source: PSU OMCs (IOCL, BPCL and HPCL)

1. Growth rates as on 01.11.2024 are with respect to figs as on 01.11.2023. Growth rates as on 1 April of any year are with respect to figs as on 1 April of previous year.

2. The LPG coverage is calculated by PSU OMCs based upon the active LPG domestic connections and the estimated number of households. The number of households has been projected by PSU OMCs based on 2011 census data. Factors like increasing nuclearization of families, migration of individuals/ families due to urbanization and reduction in average size of households etc. impact the growth of number of households. Due to these factors, the estimated no. of households through projection of 2011 census data may slightly differ from the actual no. of households in a State/UT. Further, this methodology does not include PNG (domestic) connections.

	18. Natural gas at a glance										
								(MMSCM)			
Details	2022-23	2023-24		October			April-October				
			2023-24	2024-25	2024-25	2023-24	2024-25	2024-25 (P)			
			(P)	(Target)	(P)	(P)	(Target)				
(a) Gross production	34,450	36,438	3,161	3,411	3,111	21,040	22,907	21,271			
- ONGC	19,969	19,316	1,634	1,730	1,620	11,385	11,563	11,027			
- Oil India Limited (OIL)	3,041	3,090	273	340	279	1,791	2,272	1,856			
- Private / Joint Ventures (JVs)	11,440	14,032	1,254	1,341	1,212	7,865	9,072	8,388			
(b) Net production	33 664	35 717	3 111		3 073	20.614		20.948			
(excluding flare gas and loss)	33,004	55,717	3,111		3,075	20,014		20,540			
(c) LNG import [#]	26,304	31,795	2,653		2,932	18,070		22,085			
(d) Total consumption including internal	E0.060	67 512	E 764		6 00F	20 601	1	42 022			
consumption (b+c)	59,909	07,512	5,764		0,005	50,004		45,055			
(e) Total consumption (in BCM)	60.0	67.5	5.8		6.0	38.7		43.0			
(f) Import dependency based on	13.0	47.1	46.0		18.8	46.7]	51 3			
consumption (%), {c/d*100}	43.9	47.1	40.0		+0.0	40.7		51.5			

LNG data from DGCIS is prorated for Sept'24-Oct'24.



Snapshot of India's Oil & Gas data -October,2024

19. Coal Bed Methane (CBM) gas development in India										
Prognosticated CBM resources		91.8	TCF							
Established CBM resources	10.4	TCF								
CBM Resources (33 Blocks)	62.8	TCF								
Total available coal bearing areas (India)	32760	Sq. KM								
Total available coal bearing areas with MoPNG/DGH	12254*	Sq. KM								
Area awarded		21,177**	Sq. KM							
Blocks awarded*		39	Nos.							
Exploration initiated (Area considered if any boreholes were drilled	11008	Sq. KM								
Production of CBM gas	April-October 2024 (P)	427 29	MMSCM							
Production of CBM gas	October 2024 (P)	64.82	MMSCM							

*ST CBM Block awarded & relinquished twice- in CBM Round II and Round IV-Area considered if any boreholes were drilled in the awarded block. **MoPNG awarded 04 new CBM Blocks (Area 3862 sq. km) under Special CBM

19a. Status of Compressed Bio Gas (CBG) projects under SATAT (as on 01.11.2024) (Provisional)									
Particulars	Units	IOCL	HPCL	BPCL	GAIL#	IGL	Total		
No. of CBG plants commissioned and initiated sale of CBG	No. of plants	37*	12	8	18	6	79*		
Start of CBG sale from retail outlet(s)	Nos.	97	84	69	1	0	251		
Sale of CBG in 2022-23	Tons	5822	77	6	5322		11,227		
Sale of CBG in 2023-24	Tons	6500	309	102	12813		19724		
Sale of CBG in 2024-25 (up to October 2024)	Tons	4412	1097	178	14814		20501		
Sale of CBG in CGD network	GA Nos.				47		44		

Sale of CBG sourced under CBG-CGD synchronization from OGMCs (IOC-1175 Tons; BPC-3567 Tons; HPC- 2555 Tons & IGL) are reported in GAIL's CBG sale figure.*2 LOI holders of IndianOil are supplying

CBG produced at their plants to two other OGMCs and hence they are counted only once in cumulative CBG plants commissioned on industry basis.

20. Common Carrier Natural Gas pipeline network as on 30.06.2024														
Nature of pip	oeline	GAIL	GSPL	PIL	IOCL	AGCL	RGPL	GGL	DFPCL	ONGC	GIGL	GITL	Others*	Total
Operational	Length	10,986	2,722	1,483	143	107	304	73	42	24				15,884
operational	Capacity	233.2	43.0	85.0	20.0	2.4	3.5	5.1	0.7	6.0				-
Partially	Length	4,933			1,080						1,302	364		7,679
commissioned [#]	Capacity	0.0												-
Total operational len	gth	15,919	2,722	1,483	1,223	107	304	73	42	24	1,302	364	0	23,563
Under construction	Length	2,605	100		65						0	220	2,640	5,630
	Capacity	26.3	3.0		1.0						0.0	36.0	42.0	-
Total lengt	h	18,524	2,822	1,483	1,288	107	304	73	42	24	1,302	584	2,640	29,193

Source: PNGRB; Length in KMs ; Authorized Capacity in MMSCMD (Arithmetic sum taken for each entity -capacity may vary from pipeline to pipeline); *Others-APGDC, JGGL, IMC,GTIL, HPPL Consortium of H-

	21. Ex	kisting LNG terminals	
Location	Promoters	Capacity as on 01.11.2024 (MMTPA)	% Capacity utilisation (April- September 2024)
Dahej	Petronet LNG Ltd (PLL)	17.5	103.9
Hazira	Shell Energy India Pvt. Ltd.	5.2	48.7
Dabhol	Konkan LNG Limited*	5	30.9
Kochi	Petronet LNG Ltd (PLL)	5	21.8
Ennore	Indian Oil LNG Pvt Ltd	5	23.7
Mundra	GSPC LNG Limited	5	27.0
Dhamra	Adani Total Private Limited	5	48.2
	Total Capacity	47.7	

* To increase to 5 MMTPA with breakwater. Only HP stream of capacity of 2.9 MMTPA is commissioned

22. Status of PNG connections and CNG stations acro	oss India (Nos	.) as on 30.09).2024(P)	
State/UT	CNC Stations		PNG connections	;
(State/UTs are clubbed based on the GAs authorised by PNGRB)	Cive Stations	Domestic	Commercial	Industrial
Andhra Pradesh	196	2,77,329	518	53
Andhra Pradesh, Karnataka & Tamil Nadu	47	11,427	10	8
Assam	24	64,203	1,413	470
Bihar	156	1,85,777	152	23
Bihar & Jharkhand	18	9,020	11	0
Bihar & Uttar Pradesh	26	12,823	0	0
Chandigarh (UT), Haryana, Punjab & Himachal Pradesh	33	28,270	186	53
Chhattisgarh	22	4,551	0	0
Dadra & Nagar Haveli (UT)	6	12,706	58	66
Daman & Diu (UT)	5	5,322	95	58
Daman and Diu & Gujarat	15	8,177	32	0
Goa	14	15,810	40	47
Gujarat	1,016	34,20,149	23,909	5,818
Haryana	457	4,29,559	1,288	2,662
Haryana & Himachal Pradesh	14	54	1	0
Haryana & Punjab	27	2,003	0	0
Himachal Pradesh	16	8,487	32	4
Jharkhand	104	1,39,940	47	8
Karnataka	401	4,66,224	622	380
Kerala	167	1,01,697	91	28
Kerala & Puducherry	23	6,334	0	0
Madhya Pradesh	313	2,50,745	529	556
Madhya Pradesh and Chhattisgrah	9	0	0	0
Madhya Pradesh and Rajasthan	37	1,119	0	0
Madhya Pradesh and Uttar Pradesh	20	0	0	3
Maharashtra	936	36,00,528	5,032	1,068
Maharashtra & Gujarat	74	2,02,267	11	41
Maharashtra and Madhya Pradesh	16	0	0	0

State/UT	CNC Stations	PNG connections				
(State/UTs are clubbed based on the GA's authorised by PNGRB)	CNG Stations	Domestic	Commercial	Industrial		
National Capital Territory of Delhi (UT)	493	16,18,765	4,312	1,912		
Odisha	118	1,28,580	20	2		
Puducherry	10	0	0	0		
Puducherry & Tamil Nadu	8	429	3	0		
Punjab	223	95,362	718	324		
Punjab & Rajasthan	20	5,725	0	0		
Rajasthan	337	3,48,343	324	1,754		
Tamil Nadu	327	41,766	25	29		
Telangana	195	2,17,076	135	133		
Telangana and Karnataka	11	126	0	2		
Tripura	20	63,498	508	62		
UT of Jammu and Kashmir	2	0	0	0		
Uttar Pradesh	1,045	16,99,900	2,983	3,634		
Uttar Pradesh & Rajasthan	47	24,060	62	349		
Uttar Pradesh and Uttrakhand	31	16,249	0	0		
Uttarakhand	37	74,874	108	121		
West Bengal	143	44,107	6	1		
Grand Total	7,259	1,36,43,381	43,281	19,669		

Note: 1. All the GAs where PNG connections/CNG Stations have been established are considered as Operational, 2. Under normal conditions. Operation of any particular GA commences within around one year of authorization. 3. State/UTs wherever clubbed are based on the GAs authorised by PNGRB.
2	3. Domestic N	latural	Gas price and	d Gas pr	ice ceiling (GCV basis	5)	
Period	Dor	nestic Nati	ural Gas price in US\$	S/MMBTU	Gas price ceiling	in US\$/MMBTU	
April 2020 - September 2020			2.39		5.	61	
October 2020 - March 2021			1.79		4.	06	
April 2021 - September 2021			1.79		3.62		
October 2021 - March 2022			2.90		6.13		
April 2022 - September 2022			6.10		9.	92	
October 2022 - March 2023			<u>8.57</u> 9.16		12	.46	
Period	Domestic Gas calculat US\$/MMBT	ed price in U	Domestic Gas ceiling ONGC/OIL in US\$/	g price for MMBTU	Period	HP-HT Gas price ceiling in US\$/MMBTU	
8 April 2023- 30 April 2023	7.92		6.50				
1 May 2023 - 31May 2023	8.27		6.50				
1 June 2023 - 30 June 2023	7.58		6.50		April 2022 Sontombor 2022	12.12	
1 July 2023 - 31 July 2023	7.48		6.50		April 2023-September 2025	12.12	
1 Aug 2023 - 31 Aug 2023	7.85		6.50				
1 Sept 2023 - 30 Sept 2023	8.60		6.50				
1 Oct 2023 - 31 Oct 2023	9.20		6.50				
1 Nov 2023 - 30 Nov2023	9.12		6.50				
1 Dec 2023 - 31 Dec 2023	8.47		6.50		Octobor'2022 - March 2024	9.96	
1 Jan 2024 - 31 Jan 2024	7.82		6.50		October 2023 - March 2024	5.50	
1 Feb 2024- 29 Feb 2024	7.85		6.50				
1 Mar 2024- 31 Mar 2024	8.17		6.50				
1 April 2024 - 30 April 2024	8.38		6.50				
1 May 2024 - 31 May 2024	8.90		6.50				
1 June 2024 - 30 June 2024	8.44		6.50		April 2024 Soptombor 2024	0.97	
1 July 2024 - 31 July 2024	8.24		6.50		April 2024-September 2024	5.07	
1 Aug 2024 - 31 Aug 2024	8.51		6.50				
1 Sept 2024-30 Sept 2024	7.85		6.50				
1 Oct 2024 - 31 Oct 2024	7.48		6.50		October 2024 - March 2025	10.16	
1 Nov 2024 - 30 Nov 2024	7.53		6.50			10.10	
Natural Gas prices are on GCV basis							
City	CN		Z4. CNG/PNC	a prices		- Course	
City Dolhi	CN	<u>3 (KS/Kg)</u> 75.00				IGL wobsite (12 11 2024)	
Mumbai		75.09			48.00	MGL website (13.11.2024)	
	Indian	Natura	Gas Spot Price	e for Phy	vsical Delivery	- met website (15.11.2024)	
ICV Dries Index Month	malan	Avg.	Price			Courses	
IGA Price Index Wonth	INR/MMB	tu	\$/MMBt	u		Source	
`October 2024	1098		13.07		155.60	As per IGX website:	

*Prices are weighted average prices |\$1=INR 84.02| 1 MMBtu=25.2 SCM (Data Excluding Ceiling Price Gas)

https://www.omv.com/en/news/241113-omv-successfully-receives-arbitral-award-in-relation-to-its-german-gas-supplies-from-gazprom-export

Published November 13, 2024

OMV successfully receives arbitral award in relation to its German gas supplies from Gazprom Export

OMV's arbitration proceedings against Gazprom Export under ICC rules concluded with an award on November 13, 2024

OMV is taking steps to recover damages from Gazprom Export based on this arbitral award of EUR 230 mn plus interest and costs

The arbitral award will be set off with immediate effect against payments to be made by OMV to Gazprom Export under its Austrian gas supply contract

Established extensive diversification measures will allow OMV to supply its customers in case of potential disruptions of Russian gas supply

OMV today announced the receipt of an arbitral award under the rules of the International Chamber of Commerce (ICC) in relation to Gazprom Export's irregular German gas supplies, which had eventually ended in September 2022. In pursuit of its claims arising from Gazprom Export's actions, OMV Gas Marketing & Trading GmbH (hereinafter: OGMT) initiated this request for arbitration in January 2023.

OMV has taken the decision to recover awarded damages amounting to EUR 230 million plus interest and costs, which positively contributes to balancing respective financial losses incurred in 2022. The company takes the necessary next steps to enforce the arbitral award with immediate effect. OGMT confirms off-setting its claims against invoices under the Austrian gas supply contract with Gazprom Export to obtain compensation for its awarded damage claims. The off-setting amount is expected to increase OMV's clean CCS operating result and operating cash-flow.

It is expected that there may be a deterioration of the contractual relationship under the Austrian supply contract of OGMT with Gazprom Export, including a potential halt of gas supply. In such case, small onetime hedging losses could occur, but will be clearly outweighed by the positive effects from the recovered damages.

As part of OMV's ongoing diversification strategy, it has continuously and successfully built up its gas supplies from non-Russian sources and additional pipeline capacities. Its portfolio of gas encompasses several supply sources from Norway, as well as additional long-term LNG volumes. OMV confirms that it can deliver the full contracted volumes of gas to its customers in case of a potential supply disruption by Gazprom Export. In addition, OMV's gas storage in Austria is currently at over 90 percent.

The potentially affected volume of gas for the Austrian Virtual Trading Point (VTP) is estimated at up to 7,400 MWh per hour, which corresponds to approximately 5 TWh per month.

About OMV Aktiengesellschaft

At OMV, we are re-inventing essentials for sustainable living. OMV is transitioning to become an integrated sustainable chemicals, fuels and energy company with a focus on circular economy solutions. By gradually switching over to a low-carbon business, OMV is striving to achieve net zero by 2050 at the latest. The company achieved revenues of EUR 39 billion in 2023 with a diverse and talented workforce of around 20,600 employees worldwide. OMV shares are traded on the Vienna Stock Exchange (OMV) and as American Depository Receipts (OMVKY) in the U.S. Further information at www.omv.com.



- November 16, 2024 -

STATEMENT FROM PRESIDENT DONALD J. TRUMP

I am thrilled to announce that Chris Wright will be joining my Administration as both United States Secretary of Energy, and Member of the newly formed Council of National Energy.

Chris has been a leading technologist and entrepreneur in Energy. He has worked in Nuclear, Solar, Geothermal, and Oil and Gas. Most significantly, Chris was one of the pioneers who helped launch the American Shale Revolution that fueled American Energy Independence, and transformed the Global Energy Markets and Geopolitics.

The Council of National Energy will consist of all Departments and Agencies involved in the permitting, production, generation, distribution, regulation, transportation, of ALL forms of American Energy. This Council will oversee the path to U.S. ENERGY DOMINANCE by cutting red tape, enhancing private sector investments across all sectors of the Economy, and by focusing on INNOVATION over longstanding, but totally unnecessary, regulation.

Chris Wright has known and worked for years with Doug Burgum, Council Chairman and Interior Secretary designate. This team will drive U.S. Energy Dominance, which will drive down Inflation, win the A.I. arms race with China (and others), and expand American Diplomatic Power to end Wars all across the World.

As Secretary of Energy, Chris will be a key leader, driving innovation, cutting red tape, and ushering in a new "Golden Age of American Prosperity and Global Peace."

Chris Wright Biography:

Self-described tech nerd turned entrepreneur, Chris Wright is the founder, Chief Executive Officer, and Chairman of the Board of Liberty Energy (NYSE: LBRT). Chris is a dedicated humanitarian with a passion for bringing the benefits of energy to every community in the world. This passion has inspired a career in energy, working not only in oil and gas but nuclear, solar, and geothermal. Chris embraces all energy sources if they are abundant, affordable, and reliable.

Chris is a bold advocate who brings rational thought to the energy dialogue. He has spoken on energy and the merits of the Shale Revolution to the UK House of Lords and US state and federal lawmakers. Chris has had multiple appearances on network TV, documentaries, and podcasts. Chris' #ThankYouNorthFace campaign went viral with over 5 million views, sparking a sober discussion on the multiple efficient uses of oil and gas in everyday products.

Chris completed an undergraduate degree in Mechanical Engineering at MIT and graduate work in Electrical Engineering at UC Berkeley and MIT. He founded Pinnacle Technologies and served as CEO from 1992 to 2006. Pinnacle created the hydraulic fracture mapping industry, and its innovations helped launch commercial shale gas production in the late 1990s. Chris was Chairman of Stroud Energy, an early shale gas producer, before selling to Range Resources in 2006. Additionally, Chris founded and served as Executive Chairman of Liberty Resources and Liberty Midstream Solutions until its sale in 2024. In addition to his role at Liberty, he sits on the Board of Directors for Urban Solutions Group, Oklo Inc. (NYSE: Oklo), and EMX Royalty Corp. (NYSE: EMX). Chris also serves on the board of numerous nonprofit organizations, including ACE Scholarships, and as a founding board member of the Bettering Human Lives Foundation.

Chris grew up and currently lives in Colorado with his wife, Liz. He is a passionate father, grandfather, skier, cyclist, climber, and outdoor enthusiast.



(Percent by Interval)

HEDIJM

Period: Monthly V

The Download Series History 🚯 Definitions, Sources & Notes

API Gravity	Graph	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	View History
20.0° or Less	@m 🗌	9.32	7.87	12.06	8.77	11.35	13.73	1983-2024
20.1° to 25.0°	۹۰۰ 🗋	50.54	51.80	46.69	49.37	48.87	42.07	1983-2024
25.1° to 30.0°	\$	6.24	<mark>11.00</mark>	9.10	9.57	7.34	10.06	1983-2024
30.1° to 35.0°	\$m 🗌	23.11	19.18	23.39	21.58	22.12	22.80	1983-2024
35.1° to 40.0°	\$	7.55	6.09	6.30	7.27	8.28	9.39	1983-2024
40.1° to 45.0°	۹۰۰ 🗋	W	W	W	1.87	W	W	1983-2024
45.1° or Greater	\$	W	W	W	1.57	W	W	1983-2024

Click on the source key icon to learn how to download series into Excel, or to embed a chart or map on your website.

- = No Data Reported; -- = Not Applicable; NA = Not Available; W = Withheld to avoid disclosure of individual company data.

Notes: Values shown for the current two months are preliminary. Values shown for the previous two months may be revised to account for late submissions and corrections. Final revisions to monthly and annual values are available upon publication of the June Petroleum Marketing Monthly. Annual averages that precede the release of the June Petroleum Marketing Monthly are calculated from monthly data. Data through 2014 are final. See Definitions, Sources, and Notes link above for more information on this table.

Release Date: 11/1/2024 Next Release Date: 12/2/2024

e Mainline eline system

energy infrastructure ensures safe and reliable supply for North American consumers.

an 13,800 learly 8,600 miles) s, Enbridge's line network city to transport els a day of light, heavy oil from U.S. Midwest Canada.

This sophisticated pipeline infrastructure network carries a variety of crude oil types, including production from the Canadian oil sands and natural gas liquids, to refineries across North America. The Mainline is Canada's largest oil transportation system and plays a critical role in providing safe and reliable energy supply for North American consumers.

Enbridge's Mainline network includes the Canadian Mainline system, which includes several pipelines running from Edmonton to the Canada-U.S. border at Gretna, Manitoba, and the Lakehead System or U.S. Mainline, which carries on to Clearbrook, MN and Superior, WI, and delivers crude to markets in Minnesota, northern Illinois, Indiana, Ohio, Michigan and southern Ontario. Other Enbridge market access pipelines serve markets in the U.S. Gulf Coast, Oklahoma, southern Illinois, and Quebec.

The first pipeline in the Mainline network, Line 1, connected Edmonton to Superior and was built in 1950, in the wake of the Leduc, Alberta oil discovery that signaled the birth of the modern Canadian industry. Since then, numerous additional lines have been built to meet consumer demand and rigorously maintained to ensure the continued safe operational reliability of the system.



Connecting key basins and leading markets

In all the years of change and growth, one certainty has remained: delivering safe and reliable solutions for our customers is the foundation of Enbridge's business.

Enbridge moves 30% of the crude oil produced in North America. We also account for 65% of all U.S.-bound Canadian oil exports, 40% of U.S. oil imports, and about 25% of North American oil exports.

Enbridge's liquids pipeline network connects the continent's key supply basins with its leading refinery markets. In fact, we are connected to 75% of North America's refining capacity overall. Our network is also unparalleled for its flexibility, with multiple receipt and delivery points across the United States and Canada. The Enbridge system is a complex web of energy infrastructure – with more than 20 major terminals, 200 tanks, 36 million barrels of operational tankage, 60 million barrels of contract storage capacity and 600 pump units.

Operating the integrated Enbridge network requires seamless coordination and collaboration across our many teams. Our segregated batching system allows us to simultaneously transport multiple grades and commodity types while maintaining strict standards for safety and efficiency.

With more than 20 receipt points and 30 delivery points across the network, we're well suited to move light, medium and heavy oil, as well as NGLs and refined products. Our system's high utilization rate reflects Enbridge's commitment to maximizing throughput via system optimization.





11/12/2024 05:10:46 [BN] Bloomberg News

Russia's Seaborne Crude Flows Rebound on Higher Arctic Shipments

Three tankers loaded crude at the Murmansk terminal in the week to Nov. 10

By Julian Lee

(Bloomberg) -- Russia's seaborne crude exports rebounded in the latest week, with a jump in cargoes from the Arctic region helping to stabilize the four-week average.

Weekly flows rose by about 260,000 barrels a day in the period to Nov. 10, as a recovery in shipments from the Arctic port of Murmansk more than offset a dip in flows from Russia's main Pacific terminal at Kozmino. Shipments from the Black Sea port of Novorossiysk also rebounded from the previous week's maintenance-hit level. Four-week exports edged higher.

The increase in Arctic shipments was expected, with four tankers at, or very close to, Murmansk fjord at the start of last week. Loadings there are likely to slip back again, with one tanker already off the port and two more expected to arrive, but toward the end of the week.

Russia's primary refining rate edged higher in the first week of November, as seasonal maintenance passed its peak. That will likely reduce the volume of crude available for export, though the effect could be offset by a Ukrainian drone strike on Rosneft's Saratov oil refinery.



Russia pumped crude almost in line with its OPEC+ output target in October, according to people familiar with Energy Ministry figures, including a modest compensatory cut to make up for earlier over-production. That came after the group of oil producers, which Russia leads alongside Saudi Arabia, delayed for the second time a plan to start adding

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back some of the supply it has cut in recent years. Moscow will have to wait until at least the start of next year to enjoy a rising production target, though that could be postponed again.

Crude Shipments

A total of 31 tankers loaded 23.96 million barrels of Russian crude in the week to Nov. 10, vessel-tracking data and port-agent reports show. The volume was up from a revised 22.13 million barrels on 30 ships the previous week.

Tankers Loading Crude at Russian Terminals 31 tankers loaded Russian crude in the week to November 10							
Week ending	November 10	November 3	October 27				
Primorsk (Baltic)	7	10	9				
Ust-Luga (Baltic)	7	5	6				
Novorossiysk (Black Sea)	3	2	4				
Murmansk (Arctic)	3	0	3				
Other Arctic	0	0	0				
Kozmino (Pacific)	8	10	9				
De Kastri (Pacific)	2	2	1				
Prigorodnoye (Pacific)	1	1	0				
Total	31	30	32				
Source: Vessel tracking data mor Note: Based on date of completic cargoes identified as Kazakhstan	nitored by Bloomberg n of cargo loading. Excl 's KEBCO grade.	udes ships loading	Bloomberg				

Daily crude flows in the week to Nov. 10 rose by about 260,000 barrels to 3.42 million, recovering about 70% of the previous week's drop. The increase was driven by a jump in flows from the country's Arctic region, which more than offset lower shipments from the Pacific.

Less volatile four-week average flows also rose, edging up to average 3.39 million barrels a day, an increase of 30,000 from the period to Nov. 3.

Crude shipments so far this year are about 40,000 barrels a day, or 1.2%, below the average for the whole of 2023.

One cargo of Kazakhstan's KEBCO crude was loaded at Ust-Luga on the Baltic Sea and one at Novorossiysk on the Black Sea during the week.

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News Story



Russia terminated its export targets at the end of May, opting instead to restrict production, in line with its partners in the OPEC+ oil producers' group. The country's output target is set at 8.978 million barrels a day until the end of December, after a planned easing of some output cuts was delayed for a second time.

Moscow also pledged to make deeper output cuts in October and November this year, then between March and September of 2025, to compensate for pumping above its OPEC+ quota earlier this year.

Export Value

The Kremlin's oil income rose with an increase in weekly-average prices for Russia's major crude streams adding to the effect of the higher export volume. Together they pushed the gross value of Moscow's exports up by about \$160 million to \$1.56 billion in the week to Nov. 10.

The price gain was in line with broader increases for oil in the run-up to the US election won by Donald Trump.

Export values at Baltic ports were up week-on-week by about \$2.40 a barrel. Prices for Black Sea loading Urals and key Pacific grade ESPO rose by about \$2.70 and \$2.80 respectively, compared with the previous week. Delivered prices in India were up by about \$2.60 a barrel, all according to numbers from Argus Media.

Four-week average income moved in the opposite direction, edging down to about \$1.53 billion a week, from a revised \$1.54 billion in the period to Nov. 3.

On this basis, the price of Russia's shipments from the Baltic and Black Sea in the four weeks to Nov. 10 was down by almost \$1 a barrel from the period to Nov. 3. Prices for key Pacific grade ESPO were lower by about \$0.60 a barrel.

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Flows by Destination

• Asia

Observed shipments to Russia's Asian customers, including those showing no final destination, edged lower to 3.02 million barrels a day in the four weeks to Nov. 10.

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About 1.36 million barrels a day of crude were 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 1.23 million barrels a day, down from a revised 1.38 million for the period to Nov. 3 and 1.63 million in the four weeks to Oct. 27.

The Indian figures, in particular, are likely to rise as the discharge ports become clear for vessels that are not currently showing final destinations. Most of those heading from Russia's western ports through the Suez Canal end up in the south Asian nation.

The equivalent of about 300,000 barrels a day was on vessels signaling Port Said or Suez in Egypt. Those show up as "Unknown Asia" until a final destination becomes apparent.

The "Other Unknown" volumes, running at about 140,000 barrels a day in the four weeks to Nov. 10, are those on tankers showing no clear destination. Most originate from Russia's western ports and go on to transit the Suez Canal, but some could end up in Turkey. Others may be moved from one vessel to another.

One Suezmax tanker, Sakarya, appears to have transferred its cargo into a VLCC near the Spanish exclave of Ceuta. A second, Cankiri, may be doing the same.

Separately, Greek naval exercises that have been running since May and have forced most ship-to-ship cargo transfers out of the Laconian Gulf and nearby waters, are due to end this week, unless they are extended again.

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News Story

Crude Shipments to Asia

Shipments of Russian crude to Asian buyers in million barrels a day

4 weeks ending	China	India	Other	Unknown Asia	Other Unknown	Total
October 6, 2024	1.34	1.80	0.00	0.00	0.00	3.14
October 13, 2024	1.24	1.85	0.00	0.00	0.00	3.09
October 20, 2024	1.36	1.73	0.00	0.05	0.00	3.15
October 27, 2024	1.24	1.63	0.00	0.17	0.09	3.12
November 3, 2024	1.34	1.38	0.00	0.24	0.09	3.04
November 10, 2024	1.36	1.23	0.00	0.30	0.14	3.02
Source: Vessel tracking data	compiled b	y Bloomberg				Bloomberg

• Europe and Turkey

Russia's seaborne crude exports to European countries have ceased, with flows to Bulgaria halted at the end of last year. Moscow also lost about 500,000 barrels a day of pipeline exports to Poland and Germany at the start of 2023, when those countries stopped purchases.

Turkey is now the only short-haul market for shipments from Russia's western ports. Flows in the 28 days to Nov. 10 rose to about 370,000 barrels a day, the highest in more than four months.



NOTES

This story forms part of a weekly series tracking shipments of crude from Russian export terminals and the gross value

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of those flows. The next update will be on Tuesday, Nov. 19.

All figures exclude cargoes identified as Kazakhstan's KEBCO grade. Those are shipments made by KazTransoil JSC that transit Russia for export through Novorossiysk and 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 stream. Since Russia's invasion of Ukraine, Kazakhstan has rebranded its cargoes to distinguish them from those shipped by Russian companies.

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.

If you are reading this story on the Bloomberg terminal, click 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 October, the OPEC Reference Basket (ORB) value increased by 86ϕ , or 1.2%, m-o-m, to average 74.45/b. The ICE Brent front-month contract increased by 2.51, or 3.4%, m-o-m, to average 75.38/b. The NYMEX WTI front-month contract increased by 2.19, or 3.2%, m-o-m, to average 71.56/b. The GME Oman front-month contract increased by 2.12, or 2.9%, m-o-m, to average at 75.03/b. The ICE Brent-NYMEX WTI front-month spread widened by 32ϕ , m-o-m, to average 3.82/b. The oil futures forward curves flattened in October but remained in backwardation. Hedge funds and other money managers showed mixed movements in their positions, contributing to volatility.

World Economy

The world economic growth forecast is revised up slightly to stand at 3.1% for 2024 and 3.0% for 2025. The US economic growth forecast for 2024 is revised up to 2.7%, reflecting robust growth in 2Q24 and 3Q24. For 2025, the US growth forecast is also revised up to 2.1%. Japan's growth forecasts remain unchanged at 0.1% for 2024 and 0.9% for 2025. Similarly, the Eurozone's economic growth forecasts remain unchanged at 0.8% and 1.2% in 2024 and 2025, respectively. China's economic growth forecast for 2024 remains unchanged at 4.9%, however, the recently announced stimulus measures led to an upward revision of the economic growth forecast for 2025 to 4.7%. India's economic growth forecasts remain unchanged at 6.8% for 2024 and 6.3% for 2025. The economic growth forecasts for Brazil are revised up to 2.9% for 2024 and 2.1% for 2025, on the back of ongoing robust dynamics which are expected to extend into 2025. Reflecting ongoing steady growth, Russia's economic growth forecasts are revised up to 3.5% for 2024 and 1.7% for 2025.

World Oil Demand

The global oil demand growth forecast for 2024 is revised down slightly by 107 tb/d from the previous month's assessment to 1.8 mb/d, y-o-y. This minor adjustment is mainly due to updated data for 1Q24, 2Q24 and 3Q24. OECD oil demand is expected to grow by around 0.2 mb/d, while non-OECD demand is forecast to expand by close to 1.7 mb/d. In 2025, global oil demand growth is also revised down slightly by 103 tb/d from the previous month's assessment to 1.5 mb/d, y-o-y. The OECD demand is expected to grow by 0.1 mb/d, y-o-y, while demand in the non-OECD is forecast to expand by 1.4 mb/d.

World Oil Supply

Non-DoC liquids supply (i.e. liquids supply from countries not participating in the DoC) is expected to grow by 1.2 mb/d, y-o-y, in 2024, unchanged from last month's assessment. The main growth drivers are expected to be the US and Canada. For 2025, the non-DoC liquids supply growth forecast is expected to grow by 1.1 mb/d, y-o-y, also unchanged from last month. Growth is anticipated to be mainly driven by the US, Brazil, Canada, and Norway. Natural gas liquids (NGLs) and non-conventional liquids from countries participating in the DoC are forecast to grow by about 0.1 mb/d, y-o-y, to average 8.3 mb/d in 2024, followed by an increase of about 80 tb/d, y-o-y, to average 8.4 mb/d in 2025. Crude oil production by the countries participating in the DoC increased by 0.21 mb/d in October compared with the previous month, averaging about 40.34 mb/d, as reported by available secondary sources.

Product Markets and Refining Operations

In October, refinery margins increased following two consecutive months of losses, amid lower refinery product output in the Atlantic Basin due to heavy maintenance. On the USGC, an increasingly tight fuel oil market and solid diesel margin gains contributed to a lift in US refining margins. The seasonal product output constraint exerted downward pressure on product stocks, helping strengthen US product markets in October. This contrasted with the firm product stock builds and margin losses seen in the previous two months. In Northwest Europe, a contraction in total product availability led to a decline in product inventories at the Amsterdam-Rotterdam-Antwerp (ARA) storage hub, exerting upward pressure on product crack spreads. This was seen nearly across the barrel except for low-sulphur fuel oil. Most of the upturn in the region was attributed to HSFO and gasoline. In Singapore, improvements in regional product requirements, particularly from Indonesia, China, and Japan, backed refining economics. Regarding products, gasoil and jet/kerosene were the strongest margin drivers over the month, while a decline in Middle Eastern naphtha inflows and healthy naphtha demand from the regional petrochemical sector added to the upside in Asian product markets.

Tanker Market

Dirty spot freight rates rose across the board due to a strong start to the month before weakening in the second half of October, amid ample tonnage availability. An active US export market and geopolitical uncertainties were key drivers supporting rates early in the month. On the Middle East-to-East route, VLCC spot freight rates rose by 6%, m-o-m, in October, while rates on the West Africa-to-East route were up 5% over the same period. In the Suezmax market, rates on the US Gulf Coast-to-Europe route jumped 36%, m-o-m. A surge in Aframax rates encouraged charterers to switch to the large Suezmax vessels, although ample availability limited gains, with Aframax spot rates on the Caribbean-to-US East Coast route surging 81%, m-o-m. The clean market was mixed according to the route, although on average rates fell both East and West of Suez. Soft demand for gasoline flows to the US limited activity in the Atlantic Basin.

Crude and Refined Product Trade

Preliminary data shows US crude imports fell to an almost two-year low of 6.0 mb/d in October, while exports returned above 4 mb/d for the first time in three months, supported by higher flows to Europe. US product imports fell further to 1.5 mb/d, led by lower inflows of gasoline, while product exports remained strong compared to the previous year at 6.4 mb/d, supported by a high distillate fuel exports. Preliminary estimates point to OECD Europe crude and product inflows increasing m-o-m in October, supported by US exports into the region. In September, Japan's crude imports strengthened further to reach 2.4 mb/d, but remained 7% lower, y-o-y. Japan's product imports edged down on declines in kerosene and diesel, while product exports rose 10% on higher outflows of most major products, especially fuel oil. Crude imports into China fell back 4% in September to average 11.1 mb/d, while product inflows remain strong on continued healthy inflows of fuel oil and LPG. India's crude imports averaged 4.5 mb/d in September, remaining at the upper end of the latest five-year range for the month and representing a seasonal decline. India's product exports jumped 30%, m-o-m, supported by higher outflows of diesel.

Commercial Stock Movements

Preliminary September 2024 data shows total OECD commercial oil stocks down by 3.0 mb, m-o-m. At 2,808 mb, they were 159 mb below the 2015–2019 average. Within components, crude stocks fell by 7.5 mb, m-o-m, while product stocks rose by 4.5 mb, m-o-m. OECD commercial crude stocks stood at 1,317 mb. This is 118 mb less than the 2015–2019 average. OECD total product stocks stood at 1,491 mb. This is 41 mb below the 2015–2019 average. In terms of days of forward cover, OECD commercial stocks fell in September by 0.2 days, m-o-m, to stand at 60.8 days. This is 1.8 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 revised down by 0.1 mb/d from the previous month's assessment to stand at 42.7 mb/d in 2024, which is around 0.5 mb/d higher than the estimate for 2023. Demand for DoC crude in 2025 is revised down by 0.2 mb/d from the previous month's assessment to stand at 43.0 mb/d, around 0.4 mb/d higher than the estimate for 2024.

Feature Article

Global oil inventory developments

Global oil inventories are grouped into three major components. The first includes OECD commercial oil stocks and Strategic Petroleum Reserves (SPRs), with inventory data sourced from OECD national government reports. The second includes non-OECD commercial inventories and SPRs, which have grown in significance since non-OECD oil demand surpassed that of the OECD in 2015, now making up about 56% of global oil demand. However, tracking non-OECD inventory levels remains challenging due to the availability of data. Estimates for these stocks are primarily based on monthly data from major producer and consumer countries, as published by the Joint Organisations Data Initiative (JODI), alongside official sources from major non-OECD countries. The third component is oil at sea, including 'oil afloat' and 'oil in transit,' which serves as an important operational link between exporting and importing countries.

Since the beginning of 2024, global oil inventories Graph 1: Global oil inventory stocks have declined by 14 million barrels (mb) to reach 8,057 mb by the end of September 2024, according to 10,000 the latest available data (Graph 1).

The OECD commercial stocks and OECD SPRs have increased by 30 mb and 28 mb, respectively, while non-OECD stocks and oil at sea have dropped by 12 mb and 60 mb, respectively. The increase in OECD commercial stocks in the first three quarters of 2024 is attributed to weaker demand in the region. For OECD SPRs, the increase is largely driven by steady additions to the US SPR, which has been expanding at a rate of about 3 mb per month, as the US Administration replenishes significant releases made in 2022.



Overall, the global stocks decline has been primarily driven by reductions in non-OECD stocks and oil at sea, spurred by an increase in non-OECD demand. Additionally, lower output from some producing countries, coupled with a backwardated market structure, has discouraged refiners and traders from building oil at sea storage.

The global inventory dynamics in 2024, y-t-d, have been characterized by three distinct intervals. In 1Q24, global oil inventory levels were almost unchanged quarter-on-quarter (q-o-q). In 2Q24, inventories increased by 69 mb, but this trend reversed in 3Q24 with a decline of 83 mb, q-o-q. In terms of the supply/demand balance, data for the first three quarters of this year indicates a negative "implied global stock change" - a trend consistent with observed global inventory movements. Indeed, the gap between these two indicators is expected to close as more data becomes available.

Between January and September 2024, the observed Graph 2: OECD commercial stocks build in total OECD commercial oil inventories was driven by a substantial build in OECD product stocks, which offset the decline in crude commercial stocks. The OECD product inventories rose by 41 mb, while crude commercial stocks fell by 11 mb (Graph 2). The 1,450 increase in product stocks primarily reflects weak product demand within OECD countries, whereas the reduction in OECD crude oil stocks was likely the result of higher crude processing rates.

Among OECD regions in 2024, combined crude and refined product stocks held in OECD Americas increased by 3 mb. This build was driven by a 22 mb increase in product stocks, while crude stocks fell by 19 mb over the same period. The crude draw occurred



on the back of year-on-year higher refinery utilization. In OECD Asia-Pacific, both crude and product inventories have risen this year, resulting in a combined oil stock build of 14 mb since the start of 2024. Higher crude imports supported crude stocks, while increased refinery output bolstered product stocks. In OECD Europe, most of the build since the beginning of this year has come from a 14 mb increase in product stocks, while crude stocks have experienced a slight decrease of 2 mb.

World Oil Demand

The global oil demand growth forecast for 2024 is revised down by 107 tb/d from the last MOMR assessment to stand at a healthy 1.8 mb/d, y-o-y. Upward revisions are made for OECD Americas, OECD Europe and several regions in the non-OECD given actual data received. At the same time, China, India, Other Asia, Africa and Other Eurasia necessitated downward revisions, due to actual data received. Oil demand in the OECD is projected to grow by around 0.2 mb/d, mostly from OECD Americas, supported by marginal growth from OECD Europe and the Asia Pacific region. In the non-OECD, oil demand growth is forecast by close to 1.7 mb/d, y-o-y, driven by China and supported by India, Other Asia, the Middle East and Latin America. Total world oil demand is anticipated to reach 104.0 mb/d in 2024, bolstered by strong transportation fuel demand and ongoing healthy economic growth, particularly in a number of non-OECD countries. Similarly, refinery capacity additions and petrochemical margins– mostly in China and the Middle East – are expected to contribute to oil demand growth.

The forecast for global oil demand growth in 2025 has been adjusted down by 103 tb/d to 1.5 mb/d, y-o-y, still marking a very healthy increase compared with pre-pandemic norms. The OECD is expected to grow by 0.1 mb/d, y-o-y, while demand in the non-OECD is forecast to rise by 1.4 mb/d. Oil demand in the non-OECD is forecast to be mostly driven by requirements from China, supported by the Middle East, India, Other Asia and Latin America. Growth is expected to be 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 are expected to continue to contribute to oil demand growth. In terms of products, 2025 oil demand is projected to be driven by requirements mostly for jet/kerosene, followed by gasoline. LPG is also expected to register appreciable growth and diesel is projected to see a rebound from lower levels in 2024. Naphtha and residual fuels are anticipated to grow marginally, while the 'other products' category is expected to be relatively weak.

	,						Change 2	024/23
World oil domand	2023	1024	2024	3024	4024	2024	Growth	024/23
	2023	04.40			4024	2024	GIOWIII	/0
Americas	24.96	24.42	25.00	25.58	25.37	25.10	0.14	0.56
of which US	20.36	19.92	20.47	20.71	20.85	20.49	0.13	0.62
Europe	13.45	12.85	13.76	13.80	13.41	13.46	0.01	0.07
Asia Pacific	7.24	7.53	7.03	7.03	7.43	7.26	0.01	0.16
Total OECD	45.65	44.79	45.80	46.41	46.21	45.81	0.16	0.35
China	16.36	16.66	16.60	16.78	17.20	16.81	0.45	2.78
India	5.34	5.66	5.61	5.47	5.65	5.60	0.25	4.76
Other Asia	9.28	9.70	9.76	9.48	9.51	9.61	0.34	3.63
Latin America	6.69	6.64	6.77	6.92	6.88	6.80	0.11	1.70
Middle East	8.63	8.69	8.48	9.19	9.02	8.84	0.21	2.44
Africa	4.46	4.60	4.29	4.43	4.85	4.54	0.08	1.86
Russia	3.84	3.97	3.87	4.00	4.11	3.99	0.15	3.83
Other Eurasia	1.17	1.31	1.20	1.08	1.28	1.22	0.04	3.68
Other Europe	0.78	0.78	0.82	0.77	0.84	0.80	0.02	2.23
Total Non-OECD	56.56	58.01	57.39	58.12	59.35	58.22	1.66	2.94
Total World	102.21	102.80	103.19	104.54	105.56	104.03	1.82	1.78
Previous Estimate	102.21	102.81	103.36	104.73	105.61	104.14	1.93	1.89
Revision	0.00	-0.01	-0.17	-0.19	-0.05	-0.11	-0.11	-0.10

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

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

Source: OPEC.

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

							Change 2	2025/24
World oil demand	2024	1Q25	2Q25	3Q25	4Q25	2025	Growth	%
Americas	25.10	24.48	25.05	25.70	25.45	25.17	0.08	0.31
of which US	20.49	19.95	20.50	20.76	20.89	20.53	0.04	0.21
Europe	13.46	12.86	13.77	13.82	13.43	13.47	0.02	0.12
Asia Pacific	7.26	7.54	7.04	7.04	7.44	7.27	0.01	0.15
Total OECD	45.81	44.89	45.87	46.57	46.32	45.91	0.11	0.23
China	16.81	16.99	16.89	17.12	17.49	17.12	0.31	1.84
India	5.60	5.88	5.86	5.73	5.88	5.84	0.24	4.28
Other Asia	9.61	9.97	10.08	9.82	9.81	9.92	0.30	3.16
Latin America	6.80	6.78	6.91	7.07	7.02	6.95	0.14	2.09
Middle East	8.84	8.94	8.68	9.52	9.23	9.09	0.25	2.81
Africa	4.54	4.68	4.38	4.54	4.94	4.63	0.09	2.03
Russia	3.99	4.04	3.92	4.06	4.15	4.04	0.05	1.35
Other Eurasia	1.22	1.34	1.22	1.13	1.31	1.25	0.03	2.59
Other Europe	0.80	0.80	0.83	0.78	0.85	0.81	0.01	1.40
Total Non-OECD	58.22	59.40	58.77	59.75	60.68	59.65	1.43	2.46
Total World	104.03	104.29	104.63	106.31	107.00	105.57	1.54	1.48
Previous Estimate	104.14	104.41	104.91	106.61	107.15	105.78	1.64	1.58
Revision	-0.11	-0.12	-0.28	-0.29	-0.15	-0.21	-0.10	-0.10

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

OECD

OECD Americas

Update on the latest developments

In August, oil demand in OECD Americas inched up by 22 tb/d, y-o-y, down from growth of 429 tb/d, y-o-y, seen the previous month. This marginal increase in monthly demand can be largely attributed to increased requirements seen in Canada and Chile.

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



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



US

US oil demand in August contracted by 57 tb/d, y-o-y, down from 439 tb/d y-o-y growth registered the previous month. The largest decrease was recorded in diesel and the 'other product' category, which offset growth in LPG and transportation fuels.

In terms of products, diesel recorded the largest contraction by 177 tb/d, y-o-y, down from y-o-y growth of 110 tb/d seen the previous month. The contraction in diesel growth is consistent with trends in US manufacturing activity, which contracted for the sixth consecutive month. The manufacturing PMI stood at 47.2 in August, compared with 46.8 in July and 48.5 in June. However, within the diesel category, transportation diesel – mostly used in trucking – dropped by 233 tb/d, y-o-y. The 'other products' category,

notably petroleum coke widely used in aluminium and steel manufacturing, fell by 161 tb/d, y-o-y, down from 266 tb/d, y-o-y, growth seen the previous month. Residual fuels softened by 32 tb/d, y-o-y, down from 43 tb/d, y-o-y, growth seen in July. Naphtha was flat, y-o-y, albeit up from the 16 tb/d y-o-y decline observed the previous month.

Table 4 - 3: US oil demand, mb/	able 4 - 3: US oil der	mand, mb/o	t
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US oil demand			Change	Aug 24/Aug 23
By product	Aug 23	Aug 24	Growth	%
LPG	3.23	3.44	0.21	6.6
Naphtha	0.13	0.13	0.00	-1.5
Gasoline	9.24	9.26	0.01	0.2
Jet/kerosene	1.71	1.80	0.09	5.1
Diesel	4.05	3.88	-0.18	-4.4
Fuel oil	0.32	0.29	-0.03	-10.0
Other products	2.37	2.21	-0.16	-6.8
Total	21.06	21.00	-0.06	-0.3

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

Sources: EIA and OPEC.

On a positive note, LPG recorded the largest growth of 214 tb/d, y-o-y, up from a 350 tb/d y-o-y decline seen the previous month. In terms of transportation fuels, while jet/kerosene expanded by 87 tb/d, y-o-y, gasoline inched up by 14 tb/d, y-o-y. Growth in gasoline demand aligned with a report from the US Department of Transportation showing that the seasonally adjusted vehicle miles travelled for August 2024 increased by 1.1% over August 2023, also representing a 0.7% increase compared with July 2024. The m-o-m increase in jet/kerosene is consistent with developments in US air travel. According to a report from the International Air Travel Association (IATA), US domestic passenger traffic and international revenue passenger-kilometres (RPKs) increased by 4.3% and 5.5% respectively, y-o-y, in August, compared with a y-o-y increase of 5.3% for international and 5.5% for domestic traffic in July. The increase in jet/kerosene demand was largely supported by domestic air travel.

Near-term expectations

In the near term, economic activity in the US is anticipated to remain healthy and the US economy is expected to experience ongoing strong support from private household consumption. Similarly, manufacturing activity is expected to see a gradual improvement in 4Q24, albeit lower than in 3Q24. The US weather authorities have announced that the La Niña phenomenon is almost certain to turn up in 4Q24 and 1Q25, likely to cause colder temperatures in the north of the country. Furthermore, air travel activity is expected to remain healthy and support oil demand. However, driving activity is anticipated to slow during the winter season. In 4Q24, oil demand is anticipated to grow by 170 tb/d, y-o-y, to average 20.8 mb/d on the back of continued robust air travel activity; jet kerosene is anticipated to continue to drive oil demand. An uptick in LPG demand is expected due to rising demand for heating stemming from the La Niña phenomenon. Overall, US demand is projected to grow by 126 tb/d, y-o-y, to average 20.5 mb/d in 2024.

In 1Q25, economic activity is expected to remain healthy and support the petrochemical sector and mobility, which will help oil demand grow by 35 tb/d. Jet/ kerosene and LPG are expected to be the main drivers of product demand growth. However, demand for diesel and naphtha is expected to remain subdued, as manufacturing activity has not yet shown a rebound. In 2025, US oil demand is projected to increase by 42 tb/d, y-o-y, to average 20.5 mb/d.

OECD Europe

Update on the latest developments

Oil demand in OECD Europe expanded by 218 tb/d, y-o-y, in August, down from growth of 578 tb/d, y-o-y, the previous month. The increase was supported by requirements from Italy, Spain and the UK, which more than offset a decline in Germany and France. In terms of petroleum products, transportation fuels and naphtha accounted for the growth in oil demand.

In terms of products, domestic gasoline demand across Europe has held steady, increasing by 154 tb/d, y-o-y, slightly below the 177 tb/d y-o-y growth seen the previous month. Gasoline demand was supported by strong mobility trends, high vehicle miles travelled and an increasing share of gasoline-driven and hybrid vehicles due to the phasing out of diesel-powered vehicles. Naphtha increased by 151 tb/d, y-o-y, down slightly from y-o-y growth of 193 tb/d observed the previous month. Naphtha remained well supported on the back of

ongoing declines in the cost of production amid lower feedstock prices. Diesel expanded by 68 tb/d, y-o-y, up from no growth observed the previous month, largely supported by firm demand for diesel requirements from Italy and the UK. Jet/kerosene saw an uptick of 13 tb/d, y-o-y, down from y-o-y growth of 36 tb/d seen in July. While the 'other products' category contracted by 108 tb/d, y-o-y, residual fuels fell by 26 tb/d, y-o-y. LPG contracted by 34 tb/d, y-o-y, down from 91 tb/d, y-o-y, growth in July.







Near-term expectations

In the near term, economic performance for the region is expected to remain on a positive trajectory, anticipating ongoing modest growth momentum, primarily driven by the services sector. Lower central bank rates, assuming they continue to be cut, will support the Eurozone's economy. Moreover, Europe is expected to increase the import of oil products ahead of requirements for winter heating, and increased transportation activities in 4Q24. These factors are expected to contribute positively to transportation and heating fuel consumption, driving regional oil demand. However, ongoing headwinds in manufacturing and petrochemical activity are expected to weigh on the region's oil demand. Accordingly, Europe is expected to see a moderate increase of 16 tb/d, y-o-y, in 4Q24. Overall, European demand is projected to slightly inch up by 9 tb/d y-o-y in 2024 to average 13.5 mb/d.

In 2025, GDP growth in the region is projected to be slightly above 2024 growth. Furthermore, air travel and driving activity in Europe are expected to remain steady and continue to support oil demand. Accordingly, OECD Europe's oil demand growth is forecast at 17 tb/d, y-o-y, to average 13.5 mb/d.

OECD Asia Pacific

Update on the latest developments

Oil demand in OECD Asia Pacific rebounded in August by 110 tb/d, y-o-y, from a 185 tb/d y-o-y decline seen in July. This relative demand growth emanates from strong 219 tb/d y-o-y growth in South Korea and 33 tb/d y-o-y growth in Australia. However, a decline of 113 tb/d, y-o-y, in Japan's oil demand offset some of the growth from these two countries.

In terms of petroleum products, naphtha expanded by 41 tb/d, y-o-y, up from a same-size decline seen the previous month. Naphtha demand in the region stemmed entirely from South Korea, supported by an ongoing rebound in the petrochemical sector amid an improving macroeconomic backdrop and steady manufacturing outlook. This aligned with developments in South Korea's Industrial Production (IP) index, which rose to 111.0 in August from 108.2 in July. The naphtha market was also supported by firm buying as the propane-naphtha spread inched into positive territory in August. LPG fell by 7 tb/d, y-o-y, down from y-o-y growth of 98 tb/d seen the previous month. Jet/kerosene expanded by 34 tb/d, y-o-y, up from 20 tb/d y-o-y growth observed the previous month. The annual increase in jet/kerosene demand is consistent with a report from IATA's Air Passenger Monthly Analysis in August 2024, which indicates that Asian Pacific airlines continue to lead the industry's air traffic growth, with the region experiencing double-digit growth of 19.9% in international RPKs in August, up from 19.4% in July.









Gasoline grew by 16 tb/d, y-o-y, up from an annual decline of 67 tb/d seen in July. Diesel decreased by 16 tb/d, y-o-y, albeit an improvement from the 152 tb/d y-o-y decline of the previous month. Diesel saw an increase of 38 tb/d, y-o-y, in South Korea. However, declines from Japan and Australia more than offset the y-o-y growth recorded in the country. The 'other products' category expanded by 64 tb/d, y-o-y, up from 35 tb/d y-o-y growth seen the previous month.

Near-term expectations

In the near term, economic activity in the region is anticipated to remain on a positive trajectory in 2024, albeit lower than that seen in 2023. South Korea is expected to drive economic growth, as one of the largest economies in the region. The country's GDP has been very steady and is expected to be above 2023 growth figures. The Japanese economy is expected to gradually grow in the near term. The S&P Global composite PMI for Japan has been on an expansionary trajectory, mostly supported by the services sector. Accordingly, steady air traffic recovery amid healthy driving activity and petrochemical industry operations are anticipated to support oil demand.

In another development, the Japan Meteorological Association has forecast that La Niña is expected to play a role in September to November and is expected to persist through January to March 2025. This is expected to support demand for kerosene as a heating fuel in Japan in 4Q24 and 1Q25. Furthermore, Japanese petrochemical producer Mitsui Chemicals plans to restart its naphtha-fed 455,000 t/yr Osaka ethylene cracker in October. Similarly, South Korean petrochemical producer SK Energy has concluded its spot tender to buy 25,000t of heavy full-range naphtha for the first half of December. Accordingly, these factors are expected to bolster naphtha demand in the region. Oil demand in OECD Asia Pacific is projected to grow by 35 tb/d, y-o-y, in 4Q24. For the year, the region's oil demand is expected to grow by a moderate 12 tb/d, y-o-y, and average at 7.3 mb/d.

In 2025, the GDP of the region is projected to surpass the 2024 growth rate. Meanwhile, the GDPs of both Japan and Australia are also expected to improve in 2025. Accordingly, anticipated improvements in regional economic activity are projected to support the services sector. In addition, healthy air travel dynamics and recovering petrochemical sector requirements in the region are projected to support oil demand growth of 11 tb/d, y-o-y, to average 7.3 mb/d in 2025.

Non-OECD

China

Update on the latest developments

China's oil demand in September grew by 57 tb/d, y-o-y, less than the 83 tb/d y-o-y growth seen the previous month.

In terms of product demand, LPG led oil demand growth by 87 tb/d, y-o-y, though this is below the y-o-y increase of 195 tb/d seen the previous month. Gasoline expanded by 58 tb/d, y-o-y, up from zero growth seen the previous month. Similarly, the 'other products' category grew by 52 tb/d, y-o-y, up from 10 tb/d y-o-y growth observed in August. Residual fuels expanded by 36 tb/d, y-o-y, up from the 61 tb/d y-o-y decline of the previous month. Jet/kerosene inched up by 6 tb/d, y-o-y, down from 50 tb/d y-o-y growth seen the previous month.

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

Diesel demand contracted by 161 mb/d, y-o-y, the seventh consecutive month of continuous decline. Diesel has been under pressure from a slowdown in construction amid weak manufacturing activity, combined with the ongoing deployment of LNG-fuelled trucks. Naphtha fell by 20 tb/d, y-o-y, down from 64 tb/d y-o-y growth seen the previous month.



China's oil demand			Change	Sep 24/Sep 23
By product	Sep 23	Sep 24	Growth	%
LPG	2.75	2.84	0.09	3.2
Naphtha	1.62	1.60	-0.02	-1.3
Gasoline	3.86	3.92	0.06	1.5
Jet/kerosene	0.83	0.83	0.01	0.7
Diesel	3.98	3.81	-0.16	-4.1
Fuel oil	1.04	1.07	0.04	3.5
Other products	2.59	2.64	0.05	2.0
Total	16.66	16.72	0.06	0.3

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

Sources: Argus Media, Chinese Customs, Chinese National Bureau of Statistics, JODI and OPEC.

Near-term expectations

Looking ahead, although the impact of recently announced broad-based stimulus plans is yet to be seen, the measures are expected to have a positive impact on consumer purchasing power, and many cash-strapped infrastructure projects are expected to receive a boost. Furthermore, the travel sector is expected to remain healthy, partly supported by China's National Day Golden Week holiday in October, one of the busiest periods of the year for travel. Petrochemical feedstock demand is also expected to remain strong on the back of new capacity additions that will require extra LPG, ethane and naphtha. These factors are expected to support oil demand in China in the near term.

Jet/kerosene and gasoline are expected to lead oil demand growth amid an ongoing air travel recovery and healthy road mobility. Accordingly, China's oil product demand is expected to expand by almost 491 tb/d, y-o-y, in 4Q24. The industrial sector and manufacturing activity are expected to gain support from the government's policy to back manufacturing and high-tech industries. Moreover, robust global demand for finished goods for export is expected at the end of the year, feeding into demand for petrochemical products in 4Q24. Overall, oil demand in 2024 is forecast to grow by a healthy 455 tb/d, y-o-y, to average 16.8 mb/d.

For 2025, the positive impact of government fiscal stimulus in 4Q24 is expected to continue into 1Q25. Similarly, ongoing healthy petrochemical feedstock requirements and stable demand for transportation fuels are expected to support oil demand in 1Q25. China is expected to remain the global leader in oil demand growth, with consumption increasing by 310 tb/d, y-o-y, to average 17.1 mb/d. China is also projected to lead global petrochemical feedstock demand growth, and jet fuel demand is projected to rise due to ongoing increases in air transportation.

India

Update on the latest developments

India's oil demand contracted by 59 tb/d, y-o-y, for the second consecutive month in September, broadly in line with the decline seen in August. The two months of decline in demand partly reflect heavy monsoon rainfall, which affected economic activity in the country. Accordingly, large declines in the 'other products' category and diesel offset growth in transportation fuels and petrochemical feedstock during the month.





Specifically, the 'other products' category, including bitumen, saw the largest contraction by 102 tb/d, y-o-y, albeit an improvement from the 171 tb/d y-o-y decline observed the previous month. Bitumen consumption during September contracted by 4.2%, y-o-y, subdued by heavy rainfall in some parts of the country, which affected road construction; normally this activity accounts for 98% share of bitumen consumption in India. Demand for diesel, the most widely used oil product in the country, fell by 28 tb/d, y-o-y, though this, too, is an improvement from the y-o-y contraction of 40 tb/d seen in August. The product was also affected by heavy flooding, which contributed to reduced movement and affected other economic activities.

On a positive note, gasoline demand led growth; it saw an increase of 27 tb/d, y-o-y, though this is down from the 76 tb/d y-o-y growth observed the previous month. Consumption of gasoline during the month was primarily driven by an increase in personal mobility with the beginning of the festival season. Jet/kerosene grew by 20 tb/d, y-o-y, up from an increase of 10 tb/d, y-o-y, observed in the previous month.

In terms of petrochemical feedstock, LPG inched up by 15 tb/d, y-o-y, down from y-o-y growth of 69 tb/d seen the previous month. Household requirements accounted for approximately 89% of LPG consumption during the month, while naphtha was flat. However, it is an improvement from the 10 tb/d y-o-y decline observed the previous month. Residual fuel requirements inched up by 7 tb/d, y-o-y, up over 3 tb/d y-o-y growth seen in August.

India's oil demand			Change	Sep 24/Sep 23
By product	Sep 23	Sep 24	Growth	%
LPG	0.99	1.01	0.02	1.5
Naphtha	0.30	0.31	0.00	0.7
Gasoline	0.87	0.89	0.03	3.1
Jet/kerosene	0.18	0.20	0.02	11.0
Diesel	1.63	1.60	-0.03	-1.7
Fuel oil	0.12	0.13	0.01	5.9
Other products	1.21	1.10	-0.10	-8.5
Total	5.30	5.24	-0.06	-1.1

Table 4 - 5: India's oil demand, mb/d

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, declines in oil demand are expected to bottom out as the monsoon season comes to an end. Accordingly, economic activity is expected to resume its healthy performance. This, combined with heightened mobility during the annual Diwali festival in early October, will bolster transportation fuel demand in India. Further, household requirements for heating during winter are expected to support the demand for kerosene. In addition, the government's proposed increase in capital spending is expected to boost economic activity. In 4Q24, oil demand is expected to see an increase of 246 tb/d, y-o-y, with transportation fuels expected to be the driver. Overall, India's oil demand is projected to grow in 2024 by 255 tb/d, y-o-y, to average 5.6 mb/d.

India's robust economic momentum is expected to be sustained in 2025. Furthermore, manufacturing and business activities in India are expected to remain steady, supporting a 239 tb/d y-o-y oil demand increase next year. Diesel is expected to continue to be the main driver of demand growth, followed by the 'other products' category, bitumen in particular. Additionally, robust growth in transport fuels and growth in LPG and naphtha demand are expected to remain healthy and support overall oil demand during the year.

Latin America

Update on the latest developments

Oil demand in Latin America in August marginally contracted by 16 tb/d, y-o-y, amid weakness in diesel, gasoline and residual fuel in some countries of the region. Oil demand declines in Argentinian and Venezuelan requirements offset moderate growth from Brazil.









In terms of product demand, diesel saw the largest contraction of 39 tb/d, y-o-y, down from 121 tb/d y-o-y growth observed the previous month. Gasoline softened by 25 tb/d, y-o-y, down from 19 tb/d y-o-y growth seen the previous month. Gasoline demand was pressured by cheaper ethanol, mostly from Brazil. Residual fuels fell by 30 tb/d, y-o-y, down from y-o-y growth of 20 tb/d seen in July.

On a positive note, the 'other products' category, which includes ethanol - primarily from Brazil - expanded by 51 tb/d, y-o-y, albeit below the growth of 93 tb/d y-o-y seen the previous month. Jet/kerosene saw an uptick of 8 tb/d, y-o-y, which is an improvement from zero growth seen the previous month. The m-o-m improvement in jet/kerosene demand aligned with a report from the IATA Air Passenger Monthly Analysis in August, indicating that international passenger traffic in Latin America achieved growth of 13.6%, y-o-y, slightly above 13.5% y-o-y growth seen the previous month.

In terms of petrochemical feedstock, LPG increased by 9 tb/d, y-o-y, though this is a slowdown from the 27 tb/d y-o-y growth seen the previous month. Naphtha expanded by 10 tb/d, y-o-y, up from y-o-y flat growth seen the previous month.

Near-term expectations

Looking ahead, oil demand in the region is expected to remain relatively strong in 4Q24, amid projected healthy economic growth and steady air travel recovery. According to a report from Brazilian Empresa de Pesquisa Energética in August, Brazilian liquid fuel demand will keep growing in 2024 on the back of steady economic growth, positive industry results, a record number of employed people, income transfer policies and government programmes, with emphasis on the New Growth Acceleration Program (Novo PAC). These factors should contribute to growth over both 2024 and 2025. Accordingly, Brazil is expected to drive oil demand in the region. Oil demand in Latin America is projected to grow by 165 tb/d y-o-y in 4Q24 and see an overall increase for the year of 113 tb/d, to average 6.8 mb/d in 2024.

In 2025, Brazil is expected to see continued healthy economic growth, led by strong agricultural and manufacturing activity amid healthy travel demand. Accordingly, the region is expected to show oil demand growing by 136 tb/d y-o-y in 1Q25. For the year, growth is anticipated at 142 tb/d, y-o-y, to average 7.0 mb/d. The outlook for oil demand growth sees transportation fuel demand expanding the most, followed by diesel and petrochemical feedstock.

Middle East

Update on the latest developments

Oil demand in the Middle East expanded in August by 186 tb/d, y-o-y, though this is below the 296 tb/d, y-o-y, growth seen in July. Strong requirements from Saudi Arabia led demand, supported by demand from Iraq and IR Iran.

Looking at demand for specific products in the region, gasoline led by 89 tb/d, y-o-y, up from the 40 tb/d, y-o-y, growth observed the previous month. The 'other products' category expanded by 63 tb/d, y-o-y, though this is below the 161 tb/d, y-o-y, growth of the previous month. Diesel expanded by 14 tb/d, y-o-y, slightly below the 29 tb/d y-o-y growth seen the previous month. Jet/kerosene expanded by 12 tb/d, y-o-y, up from an 8 tb/d, y-o-y, decline in the previous month. In terms of petrochemical feedstock, LPG increased by 17 tb/d, y-o-y, up from zero growth observed the previous month. Naphtha saw a slight uptick of 3 tb/d, y-o-y, down from 4 tb/d y-o-y growth seen the previous month.

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







Near-term expectations

In the near term, steady economic activity in the region is expected to be sustained by additional support from robust non-oil activity. In addition, ongoing strong international air traffic and driving mobility is expected to boost gasoline and jet/kerosene demand and support oil demand growth in the region. However, the Middle East is expected to see some seasonal declines during winter, which will affect demand for direct crude burning and fuel oil required for electricity generation. Accordingly, oil demand in the region is expected to expand by an average of 265 tb/d, y-o-y, in 4Q24, slightly below 361 tb/d y-o-y growth seen in 3Q24. Overall, the region is projected to grow by 211 tb/d, y-o-y, to average 8.8 mb/d in 2024.

Regional economic activity is expected to remain healthy in 1Q25, with 2025 GDP growth rates forecast to surpass those of 2024. In addition, air travel is expected to surpass pre-pandemic levels. Gasoline, transportation diesel and jet kerosene are expected to lead oil demand growth, which is expected to stand at 249 tb/d, y-o-y, in 1Q25. Overall, in 2025, the Middle East is expected to see y-o-y growth of 249 tb/d, to average 9.1 mb/d. The bulk of demand growth is expected to come from Iraq, Saudi Arabia and the UAE.

World Oil Supply

Non-DoC liquids supply (i.e. liquids supply from countries not participating in the DoC) is expected to grow by 1.2 mb/d in 2024 to average 53.1 mb/d.

US crude and condensate production hit an all-time high in August passing 13.4 mb/d. Natural gas liquids (NGLs) production rebounded from the previous month to just over 7.0 mb/d, up by 0.4 mb/d, y-o-y. Accordingly, US liquids supply growth for 2024 is expected at 0.6 mb/d. The other main drivers for expected non-DoC growth in 2024 are Canada, China and Argentina.

In 2025, non-DoC liquids supply growth is expected at 1.1 mb/d, for an average of 54.2 mb/d. Growth is expected to be driven mainly by the US, Brazil, Canada and Norway, while the main decline is expected in Angola.

DoC NGLs and non-conventional liquids are forecast to grow by around 0.1 mb/d to average 8.3 mb/d in 2024, followed by an increase of around 80 tb/d to average 8.4 mb/d in 2025. OPEC NGLs and non-conventional liquids production is expected to increase by around 60 tb/d to average 5.5 mb/d in 2024, while additional growth of 110 tb/d is forecast in 2025 for an average of 5.6 mb/d.

DoC crude oil production in October increased by 0.21 mb/d, m-o-m, averaging 40.34 mb/d, as reported by available secondary sources.

Key drivers of growth and decline

Non-DoC liquids supply is expected to grow by 1.2 mb/d in 2024. Upward revisions in OECD Americas and Africa were offset by the downward shifts in OECD Europe and Latin America. The main drivers for non-DoC liquids supply growth in 2024 are expected to be the US, Canada, China and Argentina.



In 2025, non-DoC liquids supply growth is expected at 1.1 mb/d. Annual growth is set to be driven mainly by the US, Brazil, Canada and Norway.

Non-DoC liquids production in 2024 and 2025

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

							Change 2	024/23
Non-DoC liquids production	2023	1Q24	2Q24	3Q24	4Q24	2024	Growth	%
Americas	26.67	26.91	27.58	27.75	27.67	27.48	0.81	3.03
of which US	20.97	21.02	21.81	21.81	21.63	21.57	0.60	2.84
Europe	3.65	3.66	3.59	3.52	3.68	3.61	-0.04	-1.10
Asia Pacific	0.45	0.46	0.43	0.47	0.46	0.45	0.01	1.43
Total OECD	30.77	31.03	31.60	31.73	31.82	31.54	0.78	2.52
China	4.52	4.62	4.63	4.52	4.51	4.57	0.05	1.17
India	0.79	0.80	0.79	0.78	0.80	0.79	0.01	0.97
Other Asia	1.61	1.62	1.62	1.60	1.59	1.61	-0.01	-0.46
Latin America	6.96	7.28	7.19	7.18	7.38	7.26	0.30	4.29
Middle East	2.02	2.00	2.00	2.01	2.02	2.01	-0.02	-0.76
Africa	2.22	2.24	2.26	2.38	2.31	2.30	0.08	3.54
Other Eurasia	0.37	0.37	0.37	0.37	0.37	0.37	0.00	-1.32
Other Europe	0.10	0.10	0.10	0.10	0.10	0.10	0.00	-1.63
Total Non-OECD	18.60	19.03	18.96	18.94	19.09	19.00	0.41	2.20
Total Non-DoC production	49.37	50.06	50.56	50.66	50.90	50.55	1.18	2.40
Processing gains	2.47	2.52	2.52	2.52	2.52	2.52	0.05	2.02
Total Non-DoC liquids production	51.84	52.58	53.08	53.18	53.42	53.07	1.23	2.38
Previous estimate	51.84	52.58	53.08	53.05	53.54	53.07	1.23	2.37
Revision	0.00	0.00	0.01	0.13	-0.12	0.00	0.00	0.00

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

Table 5 - 2:	Non-DoC	liquids	production	in 2025*, mb/d
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							Change 20)25/24
Non-DoC liquids production	2024	1Q25	2Q25	3Q25	4Q25	2025	Growth	%
Americas	27.48	27.81	27.97	28.27	28.51	28.14	0.66	2.42
of which US	21.57	21.70	22.09	22.20	22.27	22.07	0.50	2.32
Europe	3.61	3.79	3.67	3.65	3.75	3.71	0.10	2.79
Asia Pacific	0.45	0.45	0.44	0.45	0.45	0.45	-0.01	-1.74
Total OECD	31.54	32.04	32.07	32.37	32.71	32.30	0.76	2.40
China	4.57	4.63	4.61	4.53	4.53	4.57	0.01	0.12
India	0.79	0.79	0.80	0.81	0.81	0.80	0.01	0.99
Other Asia	1.61	1.60	1.58	1.56	1.56	1.58	-0.03	-1.81
Latin America	7.26	7.42	7.46	7.54	7.67	7.52	0.27	3.66
Middle East	2.01	2.01	2.04	2.04	2.03	2.03	0.02	1.01
Africa	2.30	2.32	2.32	2.32	2.31	2.32	0.02	0.73
Other Eurasia	0.37	0.37	0.37	0.37	0.37	0.37	0.00	0.07
Other Europe	0.10	0.10	0.10	0.10	0.10	0.10	0.00	2.02
Total Non-OECD	19.00	19.24	19.27	19.27	19.39	19.29	0.29	1.52
Total Non-DoC production	50.55	51.29	51.35	51.64	52.10	51.59	1.05	2.07
Processing gains	2.52	2.58	2.58	2.58	2.58	2.58	0.06	2.38
Total Non-DoC liquids production	53.07	53.87	53.93	54.22	54.68	54.17	1.11	2.08
Previous estimate	53.07	53.86	53.92	54.21	54.68	54.17	1.11	2.08
Revision	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

OECD

For 2024, OECD liquids production (excluding DoC Graph 5 - 3: OECD quarterly liquids supply, participating country Mexico) is anticipated to expand y-o-y changes by about 0.8 mb/d to average 31.5 mb/d. Growth is set to be led by OECD Americas, with an expected increase of 0.8 mb/d to average 27.5 mb/d. This is revised up by about 35 tb/d compared with the previous month's assessment. Yearly liquids production in OECD Europe is set to drop by 40 tb/d to average 3.6 mb/d, which is a downward revision of 26 tb/d compared with the October MOMR. OECD Asia Pacific production is expected to remain largely unchanged, y-o-y, to average 0.5 mb/d.

OECD liquids production is forecast to grow by 0.8 mb/d to average 32.3 mb/d in 2025. OECD Americas is expected to be the main growth driver, with an anticipated increase of 0.7 mb/d for an



average of 28.1 mb/d. Yearly liquids production in OECD Europe is expected to grow by 0.1 mb/d to average 3.7 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.

US

US liquids production in August jumped by 0.3 mb/d, m-o-m, to average 22.1 mb/d. This was 0.9 mb/d higher than in August 2023.

Crude oil and condensate production rose by Graph 5 - 4: US monthly liquids output by key 0.2 mb/d, m-o-m, to average 13.4 mb/d in August, up component by 0.4 mb/d, y-o-y.

In terms of the crude and condensate production breakdown by region (PADDs), production increased on the US Gulf Coast (USGC) by 156 tb/d to average 9.9 mb/d. Production on the East Coast (PADD 1) remained broadly unchanged, while on the West Coast (PADD 5) it dropped by 11 tb/d. Output in the Midwest (PADD 2) and the Rocky Mountain (PADD 4) regions rose by 26 tb/d and 19 tb/d, respectively, m-o-m.

The m-o-m production increase in the main producing regions can primarily be attributed to higher output in Texas and New Mexico. Those gains were partially offset by losses in Alaska.



NGLs production rose by 135 tb/d, m-o-m, to average 7.0 mb/d in August. This was 0.4 mb/d higher, y-o-y. According to the US Department of Energy (DoE), the production of non-conventional liquids (mainly ethanol) fell by 12 tb/d, m-o-m, to average 1.7 mb/d. Preliminary estimates show non-conventional liquids averaging about 1.6 mb/d in September, lower by about 60 tb/d, m-o-m.

Gulf of Mexico (GoM) production remained largely unchanged, m-o-m, for an average of 1.8 mb/d in August. Following hurricanes Francine and Helene in September, it should be noted that production at federal offshore fields is expected to show a drop only in September as damage to oil and gas infrastructure was negligible. Output is expected to be supported by new projects in the coming months. In the onshore Lower 48, crude and condensate production increased by 0.2 mb/d, m-o-m, to average 11.2 mb/d in August.

World Oil Supply

Table !	5 -	3: US	crude	oil	production	bv	selected	state	and	region.	tb/d
TUDIC	-	0.00	ciuuc		production	Ny	Sciected	Stute	unu	region,	LD/ G

				Chai	nge
State	Aug 23	Jul 24	Aug 24	m-o-m	у-о-у
Texas	5,603	5,719	5,818	99	215
New Mexico	1,799	2,035	2,092	57	293
Gulf of Mexico (GOM)	1,876	1,806	1,809	3	-67
North Dakota	1,207	1,158	1,169	11	-38
Colorado	466	446	455	9	-11
Alaska	396	408	396	-12	0
Oklahoma	433	378	384	6	-49
Total	13,047	13,206	13,401	195	354

Sources: EIA and OPEC.

In terms of individual US states, New Mexico's oil production rose by 57 tb/d to average 2.1 mb/d, which is 293 tb/d higher than a year ago. Production from Texas was up by 99 tb/d to average 5.8 mb/d, which is 215 tb/d higher than a year ago. In the Midwest, North Dakota's production rose by 11 tb/d, m-o-m, to average 1.2 mb/d, down by 38 tb/d, y-o-y. Meanwhile, Oklahoma's production increased by just 6 tb/d, m-o-m, to average 0.4 mb/d. Production in Colorado rose by 9 tb/d, m-o-m, while output in Alaska fell by 12 tb/d, m-o-m.





US total liquids production US crude oil production Sources: EIA and OPEC.

US tight crude output in August is estimated to have Graph 5 - 7: US tight crude output breakdown increased by 176 tb/d, m-o-m, to an average of 8.8 mb/d, according to the latest estimates from the US Energy Information Administration (EIA). This was 0.3 mb/d higher than in the same month last year.

The m-o-m production increases from shale and tight formations using horizontal wells came mainly from the Permian shale in Texas, where output rose by 0.1 mb/d to average 5.5 mb/d. This was an increase of 0.3 mb/d, y-o-y.

In North Dakota, Bakken shale oil output rose by 14 tb/d, m-o-m, to average 1.2 mb/d. This was about 12 tb/d lower, y-o-y. Tight crude output at Eagle Ford in Texas increased by 27 tb/d to average 1.0 mb/d. This was up by about 30 tb/d, y-o-y. Production at Niobrara-Codell in Colorado and Wyoming was higher by 11 tb/d, m-o-m, to reach about 480 tb/d.

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



US total liquids production US crude oil production Sources: EIA and OPEC.



Sources: EIA and OPEC.

US liquids production in 2024, excluding processing Graph 5 - 8: US liquids supply developments by gains, is expected to grow by 0.6 mb/d, y-o-y, to component

average 21.6 mb/d. The growth is higher by about 45 tb/d from the previous assessment. The forecast still assumes a modest level of drilling and completion activities and fewer logistical issues this year at prolific major shale sites. To date, the hurricane season has affected crude oil production in the GoM during September, with no major storm in the region seen in October.

Crude oil and condensate output in 2024 is expected to increase by 0.3 mb/d, y-o-y, to average 13.2 mb/d. At the same time, NGLs production and that of non-conventional liquids, particularly ethanol, are projected to increase by 0.3 mb/d and 40 tb/d, y-o-y, to average 6.8 mb/d and 1.6 mb/d, respectively.



Average tight crude output in 2024 is expected to reach 8.7 mb/d, up by 0.3 mb/d, y-o-y. The 2024 forecast assumes ongoing capital discipline and less inflationary pressure, accompanied by fewer supply chain issues and oil field service constraints. At the same time, well productivity and operational efficiency improvements are expected to support crude production, despite a decline in drilling rig counts.

US liquids production, excluding processing gains, is expected to expand by 0.5 mb/d, y-o-y, to average 22.1 mb/d in 2025. This assumes a mild increase in drilling activity, lower service cost inflation and continued well productivity improvements in the key shale basins. Crude oil and condensate output are expected to rise by 0.3 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, are projected to increase by 0.2 mb/d and 20 tb/d, y-o-y, to average 7.0 mb/d and 1.6 mb/d, respectively. Average tight crude output in 2025 is expected to reach 9.0 mb/d, up by 0.3 mb/d, y-o-y. The 2025 forecast also assumes ongoing capital discipline in the US upstream sector.

		Change		Change			
US liquids	2023	2023/22	2024*	2024/23	2025*	2025/24	
Tight crude	8.44	0.67	8.74	0.30	9.05	0.31	
Gulf of Mexico crude	1.87	0.13	1.81	-0.06	1.89	0.09	
Conventional crude oil	2.63	0.14	2.67	0.04	2.56	-0.11	
Total crude	12.93	0.94	13.21	0.28	13.50	0.29	
Unconventional NGLs	5.36	0.58	5.65	0.29	5.86	0.21	
Conventional NGLs	1.14	-0.02	1.13	-0.01	1.11	-0.02	
Total NGLs	6.50	0.57	6.78	0.28	6.97	0.19	
Biofuels + Other liquids	1.54	0.10	1.58	0.04	1.60	0.02	
US total supply	20.97	1.61	21.57	0.60	22.07	0.50	

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

Note: * 2024-2025 = Forecast.

Sources: EIA, OPEC and Rystad Energy.

US tight crude production in the Permian Basin during 2024 is expected to increase by 0.3 mb/d, y-o-y, to average 5.4 mb/d. In 2025, it is forecast to grow by 0.3 mb/d, y-o-y, to average 5.7 mb/d.

In North Dakota, Bakken shale production is expected to remain below the pre-pandemic average of 1.4 mb/d. Growth of just 25 tb/d and 20 tb/d is expected for 2024 and 2025, respectively, to average around 1.2 mb/d in both years. This trend could signal a maturing basin.

Output in the Eagle Ford Basin in Texas is estimated Graph 5 - 9: US tight crude output by shale play, to have averaged 1.0 mb/d in 2023. In 2024, steady y-o-y changes production is expected for the Basin, while growth of 15 tb/d is forecast for 2025.

Niobrara's production is expected to rise by around 15 tb/d, y-o-y, in 2024, to average 0.5 mb/d. With the expected growth of 20 tb/d in 2025, the output is forecast to remain at 0.5 mb/d.

In the other tight plays, which are experiencing a modest pace of drilling and completion activities, production is expected to drop by 50 tb/d this year, before stabilizing in 2025.



Sources: EIA and OPEC.

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

		Change		Change		Change
US tight oil	2023	2023/22	2024*	2024/23	2025*	2025/24
Permian tight	5.16	0.49	5.47	0.31	5.72	0.25
Bakken shale	1.16	0.13	1.18	0.03	1.20	0.02
Eagle Ford shale	1.00	0.03	1.00	0.00	1.02	0.02
Niobrara shale	0.45	0.02	0.47	0.02	0.49	0.02
Other tight plays	0.67	0.00	0.62	-0.05	0.62	0.00
Total	8.44	0.67	8.74	0.30	9.05	0.31

Note: * 2024-2025 = Forecast.

Source: OPEC.

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

in the week ending 1 November 2024 remained output and WTI price unchanged at 585, according to Baker Hughes. This is 33 fewer rigs than a year ago. The number of active offshore rigs remained unchanged, w-o-w, at 16. This is five less than in the same month a year earlier. The number of onshore oil and gas rigs was also unchanged, w-o-w, at 568, with one rig in inland waters. This is down by 26 rigs, y-o-y.

The US horizontal rig count rose by four, w-o-w, to 517, compared with 549 horizontal rigs a year ago. The number of drilling rigs for oil fell by one, w-o-w, to 479, while the number of gas drilling rigs rose by one, w-o-w, to 102.

The Permian's rig count fell by one, w-o-w, to 303. The rig count in the Williston Basin saw a gain of one,

The total number of active US oil and gas drilling rigs Graph 5 - 10: US weekly rig count vs. US crude oil



w-o-w, to 35, while in the Eagle Ford it dropped by one, w-o-w, to 48. The number of active rigs remained unchanged, w-o-w, in the DJ-Niobrara and Cana Woodford Basins at 8 and 20, respectively.

World Oil Supply

wells in all US shale plays include 848 horizontal wells in US shale plays spudded in September, as per preliminary data. This Wells is up by 4, m-o-m, and is about 8% higher than in 1,100 September last year.

Preliminary data for September indicates a lower number of completed wells, m-o-m, at 937, although the number is up by about 19%, y-o-y. The number of started wells is estimated at 843, which is 21% higher than a year earlier.

Preliminary data for October saw 872 spudded, 823 completed and 801 started wells, based on Rystad Energy data.

In terms of identifying US oil and gas fracking operations, Rystad Energy reported that 1,004 wells started fracking in August. In September and October, it stated that 846 and 645 wells began fracking, respectively, according to preliminary numbers based on an analysis of high-frequency satellite data.

In regional terms, preliminary data for September shows that 209 and 222 wells started fracking in the Permian Midland and Permian Delaware regions, respectively. There was a loss of 72 wells in the Midland region and a loss of 49 in Delaware compared with August. Data also indicates that 53 wells began fracking in the DJ Basin, 82 in the Eagle Ford and 101 in the Bakken during September.

Canada

Canada's liquids production in September is Graph 5 - 13: Canada's monthly liquids production estimated to have dropped by about 0.1 mb/d, m-o-m, development by type to average 5.9 mb/d, following planned maintenance mb/d in some oil sands facilities.

Conventional crude production fell by about 40 tb/d in September, m-o-m, to an average of 1.2 mb/d. NGLs output was down by about 20 tb/d, m-o-m, to an average of 1.3 mb/d.

Crude bitumen production output rose in September by 50 tb/d, m-o-m, while synthetic crude production fell by 0.1 mb/d, m-o-m. Taken together, crude bitumen and synthetic crude production dropped by about 60 tb/d to average 3.4 mb/d.

Liquids production in 3Q24 is estimated to have risen by 0.2 mb/d, q-o-q, as wildfire disruptions abated and major scheduled maintenance had already taken place.

Drilling and completion activities for oil-producing Graph 5 - 11: Spudded, completed and started wells



Sources: Rystad Energy and OPEC.





Sources: Rystad Energy Shale Well Cube and OPEC.



Sources: Statistics Canada, Alberta Energy Regulator and OPEC.

In 2024, Canada's liquids production is forecast to Graph 5 - 14: Canada's quarterly liquids production increase at a much faster pace than in 2023, rising by and forecast

0.2 mb/d to average 5.9 mb/d. Incremental production is expected to come from oil sands project ramp-ups, optimization and the expansion of existing facilities in areas like Montney, Kearl, Duvernay and Fort Hills, as well as some conventional field growth. At the same time, new export opportunities following the commissioning of the Trans Mountain Expansion (TMX) pipeline is expected to continue stimulating production in the coming months.

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 additional well pads coming online at a number of facilities. Sources of production

mb/d



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

are primarily expected from the Athabasca. Kearl. 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, Cold Lake Oil Sands and the Montney Play.

Norway

by 0.3 mb/d, m-o-m, to average 1.7 mb/d, amid an development uptick in maintenance works. Norway's crude production fell by 0.2 mb/d, m-o-m, to average 1.6 mb/d. This was down by 86 tb/d, y-o-y. Nevertheless, monthly oil production was 1.5% higher than the Norwegian Offshore Directorate's (NOD) forecast.

Production of NGLs and condensate dropped by 88 tb/d, m-o-m, to average 0.1 mb/d in September, according to NOD data.

For 2024, Norwegian liquids production is forecast to drop by about 10 tb/d to an average of 2.0 mb/d. This was revised down by a minor 8 tb/d from the previous month's assessment, mainly due to heavy maintenance at several offshore platforms in

Norwegian liquids production in September dropped Graph 5 - 15: Norway's monthly liquids production



Sources: The Norwegian Offshore Directorate (NOD) and OPEC.

September. Several projects have been scheduled to ramp up this year. In addition to a few new projects at Hanz, Eldfisk, Kristin and Snorre that started production this year, further start-ups are expected at the Kvitebjorn, Tyrving and Aasgard floating, production, storage and offloading (FPSO) projects. Johan Castberg is projected to be the main source of output growth, with first oil planned later this year. Hookup operations have started at the Johan Castberg's FPSO in mid-September, following the offshore anchoring of the unit, according to Equinor.

In 2025, Norwegian liquids production is forecast to grow by 0.1 mb/d to average 2.1 mb/d. Several small-tolarge-scale projects are scheduled to ramp up, including Johan Castberg, Kristin, Eldfisk and Balder/Ringhorne. At the same time, start-ups are expected at the Ormen Lange, Balder/Ringhome, Snohvit, Halten East, Eirin, Norne FPSO, Maria and Alve projects. Norway's Var Energi recently postponed the startup of its Balder X oil project in the North Sea to 2Q25.

UK

In September, UK liquids production rose by 54 tb/d, m-o-m, to average 0.7 mb/d. Crude oil output increased by 42 tb/d, m-o-m, to average 0.5 mb/d. However, this was lower by 54 tb/d, y-o-y, according to official data. NGLs output rose by 12 tb/d, m-o-m, to an average 0.1 mb/d.

For 2024, UK liquids production is forecast to drop by Graph 5 - 16: UK monthly liquids production about 40 tb/d to average 0.7 mb/d. Production ramp- development ups will be seen at the ETAP and Clair sites, as well as the Captain enhanced oil recovery (EOR) and a start-up is forecast at the Josephine project. Furthermore, the Penguins FPSO unit is expected to be towed out to the UK's North Sea fields by the end of the year.

UK liquids production is forecast to stay steady at an average of 0.7 mb/d in 2025. Production ramp-ups are set to be seen at the Clair sites and at Schiehallion. Elsewhere, project start-ups are expected at the Victory, Janice and Murlach (Skua redevelopment) assets. However, any additional volumes are expected to be largely offset by decline rates from the ageing basins.

Non-OECD





mb/d



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





China

China's liquids production dropped by 46 tb/d, m-o-m, to average 4.5 mb/d in September. This is up by 43 tb/d, y-o-y, according to official data. Crude oil output in September averaged 4.2 mb/d, down by 46 tb/d compared with the previous month. This was higher by 48 tb/d, y-o-y.

NGLs production remained unchanged, m-o-m, averaging 41 tb/d. This was lower by 7 tb/d compared with the same month a year earlier.





Graph 5 - 20: China's quarterly liquids production and forecast



World Oil Supply

For 2024, China's liquids production is expected to rise by about 50 tb/d, y-o-y, to average 4.6 mb/d. This is unchanged from the previous assessment. Additional growth through more infill wells and EOR projects is anticipated to be largely offset by decline rates at mature fields. Chinese operators are maintaining high upstream CAPEX in 2024. This is in line with the seven-year exploration and development plan (2019-2025) to scale up exploration activities and to help boost domestic production. Several projects have already started production in 2024, such as Liuhua 11-1, Suizhong 36-1, Huizhou 26-6, Lufeng 8-1/9-2/14-8 and Enping 21-4 since January. At the same time, projects such as Wushi 17-2, Lingshui 17-2 Gas Complex (Phase 2), Bozhong 19-2 and Suizhong 36-2 – operated by CNOOC and PetroChina – are still expected to start operations in 2024. Furthermore, key ramp-ups are planned for Changqing, Kenli 10-2, Wushi 17-2 and Kenli 6-4.

In 2025, Chinese liquids production is expected to remain broadly steady, y-o-y, at an average of 4.6 mb/d. Supply growth is primarily expected to come from the offshore sector following considerable recent exploration investments in Bohai Bay off northern China and in the South China Sea. For next year, oil and gas condensate projects like Songliaho, Peng Lai 19-9, Kenli 10-2, Shengli, Liaodong Bay West, Xijiang 30-2, Wenchang 9-7 – operated by CNOOC, PetroChina and Sinopec – are expected to come on stream. Additionally, key rampups are planned for Changqing, Tarim, Xibei, Peng Lai 19-9 and Xi'nan.

Brazil

Brazil's crude output in September rose by about 130 tb/d, m-o-m, to average 3.5 mb/d. The output recovered from previous lows, representing the highest level since February this year; however, it has still been affected by operational issues and slow ramp-ups. NGLs production remained largely unchanged at an average of around 80 tb/d and is expected to remain flat in October 2024. Biofuel output (mainly ethanol) is estimated to have remained unchanged, m-o-m, at an average of 0.7 mb/d, with preliminary data showing a stable trend in October. The country's total liquids production increased by 132 tb/d in September to average 4.3 mb/d, albeit lower by about 0.2 mb/d, y-o-y.

Graph 5 - 21: Brazil's monthly liquids production development by type



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

Graph 5 - 22: Brazil's quarterly liquids production



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

For 2024, Brazil's liquids supply, including biofuels, is forecast to grow by about 30 tb/d, y-o-y, to average 4.2 mb/d. This was revised down by about 30 tb/d due to lower-than-expected production in recent months. Crude oil output is expected to increase through production ramp-ups at the Buzios (Franco), Mero (Libra NW), Tupi (Lula) and Itapu (Florim) fields. Oil project start-ups are expected mainly through the Mero 3, Atlanta and Maria Quiteria FPSOs. However, technical and operational issues could potentially delay the start-up of scheduled production platforms. In mid-October, Petrobras started production from the 0.1 mb/d FPSO Maria Quiteria, which is located at the Jubarte field in the Campos Basin. Brazilian output is expected to rise in the 4Q24 as maintenance is concluded and new facilities start up.

Brazil's liquids supply, including biofuels, is forecast to increase by 0.2 mb/d, y-o-y, to average 4.4 mb/d in 2025. Crude oil output is expected to expand through production ramp-ups at the Buzios (Franco), Mero (Libra NW), Tupi (Lula), Marlim, Jubarte and Atlanta fields. Oil project start-ups are expected at the Buzios, Bacalhau (x-Carcara), Wahoo, Parque das Baleias and Lapa (Carioca) fields. However, growing offshore development costs and inflationary pressure may continue to delay projects and moderate short-term growth.

DoC NGLs and non-conventional liquids

8.3 mb/d.

that Preliminary data shows NGLs and non-conventional liquids output in 3Q24 averaged 8.2 mb/d. According to preliminary September data, OPEC Member Countries and non-OPEC DoC countries are estimated to have produced 5.5 mb/d and 2.7 mb/d, respectively, of NGLs and non-conventional liquids.

The 2025 forecast points toward a combined increase of about 80 tb/d for an average of 8.4 mb/d. NGLs and non-conventional liquids production are projected to grow by 0.1 mb/d to average 5.6 mb/d for OPEC Member Countries. However, a drop of about 30 tb/d is forecast for non-OPEC DoC countries.

DoC NGLs and non-conventional liquids are expected Graph 5 - 23: DoC NGLs and non-conventional to expand by about 0.1 mb/d in 2024 to average liquids quarterly production and forecast



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

Table 5 - 6: DoC NGLs + non-conventional liquids, mb/d

DoC NGLs and		Change		Change						Change
non-coventional liquids	2023	23/22	2024	24/23	1Q25	2Q25	3Q25	4Q25	2025	25/24
OPEC	5.46	0.06	5.53	0.06	5.60	5.67	5.64	5.64	5.64	0.11
Non-OPEC DoC	2.77	0.20	2.78	0.01	2.79	2.77	2.68	2.76	2.75	-0.03
Total	8.23	0.26	8.31	0.08	8.40	8.43	8.31	8.40	8.39	0.08

Note: 2024-2025 = Forecast. Source: OPEC.
DoC crude oil production

According to secondary sources, **total OPEC-12 crude oil production** averaged 26.53 mb/d in October 2024, which is 466 tb/d higher, m-o-m. Crude oil output increased mainly in Libya, Nigeria and Congo, while production in IR Iran, Iraq, and Kuwait decreased.

At the same time, **total non-OPEC DoC crude oil production** averaged 13.80 mb/d in October 2024, which is 251 tb/d lower, m-o-m. Crude oil output increased mainly in Malaysia and Bahrain, while production in Kazakhstan decreased.

Secondary									Change
sources	2022	2023	1Q24	2Q24	3Q24	Aug 24	Sep 24	Oct 24	Oct/Sep
Algeria	1,013	973	907	904	909	910	909	909	0
Congo	261	261	246	262	257	264	253	265	12
Equatorial Guinea	84	56	54	56	58	58	60	56	-4
Gabon	195	203	214	210	211	216	207	214	6
IR Iran	2,554	2,859	3,179	3,238	3,306	3,299	3,327	3,259	-68
Iraq	4,439	4,289	4,265	4,234	4,243	4,268	4,133	4,068	-66
Kuwait	2,704	2,595	2,430	2,429	2,421	2,418	2,431	2,417	-14
Libya	981	1,162	1,119	1,189	894	950	540	1,096	556
Nigeria	1,210	1,315	1,413	1,366	1,413	1,438	1,399	1,434	35
Saudi Arabia	10,531	9,609	8,998	8,962	8,980	8,991	8,964	8,968	4
UAE	3,066	2,950	2,926	2,934	2,958	2,964	2,957	2,955	-2
Venezuela	684	749	816	838	876	876	888	895	7
Total OPEC	27,722	27,021	26,568	26,621	26,525	26,652	26,069	26,535	466
Azerbaijan	560	503	477	475	486	482	489	482	-7
Bahrain	193	183	176	185	166	163	159	177	18
Brunei	75	72	81	66	84	82	82	84	2
Kazakhstan	1,489	1,597	1,614	1,555	1,542	1,476	1,582	1,290	-292
Malaysia	396	374	359	359	326	328	304	326	22
Mexico	1,652	1,655	1,615	1,600	1,593	1,597	1,589	1,585	-5
Oman	850	819	772	765	765	766	765	765	0
Russia	9,771	9,574	9,426	9,216	9,037	9,029	9,001	9,010	9
Sudan	62	54	35	27	28	28	28	28	0
South Sudan	145	146	113	66	57	58	54	58	3
Total Non-OPEC DoC	15,193	14,976	14,667	14,314	14,083	14,009	14,055	13,803	-251
Total DoO									

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

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

OPEC crude oil production

OPEC crude oil production for October, as reported by OPEC Member Countries, is shown in **Table 5 - 8** below.

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

									Change
Direct communication	2022	2023	1Q24	2Q24	3Q24	Aug 24	Sep 24	Oct 24	Oct/Sep
Algeria	1,020	973	907	905	909	910	908	909	1
Congo	262	271	252	260	264	270	265	265	1
Equatorial Guinea	81	55	53	60	57	61	52	52	0
Gabon	191	223							
IR Iran									
Iraq	4,453	4,118	3,957	3,862	3,897	3,904	3,792	3,782	-10
Kuwait	2,707	2,590	2,413	2,413	2,413	2,413	2,413	2,400	-13
Libya		1,189	1,149						
Nigeria	1,138	1,187	1,327	1,270	1,328	1,352	1,324	1,333	9
Saudi Arabia	10,591	9,606	8,979	8,937	8,970	8,992	8,975	8,972	-3
UAE	3,064	2,944	2,919	2,928	2,933	2,935	2,931	2,914	-17
Venezuela	716	783	864	904	933	927	943	989	46
Total OPEC									

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

Source: OPEC.

Preliminary September 2024 data shows total OECD commercial oil stocks down by 3.0 mb, m-o-m. At 2,808 mb, they were 19.9 mb lower than the same time a year ago, 86.2 mb less than the latest five-year average, and 158.9 mb below the 2015-2019 average. Within the components, crude stocks fell by 7.5 mb, m-o-m, while product stocks rose by 4.5 mb, m-o-m.

OECD commercial crude stocks stood at 1,317 mb. This was 6.5 mb lower than the same time a year ago, 58.6 mb below the latest five-year average, and 118.3 mb less than the 2015–2019 average.

OECD total product stocks stood at 1,491 mb. This is 13.4 mb below the same time a year ago, 27.6 mb lower than the latest five-year average, and 40.7 mb less than the 2015–2019 average.

In terms of days of forward cover, OECD commercial stocks fell in September by 0.2 days, m-o-m, to stand at 60.8 days. This is 0.7 days lower than the level registered in September 2023, 2.8 days less than the latest five-year average, and 1.8 days less than the 2015–2019 average.

OECD

Preliminary September 2024 data shows total OECD Graph 9 - 1: OECD commercial oil stocks commercial oil stocks down by 3.0 mb, m-o-m. At 2,808 mb, they were 19.9 mb lower than the same time a year ago, 86.2 mb less than the latest five-year average, and 158.9 mb below the 2015-2019 average.

Within the components, crude stocks fell by 7.5 mb, m-o-m, while product stocks rose by 4.5 mb, m-o-m.

Within the OECD regions, in September, total commercial oil stocks fell in OECD Europe, while they rose in OECD Asia Pacific and OECD Americas.

OECD commercial crude stocks fell by 7.5 mb, m-o-m, ending August at 1,317 mb. This was 6.5 mb lower than the same time a year ago, 58.6 mb below the latest five-year average, and 118.3 mb less than the 2015-2019 average.



Within the OECD regions, OECD Asia Pacific saw a crude stock build of 1.8 mb, m-o-m, while crude stocks in OECD Americas and OECD Europe dropped by 0.4 mb and 8.9 mb, m-o-m, respectively.

By contrast, OECD total product stocks rose by 4.5 mb, m-o-m, in September to stand at 1,491 mb. This is 13.4 mb lower than the same time a year ago, 27.6 mb less than the latest five-year average, and 40.7 mb below the 2015-2019 average.

Within the OECD regions, product stocks in OECD Asia Pacific and OECD Americas witnessed a build of 3.7 mb and 3.3 mb, m-o-m, respectively. OECD Europe product stocks declined by 2.5 mb, m-o-m.

Table 9 - 1: OECD commercial stocks, mb											
					Change						
OECD stocks	Sep 23	Jul 24	Aug 24	Sep 24	Sep 24/Aug 24						
Crude oil	1,323	1,333	1,324	1,317	-7.5						
Products	1,505	1,492	1,487	1,491	4.5						
Total	2,828	2,824	2,811	2,808	-3.0						
Days of forward cover	61.5	61.1	61.0	60.8	-0.2						

Note: Totals may not add up due to independent rounding. Sources: EIA, IEA, METI, OilX and OPEC.

In terms of days of forward cover, OECD commercial stocks fell in September by 0.2 days, m-o-m, to stand at 60.8 days. This is 0.7 days lower than the level registered in September 2023, 2.8 days less than the latest five-year average, and 1.8 days less than the 2015–2019 average.

Within the OECD regions, OECD Americas stood at 3.4 days and OECD Europe at 3.6 days below the latest five-year average, standing at 60.2 days and 67.9 days, respectively. OECD Asia Pacific was 0.1 days higher than the latest five-year average, standing at 49.8 days.

OECD Americas

OECD Americas' total commercial stocks rose in September by 2.9 mb, m-o-m, to settle at 1,528 mb. This is 11.4 mb lower than the same month in 2023, and 28.6 mb below the latest five-year average.

Commercial crude oil stocks in OECD Americas fell in September by 0.4 mb, m-o-m, to stand at 733 mb, which is 1.5 mb less than in September 2023, and 25.5 mb lower than the latest five-year average.

By contrast, total product stocks in OECD Americas rose by 3.3 mb, m-o-m, in September to stand at 795 mb. This is 9.9 mb lower than the same month in 2023, and 3.1 mb below the latest five-year average. Lower consumption in the region was behind the product stock build.

OECD Europe

OECD Europe's total commercial stocks fell in September by 11.3 mb, m-o-m, to settle at 911 mb. This is 13.7 mb lower than the same month in 2023, and 49.1 mb below the latest five-year average.

OECD Europe's commercial crude stocks dropped by 8.9 mb, m-o-m, to end September at 393 mb. This is 10.2 mb less than one year ago and 27.7 mb lower than the latest five-year average.

Total product stocks also decreased by 2.5 mb, m-o-m, to end September at 518 mb. This is 3.5 mb lower than the same time a year ago, and 21.4 mb below the latest five-year average.

OECD Asia Pacific

OECD Asia Pacific's total commercial oil stocks rose in September by 5.5 mb, m-o-m, to stand at 370 mb. This is 5.2 mb higher than the same time a year ago, but 8.4 mb below the latest five-year average.

OECD Asia Pacific's crude stocks rose by 1.8 mb, m-o-m, to end September at 191 mb. This is 5.2 mb higher than one year ago, but 5.4 mb below the latest five-year average.

OECD Asia Pacific's total product stocks also went up by 3.7 mb, m-o-m, to end September at 179 mb. This is in line with one year ago at the same time but 3.0 mb below the latest five-year average.

US

Preliminary data for October 2024 shows that total Graph 9 - 2: US weekly commercial crude oil US commercial oil stocks fell by 18.7 mb, m-o-m, to inventories stand at 1.248 mb. This is 15.3 mb. or 1.2%. lower than the same month in 2023, and 35.4 mb, or 2.8%, below the latest five-year average. Crude stocks rose by 8.6 mb, while product stocks fell by 27.3 mb, m-o-m.

US commercial crude stocks in October stood at 425.5 mb. This is 0.5 mb, or 0.1%, lower than the same month in 2023, and 22.4 mb, or 5.0%, below the latest five-year average. The monthly build in crude oil stocks came despite higher crude runs, which increased by 140 tb/d, m-o-m, to average 16.17 mb/d in October.

Total product stocks fell in October to stand at 822.9 mb. This is 14.8 mb, or 1.8%, less than in October 2023, and 13.0 mb, or 1.6%, lower than the latest five-year average. The product stock draw can be attributed to higher product consumption.





Gasoline stocks fell in October by 10.3 mb, m-o-m, to settle at 210.9 mb. This is 7.9 mb, or 3.6%, lower than the same month in 2023, and 8.7 mb, or 4.0%, below the latest five-year average.

Distillate stocks in October also decreased by 8.8 mb, Graph 9 - 3: US weekly distillate inventories m-o-m, to stand at 112.9 mb. This is 3.2 mb, or 3.0%, higher than the same month in 2023, but 13.0 mb, or 10.3%, below the latest five-year average.

Residual fuel oil stocks in October went down by 0.3 mb, m-o-m. At 24.2 mb, they were 3.4 mb, or 12.2%. less than a year earlier and 5.2 mb. or 17.7%. below the latest five-year average.

Jet fuel stocks fell by 2.5 mb, m-o-m, ending October at 43.2 mb. This is 3.7 mb, or 9.4%, higher than the same month in 2023, and 4.4 mb, or 11.4%, above the latest five-year average.



Sources: EIA and OPEC.

					Change
US stocks	Oct 23	Aug 24	Sep 24	Oct 24	Oct 24/Sep 24
Crude oil	426.0	417.4	416.9	425.5	8.6
Gasoline	218.7	220.4	221.2	210.9	-10.3
Distillate fuel	109.6	125.4	121.6	112.9	-8.8
Residual fuel oil	27.6	25.2	24.5	24.2	-0.3
Jet fuel	39.4	46.0	45.6	43.2	-2.5
Total products	837.6	858.4	850.1	822.9	-27.3
Total	1,263.6	1,275.8	1,267.1	1,248.4	-18.7
SPR	351.3	379.7	382.6	385.8	3.3

Table 9 - 2: US commercial petroleum stocks, mb

Sources: FIA and OPEC

Japan

In Japan, total commercial oil stocks in September 2024 rose by 5.5 mb, m-o-m, to settle at 132.0 mb. This is 3.3 mb, or 2.5%, lower than the same month in 2023 and 1.5 mb, or 1.1%, below the latest five-year average. Crude and product stocks rose by 1.8 mb and 3.7 mb, m-o-m, respectively.

Japanese commercial crude oil stocks rose in Graph 9 - 4: Japan's commercial oil stocks September by 1.8 mb, m-o-m, to stand at 69.9 mb. This is 2.5 mb, or 3.4 %, lower than the same month in 2023 and 1.3 mb. or 1.8%, below the latest five-year average.

Gasoline stocks rose by 0.5 mb, m-o-m, to stand at 10.0 mb in September. This is in line with a year earlier at the same period, but 0.4 mb, or 3.5%, below the latest five-year average. The build in crude stocks came on the back of higher imports, which increased in September, m-o-m, by 165 tb/d or 7.3% to stand at 2.4 mb/d.

Middle distillate stocks rose by 2.2 mb, m-o-m, to end September at 30.4 mb. This is 0.2 mb, or 0.5%, lower than the same month in 2023, and 0.1 mb, or 0.2%,



----- Average 2019-23

Sources: METI and OPEC. lower than the latest five-year average. Within the distillate components, jet fuel and kerosene stocks rose by

-0

- 2024

16.4% and 14.5% respectively, while gasoil stocks fell by 4.0%. By contrast, total residual fuel oil stocks decreased, m-o-m, by 0.1 mb to end September at 12.2 mb. This is

1.2 mb, or 9.3%, less than the same month in 2023 and 0.2 mb, or 1.8%, lower than the latest five-year average. Within the components, fuel oil A stocks fell by 4.4%, m-o-m, while fuel oil B.C stocks rose by 1.6%, m-o-m.

					Change
Japan's stocks	Sep 23	Jul 24	Aug 24	Sep 24	Sep 24/Aug 24
Crude oil	72.4	66.5	68.1	69.9	1.8
Gasoline	10.0	9.5	9.5	10.0	0.5
Naphtha	9.0	8.6	8.5	9.5	1.0
Middle distillates	30.5	25.0	28.1	30.4	2.2
Residual fuel oil	13.4	12.5	12.3	12.2	-0.1
Total products	63.0	55.6	58.4	62.1	3.7
Total**	135.3	122.2	126.5	132.0	5.5

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

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 September 2024 showed that Graph 9 - 5: EU-14 plus UK and Norway total oil total European oil stocks fell by 11.3 mb, m-o-m, to stocks

stand at 981.5 mb. At this level, they were 2.8 mb, or 0.3%, lower than the same month in 2023, and 48.2 mb, or 4.7%, beneath the latest five-year average. Crude and product stocks fell by 8.9 mb and 2.5 mb, m-o-m, respectively.

European crude stocks stood at 390.5 mb in September. This is 5.2 mb, or 1.3%, lower than the same month in 2023 and 26.6 mb, or 6.4%, less than the latest five-year average. The drop in crude oil stocks came despite lower refinery throughput in the EU-14, plus the UK and Norway, which decreased by around 10 tb/d, m-o-m, to stand at 9.76 mb/d.



Total European product stocks also fell by 2.5 mb, m-o-m, to end September at 591.0 mb. This is 2.4 mb, or 0.4%, higher than the same month in 2023, but 21.6 mb, or 3.5%, below the latest five-year average. The stock draw can be attributed to higher demand in the region.

Gasoline stocks fell in September by 0.3 mb, m-o-m, to stand at 103.0 mb, which is 0.8 mb, or 0.8%, less than the same time in 2023, and 3.9 mb, or 3.7%, lower than the latest five-year average.

Middle distillate stocks also decreased in September by 3.4 mb, m-o-m, to stand at 397.2 mb. This is 3.9 mb, or 1.0%, higher than the same month in 2023, but 16.5 mb, or 4.0%, lower than the latest five-year average.

By contrast, residual fuel stocks in September were up by 0.3 mb, m-o-m, to stand at 59.3 mb. This is 0.5 mb, or 0.8%, lower than the same month in 2023, and 3.5 mb, or 5.5%, below the latest five-year average.

Naphtha stocks also increased in September by 0.9 mb, m-o-m, ending the month at 31.5 mb. This is 0.1 mb, or 0.4%, less than the same month in 2023, but 2.3 mb, or 7.9%, above the latest five-year average.

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

					Change
EU stocks	Sep 23	Jul 24	Aug 24	Sep 24	Sep 24/Aug 24
Crude oil	395.7	404.9	399.4	390.5	-8.9
Gasoline	103.9	103.2	103.4	103.0	-0.3
Naphtha	31.6	30.4	30.6	31.5	0.9
Middle distillates	393.3	395.1	400.6	397.2	-3.4
Fuel oils	59.7	59.0	58.9	59.3	0.3
Total products	588.6	587.6	593.5	591.0	-2.5
Total	984.3	992.5	992.8	981.5	-11.3

Sources: OilX and OPEC.

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

Singapore

In September, total product stocks in Singapore fell by 4.9 mb, m-o-m, to stand at 40.2 mb. This is 1.9 mb, or 4.4%, lower than the same month in 2023, and 4.7 mb, or 10.4%, less than the latest five-year average.

Light distillate stocks fell in September by 1.1 mb, m-o-m, to stand at 14.6 mb. This is 1.7 mb or 13.0% higher than the same month in 2023, and 1.7 mb, or 13.6%, above the latest five-year average.

Middle distillate stocks also decreased in September by 1.1 mb, m-o-m, to stand at 9.9 mb. This is 0.3 mb, or 3.6%, higher than in September 2023, but 1.2 mb, or 10.6%, lower than the latest five-year average.

Residual fuel oil stocks went down by 2.7 mb, m-o-m, ending September at 15.7 mb. This is 3.9 mb, or 19.9%, lower than in September 2023, and 5.2 mb, or 25.0%, below the latest five-year average.

ARA

Total product stocks in ARA in September rose by 0.9 mb, m-o-m. At 47.7 mb, they were 7.3 mb, or 18.0%, above the same month in 2023, and 4.8 mb, or 11.1%, higher than the latest five-year average.

Gasoil stocks in September rose by 0.2 mb, m-o-m, to stand at 18.3 mb. This is 3.6 mb, or 24.3%, higher than the same month in 2023 and 1.3 mb, or 8.0%, above the latest five-year average.

Fuel oil stocks increased in September by 0.3 mb, m-o-m, to stand at 8.9 mb. This is 2.2 mb, or 32.2%, higher than in September 2023 and 1.3 mb, or 8.0%, above the latest five-year average.

Jet oil stocks also went up by 0.1 mb, m-o-m, to stand at 7.7 mb in September. This is 1.6 mb, or 27.0%, higher than the level seen in September 2023 and 1.3 mb, or 19.6%, above the latest five-year average.

By contrast, gasoline stocks fell by 0.6 mb, m-o-m, ending September at 8.0 mb. This is 3.4 mb, or 29.9%, lower than in September 2023 and 1.7 mb, or 18.0%, below the latest five-year average.

Fujairah

During the week ending 4 November, total oil product stocks in Fujairah fell by 0.92 mb, w-o-w, to stand at 16.14 mb, according to data from FEDCom and S&P Global Commodity Insights. At this level, total oil stocks were 1.73 mb lower than at the same time a year ago.

Light distillate stocks fell by 0.43 mb, w-o-w, to stand at 5.93 mb, which is 1.43 mb higher than a year ago.

Heavy distillate stocks also decreased by 0.50 mb, w-o-w, to stand at 8.33 mb, which is 3.26 mb less than the same time a year ago.

By contrast, middle distillate stocks rose by 0.01 mb, w-o-w, to stand at 1.89 mb, which is 0.10 mb above the same time last year.

Balance of Supply and Demand

Demand for DoC crude (i.e. crude from countries participating in the Declaration of Cooperation) is revised down by 0.1 mb/d from the previous assessment to stand at 42.7 mb/d in 2024. This is around 0.5 mb/d higher than the estimate for 2023.

Demand for DoC crude in 2025 is revised down by 0.2 mb/d from the previous assessment to stand at 43.0 mb/d. This is around 0.4 mb/d higher than the estimate for 2024.

Balance of supply and demand in 2024

Demand for DoC crude

Demand for DoC crude (i.e. crude from countries participating in the Declaration of Cooperation) in 2024 is revised down by 0.1 mb/d from the previous assessment to stand at 42.7 mb/d. This is around 0.5 mb/d higher than the estimate for 2023.

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

							Change
	2023	1Q24	2Q24	3Q24	4Q24	2024	2024/23
(a) World oil demand	102.2	102.8	103.2	104.5	105.6	104.0	1.8
Non-DoC liquids production	51.8	52.6	53.1	53.2	53.4	53.1	1.2
DoC NGL and non-conventionals	8.2	8.4	8.3	8.2	8.3	8.3	0.1
(b) Total non-DoC liquids production and DoC NGLs	60.1	61.0	61.4	61.4	61.7	61.4	1.3
Difference (a-b)	42.1	41.8	41.8	43.1	43.8	42.7	0.5
DoC crude oil production	42.0	41.2	40.9	40.6			
Balance	-0.2	-0.6	-0.9	-2.5			

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 (i.e. crude from countries participating in the Declaration of Cooperation) in 2025 is revised down by 0.2 mb/d from the previous assessment to stand at 43.0 mb/d. This is around 0.4 mb/d higher than the estimate for 2024.

Table 10 - 2: DoC supply/demand balance for 2025*, mb/d

							Change
	2024	1Q25	2Q25	3Q25	4Q25	2025	2025/24
(a) World oil demand	104.0	104.3	104.6	106.3	107.0	105.6	1.5
Non-DoC liquids production	53.1	53.9	53.9	54.2	54.7	54.2	1.1
DoC NGL and non-conventionals	8.3	8.4	8.4	8.3	8.4	8.4	0.1
(b) Total non-DoC liquids production and DoC NGLs	61.4	62.3	62.4	62.5	63.1	62.6	1.2
Difference (a-b)	42.7	42.0	42.3	43.8	43.9	43.0	0.4

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

Appendix

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	24.0	24 7	25.0	24.4	25.0	25.6	25.4	25.1	24 5	25.1	25.7	25.4	25.2
of which US	19.8	20.2	20.4	19.9	20.5	20.7	20.8	20.5	20.0	20.5	20.8	20.9	20.5
Europe	13.1	13.6	13.4	12.8	13.8	13.8	13.4	13.5	12.9	13.8	13.8	13.4	13.5
Asia Pacific	7.3	7.3	7.2	7.5	7.0	7.0	74	7.3	7.5	7.0	7.0	74	7.3
Total OECD	44.4	45.6	45.6	44.8	45.8	46.4	46.2	45.8	44.9	45.9	46.6	46.3	45.9
Chipa	15.5	15.0	16.4	16.7	16.6	16.9	17.2	16.8	17.0	16.0	17.1	17.5	17.1
India	10.0	5.1	5.2	5.7	5.6	10.0	5.7	10.0 5.6	5.0	5.0	5.7	5.0	E 0
Other Asia	4.0	0.1	0.0	0.7	0.0	0.5	0.5	0.0	10.0	10.1	0.0	0.9	0.0
	0.7	9.1	9.3	9.7	9.0	9.0	9.0	9.0	10.0	10.1	9.0	9.0	9.9
	0.2	0.4	0.7	0.0	0.0	0.9	0.9	0.0	0.0	0.9	7.1	7.0	0.9
Middle East	7.8	8.3	8.6	8.7	8.5	9.2	9.0	8.8	8.9	8.7	9.5	9.2	9.1
Africa	4.2	4.4	4.5	4.0	4.3	4.4	4.9	4.5	4.7	4.4	4.5	4.9	4.6
Russia	3.6	3.8	3.8	4.0	3.9	4.0	4.1	4.0	4.0	3.9	4.1	4.2	4.0
Other Eurasia	1.2	1.2	1.2	1.3	1.2	1.1	1.3	1.2	1.3	1.2	1.1	1.3	1.2
Other Europe	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Total Non-OECD	52.8	54.1	56.6	58.0	57.4	58.1	59.3	58.2	59.4	58.8	59.7	60.7	59.7
(a) Total world demand	97.2	99.7	102.2	102.8	103.2	104.5	105.6	104.0	104.3	104.6	106.3	107.0	105.6
Y-o-y change	5.9	2.5	2.6	1.6	1.4	2.2	2.1	1.8	1.5	1.4	1.8	1.4	1.5
Non-DoC liquids production													
Americas	23.5	25.0	26.7	26.9	27.6	27.7	27.7	27.5	27.8	28.0	28.3	28.5	28.1
of which US	18.1	19.4	21.0	21.0	21.8	21.8	21.6	21.6	21.7	22.1	22.2	22.3	22.1
Europe	3.8	3.6	3.7	3.7	3.6	3.5	3.7	3.6	3.8	3.7	3.6	3.8	3.7
Asia Pacific	0.5	0.5	0.4	0.5	0.4	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4
Total OECD	27.9	29.1	30.8	31.0	31.6	31.7	31.8	31.5	32.0	32.1	32.4	32.7	32.3
China	43	4.4	4.5	4.6	4.6	4.5	4.5	4.6	4.6	4.6	4.5	4.5	4.6
India	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Other Asia	1 7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Latin America	6.0	6.3	7.0	73	7.2	7.2	7.4	7.3	7.4	7.5	7.5	7.7	7.5
Middle East	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Africa	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Africa Othor Eurosia	2.3	2.5	2.2	2.2	2.5	2.4	2.5	2.3	2.5	2.3	2.5	2.5	2.5
Other Europe	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Total Nan OECD	17.6	10.1	19.6	10.1	10.1	190	10.1	10.1	10.1	10.1	10.1	10.1	10.1
Total Non-OECD	17.0	10.0	10.0	19.0	19.0	10.9	19.1	19.0	19.2	19.3	19.3	19.4	19.3
Total Non-Doc production	45.4	47.0	49.4	50.1	50.6	50.7	50.9	50.5	51.3	51.3	51.6	52.1	51.6
Processing gains	2.3	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.0	2.6	2.6	2.6	2.6
Total Non-Doc liquids production	4/./	49.4	51.8	52.6	53.1	53.2	53.4	53.1	53.9	53.9	54.2	54.7	54.2
DOCINGLS	7.0	8.0	8.Z	8.4	8.3	8.2	8.3	8.3	8.4	8.4	8.3	8.4	8.4
(b) I otal Non-DoC liquids		4											
production and DoC NGLs	55.3	57.4	60.1	61.0	61.4	61.4	61.7	61.4	62.3	62.4	62.5	63.1	62.6
Y-o-y change	0.6	2.0	2.7	1.7	2.0	1.2	0.3	1.3	1.3	1.0	1.1	1.4	1.2
OPEC crude oil production													
(secondary sources)	25.2	27.7	27.0	26.6	26.6	26.5							
Non-OPEC DoC crude production	15.0	15.1	15.0	14.7	14.3	14.1							
DoC crude oil production	40.3	42.8	42.0	41.2	40.9	40.6							
Total liquids production	95.6	100.2	102.0	102.2	102.2	102.0							
Balance (stock change and													
miscellaneous)	-1.6	0.6	-0.2	-0.6	-0.9	-2.5							
OECD closing stock levels, mb													
Commercial	2.652	2.781	2.778	2.768	2.846	2.808							
SPR	1,484	1,214	1.207	1,219	1,226	1.235							
Total	4.136	3,995	3.984	3.987	4.072	4.043							
Oil-on-water	1,348	1,546	1,438	1,460	1,396	1.378							
Days of forward consumption in	.,510	.,510	.,100	.,100	.,500	.,510							
OECD, days													
Commercial onland stocks	58	61	61	60	61	61							
SPR	33	27	26	27	26	27							
lotal	91	88	87	87	88	87							
Memo items													
(a) - (b)	41.8	42.3	42.1	41.8	41.8	43.1	43.8	42.7	42.0	42.3	43.8	43.9	43.0

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

Source: OPEC.

Oil Market Report - November 2024

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.

PublishedNovember 2024

Highlights

- World oil demand is forecast to expand by 920 kb/d this year and just shy of 1 mb/d in 2025, to 102.8 mb/d and 103.8 mb/d, respectively. The slowdown in growth from recent years reflect the end of the post-pandemic release of pent-up demand and below-par underlying global economic conditions, as well as clean energy technology deployment.
- Global oil supply rose by 290 kb/d in October to 102.9 mb/d, as the return of Libyan barrels to the market more than offset lower Kazakh and Iranian supplies. OPEC+ delayed the unwinding of extra voluntary production cuts to January, at the earliest. Non-OPEC+ producers will boost supply by roughly 1.5 mb/d in both 2024 and 2025.
- Refinery margins improved in October as seasonal maintenance and economic run cuts supported product cracks. Global refinery runs hit a seasonal low in October before starting to recover in November and will average 82.8 mb/d this year and 83.4 mb/d in 2025. Annual growth of roughly 600 kb/d is driven largely by OECD Americas (+360 kb/d) this year and by non-OECD regions in 2025.
- Global oil inventories plunged by 47.5 mb in September, to their lowest level since January, led by a sharp draw in OECD oil products and non-OECD crude oil stocks. OECD industry stocks fell by 36.4 mb to 2 799 mb, 95.3 mb below the five-year average. Provisional data suggest total global stocks decreased for a fifth consecutive month in October.
- Brent futures rose \$2.50/bbl m-o-m to \$75.38/bbl in October, but traded in a wide \$10/bbl range. Prices peaked at \$80.90/bbl early in the month on escalating tensions in the Middle East but subsequently eased to close the month at around \$73/bbl. Speculative length in paper markets remains near historical lows.

Ebbs and flows

Global oil prices have eased from early-October highs, as market attention once again shifted from supply risks to concerns over the health of the global economy, sluggish oil demand and ample supply. After surging past \$80/bbl at the start of October, Brent crude oil futures fell to around \$72/bbl by mid-November as fears of an attack by Israel on Iran's energy infrastructure faded.

Oil market participants refocussed attention on fundamentals, including weak Chinese demand, the resumption of Libyan crude output and the planned unwinding of OPEC+ production cuts – all

foreshadowing a well-supplied oil market in 2025. Speculative length in paper markets remains near historical lows.

With only six weeks left of the year, global oil demand is on track to expand by 920 kb/d to an average 102.8 mb/d in 2024, compared with growth close to 2 mb/d last year and 1.2 mb/d per year on average over 2000-2019. China's marked slowdown has been the main drag on demand, with its growth this year expected to average just a tenth of the 1.4 mb/d increase in 2023.

Indeed, Chinese demand contracted for a sixth straight month in September – taking the 3Q24 average to 270 kb/d below a year ago. By contrast, oil demand growth in advanced economies reversed course, expanding by 230 kb/d y-o-y in 3Q24. Our estimate of world oil consumption growth for 2025 is essentially unchanged at 990 kb/d. The sub-1 mb/d growth pace for both years reflects below-par global economic conditions with the post-pandemic release of pent-up demand now complete. Rapid deployment of clean energy technologies is also increasingly displacing oil in transport and power generation, adding downward pressure to otherwise weak demand drivers.

Meanwhile, world oil supply is rising at a healthy clip. Following the early November US elections, we continue to expect the United States to lead non-OPEC+ supply growth of 1.5 mb/d in both 2024 and 2025, along with higher output from Canada, Guyana and Argentina. Plagued by a number of unscheduled outages and operational underperformance this year, Brazil is expected to be a major source of growth next year. Latin America's largest producer is forecast to boost supply by 210 kb/d to 3.7 mb/d in 2025, as more than 800 kb/d of new capacity starts up. Total growth from the five American producers will more than cover expected demand growth in 2024 and 2025.

Against this bearish backdrop, the OPEC+ alliance decided to postpone a scheduled production increase at its 3 November meeting. The producer group, which had planned to increase output gradually starting with a modest 180 kb/d in December, announced that it would now start unwinding the extra voluntary cuts from January at the earliest. The alliance will hold its full bi-annual ministerial meeting on 1 December 2024 to review the market outlook and production policies for 2025.

Our current balances suggest that even if the OPEC+ cuts remain in place, global supply exceeds demand by more than 1 mb/d next year. With supply risks omnipresent, a looser balance would provide some much-needed stability to a market upended by the Covid pandemic, Russia's full-scale invasion of Ukraine and, most recently, heightened unrest in the Middle East.

OPEC+ crude oil production¹

million barrels per day

	Sep 2024 Supply	Oct 2024 Supply	Oct Prod vs Target	Oct-2024 Implied Target ¹	Sustainable Capacity ²	Eff Spare Cap vs Oct ³
Algeria	0.9	0.9	-0.0	0.91	0.99	0.08
Congo	0.26	0.26	-0.01	0.28	0.27	0.01
Equatorial Guinea	0.06	0.05	-0.02	0.07	0.06	0.01
Gabon	0.22	0.23	0.06	0.17	0.22	-0.01
Iraq	4.3	4.25	0.35	3.9	4.87	0.62
Kuwait	2.5	2.49	0.08	2.41	2.88	0.39
Nigeria	1.31	1.32	-0.19	1.5	1.42	0.1
Saudi Arabia	9.04	9	0.02	8.98	12.11	3.11
UAE	3.26	3.23	0.32	2.91	4.28	1.05
Total OPEC-9 ⁴	21.85	21.73	0.6	21.13	27.1	5.37
Iran ⁵	3.41	3.35			3.8	
Libya ⁵	0.56	0.96			1.23	0.26
Venezuela ⁵	0.93	0.92			0.89	-0.03
Total OPEC	26.76	26.97			33.02	5.63
Azerbaijan	0.49	0.49	-0.06	0.55	0.49	-0.0
Kazakhstan	1.54	1.28	0.08	1.2	1.62	0.34
Mexico ⁶	1.56	1.58			1.59	0.01
Oman	0.76	0.76	0.0	0.76	0.85	0.09
Russia	9.15	9.2	0.23	8.97	9.76	
Others 7	0.73	0.73	-0.14	0.87	0.86	0.13
Total Non-OPEC	14.24	14.05	0.11	12.35	15.16	0.56
OPEC+ 18 in Nov 2022 deal ⁵	34.52	34.2	0.72	33.48	40.67	5.93
Total OPEC+	40.99	41.02			48.18	6.19

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.

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

2024-11-14 09:00:00.3 GMT

By Kristian Siedenburg

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

	4Q	ЗQ	2Q	1Q	4Q	ЗQ	2Q	1Q			
	2025	2025	2025	2025	2024	2024	2024	2024	2025	2024	2023
1 _ 6.: .1.: 1					Dem	nand					
Total Demand	104.4	104.6	103.6	102.6	103.5	103.7	102.6	101.5	103.8	102.8	101.9
Total OECD	45.8	46.0	45.4	45.0	46.0	46.2	45.6	44.8	45.5	45.6	45.6
Americas	25.1	25.3	25.0	24.6	25.1	25.3	25.0	24.4	25.0	24.9	25.0
Europe	13.2	13.8	13.5	12.8	13.4	14.0	13.6	12.9	13.3	13.5	13.4
Asia Oceania	7.5	6.9	6.9	7.6	7.5	6.9	7.0	7.5	7.2	7.2	7.2
Non-OECD countries	58.6	58.6	58.2	57.6	57.5	57.5	57.0	56.7	58.3	57.2	56.2
FSU	5.1	5.1	4.9	4.9	5.0	5.1	4.8	4.8	5.0	4.9	5.0
Europe	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
China	16.7	16.9	16.8	16.6	16.5	16.6	16.6	16.6	16.8	16.6	16.5
Other Asia	15.5	14.8	15.3	15,5	15.1	14.4	14.9	15.1	15.3	14.9	14.4
Americas	6.6	6.6	6.6	6,4	6.5	6.5	6.4	6.2	6.6	6.4	6.3
Middle East	9.3	9.9	9.3	9.1	9.1	9.8	9.2	8.8	9.4	9.2	9.1
Africa	4.5	4.4	4.4	4.4	4.4	4.4	4.3	4.3	4.4	4.4	4.3
					Suj	oply				21	
Total Supply	n/a	n/a	n/a	n/a	n/a	103.3	102.9	101.9	n/a	n/a	102.3
Non-OPEC	72.7	72.4	72.0	70.9	70.7	70.5	70.2	69.4	72.0	70.2	69.3
Total OECD	33.0	32.6	32.9	32.4	32.3	31.9	31.8	31.3	32.7	31.8	31.1
Americas	29.2	29.0	29.0	28.6	28.7	28.4	28.2	27.6	28.9	28.2	27.5
Europe	3.4	3.2	3.4	3.3	3.2	3.0	3.2	3.2	3.3	3.2	3.2
Asia Oceania	0.4	0.5	0.4	0.5	0.5	0.5	0.4	0.5	0.4	0.5	0.5
Non-OECD	33.8	33.6	33.3	33.3	32.7	32.4	32.6	33.0	33.5	32.7	32.7
FSU	13.9	13.8	13.8	13.7	13.4	13.4	13.5	13:7	13.8	13.5	13.8
Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	4.4	4.4	4.5	4.5	4.4	4.3	4.4	4.4	4.4	4.4	4.3
Other Asia	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.7	2.5	2.6	2.7
Americas	7.1	6.9	6.6	6.6	6.5	6.4	6.4	6.5	6.8	6.4	6.2
Middle East	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.2	3.1	3.1
Africa	2.7	2.7	2.7	2.7	2.6	2.6	2.5	2.5	2.7	2.5	2.5
Processing Gains	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.4	2.4	2.4
Total OPEC	n/a	n/a	n/a	n/a	n/a	32.8	32.7	32.5	n/a	n/a	32.9
Crude	n/a	n/a	n/a	n/a	n/a	27.2	27.2	26.9	n/a	n/a	27.4
Natural gas											
liquids NGLs	5.7	5.7	5.7	5.6	5.6	5.6	5.5	5.5	5.7	5.6	5.5
Call on OPEC crude											
and stock change *	26.0	26.5	25.9	26.0	27.2	27.5	26.8	26.5	26.1	27.0	27.1

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

2024-11-14 09:00:00.5 GMT

By Kristian Siedenburg

(Bloomberg) -- Following is a summary of oil production in

OPEC countries from the International Energy Agency in Paris:

	Oct.	Sept.	Oct.
	2024	2024	MoM
Total OPEC	26.97	26.76	0.21
Total OPEC9	21.73	21.85	-0.12
Algeria	0.91	0.90	0.01
Congo	0.26	0.26	0.00
Equatorial Guinea	0.05	0.06	-0.01
Gabon	0.23	0.22	0.01
Iraq	4.25	4.30	-0.05
Kuwait	2.49	2.50	-0.01
Nigeria	1.32	1.31	0.01
Saudi Arabia	9.00	9.04	-0.04
UAE	3.23	3.26	-0.03
Iran	3.35	3.41	-0.06
Libya	0.97	0.57	0.40
Venezuela	0.93	0.93	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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To view this story in Bloomberg click here: https://blinks.bloomberg.com/news/stories/SMXJTCGETF5S

IEA REPORT WRAP: Oil Market Faces Glut; China Demand Slumps

2024-11-14 10:40:07.555 GMT By Rachel Graham (Bloomberg) -- Oil supply will exceed demand by more than 1 million barrels a day in 2025, the International Energy Agency said. * China's oil demand is forecast to grow by 140k b/d this year, a fraction of last year's figure

* In the third quarter, advanced economies accounted for the highest share of global demand growth in two years
* Non-OPEC capacity will be boosted by new offshore conventional projects, led by Brazil, Guyana and Norway

The following stories and headlines were published Thursday from the IEA's monthly Oil Market Report:

* World Oil Market Faces Million-Barrel Glut in 2025, IEA Says
** Global oil markets face a surplus of more than 1 million
barrels a day next year as Chinese demand continues to falter

SUPPLY DEMAND:

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

- ** Shows quarterly forecast for demand by region
- * IEA World Oil Supply/Demand Key Forecasts

** Shows key revisions

* 2024 global oil demand to increase by 920k b/d to 102.8m

** 2024 China demand to add 140k b/d vs 1.4m b/d in 2023

*** China's demand slid for a sixth month in September

** In 3Q, advanced economies accounted for 30% of the global

increase of 830k b/d – the highest quarterly share in two years

- * 2025 global demand to rise by 990k b/d to 103.8m b/d
- * Oil Demand Growth in 2024 Lifted by Weaker Numbers for 2023
- * Gasoil is Still The Weak Point for Global Oil Demand
- * New Offshore Capacity to Boost Non-OPEC Production Growth
- ** Non-OPEC to boost supply by about 1.5m b/d in 2024 and 2025
- * OPEC Crude Output Rose 210k B/D in October on Libya Ramp-Up
- ** Also see table on OPEC output

* NOTE: Earlier this week, OPEC cut its oil demand growth forecasts for this year and next for a fourth month as it belatedly recognized a slowdown in China.

REFINING:

* Non-OECD Refiners to Boost Runs in 2025 Led by China

** Growth in crude throughput among non-OECD refiners is set to accelerate next year partly as China's runs rebound

** China runs forecast at 14.6m b/d this year vs January forecast of 15.4m

* US Refiners Squeeze Better Margin Than European Majors

OTHER:

* Russia Oct. Oil Revenue Rebounds to \$15.6B as Prices Rise

Click here for last month's IEA wrap To contact the reporter on this story: Rachel Graham in London at <u>rgraham13@bloomberg.net</u> To contact the editors responsible for this story: Alaric Nightingale at <u>anightingal1@bloomberg.net</u> Brian Wingfield

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World Oil Market Faces Million-Barrel Glut in 2025, IEA Says (1)

2024-11-14 10:20:50.21 GMT

By Grant Smith and Alex Longley

(Bloomberg) -- Global oil markets face a surplus of more than 1 million barrels a day next year as Chinese demand continues to falter, cushioning prices against turmoil in the Middle East and beyond, the International Energy Agency said. Oil consumption in China — the powerhouse of world markets for the past two decades — has contracted for six straight months through September and will grow this year at just 10% of the rate seen in 2023, the IEA said in a monthly report on Thursday. The global glut would be even bigger if OPEC+ decides to press on with plans to revive halted production when it gathers next month, according to the agency. It's possible that China's oil demand has peaked, IEA Head of Oil Industry and Markets Toril Bosoni said in an interview with Bloomberg TV on Thursday. "It's not just the economy and the shift, the slowdown in the construction sector," Bosoni said. "It's the transition to electric vehicles, high speed rail and gas in trucking that is undermining Chinese oil demand growth." Amid this extended weakness in Chinese demand, crude prices have retreated 11% since early October despite ongoing hostilities between Israel and Iran, as traders focus growing output in the Americas, the Paris-based IEA said. The decline foreshadows a "well-supplied market in 2025," it added. Brent

futures traded near \$72 a barrel on Thursday.

Global oil consumption will increase by 920,000 barrels a day this year — less than half the rate seen in 2023 — to average 102.8 million per day, it said. Next year, demand will grow by 990,000 barrels a day.

"The sub-1 million barrel-a-day growth pace for both years reflects below-par global economic conditions with the postpandemic release of pent-up demand now complete," according to the report. "Rapid deployment of clean energy technologies is also increasingly displacing oil in transport and power generation."

The agency, which advises major economies, predicted earlier this year that world demand will stop growing this decade amid a shift away from fossil fuels toward electric vehicles and renewable energy.

While demand growth cools, supplies from producers such as the US, Brazil, Canada and Guyana is set to grow this year and next by 1.5 million barrels a day, the agency predicts. As a result, world supplies will exceed demand next year by more than 1 million barrels a day, even if the 23-nation OPEC+ cartel abandons plans to restore output.

The Organization of Petroleum Exporting Countries and its allies have been seeking to restart production halted since 2022, but has been forced to delay the move twice because the market remains so fragile. It currently plans to begin a series of modest monthly increases with a hike of 180,000 barrels a day in January, and will gather on Dec. 1 to review the decision. OPEC's secretariat has belatedly recognized the demand slowdown, cutting its forecasts for this year by 18% during four consecutive monthly downgrades. Nonetheless, its projection of 1.8 million barrels a day of growth remains roughly double the rate seen by the IEA, and higher than most other market observers.

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IEA World Oil Supply/Demand Key Forecasts

2024-11-14 09:00:00.6 GMT By Kristian Siedenburg (Bloomberg) -- World oil demand 2025 forecast was unrevised at 103.8m b/d in Paris-based Intl Energy Agency's latest monthly report.

- * 2024 world demand was unrevised at 102.8m b/d
- * Demand change in 2025 est. 1% y/y or 0.99m b/d
- * Global demand in 2025 seen at 103807 kb/d; 2024 at 102817 kb/d
- * Non-OPEC supply 2025 was unrevised at 72.0m b/d
- * Call on OPEC crude 2025 was unrevised at 26.1m b/d
- * Call on OPEC crude 2024 was unrevised at 27.0m b/d
- ** OPEC crude production in Oct. rose by 210k b/d on the month to 27.0m b/d
- * Detailed table: FIFW NSN SMXJS6GQOFSX <GO>
- * NOTE: Fcasts based off IEA's table providing one decimal point

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Oil Demand Growth in 2024 Lifted by Weaker Numbers for 2023: IEA

2024-11-14 09:00:04.608 GMT

By Julian Lee

(Bloomberg) -- The IEA raised its forecast for oil demand growth this year, even though it sees the world using fewer barrels than it did a month ago, figures from its latest monthly report show.

* 2024 global oil demand growth now seen at 920k b/d, up from last month's forecast of 860k b/d

- ** Actual demand this year was shaved by 20k b/d to 102.82m b/d
- from 102.84m seen in October's report
- ** 2023 oil use was cut by 80k b/d to 101.9m b/d from the

earlier estimate of 101.98m on weaker than previously thought consumption in Latin America

* For this year, upward revisions to 3Q demand in Europe and Asia were partly offset by lower assessments for the Americas in the same period, with 3Q24 demand now assessed 60k b/d higher than it was a month ago

* Expectations for oil consumption in OECD and non-OECD Americas in 4Q were also trimmed, leaving global demand this quarter revised lower by 80k b/d

* "Gasoil accounts for most of the OECD upgrade, especially in Europe, where third-quarter gains of 80k b/d y/y were the largest in more than two years"

* But the fuel remains "the weak point in global demand," with consumption seen down y/y by 160k b/d - "the only fuel that will see annual consumption decline"

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Gasoil is Still The Weak Point for Global Oil Demand, IEA Says

2024-11-14 09:00:00.21 GMT

By Jack Wittels

(Bloomberg) -- Gasoil remains the "weak point" for global oil demand, with an annual decline of 160k b/d forecast for this year, the International Energy Agency said in its Oil Market Report.

* "It is the only fuel that will see annual consumption decline"

** September manufacturing PMIs in contraction in the US, eurozone and China

** READ (Nov. 5): Diesel Set For Growing Surplus Next Year as Demand Falters

* Still, the IEA did revise its gas/diesel oil 2024 demand

forecast higher from last month's report

** Global 2024 demand seen at 28.25m b/d, vs 28.17m b/d

previously

* NOTE: 2024 global demand for "other products" also seen contracting in 2024, down by 376k b/d

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New Offshore Capacity to Boost Non-OPEC Production Growth: IEA

2024-11-14 09:00:00.9 GMT

By Sherry Su

(Bloomberg) -- Non-OPEC capacity will be boosted by new offshore conventional projects, led by Brazil, then Guyana and Norway, though US shale production growth will continue to slow, said the IEA in its monthly Oil Market Report.

* Offshore conventional projects will provide close to 700k b/d of the 1.5m b/d increase in non-OPEC+ production expected in 2025

* US shale production growth is forecast to slow to just 320k b/d next year from 540k b/d in 2024 and 850k b/d in 2023, putting its contribution to non-OPEC+ supply growth at just 20% in 2025

* Brazil is on track to bring on four new FPSOs over the course of 2025, adding 800k b/d of new capacity by December 2025

* Guyana and the Exxon Mobil-led consortium have operated the three FPSOs on the Stabroek block at 95% efficiency year-todate. Next year sees a fourth vessel commissioned in the block, adding a further 250k b/d of capacity

* US Gulf of Mexico capacity is expected to expand by 170k b/d this year, including:

** Chevron's 70k b/d Anchor project

** Beacon Offshore Energy's 20k b/d Winterfell project, started up in 3Q24

** Shell's 80k b/d Whale development slated to start in December

** Next year sees an additional 200k b/d of growth as Chevron's

80k b/d Ballymore, Beacon's 60k b/d Shenandoah and LLOG's 60k b/d Leon/Castile projects are commissioned * Norwegian growth is led by the Johan Castberg project that will add 220k b/d of capacity in the Barents Sea. Three other major projects – Eldfisk North, Balder X and Tyrving – will add a further 100k b/d among them * Elsewhere, new projects include China CNOOC's 130k b/d of new capacity between the Bohai Bay and the South China Sea, India ONGC's 50 kb/d KG-DWN-98/2 project, Senegal's 100k b/d Sangomar FPSO, additional 80k b/d of West African offshore production from Angola and Cote d'Ivoire

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OPEC Crude Output Rose 210k B/D in October on Libya Ramp-Up: IEA

2024-11-14 09:00:00.31 GMT

By Amanda Jordan

(Bloomberg) -- OPEC's crude output in October climbed 210k b/d from a month earlier to 26.97m b/d, reflecting the recovery of Libyan production, the IEA said in its monthly market report. * Libyan supply jumped 400k b/d to 970k b/d, with output expected to increase further this month ** The ramp-up follows the resolution of a political crisis that had shuttered oil fields and export terminals

* Elsewhere in Africa, Nigeria and Algeria each lifted supply by 10k b/d

- * Production from core Persian Gulf members declined m/m
- ** Saudi output edged down to 9m b/d
- ** UAE volumes fell 30k b/d to 3.23m b/d; still above its OPEC+ quota
- ** Kuwaiti supply slipped to 2.49m b/d
- ** Iraqi production shrank by 50k b/d to 4.25m b/d
- ** Iranian output dropped by 60k b/d to 3.35m b/d

* Venezuelan production was little changed at 930k b/d

* NOTE: OPEC released its own figures for October on Tuesday,

estimating its 12 members pumped 26.535m b/d

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Non-OECD Refiners to Boost Runs in 2025 Led by China, IEA Says

2024-11-14 09:00:00.35 GMT

By Rachel Graham

(Bloomberg) -- Growth in crude throughput among non-OECD refiners is set to accelerate next year partly as China's runs rebound, the IEA said in its monthly Oil Market Report.

* Non-OECD refiners will boost throughput by 1m b/d in 2025 vs 470k b/d this year

** That increase is "led by a strong rebound in China as well as by continued growth in the Middle East and Africa" and "will more than eclipse projected declines in OECD refinery activity"
* This year's growth in throughput is led by the Middle East and

Africa

** That said, "continued reports of contractual difficulties for Nigeria's Dangote refinery shift more of the growth into 2025," the IEA said

* Globally, crude throughput is set to increase to 83.4m b/d next year vs 82.8m b/d this year

China's Refining Runs Are Set for a `Strong Rebound,' the IEA Says									
	2019	2020	2021	2022	2023	2024	2025		
OECD Americas	19.1	16.6	17.8	18.7	18.7	19.1	18.9m b/d		
OECD Europe	12.2	10.7	11.0	11.5	11.4	11.3	11.1		
OECD Asia	6.8	5.9	5.8	6.1	5.8	5.7	5.6		
China	13.4	13.8	14.4	13.9	14.8	14.6	14.9		
Other Asia	10.4	9.3	9.6	10.2	10.5	10.7	10.9		
FSU	6.9	6.4	6.7	6.5	6.5	6.3	6.4		
Middle East	7.9	7.1	7.9	8.5	8.7	9.3	9.5		
Africa	2.0	1.9	1.8	1.8	1.6	1.8	1.9		
Source: International Energy Agency Note: The figures for 2019 are from a previous report. The IEA no longer includes estimates for that year in the monthly reports. Bloomberg									

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https://blinks.bloomberg.com/news/stories/SMXKA0T0AFB4

US Refiners Squeeze Better Margin Than European Majors, IEA Says

2024-11-14 09:00:00.8 GMT

By Rachel Graham

(Bloomberg) -- While refining margins have slumped in the past year across the industry, some US companies are faring better than European peers, the IEA said in its monthly Oil Market Report.

* US independent refiners — such as Marathon, PBF, Phillips 66 and Valero — reported an average drop of 17% q/q and 56% y/y
* In Europe, margins were hit by higher exposure to middle distillates and higher costs
** European integrated oil companies BP, Shell, Total, Eni and

Repsol declined by an average 37% in 3Q compared with 2Q, and were down 65% y/y

* Low profitability could prompt closures * "As traditional refining profitability declines, the ability of companies to diversify into sustainable fuels and advanced refining technologies will be vital to maintaining long-term competitiveness"

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Russia Oct. Oil Revenue Rebounds to \$15.6B as Prices Rise: IEA

2024-11-14 09:00:00.7 GMT

By Bloomberg News

(Bloomberg) -- Russia's oil-export revenue rebounded to

\$15.6b in October amid higher prices, although total exports

declined slightly to 7.3Mb/d, the International Energy Agency said in its monthly market report.

* Revenue was up from \$14.4b in September but still below all other months since July 2023, according to the IEA estimates

* The average-weighted price for Russian crude increased to \$65.69, compared with \$64.43 in September

** The average-weighted price for Russian premium petroleum products increased to \$72.98/bbl, below the western cap of \$100/bbl

** Russian discounted petroleum product traded at an average of \$57.5/bbl, above the cap of \$45/bbl

* IEA estimates Russia's crude production in October at 9.2Mb/d

** Total Russian supply of crude, condensates and NGLs climbed to 10.6Mb/d last month

* READ, Nov. 6: Russia Says October Crude Output Was in Line With OPEC+ Target

* READ, Nov. 4: Russia Refining Runs Fell to Lowest in Almost

2.5 Years in Oct.

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Elon Musk Met With Iran's U.N. Ambassador, Iranian Officials Say

The tech billionaire, a top adviser to President-elect Donald J. Trump, was reported to have discussed ways to defuse tensions between Iran and the United States.

By <u>Farnaz Fassihi</u>

Nov. 14, 2024

Elon Musk, a close adviser to President-elect Donald J. Trump, met with Iran's ambassador to the United Nations on Monday in New York in a session that two Iranian officials described as a discussion of how to defuse tensions between Iran and the United States.

The Iranians said the meeting between Mr. Musk and Ambassador Amir Saeid Iravani lasted more than an hour and was held at a secret location. The Iranians, who spoke on the condition of anonymity because they were not authorized to discuss policy publicly, described the meeting as "positive" and "good news."

Asked about whether there was such a session, Steven Cheung, Mr. Trump's communications director, said, "We do not comment on reports of private meetings that did or did not occur." Mr. Musk did not respond to a request for comment.

Karoline Leavitt, the transition spokeswoman for the incoming Trump-Vance administration, said in a statement: "The American people re-elected President Trump because they trust him to lead our country and restore peace through strength around the world. When he returns to the White House, he will take the necessary action to do just that."

Mr. Musk has emerged as the most powerful private citizen in the Trump transition, and has sat in on nearly every job interview. During a call last week with Ukraine's president, Volodymyr Zelensky, the president-elect <u>handed the phone to the billionaire</u>. Mr. Musk has played a key role in providing communications capability to Ukraine in the war with Russia.

An early direct meeting between a senior Iranian official and Mr. Musk raises the possibility of a change in tone between Tehran and Washington under the Trump administration, despite a charged history between the president-elect and Iran. One of the Iranian officials said that it was Mr. Musk who had requested the meeting and that the ambassador picked the site.

During his first term Mr. Trump pulled the United States out of the 2015 <u>nuclear accord</u> between Iran and world powers, calling it "a horrible one-sided deal that should have never, ever been made," and imposed tough economic sanctions on Iranian oil revenues and international banking transactions. He also ordered the assassination of a top Iranian general, Qassim Suleimani, in Iraq in 2020.

In response, Iran's supreme leader banned any negotiations with the Trump administration and Iranian officials vowed to avenge Mr. Suleimani's killing. Federal prosecutors said in a court filing last week that Iran had plotted to assassinate Mr. Trump before the election.

But in the wake of Mr. Trump's election last week, Iran has been <u>openly debating</u> whether it can now reach a new and more lasting deal with the United States. Many members of President Masoud

Pezeshkian's new government favor negotiating, arguing that Mr. Trump likes to make deals and that there may be an opportunity to get the sanctions lifted.

Many in the conservative faction in Iran oppose engagement with Mr. Trump, and any negotiations — or deal — must be approved by the supreme leader, Ayatollah Ali Khamenei. Mr. Trump has been an avid supporter of Israel, which has been waging war on the Iranian-backed militias Hamas and Hezbollah since the Oct. 7 attack last year.

On Thursday, in a <u>post on X</u>, Iran's foreign minister, Abbas Araghchi, said: "Differences can be resolved through cooperation and dialogue. We agreed to proceed with courage and good will. Iran has never left the negotiation table on its peaceful nuclear program."

Mr. Araghchi made the comments following a meeting in Tehran with Rafael Grossi, the head of the U.N.'s atomic watchdog.

Analysts said that for all the history of bad blood with Mr. Trump, the Iranians appeared to want to keep the door to diplomacy open. Mr. Trump, too, appears interested, they said.

"Overall, everything is possible with Trump," said Ali Vaez, the Iran director for the International Crisis Group. "He appears to be interested in a deal with Iran." But some advisers, he said, may favor other approaches, among them increasing the pressure on Iran.

The two Iranian officials said that the meeting with Mr. Musk provided a workaround for Iran, allowing it to avoid sitting directly with an American official. Mr. Musk will, however, have an official role soon. He has been named as the co-director of a new government efficiency agency.

One Iranian Foreign Ministry official said that Ambassador Iravani told Mr. Musk during the meeting that he should obtain sanctions exemptions from the Treasury and bring some of his businesses to Tehran.

Iran's mission to the United Nations said it would not publicly comment on the meeting.

Farnaz Fassihi is the United Nations bureau chief for The Times, leading coverage of the organization, and also covers Iran and the shadow war between Iran and Israel. She is based in New York. <u>More about Farnaz Fassihi</u>

A version of this article appears in print on Nov. 15, 2024, Section

"what President Trump did say in Riyadh was that he would isolate Iran diplomatically and weaken them economically so they can't fund all of the violence that is going with the Houthis in Yemen, Hamas, Hezbollah, PIJ and these proxies that around Iraq and Syria today. All of whom destabilize Israel and our Gulf Partners" Brian Hook.



SAF Group created transcript of comments by Brian Hook (former US envoy on Iran under Trump) with CNN's Becky Anderson on Nov 7, 2024. <u>https://www.youtube.com/watch?v=aKsxggdQX0k</u>

Items in "italics" are SAF Group created transcript

At 0:00 min mark, Anderson asks on the reports Hook is going to lead the transition team at the State Dept ".. will you be leading the transition team at the State Dept?" Hook "I don't have any comment on that."

At 3:15 min mark, Hook "... President Trump came to Riyadh at that Arab Muslim summit, 55 nations were there, and he laid out a very coherent strategy for how we are going to focus on shared interests. We're going to combat ideologies that are killing not only American troops in the region but also citizens of Arab and Muslim nations. And we're going to do that in a spirt of friendship and partnership. So over the course of those four years, he executed against that strategy. Defeated ISIS. Put Iran in a political and financial crisis. Deepened his ties with Israel. Deepened his ties with our Gulf partners. Got out of the Iran nuclear deal. And did four peace treaties in five months. I would be very happy to put President Trump's record in the Middle East against any other President."

At 6:15 min mark, Hook "well look Becky, President Trump's foreign policy is hiding in plain sight. I'm not swerving any of your answers. I just think it's fairly obvious what he did in the first term. It's obvious that he isolated Iran and he weakened Iran economically. And you talked about a regional balance of power shifting. Israel has had enormous success against Hamas and Hezbollah, which are two terrorist proxies of Iran, Muslim brotherhood offshoots, and part of this extremist ideology that President Trump worked with leaders in Saudi Arabia, UAE and Egypt to combat. I have no reason to think he won't do that again. And he was very successful at it. The leaders in the region that I described enjoyed working with President Trump. And I think that they are looking forward to him coming back into office. In fact, I'm sure of it." [Note earlier in the interview, Hook highlighted it was significant that Trump's Day 1 calls included leaders of Saudi Arabia, UAE, Egypt and Israel" At 7:10 min mark, Anderson "Do you expect the Gulf countries to support a further policy of maximum pressure, for example? Further escalation between Israel and Iran if that is what Donald Trump is supporting?" Hook ""President Trump understands that the chief driver of instability in today's Middle East is the Iranian regime. And the Gulf is I think the most sort of economically dynamic and culturally vibrant region in the world today. And this sort of extremism and revolutionary ideology that the Iranian regime exports is one of the obstacles. Right, to continuing on this good path. And when the US decides to seek accommodation with Iran, it then creates the space for other countries to do the same. But in my personal experience, I know that when we deter the Iranian regime, you have the countries that you described, who are on the frontlines of Iranian aggression, doing everything they can to be a part of that deterring Iran. President Trump has no interest in regime change. The future of Iran will be decided by the Iranian people. We've said that repeatedly over four years. But what President Trump did say in Riyadh was that he would isolate Iran diplomatically and weaken them economically so they can't fund all of the violence that is going with the Houthis in Yemen, Hamas, Hezbollah, PIJ and these proxies that around Iraq and Syria today. All of whom destabilize Israel and our Gulf Partners."

Prepared by SAF Group https://safgroup.ca/insights/energy-tidbits/

November 15, 2024 TIPRO Reports Fifth Consecutive Month of Texas Upstream Job Growth

Austin, Texas – Citing the latest Current Employment Statistics (CES) report from the U.S. Bureau of Labor Statistics (BLS), the Texas Independent Producers and Royalty Owners Association (TIPRO) today highlighted new employment figures showing the fifth consecutive month of growth in upstream employment in Texas in the month of October 2024. According to TIPRO's analysis, direct Texas upstream employment for October totaled 196,100, an increase of 1,400 industry jobs from revised September employment numbers. All gains in upstream employment occurred in the services sector last month, while oil and gas extraction jobs remained unchanged.

TIPRO's new workforce data yet again indicated strong job postings for the Texas oil and natural gas industry. According to the association, there were 11,703 active unique jobs postings for the Texas oil and natural gas industry last month, including 4,678 new postings. In comparison, the state of California had 3,619 unique job postings in October, followed by New York (2,435), Florida (2,064), Pennsylvania (1,612) and Oklahoma (1,521). TIPRO reported a total of 56,043 unique job postings nationwide last month within the oil and natural gas sector.

Among the 19 specific industry sectors TIPRO uses to define the Texas oil and natural gas industry, Gasoline Stations with Convenience Stores led in the ranking for unique job listings in October with 2,700 postings, followed by Support Activities for Oil and Gas Operations (2,644) and Crude Petroleum Extraction (917). The leading three cities by total unique oil and natural gas job postings were Houston (3,059), Midland (837) and Odessa (421), said TIPRO.

The top three companies ranked by unique job postings in October were Cefco (1,120), Love's (651) and John Wood Group (401), according to the association. Of the top ten companies listed by unique job postings last month, four companies were in the services sector, two in the gasoline stations with convenience stores category, two midstream companies, one upstream company and one in the downstream sector. Top posted industry occupations for October included first-line supervisors of retail sales workers (627), general maintenance and repair workers (402) and heavy and tractor-trailer truck drivers (305). The top posted job titles for October included assistant store managers (228), customer service representatives (202) and maintenance people (141).

Top qualifications for unique job postings included Valid Driver's License (2,054), Commercial Driver's License (CDL) (276) and Transportation Worker Identification Credential Card (214). TIPRO reports that 39 percent of unique job postings had no education requirement listed, 34 percent required a bachelor's degree and 27 percent required a high school diploma or GED. There were 2,220 advertised salary observations (19 percent of the 11,703 matching postings) with a median salary of \$62,600. The highest percentage of advertised salaries (21 percent) were in the \$100,000 to \$519,000 range.

Additional TIPRO workforce trends data:

- A sample of industry job postings in Texas for October 2024 can be viewed <u>here</u>.
- The top three posting sources in October included <u>www.indeed.com</u> (4,781), <u>www.simplyhired.com</u> (3,035) and <u>www.dejobs.org</u> (2,372).

Additionally, tax contributions from the Texas oil and gas industry last month continued to provide essential funding for government coffers, noted TIPRO. In October, Texas producers paid \$436 million in oil production taxes, according to recent data released by the Texas comptroller's office. Energy producers last month also paid a total of \$182 million to the state in natural gas production taxes. Production taxes paid by the oil and natural gas industry are used to support major revenue streams for the state, including public education funding, the State Highway Fund, the Rainy Day Fund and other vital parts of the state budget.

TIPRO also highlights new production forecasts showing more growth in domestic crude oil and natural gas output in the upcoming year. The U.S. Energy Information Administration (EIA) in its November *Short-Term Energy Outlook* projects U.S. crude oil production will rise to 13.53 million barrels per day (b/d) in 2025, a record high, while marketed natural gas production in the U.S. is expected to increase to an average of 114 billion cubic feet per day (Bcf/d) next year, an increase of 1 percent from this year's annual average, led by a 6 percent increase in production in the Permian Basin and a 5 percent increase in the Eagle Ford Shale compared with 2024.

"Given the outcome of the elections, TIPRO looks forward to working with the new administration, incumbents and newly elected officials at the state level in Texas to reinforce the importance of domestic oil and natural gas production," said Ed Longanecker, president of TIPRO. "While it may be a lengthy process, we look forward to returning to some level of normalcy from an energy regulatory standpoint, which will bring tremendous benefit to our state, country and industry," added Longanecker.

https://www.accuweather.com/en/severe-weather/hurricanes-played-big-role-in-worst-tornado-seasonsince-2011/1710598

Hurricanes played big role in worst tornado season since 2011

May outbreaks and hurricane-spawned tornadoes have helped make the 2024 tornado season the worst tornado season in 13 years.

By Jesse Ferrell, AccuWeather meteorologist and senior weather editor

It's been a big year for tornadoes in the United States, and the <u>secondary severe weather season</u> is adding to the total this week, with more than two dozen tornado reports. As of Nov. 3, the United States had recorded 1,732 tornadoes, according to NOAA's Storm Prediction Center's preliminary tornado reports, a number far above the 14-year mean of 1,355.



Although 2024's tornado number has been the largest since 2011, it's unlikely to exceed that blockbuster year. By the end of October 2011, the U.S. had racked up 500 more tornadoes than this year's number and would ultimately reach 2,250 for the year.



An active May in Tornado Alley pushed 2024 above normal

After a slow start to the year, tornado outbreaks during May <u>pushed 2024 above normal</u>. For the second year in a row, the highest tornado counts have returned to <u>the "classic" Tornado Alley</u>. Texas has the country's largest tornado count this year, with over 150 twisters touching the ground. Due to its size and location in a tornado-prone part of the country, Texas is often number one, and tornadoes from Hurricane Beryl helped secure that first-place spot in 2024.

The second-highest state number is 131, in both Nebraska and Iowa. Illinois comes in next with 126 confirmed tornadoes.

3 surprising state tornado numbers



Tornadoes on Florida Department of Transportation traffic cameras on I-75 in the Everglades (left) and Fort Myers (right) spawned by Hurricane Milton on October 9, 2024. (FLDOT)

There were a few state surprises this year. Florida, which rounds out the top five, was one. Florida's number is unusually high due to tornado reports during Hurricane Milton, which spawned more than twice the daily record of twisters.

Ohio, with 81 preliminary tornado reports, experienced multiple tornado outbreaks on Feb. 27, March 14, April 2 and May 7. Although not ranking in the top 10 reports by state, <u>New York also had an unusually</u> <u>active tornado year</u>, with 32 tornado reports versus only 10 in 2023. Both states' numbers are likely yearly records, but final numbers won't be in until next year.

Hurricanes contributed significantly this season

Part of the story of the 2024 tornado season has been plentiful tornadoes spawned from hurricanes. <u>Hurricane Beryl</u>, <u>Hurricane Debby</u>, <u>Hurricane Helene</u> and <u>Hurricane Milton</u> caused a combined 178 twisters.



Although that sounds like a lot, two years since 1995 have delivered more hurricane-spawned twisters: 2004 with 317 and 2005 with 237 tornadoes. You may recall that 2004 was the year that four hurricanes hit Florida, while 2005 was the season with the most named storms on record, including the infamous Katrina, Rita and Wilma.

TOP HURRICANE-SPAWNED	D TORNADO YE	ARS 1995-20)24
		7001100 #	
	YEAR	TURNADU #	
	2004	317	
	2005	237	
	2024	178	
	2008	138	
	2017	124	
	Mary.		SOURCE: STORM PREDICTION CENTER

What about tornado warnings?

Unsurprisingly, the number of tornado warnings issued by the National Weather Service, 3,404, is also the highest since 2011. Florida, Oklahoma, Ohio and New York have had more tornado warnings issued this year than any year on record (since 2002), the Iowa Environmental Mesonet says.



The only states that didn't report any tornadoes this year were Nevada, Vermont and Maine.

Compared to 2023

The 2023 tornado season map looked slightly different, with Illinois taking the number-one spot with 118 tornadoes and Colorado having 88 at number two. Illinois, Colorado, Texas, Iowa and Alabama were the 2023 tornado season favorites. Utah, West Virginia and Maine were devoid of tornadoes in 2023.



What's the forecast?

After two dozen tornado reports over the last week, the question is, what's left of the <u>secondary severe</u> <u>weather season</u>? AccuWeather Lead Long-Range Expert Paul Pastelok says that severe weather is still

possible over the next two weeks, but we're running out of time as the storms are getting farther north, disconnecting from Gulf of Mexico moisture. That may mean fewer tornadoes than recently, but high winds and large hail could still be a problem.



Country Analysis Brief: Malaysia

Last Update: November 12, 2024 Next Update: November 2026



Independent Statistics and Analysis U.S. Energy Information Administration www.eia.gov U.S. Department of Energy Washington, DC 20585

Overview

Table 1. Malaysia Energy Indicators, 2022

	Petroleum and other liquids	Natural gas	Coal	Nuclear	Hydro	Other renewables	Total
Primary energy production (quads)	1.1	2.8	0.1	0.0		0.2	4.2
Primary energy production (percentage)	27%	67%	2%	0%		4%	100%
Primary energy consumption (quads)	1.4	1.6	0.9	0.0		0.2	4.1
Primary energy consumption (percentage)	35%	40%	21%	0%		4%	100%
Generation (billion kWh)	32.7	63.5	93.6	0.0	32.7	3.3	225.9
Generation (percentage)	14%	28%	41%	0%	14%	1%	100%

Data source: U.S. Energy Information Adminstration, International Energy Statistics and estimates.

Note: Generation does not include biomass & waste. Total may not equal 100% due to independent rounding. Quads=quadrillion British thermal units, kWh=kilowatthours.
- Malaysia is the second-highest producer of petroleum and other liquids in Southeast Asia and the fifth-highest exporter of liquefied natural gas (LNG) globally in 2023. Malaysia is strategically located in the South China Sea and borders the Malacca Strait, both of which are important maritime routes for energy trade.¹
- Malaysia's oil and natural gas production is expected to peak at 2 million barrels of oil equivalent per day (BOE/d) in 2024, according to national oil company Petronas.² This would be an increase of just over 200,000 BOE/d from the 1.79 million BOE/d produced in 2023.³
- Malaysia's national oil company Pertonas, with Enilive and Euglena, will build Petronas's first biorefinery. The biorefinery, which will be located at the Pengerang Integrated Complex, will produce 12,500 barrels per day (b/d) of sustainable aviation fuel and biodiesel. Construction will begin at the end of 2024, and commercial operation is slated to start in 2028.⁴
- According to Malaysia's National Energy Transition Roadmap, Malaysia plans to achieve a 70% share of installed electricity generation capacity for renewable energy by 2050. The government estimates it will need \$143 billion in investments to meet its target. To help develop its renewable sector, Malaysia lifted its ban on renewable energy exports that it initiated in 2021.⁵ The increase in demand for renewable energy from foreign markets will prompt development of domestic renewable generation capacity on a larger scale to meet the higher demand.



Data source: U.S. Energy Information Administration and World Bank

Petroleum and Other Liquids

- In 2023, Malaysia had proved oil reserves of 2.7 billion barrels—the second-largest oil reserve in the Southeast Asia.⁶ Although reserves have declined since 2022, there were 19 new discoveries in 2023, which could add over 1 billion barrels of oil equivalent, according to Petronas. Of these discoveries, 16 are located in the Sarawak state, and 3 are in the Sabah state (Figure 2).⁷
- Following the Malaysia Bid Round 2023 (MBR 2023), six production sharing contracts and one discovered resource opportunity (DRO) were awarded. A DRO is an opportunity where a company can obtain the rights to an undeveloped discovery from a government to invest in its development. All offshore blocks for MBR 2023 in Sarawak and Northwest Sabah Basins are now licensed as a result of this bid round (Table 2).⁸



Map 2. States of Malaysia

Data source: U.S. Energy Information Administration, World Bank, and MB-Research GmbH

In the 12th Malaysia Plan (2021–2025), the government outlined its plan to reduce carbon intensity economy-wide by 45% from 2005 levels against gross domestic product (GDP) and to achieve net-zero greenhouse gas emissions by 2050. To support these goals, Petronas plans to cap operational emissions at 49.5 million metric tons of CO₂ equivalent in its Malaysian operations by the end of 2024. Petronas and its subsidies has also targeted a 50% reduction from 2019 levels in methane emissions from its natural gas value chain by 2025.⁹

Table 2. Malaysia Bid Round 2023 block awards

Block name	Company
Block PM342	Petronas; E&P Malaysia Venture
Block PM428	Jadestone Energy; Petronas

Block SK330	Petronas; E&P Malaysia Venture; Petroleum Sarawak E&P
Block SK510	Petronas; INPEX Malaysia E&P Pertamina; Petroleum Sarawak E&P
Block 5E	Shell; Petronas; Petroleum Sarawak E&P
Block SB403	Petronas; E&P Malaysia Venture; SMJ Energy
Bamabazon Cluster	E&P O&M Services

Data source: World Oil

- From 2024 through 2026, Petronas expects more than 25 wells (oil and natural gas) to be drilled per year. The Penisular Malaysia and Sarawak will be the focus of shallow water wells, and deepwater wells will be in Sabah.¹⁰
- Malaysia's petroleum and other liquids production declined from 2017 to 2023—to 597,000 barrels per day (b/d)—due to maturing fields (Figure 1).¹¹
- After a dip in 2020, Malaysia's petroleum and other liquids consumption returned to prepandemic levels in 2022, driven mainly by a rebound increased gasoline demand (Figure 3).¹²



In 2022, gasoline accounted for 44% of total petroleum product use, followed by distillate fuel oil (27%), and liquefied petroleum gas (11%) (Figure 2). COVID-19 restrictions were lifted in 2021, which led to more driving and passenger vehicle sales.¹³



Malaysia had a refining capacity of 997,000 b/d in 2023 (Table 3).¹⁴ By 2034, proposed projects could add an additional 181,000 b/d of capacity.¹⁵

		Crude oil refining capacity
Name of site	Company	(thousand barrels per day)
Kemaman	Kemaman Bitumen	30
Port Dickson	Hengyuan Refining Company	156
Kerteh	Petronas	121
Melaka (PSR-1)	Petronas	100
Melaka (PSR-2)	Petronas	170
Pengerang	Petronas	300
Port Dickson	San Miguel/Petron	85
Total		997

Table 3. Operating refineries in Malaysia, 2023

Data source: FACTS Global Energy, Asia Pacific Databook 2: Refinery Configuration, Spring 2024

Natural Gas

- At the end of 2023, Malaysia had proved natural gas reserves of 32 trillion cubic feet (Tcf).¹⁶
 Although lower than the 2014 peak of 101 Tcf, reserves have increased since 2018 as a result of new discoveries.¹⁷
- Malaysia's natural gas production increased in 2022 to an all-time high of 2.7 Tcf,¹⁸ which was the result of developing both brownfield and greenfield projects (Figure 3).¹⁹





Map 3: Malaysia's Natural gas infrastructure

Data source: U.S. Energy Information Administration; World Bank; and Global Energy Monitor, *Global Gas Infrastructure Tracker*

Note: LNG=liquefied natural gas; FLNG=floating liquefied natural gas storage; MLNG=Malaysia LNG

- The Jerun gas field, located off the shore of Sarawak, northwest of Bintulu, was brought online by SapuraOMV in 2024. According to SampuraOMV, the project will reach peak production in 2030 at 550 million cubic feet per day (MMcf/d) of natural gas and 15,000 b/d of condensate. The project will supply the Petronas LNG complex in Bintulu via a 50-mile pipeline.²⁰ The complex consists of MLNG Satu, MLNG Dua, MLNG Tiga, and MLNG T9.
- Shell operates the Timi natural gas project, which is located in Sarawak. Shell expects the project to produce 300 MMcf/d at peak production. The natural gas will support a production hub, located off the shore of Sarawak, via a 50-mile pipeline. Commercial production is slated to start in 2025.²¹

 The Malaysia-Thailand Joint Development Area is located in the Gulf of Thailand and overseen by the Malaysia-Thailand Joint Authority; each country has 50% ownership of the area's resources. The area produced natural gas for both Malaysia and Thailand and is linked to Malaysia via the Peninsular Gas Utilization (PGU) pipeline network.²²



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- The industrial sector's natural gas consumption share surpassed the power sector's share in 2017 and has remained the top natural gas-consuming sector since that year (Figure 4). The Malaysia natural gas pipeline network, which has helped the manufacturing sector grow, is a major supplier for industrial natural gas consumption. Residential, commercial, and transportation sectors together have accounted for less than 1.5% of natural gas consumption per year from 2013 to 2022.²³
- Malaysia has one of the most extensive natural gas pipeline networks in Asia. Much of the
 natural gas pipeline network is located in Peninsular Malaysia and is known as the Peninsular
 Gas Utilization (PGU) pipeline network. The PGU is 1,630 miles long and can transport 3,500
 MMcf/d. The network transports processed natural gas to the power sector and to non-power
 end-use sectors and exports natural gas to Singapore. The four entry points into the PGU are in
 Kertih, Pengerang, Sungai Udang, and Thailand.²⁴
- A floating liquefied natural gas (FLNG) vessel called ZFLNG is under development off the shore of Sabah. The facility's liquefaction capacity is 2 million metric tons per year, and its completion is set for 2027.²⁵

Project name	Owners	(billion cubic feet per year)	Start year
MLNG Satu T1-T3	Petronas (90%); Mitsubishi Corp(5%); Sarawak State (5%)	403	1982
MLNG Dua T4-T6	Petronas (80%); Mitsubishi Corp(10%); Sarawak State (10%)	461	1995
MLNG Tiga T7-T8	Petronas (60%); Sarawak State (25%); JX Nippon Oil and Gas (10%); Mitsubishi Corp (5%)	370	2003
MLNG T9	Petronas (80%); JX Nippon Oil and Gas (10%); Sarawak State (10%)	173	2017
Petronas FLNG Satu (PFLNG1)	Petronas	58	2017
Petronas FLNG Rotan (PFLNG2)	Petronas	72	2021
Total		1,536	

Table 4. Malaysia's LNG liquefaction terminals, 2023

Data source: International Gas Union, 2024 World LNG Report

Note: LNG=liquefied natural gas, FLNG=floating liquefied natural gas, MLNG=Malaysia LNG

Table 5. Malaysia's LNG regasification terminals

Project name	Owners	Capacity (billion cubic feet per year)	Start year
Melaka LNG	Petronas	183	2013
Pengerang LNG	Petronas (65%); Dialog Group (25%); Johor Government (10%)	168	2017
Total		351	
Data source: Internat	tional Gas Union, 2024 World LNG Report		

Note: LNG=liquefied natural gas

 Petronas and MISC Group signed an agreement in October 2023 that will convert a 4.9-millioncubic-foot LNG shipping vessel into floating storage for the Pengerang LNG terminal. The conversion is scheduled to be completed by 2025.²⁶

Coal

- Malaysia has limited coal resources. Its reserves were 249 million short tons in 2022.²⁷ Nearly 99% of the reserves are located in Sarawak, and the remainder is in Sabah.²⁸
- In 2022, coal made up 21% of Malaysia's primary energy consumption.²⁹ Under the National Energy Policy 2022–2040, Malaysia's goal is to reduce coal's share of primary energy supply to 17% by 2040.³⁰
- Malaysia's coal production decreased 4% in 2023. This came after an increase of almost 20% the previous year, from 3.4 million short tons in 2021 to a record 4 million short tons in 2022(Figure 5).³¹



Electricity

- Malaysia's electricity generation increased 8% from 2021 to 194 terawatthours in 2022 (Figure 8). Fossil fuels made up 81% of all electricity generated in 2022, and non-hydroelectric renewables made up less than 2%. Although total generation increased in 2022, the increase was dispersed evenly across most generation sources (Figure 6).³²
- In 2022, Malaysia pledged not to build any new coal power plants after 2040. In 2021, they created a phase-out plan to reduce existing coal capacity by 50% by 2035 and completely by 2044.³³ Currently, 5 coal-fired power plant projects are under development, which are slated to come online by 2031 and will add 11.7 gigawatts (GW) of capacity.³⁴
- In April 2024, Malaysia's government announced its intention to create the Energy Exchange Malaysia (ENEGEM) to export electricity from renewable sources to other Southeast Asian countries. ENEGEM aligns with the Association of Southeast Asian Nations (ASEAN) goals of an integrated power grid among Southeast Asian countries.³⁵



Malaysia's installed electricity capacity remained relatively flat in 2022; it increased less than 1% from 2021 levels (Figure 7). All added capacity came from growth in solar installations.³⁶



Energy Trade

Petroleum and other liquids

- Malaysia's crude oil and condensate exports decreased by 14% in 2023 from 2022. The largest declines by importing countries were China and India, which represent a combined decrease of 29,000 b/d.³⁷
- Virtually all of Malaysia's crude oil and condensate exports in 2023 went to the Asia Pacific region. Southeast Asia was responsible for 52% of imports (Figure 8).³⁸



- Malaysia imported almost 1.2 million b/d of petroleum product imports in 2023, a 3% increase from the previous year. Asia was the source for 58% of all petroleum product imports (Figure 9).³⁹
- Fuel oil (28%) accounted for the largest share of petroleum product imports in 2023, followed by diesel (25%) and gasoline (20%).⁴⁰



- Malaysia also exported 1.3 million b/d of petroleum products in 2023, a 7% increase from the previous year. The Asia Pacific region was the destination for 79% of all petroleum product exports (Figure 10). ⁴¹
- Diesel (24%) accounted for the largest share of exports in 2023, followed by fuel oil (20%) and biodiesel (19%).⁴²



Natural gas

- In 2023, Malaysia exported 85 billion cubic feet (Bcf) of natural gas to Singapore via pipeline.⁴³
- Malaysia's LNG exports declined 7% from 2022 to 1.3 Tcf in 2023. Although Japan still receives the largest share of Malaysia LNG exports, in 2023, Japan imported approximately 90 Bcf less than in 2022 (Figure 11).⁴⁴



Electricity

Malaysia's electricity exports significantly increased after 2016. (Figure 12). The increase was driven by a power trading project established in 2016, between Sarawak Energy Berhad and Indonesia's state utility Perusahaan Listrik Negara. The power is exported through the 275 kV Sarawak-West Kalimatan Interconnection. In October 2021, Malaysia banned the export of renewable energy which may account for some of the decrease in exports in 2021 and 2022. The ban was lifted in May 2023 to attract more development in its renewable sector.⁴⁵



Coal

In 2023, Malaysia's coal imports increased almost 10% from 2022 to 42 million short tons. Most imports came from the Asia Pacific region (91%). Malaysia increased its imports of Indonesia's coal to 31 million short ton in 2023, up approximately 3 million short tons from 2022 (Figure 13).⁴⁶



¹ U.S. Energy Information Administration, International Energy Statistics; International Gas Union, 2024 World LNG Report, page 24.

² "Malaysia's Petronas Sees Domestic Oil, Gas Output Peaking by 2024 | Reuters." Reuters, June 28, 2023.

³ U.S. Energy Information Administration, International Energy Statistics and estimates.

⁴ "Petronas Moves Ahead with First Biorefinery Project." Energy Intelligence, July 26, 2024.

⁵ "Malaysia Sets New Target to Reach 70% of Renewables in the Power Mix by 2050." Enerdata, May 11, 2023.

⁶ Oil and Gas Journal, "Worldwide Look at Reserves and Production", December 2023

⁷ Oil and Gas Journal, "Worldwide Look at Reserves and Production", December 2023; Malaysia Oil & Gas Report Q3 2024, BMI-A Fitch Solutions Company, June 14,

⁸ "Petronas, Shell Win Big at Malaysian Offshore Exploration Bid Round." World Oil - Upstream News, January 25, 2024.

⁹ Petronas, Petronas Activity Outlook 2024-2026 IN THE SPOTLIGHT, Page 33; Petronas, Methane Guiding Principles Signatory Reporting, Page 2.

¹⁰ Petronas, Petronas Activity Outlook 2024-2026 IN THE SPOTLIGHT, Page 15.

¹¹ U.S. Energy Information Administration, International Energy Statistics.

¹² U.S. Energy Information Administration, International Energy Statistics; FACTS Global Energy, *Asia Pacific Petroleum Databook 1: Supply and Demand*, Spring 2023, page 23.

¹³ FACTS Global Energy, Asia Pacific Petroleum Databook 1: Supply and Demand, Spring 2023, page 23.

¹⁴ FACTS Global Energy, Asia Pacific Petroleum Databook 2: Refinery Configuration, Fall 2024

¹⁵ FACTS Global Energy, Asia Pacific Petroleum Databook 2: Refinery Configuration & Construction, Fall 2024, page 34. ¹⁶ Oil and Gas Journal, "Worldwide Look at Reserves and Production", December 2022. ¹⁷ Fitch Solutions Group, "Malaysia Oil & Gas Report Q1 2023.", page 27. ¹⁸ U.S. Energy Information Administration. International Energy Statistics. ¹⁹ Fitch Solutions Group, "Malaysia Oil & Gas Report Q1 2023.", page 26. ²⁰ "SapuraOMV Launches Key Gas Field off Malaysia | Newsbase." n.d. Newsbase.com. Accessed July 25, 2024. ²¹ "Shell Delivers First Gas from the Timi Platform in Malaysia | Shell Global." n.d. Www.shell.com; Fitch Solutions Group, "Malaysia Oil & Gas Report Q1 2023.", page 26. ²² Fitch Solutions Group, "Malaysia Oil & Gas Report Q1 2023.", page 28. ²³ FACTS Global Energy, *Malaysia Natural Gas Outlook*, September 2023, page 11. ²⁴ "Gas Transportation." PETRONAS Gas Berhad (PGB). Accessed July 25, 2024. ²⁵ International Group of Liquefied Natural Gas Importers, GIIGNL Annual Report 2024, page 33. ²⁶ International Group of Liquefied Natural Gas Importers, GIIGNL Annual Report 2024, page 42. ²⁷ U.S. Energy Information Administration, International Energy Statistics. ²⁸ Malaysia Energy Commission, Malaysia Energy Information Hub database, accessed July 21, 2024. ²⁹ U.S. Energy Information Administration, International Energy Statistics. ³⁰ "Malaysia - an Energy Snapshot." Asia Natural Gas & Energy Association. Accessed July 21, 2024. ³¹ U.S. Energy Information Administration, International Energy Statistics. ³² U.S. Energy Information Administration, International Energy Statistics. ³³ Yun, Tan Zhai. "Fadillah: Malaysia Aims for Complete Retirement of Coal-Fired Power Plants by 2044." The Edge Malaysia, June 25, 2024. ³⁴ "Malaysia - an Energy Snapshot." Asia Natural Gas & Energy Association. Accessed July 21, 2024. ³⁵ Lim, Mark, Kim Hock Ang, and Faez Abdul Razak. "Malaysia: Energy Exchange Update." Global Compliance

News, April 25, 2024; Fitch Solutions Group, "Malaysia Power Report Q3 2024.", page 16.

³⁶ U.S. Energy Information Administration, International Energy Statistics.

³⁷ Vortexa (accessed June 2024)

³⁸ Vortexa (accessed June 2024)

³⁹ Vortexa (accessed June 2024)

⁴⁰ Vortexa (accessed June 2024)

⁴¹ Vortexa (accessed August 2024)

⁴² Vortexa (accessed August 2024)

⁴³ Global Trade Tracker (accessed July 2024)

44 Vortexa (accessed August 2024

⁴⁵ Fitch Solutions Group, "Malaysia Power Report Q3 2023.", pages 19, 28.

⁴⁶ Global Trade Tracker (accessed June 2024)

https://www.reuters.com/business/autos-transportation/trumps-transition-team-aims-kill-biden-ev-taxcredit-2024-11-14/

Exclusive-Trump's transition team aims to kill Biden EV tax credit

By Jarrett Renshaw and Chris Kirkham

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By Jarrett Renshaw and Chris Kirkham

(Reuters) -President-elect Donald Trump's transition team is planning to kill the \$7,500 consumer tax credit for electric-vehicle purchases as part of broader tax-reform legislation, two sources with direct knowledge of the matter told Reuters.

The group has had several meetings since Trump's Nov. 5 election victory, including some at his Florida Mar-a-Lago club, where Tesla chief executive Elon Musk has also spent considerable time since the election.

Representatives of Tesla, GM, Ford, Stellantis and the Trump transition did not immediately respond to requests for comment.

The Alliance for Automotive Innovation, a trade group representing nearly all major automakers besides Tesla, also did not immediately respond. The alliance last month in an Oct. 15 letter urged Congress to retain the EV tax credits, calling them "critical to cementing the U.S. as a global leader in the future of automotive technology and manufacturing."

Trump repeatedly pledged to end Biden's "EV mandate" on the campaign trail, without spelling out specific targeted policies. The energy-focused transition team has determined that some of the cleanenergy policies in Biden's IRA will be tough to roll back given that the programs have already started allocating money, including to Republican-dominated states where the programs are popular, the sources said.

ENERGY MATTERS!

Liberty's mission is to **BETTER HUMAN LIVES.**

Liberty is a **TECHNOLOGY PIONEER** of the shale revolution and has driven enormous improvements in both human well-being and environmental quality.

Liberty management and board are **ALIGNED** with our owners and our communities.

Liberty partners with our customers to deliver **LOW-IMPACT**, **LOW-COST**, **RELIABLE ENERGY** (and we're proud of it!).

Liberty sees THREE GLOBAL ENERGY CHALLENGES:

- Energy poverty
- Reliable, affordable, clean energy
- Climate change

INTRODUCTION

IT IS SIMPLY NOT POSSIBLE TO DISCUSS THE ENVIRONMENTAL AND SOCIAL IMPACTS OF OUR INDUSTRY WITHOUT CONSIDERING THE ENVIRONMENTAL AND HUMAN IMPACTS OF THE ABSENCE OF OUR INDUSTRY.

As with all complex issues, Liberty strives to learn first, define a thoughtful plan, and then act. Our inaugural Environmental, Social, and Governance (ESG) report is designed to share our journey with you. We go far beyond the narrow focus on our company to look at the bigger picture of the world in which we live and the industry in which we operate. Would the world be better off without fossil fuels? Emphatically "no" is our answer. Because the issues around energy, poverty, and the environment are so important – and so often misunderstood – we will explore and explain them in depth.

Part 1 covers in greater depth the larger issues that form the Energy/ Environment/Poverty nexus. This begins with why worldwide clean energy access matters. Since the oil and gas industry began in the second half of the 19th century, global life expectancy has doubled, extreme poverty has plummeted, and human liberty has grown tremendously. The timing here is no coincidence. This progress in the human condition was enabled by the surge in plentiful, affordable energy from oil, gas, and coal. Unfortunately, many people still lack access to life-enhancing modern energy, which presents the most pressing global energy challenge. Our energy-rich lifestyles have both environmental downsides such as pollutants and climate change, and upsides like forest preservation, reduced need for cropland, and cleaner air.

Part 2 covers the actions Liberty is taking to maximize the benefits of our services and to lead the industry into a new era of technology and stewardship. At Liberty, we view ESG principles as foundational to our business strategy, expanding beyond our four walls to ensure that the work we do benefits our families, our communities, and the world. We passionately work to better the process of bringing hydrocarbons to the surface in a clean, safe, and efficient fashion. It is important to not lose sight of the rich history of progress enabled by the oil and gas industry, and this broader context motivates our team every day.

Liberty's ESG report offers information on critical issues that are important to our business today. Information is provided by Liberty's subject matter experts, approved by our leadership team, and reviewed by the Liberty board of directors. Data in the report covers our 2020 calendar year unless otherwise indicated. The report is prepared in accordance with Sustainability Accounting Standards Board (SASB) standards and uses several other ESG standards to inform our discussion. In developing our report, we have identified opportunities for expanded reporting in subsequent years as we continue to drive improvement.

A MESSAGE FROM CHRIS WRIGHT, CHAIRMAN AND CEO

LIBERTY'S MISSION IS TO BETTER HUMAN LIVES.

The Liberty family, from our field crews to our board of directors, forms a passionate, committed, and engaged team. We strive to enhance our company, families, communities, and the world. Liberty is committed to meeting the challenges of our time. By investing in our people and technology we are helping our customers efficiently produce cleaner oil and gas resources. It is simply not possible to discuss the environmental and social impacts of our industry without considering the environmental and human impacts of the absence of our industry.

Today there is discontent among the public in wealthy nations with oil and gas, and even a growing belief that our industry soon will be, and should be, gone. This report explains why the near-term disappearance of our industry is both highly unlikely and undesirable. Liberty takes great pride in our work, and we strive to explain why in this report.

The big-picture issues are tackled in depth in Part 1 of this report, which gives data-packed summary overviews on energy, energy poverty, climate change, and climate economics. At least a basic understanding of these issues is critical to engaging with today's three global energy challenges: 1) energy poverty, 2) affordable, reliable, clean energy, and 3) climate change.

This report explains why the longer, healthier, opportunity-rich lives in the modern world are simply not possible without oil and gas. Borrowing Thomas Hobbes' words, life for most everyone in history was "nasty, brutish, and short" when liberty was scarce and energy was supplied only by human toil and draught animals. Liberty's mission is to bring modern energy to the fully one-third of humanity that lacks that access today and, therefore, must live far more dangerous and constrained lives than we enjoy. Part 2 of this report covers Liberty's efforts to better human lives, strengthen our communities, and reduce negative environmental impacts from North American oil and natural gas production. Our efforts on the social front began with the inception of our company. We chose our name, Liberty, because we believe in human liberty: everyone should have the freedom and opportunity to pursue their dreams. This ethos pervades our diverse workforce and hiring policies that focus on where people are headed with their lives far more than where they came from. Liberty provides a home to many of the brave service men and women who have served our country. We also employ dozens of formerly incarcerated people who had a tough start in life, but are now building meaningful careers.

COVID-19 dealt a body blow to Liberty. Our top priority was the health and safety of our team and their families. We were highly effective in suppressing COVID-19 transmission at Liberty even as we worked 24/7 to supply reliable energy and raw materials critical to fighting the global pandemic. We were forced to make our firstever layoffs in company history. We also had to make significant compensation cuts and, in Liberty fashion, the compensation cuts



were made first and deepest at the executive level. Now as the country has entered a recovery phase, most compensation cuts for the Liberty team are restored and we are hiring again. April 2020 was the toughest professional time of my career. I am proud and humbled to be part of a team that faced adversity with courage, perseverance, and steadfast commitment to Liberty's mission.

Liberty provides over 100 K-12 scholarships to low-income kids through ACE (Alliance for Choice in Education), and we recently launched a Liberty Scholars program at Montana Tech to enable lower income students to get a college engineering education. We have numerous other efforts targeting schools and kid programs, poverty abatement programs, low-income housing (Habitat for Humanity), criminal justice reform and job opportunities for those who had a disadvantaged start in life. Our efforts are all targeted at bettering human lives and growing individual liberty and opportunity.

Liberty is committed to honest, sound, aligned governance that assures management and our board of directors are responsible stewards of our owners' capital. All the Liberty founders are still here fulfilling our dream to build a truly special company. We have always recognized that incentives drive human behavior and that principle guides our corporate governance. We align our financial incentives with our shareholders, and our social and operational practices with the communities in which we operate. Businesses are major players in setting the tone, culture, and character of our society. We behave in ways that our children and neighbors can be proud of for years to come.

This report is long, but necessarily so. It is critical to put Liberty's efforts and our whole industry in proper context. We start in Part 1 by showing how low-cost, reliable energy is an agent of human wellbeing. The essential role of energy access lifts people out of poverty and reduces the health and environmental stresses that accompany the use of traditional biomass fuels like wood, dung, and agricultural waste. Regrettably, traditional fuels still dominate for roughly one-third of the world's people. The World Health Organization (WHO) estimates that over 2 million premature deaths each year arise from indoor use of traditional biomass fuels, which generate copious particulate matter during combustion. This staggering loss of human potential can and must be eradicated. WHO estimates there are several million additional deaths from outdoor air pollution, predominantly from the same source: particulate matter, or $PM_{2.5'}$ which is one of the world's deadliest pollutants. Transitioning from traditional biomass fuels to modern fuels and using appropriate industrial pollution controls are the keys to reducing outdoor $PM_{2.5}$ concentrations. $PM_{2.5'}$ malnutrition, preventable disease, and lack of access to drinking water and basic education collectively account for over 10 million premature deaths per year. Bringing affordable, reliable energy to the world's poor is essential to eradicating these scourges. Even in wealthy nations, rising energy prices pose significant economic and health threats to lower income people.

We see three global energy challenges today: energy poverty; maintaining reliable, affordable, and clean energy; and climate change. There is no reason that we can't master all these challenges. But doing so will require honest assessment, rational evaluation of tradeoffs, continued technology advancement, and the will to get it right. Unfortunately, the first and most urgent issue, energy poverty, afflicts poor countries and lower income residents of the wealthier countries, hence it garners tragically little attention. This is wrong.

The second global energy challenge is maintaining reliable, affordable and clean energy. This issue is starting to garner more attention as power grids become more expensive and less reliable, amply illustrated by the recent serious blackouts in California, Texas, and the U.K.

The third global energy challenge, climate change, has become so politicized and emotionally charged that rational, fact-based decision-making is becoming scarce. Urgent desires to visibly take politically appealing action have often driven up energy prices, made power grids less reliable, and grown energy poverty without making meaningful progress on climate change. Climate change is a long-term challenge requiring broad-based actions with significant technology and system advancements required. Liberty is excited to play a growing role here.

Decisions at Liberty are driven by data, facts, customer preferences, and our commitment to do the right thing. Our efforts on these three big issues that make up the energy/environment/poverty nexus will be no different. Our efforts are both internal to Liberty's operations and in partnership with our customers. To put the global energy challenges in context, Figure 1.1 shows an economic analysis of the staggering lost economic output resulting from the major afflictions of the world since 1900. Although we have seen over a century of progress, air pollution, disease, malnutrition, etc., still dwarf climate change in urgency. Solving these challenges is intimately tied to raising the poorest third of the world population out of energy poverty. For context, Figure 1.1 overlays, on a like-for-like basis, projections of climate change economic impacts from Nobel Prize winning climate economist, William Nordhaus.

Liberty works in the shale revolution, made possible by innovations in hydraulic fracturing and horizontal drilling. The shale revolution is a major driver of progress for all three global energy challenges. Surging U.S. oil and gas production has reset global oil and gas prices lower, lifting the economic fortunes of everyone, most of all the world's poor. 2020 marked the second straight year that the U.S. produced more total energy than consumed. The last time the U.S. produced more energy than consumed was in the 1950s.

Surging U.S. exports of liquid petroleum gas (LPG) bring this critical fuel to improve the lives of families in dire energy poverty still relying on dirty, life-shortening traditional biomass fuels. On the climate front, surging U.S. natural gas production and plunging natural gas prices brought by the shale revolution have been the largest factors driving down U.S. per capita greenhouse gas (GHG) emissions to their lowest levels in my lifetime! Lower global natural gas prices and surging exports of liquified natural gas (LNG) are globalizing the incremental displacement of coal with cleaner electricity sources like natural gas, solar, and wind.

The broader social, community, governance, environmental, and human flourishing aspects of energy are topics near and dear to our hearts and were significant drivers of why we founded Liberty ten years ago.



TO BETTERING HUMAN LIVES,

CHRIS WRIGHT CHAIRMAN AND CEO LIBERTY OILFIELD SERVICES





ENERGY POVERTY

The most urgent challenge with energy today is that fully one-third of humanity still lacks access to basic modern energy, including over 80% of Africans and half of Indians. Over two billion people still cook their daily meals and heat their homes with traditional fuels, typically wood, dung, agricultural waste, or charcoal. Simply for lack of access to a basic stove and an LPG canister, two to three million people die every year from the resulting indoor air pollution. This staggering loss of human potential can and must be eradicated.

In sub-Saharan Africa, an estimated five out of six people (approximately 900 million people) in total lack access to clean cooking resources.

95% Almost 95% of that subset of the population rely on solid biomass for cooking in the form of fuel wood, charcoal, or dung. The remaining 5% rely on kerosene or coal.

500,000 Household air pollution stemming from inefficient and polluting cooking fuels was linked to nearly 500,000 premature deaths in sub-Saharan Africa in 2018.

2.5 MILLION Globally, WHO estimates deaths

from indoor air pollution at 2.5 million – a figure comparable to the combined death toll of malaria, tuberculosis, and HIV/AIDS in 2018. WHO estimates there are several million additional deaths from outdoor air pollution from the same source: particulate matter, or $PM_{2.5}$, which is one of the world's deadliest emissions. Transitioning from traditional solid fuels to liquid fuels (or natural gas or electricity) is the key to reducing outdoor $PM_{2.5}$ concentrations just as it is for reducing indoor $PM_{2.5}$ levels. Figure 1.5 shows a global map of outdoor $PM_{2.5}$ pollution. This problem is worst in Africa, south Asia, southeast Asia, and China, the same places where energy poverty drives the indoor air pollution crisis. Wealthy countries have used technology to have both highly energized societies and clean air.

Together PM_{2.5}, malnutrition, preventable disease, and lack of access to drinking water and basic education collectively are responsible for over 10 million premature deaths per year. Bringing affordable, reliable energy to the world's poor will be essential to eradicating these scourges.

The good news is that tremendous progress is being made. Energy access is increasing globally as hundreds of millions of people have made the transition from traditional cooking and heating fuels to modern fuels – most commonly to liquid petroleum gas (LPG) – over the last 15 years. The U.S. shale revolution has been simply tremendous in lowering the energy cost bar for low-income families to transition from burning solid biofuels to clean-burning LPG stoves fueled by refillable LPG canisters. The U.S. is now by far the world's largest exporter of LPG (dominantly propane) as well as the source of virtually all the growth in world LPG trade over the last decade. This has brought down LPG prices and significantly grown available supplies. Continuing this trend is essential to bringing everyone clean-burning cooking fuel in the next two decades.



GLOBAL SATELLITE-DERIVED MAP OF PM₂₅ AVERAGED OVER 2001-2006

Figure 1.5 Source: Global satellite-derived map of PM_{2.5} averaged over 2001-2006. Credit: Dalhousie University, Aaron van Donkelaar https://www.nasa.gov/topics/earth/features/health-sapping.html

THE DEVELOPED WORLD TAKES ELECTRICITY ACCESS FOR GRANTED. FOR HUNDREDS OF MILLIONS OF PEOPLE IT IS A LUXURY OR ABSENT.

Nearly one billion people have no access to electricity. Another billion have only intermittent – four hours per day – access to modest amounts of electricity. This is enough to power a light bulb or charge a cell phone, but not enough to power a water pump or other machinery necessary to raise their productivity and energize significant increases in productivity and income. One billion people received their first access to electricity in the last 20 years – the large majority from hydrocarbons or hydropower.

Below are side-by-side maps of per capita electricity consumption by country and child malnutrition by country. There is a reason that both maps look quite similar: energy is the prime mover that enables everything else. If you have electricity, your life and that of your family improves beyond recognition.

Continuing the last several decades of unprecedented progress in the human condition requires massive increases in affordable, reliable energy for the world's poorest countries and the poorest citizens in the world's middle income and wealthy nations. While progress continues to be made, there are now growing headwinds due to the heavyhanded actions of the world's wealthy nations in the name of climate change. The World Bank, European Development Bank, and many large commercial banks are now restricting or simply not offering funding for hydrocarbon-fueled power plants, which are the main source of electricity generation globally, and even more so in developing nations.



ELECTRICITY CONSUMPTION kWh PER CAPITA

CHANGING WOMEN'S LIVES

- WOMEN IN ENERGY POVERTY SPEND MORE THAN AN HOUR PER DAY GATHERING FUEL WOOD FOR COOKING.
- WOMEN IN ENERGY POVERTY SPEND AN HOUR PER DAY SOURCING WATER FOR DRINKING AND COOKING.

Source: UN report - https://sustainabledevelopment.un.org/content/documents/17489PB12.pdf

PERCENTAGE OF UNDERWEIGHT CHILDREN AT AGE 5

Figure 1.9 Source: World Bank - World Development Indicators

ENERGY ACCESS = BETTER HEALTH

Nations with low access to electricity have dramatically higher child malnutrition rates, as can be seen in the similarity in these two maps. Improved energy access is a necessary condition to improved health outcomes.



The United Nations Human Development Index (HDI) is a good rough proxy for the human condition as it combines life expectancy at birth, years of education received, and per capita gross national product. In 1990 62% of the global population (5.3 billion in 1990) scored "Low" on the HDI. The last three decades have shown tremendous progress as now only 12% of today's larger population (7.6 billion) score "Low" on the HDI. However, 12% is still over 900 million people. As with child mortality, and virtually any index of human well-being, increasing the HDI requires increased energy consumption. This point is illustrated in the two graphs below. The first graph shows the relationship between energy consumption per capita and HDI across countries, and the second graph shows the changes over the last thirty years for both China and India where rising energy consumption accompanies rising HDI.



ACCESS TO AFFORDABLE ENERGY IS ESSENTIAL FOR HDI IMPROVEMENT

Figure 1.10 Size of Circles Depicts Relative Size of Population | Source: World Bank and United Nations Development Programme 2018

BETWEEN 1990 AND 2018, INDIA AND CHINA HAVE SEEN A 51% AND 52% IMPROVEMENT, RESPECTIVELY, IN HDI

INDIA

- MOVED FROM LOW TO MEDIUM HDI
- MEAN EDUCATION INCREASED 2.2X
- LIFE EXPECTANCY INCREASED 11.5 YEARS
- ENERGY PER CAPITA INCREASED 82%

CHINA

- MOVED FROM LOW TO HIGH HDI
- MEAN EDUCATION INCREASED 1.6X
- LIFE EXPECTANCY INCREASED 7.4 YEARS
- ENERGY PER CAPITA INCREASED 192%



Figure 1.11 Source: World Bank and United Nations Development Programme 2018



SAF Group created transcript of comments by Jared Cohen (Goldman Sachs, President of Global Affairs) with Andrew Ross Sorkin, Becky Quick and Joe Kernen on CNBC Squawk Box on Nov 12, 2024. https://www.cnbc.com/video/2024/11/12/goldman-sachs-jared-cohen-on-powering-the-ai-revolution-the-u-s-wont-be-able-to-lead-on-its-own.html

Items in "italics" are SAF Group created transcript.

At 1:10 min mark, Ross Sorkin: "What is a differentiated data center mean?" Cohen "So, if you look at datacenters for cloud workloads versus datacenters for A.I. workloads. Datacenters for A.I. workloads, um, require, they're ultra-high density, they require concentrated power source, so intermittent power like wind and solar, they don't fit the bill, so you need baseload power; so, think nuclear, coal, natural gas. We have plenty of that in the U.S., the problem is, we can't transport it from where it is through multiple jurisdictions cause of "not in my backyard". And so, the U.S. is going to need some kind of an overflow option if it wants to continue leading in this space, and there is not a single geography that I would say represents a panacea to this problem."

Ross Sorkin: So, when you talk about, sort of, diplomacy around this, is the idea that you put these datacenters in Mexico and in Canada, and hope that you could somehow benefit from them that way? Or where would you be placing these things?" Cohen: "So, the U.S. has three options, um, from where this overflow could happen, and none of them are ideal. Um, one option is you keep it in the democratic world which would obviously be this sort of preferable option, and so think Canada, Australia, the Nordic countries, which is good for liquid cooling, France."

Ross Sorkin: "You could do it in Australia and still get the benefit here? Given the, how much you need to communicate back and forth?" Cohen "Well so one of the things that, one of the things that has happened with technological innovation, is we have a separation now between training and inference, so that has unlocked a lot of new geographies. Um, uh, the problem with keeping them in the democratic world is all these countries that I just mentioned, they have the same issue that we have in the U.S., right, ESG concerns, "not in my backyard" concerns. And so, what are the other two options; one option is you kind of go with the default choice which is, you know, persist where it already exists in the global South. So, think Malaysia, Indonesia, where you have cheap energy. The problem is, a lot of that capacity goes to China, so you have a national security concern. And then the third option, you know, probably has the best conditions, which is the Middle East, right? Cheap energy, they know how to build massive amounts of infrastructure at scale, uh, they can build-they have plenty of land, they can do it near the sea for liquid cooling. They have the sovereign ambition to do it. The challenge is once they have all that capacity, these are geopolitical swing states. So how do you keep them on sides?"

Ross Sorkin: "How do you keep them on sides? So, what would you do? What are you telling clients to do?" Cohen "Well first and foremost, this is really a U.S. government, it is a U.S. government's choice, first and foremost because of export controls, right? So the U.S. gets to decide, um, who can get uh, the chips and who can't get the chips, right, and so, this is an interesting, uh, policy question that is going to play out in the new administration, um, so when you think about these three different options, you have to view it through the lens of the new administration that was just elected."

Ross Sorkin: "But it's through export controls that matter, in this regard? Cohen: "So um, it turns out that there is a limit, so if you think about the geopolitical swing states, right, these are countries that have diff- these are countries that benefit from sustained tensions between the U.S. and China, because they have a differentiated amount of the supply the supply chain, they're attractive for nearshoring, offshoring, and friend-shoring. They have an abundant amount of capital, and they're led by individuals."

Ross Sorkin: "I like that you call them swing states." Cohen: "Well, they swing on an issue-by-issue basis, right, so if you think about India, India stayed neutral on Ukraine; is aligned with the U.S. on China, if you look at the countries in the Middle East; these countries pick and choose what issues they want to align with the U.S. on. And so, um it turns out there is a limit though to how hard they can swing. These countries can't just do whatever they want uh, when it comes to A.I. because at the end of the day, they need the U.S. government to be allow, to allow them to actually have access to the technology."

At 6:45 min mark, Kernen "Jared, we have once again, the luxury of taking ESG concerns seriously here because we can pay more if we need to, if we want the inflation. But if Capital flows downhill, it is going to places that aren't quite as concerned with that crap. They're going to get the least expensive energy sources. If it goes there, is it a problem that, security wise, that it is not here again, and we are back to saying "Oh my god", we are vulnerable because its- we need onshore, all this stuff. And will we be able to use the cheapest energy, hydrocarbons. Will we be able to do hydrocarbons here where- you know that is what they are going to do if its in India, if it's something like that, they may do coal for a lot of this. Right?" Cohen: "There is two separate questions here, one is, is there a risk in having too much of this capacity, um, inside of countries who, you know, may decide to share that capacity with an adversary."

Kernen: "Or not let us have it at all." Cohen: "Or not let us have it, right. This is another concern, and this is one of the challenges with having it in, you know, a country that is not aligned with the U.S., a geopolitical swing state is never going to fully pivot away from the U.S., so I would argue that that is not a bad choice. But there is a contradiction, um, with some of this technology and some of the ESG bulls, and this is true both for, um, uh, A.I. workloads and also by way for um, electric vehicles. So, if you think about electric vehicles, they require critical minerals and rare earths to be processed and refined, you know, ninety plus percent of that happens in China to go into the batteries, right? So, we outsource, you know, the dirtier part of it gets outsourced to China, so that we can have cleaner cars. It is the same thing, you know with A.I., these large-language models can, can be transformative in terms of capturing energy efficiency. The problem is in the short-term; in order to run these large language models, you need a lot of baseload power. Um, so there is a sort of short-term contradiction that we have to grapple with. And there is not a good answer to this, right, because you can't use intermittent power, because these A.I. workloads are ultra-high density."

Kernen: "I would say, in a Trump world, I mean there could be a lot more hydrocarbons, doing this domestically and it sort of obviates the problem that you just talked about. It could be domestic; we'd still have a cheap." Ross Sorkin: "And you're saying there is still not enough?" Cohen: "There is still not enough, so, my feeling is the U.S. has plenty of potential to do this, but the need to meet this capacity is so urgent, right? We are going to have to probably bring another thirty-five plus gigawatts of power online, relative to the seventeen gigawatts of power that are already online, feeding these datacenters, in just the next couple of years. Um, that's not enough, that's not enough time, right? So, y'know, the U.S is going to continue to lead in this space, but it is not going to be able to lead on its own."

Prepared by SAF Group https://safgroup.ca/insights/energy-tidbits/



https://english.news.cn/20241112/67eddfc8cb184dfeb529c26b92a1dc4f/c.html

China to accelerate trials of intelligent connected vehicle on roads

Source: Xinhua

Editor: huaxia

2024-11-12 21:00:31

BEIJING, Nov. 12 (Xinhua) -- China will speed up piloting market access for intelligent connected vehicles and letting them run on the roads, authorities have said.

The country will promote the demonstration and application of autonomous driving and driverless vehicles in key areas including the Yangtze River Delta region and the Guangdong-Hong Kong-Macao Greater Bay Area, according to an action plan jointly released by the Ministry of Transport and the National Development and Reform Commission.

The plan, which outlines measures to improve transport efficiency and lower logistics costs, says the country will accelerate the construction of smart highways, waterways, ports and hubs, and promote the digital transformation and upgrading of transport infrastructure.

By 2027, the ratio of social logistics costs to GDP is expected to be reduced to around 13.5 percent, according to the plan.

By then, the national railway freight transport turnover will increase by about 10 percent compared with that in 2023, and the annual growth in volume of rail-water intermodal transport through the country's ports will stand at 15 percent on average, says the plan.

China's logistics efficiency continued to improve last year. The ratio of social logistics costs to GDP was 14.4 percent in 2023, down 0.3 percentage points from the previous year, according to the China Federation of Logistics and Purchasing.

In 2023, the cumulative volume of rail-water intermodal transport through the country's ports exceeded 11.7 million twenty-foot equivalent units of container cargo, up 11.7 percent year on year, according to data released at an international conference on port intermodal transportation held in Tianjin last month.

https://www.reuters.com/business/energy/germany-gets-informal-eus-go-ahead-support-gas-fired-power-sources-say-2024-06-07/?taid=66632fafb543f00001119448&utm_campaign=trueAnthem:+Trending+Content&utm_medium=trueAnthem&utm_source=twitter

Germany gets informal EU go-ahead to support gas-fired power, sources say By Markus Wacket

June 7, 20245:00 AM MDTUpdated 7 hours ago

BERLIN, June 7 (Reuters) - Germany won the European Union's informal approval to pay billions of euros to gas powered plants to be able to stabilise the grid when unsteady renewable energy supplies fall short, people familiar with the negotiations told Reuters on Friday.

An agreement in principle was reached with the EU's competition authorities for state support to utilities for the 10 gigawatt (GW) scheme but some details for an official approval are to be hammered out over the next few weeks, government and company sources said.

They added that the German government secured an agreement to a set of terms that will change over time as the long-term scheme, which is known as the National Power Station Strategy, evolves.

Berlin expects to receive an EU document outlining the informal agreement on Friday, the sources said.

Germany is transitioning to renewables, having switched off nuclear power and seeking to phase out coal-powered electricity, but wants to give state support for natural-gas powered plants that underpin the grid during demand peaks and lows in unsteady supply from wind and solar power.

The power stations need to be able to also run on green hydrogen but the transition to the new fuel will likely be between 2035 and 2040, the government has said.

The German economy ministry did not confirm an agreement, and said that very good progress had been made in EU talks.

The EU Commission said it was in close and constructive discussions with German authorities but would not further comment on details or timing.

00:09Can Mexico's new president shake up the country's oil legacy?

The video player is currently playing an ad.

The state plans to tender contracts for utilities, such as RWE (<u>RWEG.DE</u>), opens new tab, EnBW (<u>EBKG.DE</u>), opens new tab and Uniper (<u>UN0k.DE</u>), opens new tab, to build and run the plants. Contracts will be based on financial rewards for standing by in what is known as a capacity market.

The reverse auctions will be designed to award contracts to companies agreeing to the lowest subsidies.

German Economy Minister Robert Habeck said on Thursday he was nearing an agreement after drawn-out negotiations with the EU.

Sticking points included uncertainty over when the plants will switch from natural gas to hydrogen, he added. The nation's Power Station Strategy was unveiled in <u>February</u>.

The Reuters Power Up newsletter provides everything you need to know about the global energy industry. Sign up <u>here.</u> Reporting by Markus Wacket in Berlin; additional reporting by Foo Yun Chee in Brussels; writing by Ludwig Burger; editing by Andrey Sychev and David Evans

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FCCC/PA/CMA/2023/L.17

	26. Recognizes the finding in the Synthesis Report of the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, ² based on global modelled pathways and assumptions, that global greenhouse gas emissions are projected to peak between 2020 and at the latest before 2025 in global modelled pathways that limit warming to $1.5 ^{\circ}$ C with no or limited overshoot and in those that limit warming to $2 ^{\circ}$ C and assume immediate action, and <i>notes</i> that this does not imply peaking in all countries within this time frame, and that time frames for peaking may be shaped by sustainable development, poverty eradication needs and equity and be in line with different national circumstances, and <i>recognizes</i> that technology development and transfer on voluntary and mutually agreed terms, as well as capacity-building and financing, can support countries in this regard;
	27. Also recognizes that limiting global warming to 1.5 °C with no or limited overshoot requires deep, rapid and sustained reductions in global greenhouse gas emissions of 43 per cent by 2030 and 60 per cent by 2035 relative to the 2019 level and reaching net zero carbon dioxide emissions by 2050;
7	28. Further recognizes the need for deep, rapid and sustained reductions in greenhouse gas emissions in line with 1.5 °C pathways and <i>calls on</i> Parties to contribute to the following global efforts, in a nationally determined manner, taking into account the Paris Agreement and their different national circumstances, pathways and approaches:
	 (a) Tripling renewable energy capacity globally and doubling the global average annual rate of energy efficiency improvements by 2030;
-	(b) Accelerating efforts towards the phase-down of unabated coal power;
	(c) Accelerating efforts globally towards net zero emission energy systems, utilizing zero- and low-carbon fuels well before or by around mid-century;
7	(d) Transitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, so as to achieve net zero by 2050 in keeping with the science;
	(e) Accelerating zero- and low-emission technologies, including, inter alia, renewables, nuclear, abatement and removal technologies such as carbon capture and utilization and storage, particularly in hard-to-abate sectors, and low-carbon hydrogen production;
-7	(f) Accelerating and substantially reducing non-carbon-dioxide emissions globally, including in particular memane emissions by 2030;
	(g) Accelerating the reduction of emissions from road transport on a range of pathways, including unrough development of infrastructure and rapid deployment of zero- and low-emission vehicles;
*	(h) Phasing out inefficient fossil fuel subsidies that do not address energy poverty or just transitions, as soon as possible;
Ĺ	29. <i>Recognizes</i> that transitional fuels can play a role in facilitating the energy transition while ensuring energy security;
	30. <i>Welcomes</i> that over the past decade mitigation technologies have become increasingly available, and that the unit costs of several low-emission technologies have fallen continuously, notably wind power and solar power and storage, thanks to technological advancements, economies of scale, increased efficiency and streamlined manufacturing processes, while recognizing the need to increase the affordability and accessibility of such technologies;

² Intergovernmental Panel on Climate Change. 2023. Climate Change 2023: Synthesis Report. Contribution of Working Groups J, JI and III to the Stxth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva: Intergovernmental Panel on Climate Change. Available at <u>https://www.ipcc.ch/report/ar6/syr/</u>.

https://www.forbes.com/sites/saradorn/2024/11/16/trumps-cabinet-and-key-roles-chris-wright-forenergy-secretary-karoline-leavitt-for-press-secretary-among-latest-picks/

Trump's Cabinet And Key Roles: Chris Wright For Energy Secretary, Karoline Leavitt For Press Secretary Among Latest Picks

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Nov 16, 2024,04:54pm EST

President-elect Donald Trump selected oil executive Chris Wright to lead the Energy Department on Saturday, shortly after he named attorney William Scharf as the White House Staff Secretary—the latest choices for top-level administrative posts, as Trump has made a flurry of appointments since being reelected last week.



Liberty Oilfield Services CEO Chris Wright is Trump's energy sec pick

Denver Post via Getty Images

Key Facts

Trump has chosen people for a handful of Senate-confirmed Cabinet-level jobs, and he's picked a White House chief of staff and a national security adviser, two key roles that don't require confirmation.

Trump is reportedly keen on candidates who will remove career bureaucrats Trump considers to be part of what he refers to as the "deep state," according to <u>The New York Times</u>.

Energy Secretary: Chris Wright

Chris Wright, chief executive of the oilfield services group Liberty Energy, was named Trump's nominee for secretary of energy. Wright has argued against climate change's role in causing extreme weather events, <u>saying</u> in a video posted to LinkedIn last year "there is no climate crisis, and we're not in the midst of an energy transition either." He later <u>disputed</u> he was "[fighting]

White House Staff Secretary: William Scharf

Trump tapped **William Scharf** to be an assistant to the president and the White House Staff Secretary. Scharf, who ran in the Republican primary in the race for Missouri's attorney general, was part of Trump's legal team that successfully argued he has immunity from official acts he took during his first term. He is a former assistant U.S. attorney who worked under former Missouri Gov. Eric Greitens' administration between 2018 and Greitens' resignation in early 2019.

White House Press Secretary: Karoline Leavitt

Karoline Leavitt, the Trump campaign's national press secretary, will serve as White House Press Secretary once the president-elect assumes his office. Leavitt, 27, was an assistant press secretary during Trump's first presidency. She also won the Republican primary in New Hampshire's 1st Congressional District in 2022, becoming the second Gen Z candidate to <u>win a House primary</u>.

White House Communications Director: Steven Cheung

Trump picked his campaign spokesman, **Steven Cheung**, to serve as his communications director at the White House. Cheung was the director of communications for the president-elect's 2024 presidential campaign and served as director of strategic response during Trump's last term, after working in communications for the Ultimate Fighting Championship previously.

Health And Human Services Secretary: Robert F. Kennedy Jr.

Trump nominated Robert F. Kennedy Jr. to lead the Health and Human Services Department, making good on his promise to give Kennedy broad leeway over public health decisions. Kennedy, who ran for the Democratic nomination then as an independent candidate before dropping out and endorsing Trump, espouses debunked views on public health-including skepticism about the efficacy of childhood vaccines and the Covid-19 vaccine. He has also advocated for removing fluoride from public water, an idea Trump said he as open to. As HHS secretary, Kennedy would oversee 13 public health-related agencies, and has expressed plans to upend many of them, telling an audience at a conference in November he would halt infectious disease studies at the National Institutes of Health if given a role in the Trump administration. "I'm going to say to NIH scientists, God bless you all... thank you for your public service," NBC reported. The appointment is another surprise pick by Trump, whose transition team co-chair Howard Lutnick told CNN late last month Kennedy wouldn't be in charge of HHS. The selection of Kennedy drew criticism from many Democrats, and some Republicans expressed wariness about the pick, with Maine Republican Sen. Susan Collins saying Kennedy "would be a surprising choice" and House Rep. Rep. John Duarte, R-Calif., expressing concerns that he could "move against one of the most life-saving technologies in the history of the world," referring to vaccines. Trump's former vice president Mike Pence spoke against Kennedy as the pick to lead HHS in a statement Friday and urged Senate Republicans to reject the nomination, citing Kennedy's support of abortion rights and saying, "If confirmed, RFK, Jr. would be the most pro-abortion Republican appointed secretary of HHS in modern history." Pence became one of the biggest-name Republicans to speak against the selection Friday when he called on the Senate to reject the nomination, which he called "an abrupt departure from the pro-life record of our administration."

Interior Secretary: Doug Burgum (and Head Of New National Energy Council)

Trump plans to nominate North Dakota Gov. **Doug Burgum** as secretary of the interior, he said at an <u>event</u> Thursday. If confirmed by the Senate, he'll be responsible for managing vast swaths of federally owned land, administering national parks and handling oil and gas drilling on federal property—which

Trump has <u>vowed to ramp up</u>. Trump also tapped Burgum as chairman of the new National Energy Council, which will cut down on regulations and "oversee the path to U.S. ENERGY DOMINANCE," according to <u>Trump</u>. The position will also provide Burgum a seat on the National Security Council. First elected North Dakota governor in 2016, Burgum briefly ran against Trump in the 2024 GOP primaries, but dropped out before the Iowa caucuses and endorsed Trump. A tech executive and investor by trade, Burgum previously ran Great Plains Software, remaining at the company after it was acquired by Microsoft. Last year, Forbes estimated <u>his net worth</u> at at least \$100 million.

Veterans Affairs Secretary: Doug Collins

Trump picked former Rep. **Doug Collins**, R-Ga., as his secretary for veterans affairs. Collins served as a congressman from 2013 to 2021, and was known as a vocal backer of Trump in the chamber during his first administration. He is also a chaplain in the United States Air Force Reserve Command. Collins <u>vowed</u> Thursday to "streamline and cut regulations in the VA, root out corruption, and ensure every veteran receives the benefits they've earned." The former congressman was deployed to Iraq in 2008 as a member of the Air Force's 94th Airlift Wing.

Solicitor General: Dean John Sauer

Trump tapped **Dean John Sauer** for solicitor general Thursday. Sauer has been credited with helping win Trump's presidential immunity case, which resulted in the Supreme Court ruling that presidents have <u>some immunity</u> for official acts they take in office. Sauer also served as solicitor general of Missouri for six years and clerked for late Supreme Court Justice Antonin Scalia.

U.s. Attorney For The Southern District Of New York: Jay Clayton

Trump nominated former Securities and Exchange Commission Chairman **Jay Clayton** as the U.S. Attorney for the Southern District of New York, widely seen as one of the most prestigious prosecuting jobs due to the high-profile cases filed in the district, which includes New York City. He will presumably take over for Damien Williams, who has led the office for three years and brought charges against <u>Sean</u> <u>"Diddy" Combs</u>, former <u>Sen. Bob Menendez</u>, D-N.J., and convicted sex offender <u>Ghislaine Maxwell</u>.

Deputy Attorney General: Todd Blanche

Todd Blanche, Trump's <u>hush money trial</u> lawyer, was tapped as the president-elect's deputy attorney general. Blanche was lauded as "an excellent attorney who will be a crucial leader in the Justice Department," which Trump has often criticized throughout his criminal and civil cases. Blanche called the timing and location of Trump's hush money trial in New York unfair after the president-elect was convicted on <u>34 felony charges</u> of falsifying business records.

Principal Associate Deputy Attorney General: Emil Bove

Trump picked attorney **Emil Bove** as his administration's principal associate deputy attorney general. Bove represented Trump alongside Blanche throughout the hush money trial and is a former federal prosecutor, having served as assistant United States attorney in the Southern District of New York for more than nine years. He was co-chief of the office's national security unit during his final two years.

Presidential Personnel Office Director: Sergio Gor

President and co-founder of Donald Trump Jr.'s Winning Team Publishing company, **Sergio Gor**, has been tapped to lead the Presidential Personnel Office, <u>multiple outlets</u> reported Thursday. Trump has not officially announced the appointment.

Attorney General: Matt Gaetz

Trump said Wednesday he tapped Rep. **Matt Gaetz**, R-Fla., to serve as attorney general, a surprise appointment as Gaetz was not among the names commonly floated in media reports for the role. It's one of the most high-profile and highly anticipated appointments, as Trump has fiercely criticized the agency for prosecuting him and is expected to drastically change its makeup. Gaetz is a controversial figure in Congress and a staunch Trump supporter. He was investigated by the Department of Justice over allegations of sexual misconduct with teenage girls, but the agency <u>declined to prosecute</u> him (Gaetz denied the accusation). The House Ethics Committee is also <u>probing</u> whether Gaetz engaged in sexual misconduct or illicit drug use, accepted improper gifts or gave special privileges to friends, allegations he has repeatedly denied. Gaetz led the effort to oust former House Speaker Kevin McCarthy, R-Calif., last year. Gaetz will be subject to the Senate confirmation process. His father <u>Don Gaetz</u>, a former Florida state lawmaker who cofounded a hospice company, is worth about \$33 million, largely due to real estate holdings.

Director Of National Intelligence: Tulsi Gabbard

Trump announced Wednesday **Tulsi Gabbard** will serve as his Director of National Intelligence, a role that puts her at the head of the U.S. intelligence community. Gabbard is a former Democratic representative from Hawaii and a 2020 Democratic presidential candidate, perhaps best-known for clashing with Kamala Harris on the debate stage in 2019. She left the party in 2022 and became an independent, before endorsing Trump in August and announcing she had joined the Republican Party. A <u>critic</u> of U.S. military interventions, Gabbard has drawn intense scrutiny for her foreign policy views, including for meeting with Syrian President <u>Bashar al-Assad in 2017</u>.

Secretary Of State: Marco Rubio

Trump announced Wednesday he nominated Sen. **Marco Rubio**, R-Fla., as secretary of state, confirming multiple reports earlier in the week that Trump was expected to tap the Florida senator for the top foreign policy job. Rubio and Trump feuded when they both ran for president in 2016—Rubio criticized Trump's appearance and called him a "con man," and Trump gave him the nickname "Little Marco." The two have since smoothed over their relationship and Rubio frequently campaigned for Trump and was said to be in the running to be his vice presidential pick. Some of Rubio's foreign policy stances break with Trump, including his co-sponsorship of legislation last year that would prohibit a president from exiting NATO without congressional approval. Rubio would be the first Latino to hold the position, which is subject to Senate confirmation. Forbes estimated <u>Rubio's net worth</u> at over \$1 million on Wednesday—significantly less than some other members of Trump's inner circle, but a jump since 2015, when he was worth just \$100,000.

Deputy Chief Of Staff: Dan Scavino

Trump announced Wednesday former White House Deputy Chief of Staff **Dan Scavino** will return to his role, and also serve as an assistant to the president. Scavino, who worked as a senior adviser for Trump's most recent campaign and is a longtime Trump <u>communications staffer</u>, was held in contempt of Congress for refusing to testify in the House Jan. 6 committee investigation, but the Justice Department declined to prosecute him.

Deputy Chief Of Staff For Legislative, Political And Public Affairs: James Blair

Trump appointed his campaign political director **James Blair** to the position Wednesday. Blair spearheaded Trump's grassroots voter outreach efforts and made frequent media appearances during his most recent campaign.

Deputy Chief Of Staff For Communications And Personnel: Taylor Budowich

Trump announced **Taylor Budowich**, who ran the Trump-aligned MAGA Inc. super PAC before rejoining Trump's campaign in August, for the role on Wednesday. Budowich, a spokesperson for Trump's 2020 campaign, was called to testify in Trump's federal classified documents case and was also subpoenaed by the House Jan. 6 committee.

Homeland Security Adviser And Deputy Chief Of Staff For Policy: Stephen Miller

Trump confirmed on Wednesday previous reports that he was expected to announce **Stephen Miller** as White House Deputy Chief of Staff for Policy, plus the additional role of homeland security adviser. Miller was a senior adviser to Trump during his first administration and one of the architects of some of his most controversial immigration policies, including his family separation program.

Department Of Government Efficiency: Elon Musk And Vivek Ramaswamy

Trump announced **Elon Musk**, the world's wealthiest person, will run a new Department of Government Efficiency (or "DOGE") alongside investor and former Republican primary candidate **Vivek Ramaswamy**. Trump said in a statement the department—which has not yet been created—will offer "advice and guidance from outside of Government" and focus on "making changes to the Federal Bureaucracy with an eye on efficiency," including through spending and regulatory cuts. Musk, a <u>vocal Trump backer</u> who donated over \$100 million to a pro-Trump super PAC, has pitched the department in the past, seemingly naming it after the meme cryptocurrency dogecoin.

Secretary Of Defense: Pete Hegseth

Trump selected **Pete Hegseth** as his secretary of defense Tuesday, praising his status as a combat veteran and role as a co-host on Fox & Friends Weekend. Hegseth was deployed in Cuba, Afghanistan and Iraq while serving with the Army National Guard. The veteran is the former CEO of Concerned Veterans for America, a conservative organization that has <u>communicated with Trump</u> on the matter of veterans affairs and received backing from billionaire <u>Charles G. Koch</u>—one of the wealthiest people in the world. Hegseth has been subject to renewed controversy regarding some of his tattoos following his nomination, as the Fox host has a Jerusalem cross tattooed on the right side of his chest. The cross' origins date back to the Christian crusades and have been associated with white nationalism and anti-Islam sentiment, according to <u>NPR</u>. Hegseth has denied personal links to white nationalism, calling the

cross on his chest "just a Christian symbol" in an <u>interview</u> with former U.S. Navy SEAL Shawn Ryan. A separate tattoo on Hegseth's bicep also associated with white nationalist groups resulted in a fellow National Guard member flagging him as a potential "insider threat," according to the <u>Associated Press</u>. Hegseth's appointment was mired in further controversy after he it was recently revealed he was the subject of a <u>sexual assault investigation</u> conducted by California's Monterey Police Department. The probe concerned an alleged 2017 sexual assault involving Hegseth, who was not charged with wrongdoing, according to a <u>department filing</u>, which noted the name and age of the alleged victim is confidential. "Mr. Hegseth has vigorously denied any and all accusations," Cheung said in a statement to <u>Bloomberg</u> following reports of the sexual assault investigation and controversial tattoos. "We look forward to his confirmation as United States Secretary of Defense."

Cia Director: John Ratcliffe

Former Director of National Intelligence **John Ratcliffe** will serve as the CIA's director. A former Texas congressman, Ratcliffe served as the director of national intelligence from 2020 to 2021 and acted as Trump's primary intelligence adviser during his last presidency. During his time as director of national intelligence, Ratcliffe declassified unverified Russian intelligence information that claimed Hillary Clinton approved a plan to link Trump to Russia and the Democratic National Committee cyberattacks in 2016. Democrats criticized Ratcliffe's decision to publicly release the information, alleging he was politicizing unverified information to aid Trump.

White House Counsel: William Joseph Mcginley

Trump picked former White House cabinet secretary and top GOP lawyer **William McGinley** as his White House Counsel. McGinley was brought into Trump's 2016 presidential campaign and tasked with helping it secure delegates for the Republican National Convention. He worked as Trump's White House cabinet secretary from 2017 to 2019 and was in charge of advising other cabinet members on policy coordination, optics and ethics, according to <u>Politico</u>.

Special Envoy To The Middle East: Steven C. Witkoff

Steven Witkoff, a GOP donor and real estate investor, will be Trump's special envoy to the Middle East. Witkoff is chairman of the University of Miami Business School Real Estate Advisory Board and the CEO of Witkoff, a real estate firm he founded in 1997. He is also a longtime friend of Trump's and one of the president-elect's <u>golf partners</u>. Witkoff was with Trump during the apparent second assassination attempt on his life, telling <u>NBC</u> that Secret Service agents dived on Trump and got him off his Florida golf course in under 20 seconds.

United States Ambassador To Israel: Mike Huckabee

Trump announced Tuesday he appointed former Arkansas Gov. **Mike Huckabee** to serve as his envoy to Israel on Tuesday, touting his military service as he served in the Army Special Forces for 27 years. Huckabee is a staunch supporter of Israel and has criticized the Biden administration's calls for a cease-fire with Hamas. Huckabee has advocated for Israel to <u>annex</u> parts of the West Bank, which Israel occupied in 1967, and has <u>backed Israeli settlers</u> in the territory. A former Southern Baptist pastor, Huckabee regularly leads evangelicals on visits to Israel.

National Security Adviser: Mike Waltz

Trump confirmed Tuesday he appointed Rep. **Mike Waltz**, R-Fla., to serve as his national security adviser. In recent months, Waltz—a <u>former</u> Army Green Beret—has <u>frequently criticized</u> China, urged NATO members to pay more for defense and said <u>he expects Trump</u> to push Ukraine and Russia toward a negotiated end to the war in Ukraine.

Homeland Security Secretary: Kristi Noem

Trump <u>has picked</u> South Dakota Gov. **Kristi Noem** for the role of secretary of the Department of Homeland Security, <u>CNN reported</u> early on Tuesday, citing two unnamed sources. Although no official announcement has been made, Noem is a long-time Trump loyalist who was believed be a contender for Vice President. The appointee will be essential in carrying out Trump's aggressive immigration plans, in addition to the agency's duties surrounding cybersecurity, antiterrorism and emergency response.

Environmental Protection Agency Administrator: Lee Zeldin

Trump announced Monday he's tapped former Rep. **Lee Zeldin**, R-N.Y., to lead the EPA, citing his "very strong legal background" and calling him "a true fighter for America First policies" in a statement. Zeldin—a Trump ally who ran for New York governor two years ago—"will ensure fair and swift deregulatory decisions that will be enacted in a way to unleash the power of American business while at the same time maintaining the highest environmental standards," the statement said.

Border Czar: Tom Homan

Trump appointed his <u>former</u> Immigration and Customs Enforcement Director **Tom Homan** to the role, he <u>announced</u> Monday, as Trump plans a mass deportation of undocumented migrants during his second term.

Un Ambassador: Elise Stefanik

Trump <u>announced</u> Sunday he'd nominate GOP Conference Chair Rep. **Elise Stefanik**, R-N.Y., for the United Nations ambassador role, and she told the <u>New York Post</u> she had accepted the offer.

Chief Of Staff: Susie Wiles

Trump <u>named</u> his campaign co-manager **Susie Wiles** chief of staff two days after his election win, marking his first major administrative pick. Wiles will be the first woman to hold the position.

Treasury Secretary

Trump hasn't nominated anyone yet, but Sen. **Bill Hagerty,** R-Tenn., former ambassador to Japan under Trump, is on the speculative short list for this role. Other contenders include Trump's transition team cochair, Cantor Fitzgerald CEO **Howard Lutnick**, former Trump U.S. trade representative **Robert Lighthizer**, and hedge fund executive **Scott Bessent**—who <u>spoke recently with Forbes</u>. Bessent met with Trump Friday at Mar-A-Lago, according to Reuters and <u>Bloomberg</u>, though Bloomberg cited people familiar with the process who said the meeting was not a job interview. Musk <u>appeared</u> to support Lutnick over Bessent, saying Bessent would be a "business-as-usual choice" whereas Lutnick "will actually enact change." Trump is expected to narrow his list of candidates by the end of the week, and he is leaning toward someone with Wall Street experience, Bloomberg reported Monday, citing anonymous sources.

Education Secretary

Trump's choice is unclear, but the agency's former leader, Betsy DeVos, said she would be willing to return to the role in a recent interview with <u>Education Week</u>. Trump has proposed dismantling the department and giving states control over their public schools.

Key Background

Trump has decamped to Mar-a-Lago since his win Tuesday, holding meetings with his inner circle, administration hopefuls and transition team to craft his second term agenda and build out his staff. Trump is shaping his second-term agenda with the help of several right-wing groups, his closest allies and billionaire backers. Musk, who has been spotted on numerous occasions at Mar-A-Lago since his election, is among those who appear to be influencing Trump's policy and personnel decisions. Lutnick is also overseeing a team making recommendations for personnel picks and vetting potential candidates, the Times reported, and Miller is expected to play a key role in making the final decisions. The right-wing think tank America First Policy Institute is <u>reportedly</u> the primary driver of Trump's transition plans and has been crafting possible executive actions for Trump once he takes office. The organization is chaired by former Trump Small Business Administration leader Linda McMahon and led by former Trump Domestic Policy Counsel Director Brook Rollins.



<u>Sara Dorn</u> Follow Sara Dorn is a Forbes news reporter who covers politics, with a focus on elections and Capitol Hill. She joined Forbes in 2022 and is based in New York.



<u>Antonio Pequeño IV</u> Antonio Pequeño IV is a reporter who covers breaking news, with a focus on technology and online culture. He joined Forbes in 2023 and works in

SAF ---- Dan Tsubouchi 🔗 @Energy_Tidbits

Here's why Trump won't put tariffs on Cdn #Oil exports.

PADD 2 (Midwest) refineries import 2.9 mmb/d of oil and 100% is Cdn oil via pipelines. @ElAgov

Tariffs on Cdn oil will simply add to cost of gasoline, diesel, jet fuel for Americans

#OOTT

bloomberg.com/news/articles/...

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6:29 AM · Nov 11, 2024 · 13.1K Views

SAF @Energy_Tidbits

Germany slowly moving on its stated plan to add #NatGas generation.

VC Habeck to present draft law to states & stakeholders for consultation & then to cabinet. Thx @petrasorge

Very slow moving, see \uparrow June 7 tweet

Wonder if DEU secretly hoping a Trump driven RUS/UKR deal might somehow lead to return of cheap RUS pipeline #NatGas??

#OOTT

BN 11/11 08:38 *GERMANY TO PRESENT DRAFT FOR GAS PLANT STRATEGY WITHOUT DELAY BN 11/11 08:38 *GERMANY'S HABECK SPEAKING AT ENERGY CONFERENCE IN BERLIN Germany to Present Gas-Plant Strategy Draft Imminently: Habeck 2024-11-11 09:13:59.515 GMT By Petra Sorge (Bloomberg) -- Germany wants to present the draft law for its long-awaited expansion of gas-fired power plants "without further delay," Economy Minister Robert Habeck said at an energy conference in Berlin. * Has a goal to present the document to states and stakeholders for consultation, and then pass it in cabinet
* NOTE: Germany needs to build new gas-fired power plants as it phases out coal and to meet rising power demand ** Goal to auction 5 GW of new capacity by next year ** READ, July 5: Germany to Seek Investors for New Gas Power Plants by 2025 (1) * Draft law would need a vote in parliament, where the government no longer has a majority after Chancellor Olaf Scholz fired his finance minister last week and a new general election will take place ** READ, Nov. 10: Scholz Opens Door to German Confidence Vote Before Christmas (1)

...

Trump Admin incoming EPA leader @LeeMZeldin

"As EPA Administrator, we will restore American energy dominance, revitalize our auto industry to bring back American jobs We will accomplish all this while conserving our environment, protecting access to clean air and water, and keeping the American people healthy".

Thx @stevennelson10

#OOTT #NatGas #Oil

New York Post 🧼 @nypost · Nov 11
Trump picks Lee Zeldin to lead EPA — adding second NYer to Cabinet





SAF Dan Tsubouchi @Energy_Tidbits

Here's why US needs Cdn #Oil.

US oil imports are almost all medium/heavy crude with CAN the #1 supplier as PADD 2 Midwest refineries set up to mostly run Cdn medium/heavy crude delivered on ENB mainline.

US production is light oil ie. Midwest refineries can't take much more.

Insufficient pipeline infra to replace CAN in Midwest with MEX, VEN, COL, KSA medium/heavy from Gulf Coast to Midwest

#OOTT



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SAF ---- Dan Tsubouchi 🔗 @Energy_Tidbits

Reminder #Oil demand seasonally weakens every year such that Q1 is always less demand than preceding Q4.

OPEC Oct MOMR forecasts Q1/25 at 104.41 mmb/d, which is -1.20 mmb/d lower than Q4/24 of 105.61 mmb/d.

#OOTT



Bullish for #OII incl Cdn heavy/medium oil.

Marco Rubio rumored to be Trump's Secretary of State.

Rubio has led anti-Maduro charge & been against Biden's licenses opening up Venezuela oil exports.

Trump had US oil imports from VEN down to zero

See Nov 3 tweet on Energy Tidbits memo. #OOTT



saf ---- Dan Tsubouchi 🤣 @Energy_Tidbits

See Comparison of #Oil demand growth forecasts.

OPEC Nov MOMR cuts oil demand growth again but is still a big outlier.

...

OPEC +1.82 mmb/d YoY in 2024 & +1.54 mmb/d YoY in 2025.

Next closest is Saudi Aramco Q3 +1.10 mmb/d YoY in 2024. EIA Oct STEO +1.29 mmb/d YoY in 2025.

#OOTT

Comparison of YoY Oil Dema	and Growth Forac							
	Demand Growth Forecasts							
million b/d	2024 VoV							
OPEC Nov MOMR	1.82	1.54						
OPEC Oct MOMR	1.93	1.64						
OPEC Sept MOMR	2.03	1.74						
OPEC Aug MOMR	2.11	1.78						
Saudi Aramco Q3	1.10	1.20						
Saudi Aramco Q2	1.60	1.40						
IEA Oct OMR	0.86	1.00						
EA Sept OMR	0.90	0.95						
EA Aug OMR	0.97	0.95						
IA Oct STEO	0.92	1.29						
IA Sept STEO	0.94	1.52						
IA Aug STEO	1.14	1.61						
Source: OPEC, Saudi Aramco, IEA, EIA								
Prepared by SAF Group https://safgro	oup.ca/insights/energ	y-tidbits/						

SAF Dan Tsubouchi 🤡 @Energy_Tidbits

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Reality check that Sustainable Aviation Fuel can displace jet fuel within decade or two.

Worth 85 seconds to listen to comments from @united CSO Riley.

"we are Stage Zero"

Total worldwide SAF production is 150 million gallons. UAL alone uses 4.25 billion gallons.

7, 8 ways to produce SAF ranging from trash from trash cans, corn, pulling CO2 from atmosphere to convert into SAF, used cooking oil from the restaurant next door.

Do any of these sound like can scale up to produces enough SAF to displace any portion of jet fuel?

Thx @lizrhoffman @semafor . #OOTT

Semafor 🤣 @semafor · Oct 25

"Last year, worldwide, 150 million gallons of sustainable fuel were produced," but United uses "four and a quarter billion gallons" of fuel in a year, the airline's Chief Sustainability Officer Lauren Riley tells @lizrhoffman.



SAF @Energy_Tidbits

Drill baby drill won't have big negative impact most think.

Exxon CEO "I don't think U.S. production is constrained, so I don't know that there's an

opportunity to unleash a lot of production in the near term, because most operators in the U.S. are already [optimizing] their production today.' reports @timmcdonnell @semafor

Rather key near-term Trump impact on #Oil is return to 1st term priority to hit Iran & Venezuela economically by cutting out their oil exports. Discussion in my \bigcirc Nov 3, 2024 Energy Tidbits memo.

#OOTT

semafor.com/article/11/12/...

🗤 – Dan Tsubouchi 🤣 @Energy_Tidbits · Nov 3

SAF Group Nov 3, 2024 Energy Tidbits memo is posted on the insights section of SAF Group website. this 77-pg energy research memo covers more items than tweeted this week. Hope it helps your energy views. #Oil #OOTT #LNG #NatGas #EnergyTransition #EVs safgroup.ca/insights/



Energy Tidbits

Nov 3, 2024

Bullish for Natural Gas & Coal in 2020s, Al Data Center Leader, Dominion Energy, Fossil Fuels Provided 63.7% of 2023 Power

Welcome to new Energy Tidbits memo readers. We are continuing to add new readers to our Energy Tidbits memo, energy blogs and tweets. The focus and concept for the memo was set in 1998 with input from PMs, who were



Al Data Center 101.

Al data centers "require concentrated power source so intermittent power like wind and solar, they don't fit the bill. So you need baseload power; so, think nuclear, coal, natural gas"

NIMBY preventing getting US baseload potential to markets so US needs "an overflow option" for more baseload if it wants to continue AI data center leadership.

Preferred option is democratic countries like Canada, Australia, Nordic countries.

Need to bring on 35+ GW of power in just the next couple years relative to 17 GW existing.

Above from great 9 min clip from @GoldmanSachs Jared Cohen.

What is there in next 10 yrs besides new #NatGas generation & not retiring but expanding #Coal?

Also expect Cdn natural gas producers likely being approached on power for data centers.

Great interview @andrewrsorkin @BeckyQuick @JoeSquawk. #OOTT

cnbc.com/video/2024/11/...

7:23 PM · Nov 12, 2024 · 3,783 Views

saF---- Dan Tsubouchi 🤣 @Energy_Tidbits

Big positive for Cdn #Oil.

Trans Mountain tanker loadings up to >300,000 b/d in Oct. Thx Greg Pardy @RBC.

See Nov 8 tweet graph, Q4/24 WCS less WTI differentials are \$15/b narrower in Sep/Oct/Nov because of these tanker loadings.

#OOTT



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China realizing Elon is the man behind the Trump throne.

"China will speed up piloting market access for intelligent connected vehicles and letting them run on the roads, authorities have said." State media.

Will help EVs advancement & stay on Elon's good side.

#OOTT



Last edited 5:31 AM · Nov 14, 2024 · 3,243 Views



Actuals vs forecast.

Won't move #Oil prices today but physical playes have been highlighting that actual global oil stocks continue to go lower.

IEA Nov OMR "Global oil inventories **plunged** by 47.5 mb in September, to their lowest level since January, led by a sharp draw in OECD oil products and non-OECD crude oil stocks"

#OOTT

1	nttps://www.iea.org/reports/oil-market-report-november-2024
	Dil Market Report - November 2024
1	The IEA Oil Market Report (OMR) is one of the world's most authoritative and timely sources of data, orecasts 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.
I	PublishedNovember 2024
1	Highlights
	 World oil demand is forecast to expand by 202 kb/d this year and just shy of 1 mb/d in 2025, to 102.8 mb/d and 103.8 mb/d, respectively. The slowdown in growth from recent years reflect the end of the post-pandemic release of pertup demand and below-par underlying global economic conditions, as well as clean energy technology deployment.
	 Global oil supply rose by 290 kb/d in October to 102.9 mb/d, as the return of Libyan barrels to the market more than offset lower Kazakh and Iranian supplies. OPEC+ delayed the unwinding of extra voluntary production cuts to lanuary, at the earliest. Non-OPEC+ producers will boost supply by roughly 15 mb/d in both 2024 and 2025.
	 Refinery margins improved in October as seasonal maintenance and economic run cuts supported product cracks. Global refinery runs hit a seasonal low in October before attring to recover in November and will average 82.8 mb/d this year and 83.4 mb/d in 2025. Annual growth of roughty 60 kb/d is driven largely by OECD Americas (+360 kb/d) this year and by non-OECD regions in 2025.
UNS	 Global oil inventories plunged by 47,5 mb in September, to their lowest level since January, led by a sharp draw in OECD oil products and non-DECD crude oil stocks. OECD industry stocks fell by 36,4 mb to 2798 mb, 95,3 mb below the five-year average. Provisional data suggest total global

saf Dan Tsubouchi 🤣 @Energy_Tidbits

For those who aren't near their laptops, at 9:00 am MT,

@EIAgov released #Oil #Gasoline #Distillates inventory as of Nov 8. Table below compares EIA data vs @business analyst survey expectations and vs @APIenergy estimates yesterday. Prior to release, WTI was \$68.80. #OOTT

Oil/Products Inventory	Nov 8: EIA, Bloo	mberg Survey Expectation	ons, API
(million barrels)	EIA	Expectations	API
Oil	2.09	1.60	-0.80
Gasoline	-4.41	1.00	0.30
Distillates	-1.39	1.27	1.10
2000 00 00 00 00 00 00 00 00 00 00 00 00	-3.71	3.87	0.60
Note: Oil is commercial.	So excludes a +0.	6 mb build in SPR for the 1	Vov 8 week
Note: Included in the oil	data, Cushing had	a 0.67 mmb draw for Nov	8 week
Source EIA, Bloomberg			
Prepared by SAF Group	https://safgroup.	ca/news-insights/	

9:02 AM · Nov 14, 2024 · 1,099 Views

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EU #NatGas storage would be full if NW EU hadn't cut back on LNG imports in Q2/Q3.

NW EU #LNG imports +1.16 bcfd WoW to 6.48 bcfd for Nov 4-10.

YTD Nov 10, NW EU LNG imports -501 bcf YoY or -1.59 bcfd YoY to 5.78 bcfd.

Need cold winter to avoid a repeat of 2024 EU NatGas prices.

Thx @BloombergNEF #OOTT





Trump to bring EVs down to level playing field with ICE.

Today: No surprise, Trump planning to kill \$7,500 EV purchase credit. Thx @JarrettRenshaw @c_kirkham

Fits Trump 05/11/24 "there will no ban anywhere in the USA on gas. You can buy electric if you want, you can buy gas, you can buy whatever you want, that's the way it should be." See 911/06/24 tweet.

#OOTT

reuters.com/business/autos...

Ending Biden's EVs mandate is a clearly stated Trump Day 1 executive order priority.

Show more

"On Day 1, I will immediately terminate Joe Biden's insane electric vehicle mandate. And there will be no ban on gas cars and gas trucks in the Garden State. There will no ban anywhere in the United States of America on gas." Trump on May 11, 2024



SAF Group created transcript of comments by Donald Trump at a campaign speech in Wildwood, New Jersey on May 11, 2024. Video courtesy of https://www.c-span.org/video/7555068-1/fmr-pres-trump-campaigns-wildwood-nj

At 28:06 min mark. Trump "But unfortunately, the Democrats in New Jersey have embraced Joe Biden's radical pro-China plan plan to eliminate gas-powered cars and trucks. Can you believe it? And force everyone into ultra-expensive electric vehicles that dron's go fat, a laways say, they have a couple of problems – they're to expensive, they're going to be made in China, and go fat. Other than that, I think they're wonderful. On Day 1, I will immediately terminate loe Biden's insane electric vehicles are trucked and they will be no bean one access and they truck will be no bean will be no bean at in the strucke and them will be no bean one access and they terminate loe Biden's Will be no bean electric to the SAF @ Dan Tsubouchi ? @Energy_Tidbits

Positive China consumer indicator in pre-Trump period.

Golden Week means Chinese spend & 9 of last 11 Oct's had MoM decrease in household savings.

Oct 2024 is 2nd largest MoM decline.

MoM US **\$b**: Oct 24: -\$380b to \$20,960b Oct 23: -\$130 Oct 22: -\$490 Oct 21: -\$90 Oct 20: +\$60 Oct 19: +\$90 Oct 18: -\$210 Oct 18: -\$210 Oct 17: -\$110 Oct 16: -\$200 Oct 15: -\$40 Oct 14: -\$60

Thx @business #OOTT



SAF ---- Dan Tsubouchi 🤣 @Energy_Tidbits

Negative China indicator.

Chinese consumer's most important asset, their home values keep going lower even post Sept stimulus.

New home prices: 17th straight MoM % drop. Oct -0.51%. Sept -0.71%. Aug -0.73%.

2nd hand home prices: 18th straight MoM % drop. Oct -0.48%. Sept -0.93%. Aug -0.95%.

Thx @business #OOTT



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SAF ---- Dan Tsubouchi 🤣 @Energy_Tidbits

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Chinese consumer feeling better but still a way to go. And this was pre-Trump

Best YoY % increase in China retail sales since Dec.

Oct +4.8% Sep +3.2% Aug +2.1% July +2.7% Jun +2.0% May +3.7% Apr +2.3% Mar +3.1% No Jan/Feb data 2023 Dec +7.4% Nov +10.1% Oct +7.6%

Nowhere near pre-Covid steady +8-11%.

#OOTT Thx @business





COP29.

Despite reports of divisions at COP29, should inevitably get broad sign off on text but will have more outs than normal for countries.

COP28 "calls on Parties to contribute in a nationally determined manner, taking into account the Paris Agreement and their different national circumstances, pathways and approaches".

Everyone wants a cleaner environment but **#Oil #NatGas #Coal** will be needed for longer than aspirations.





SAF ---- Dan Tsubouchi 🔗 @Energy_Tidbits

Tesla.

Just now @CathieDWood with @andrewrsorkin @SquawkCNBC, reminds 90% of their 5-yr target upside in Tesla is for autonomous.

ICYMI, see – 11/13/24 tweet. China is doing its part to help Elon's autonomous ramp by speeding up pilot for autonomous on roads.

#EVs

SM - Dan Tsubouchi ② @Energy_Tidbits · Nov 13
China realizing Elon is the man behind the Trump throne.

"China will speed up piloting market access for intelligent connected vehicles and letting them run on the roads, authorities have said." State media.

Show more



https://english.news.cn/20241112/67eddfc8cb184dfeb529c26b92a1dc4f/c.html

China to accelerate trials of intelligent connected vehicle on roads

Source. Annua	
Editor: huaxia	
2024-11-12 21:00:31	
BEIJING, Nov. 12 (Xi	nhua) China will speed up piloting market access for intelligent connected vehicles
and letting them run	on the roads, authorities have said.
The country will pror	note the demonstration and application of autonomous driving and driverless
vehicles in key areas	including the Yangtze River Delta region and the Guangdong-Hong Kong-Macao
Greater Bay Area, ac	cording to an action plan jointly released by the Ministry of Transport and the
National Developme	ent and Reform Commission.
The plan, which out	ines measures to improve transport efficiency and lower logistics costs, says the
country will accelera	ate the construction of smart highways, waterways, ports and hubs, and promote the
digital transformatio	n and upgrading of transport infrastructure.

SAF ---- Dan Tsubouchi 🤡 @Energy_Tidbits

Positive China economic activity.

"China's steel PMI jumped to highest level in six years as output surged" @BloombergNEF

China's steel industry PMI, output, new orders, new export orders all up strong in Oct post Sept stimulus.

#OOTT



7:33 AM · Nov 15. 2024 · 3.101 Views

...



Elon has long stated the world needs #Oil #NatGas.

02/12/21: "*we're gong to need to burn fossil fuels for a long time*" Elon on reality check the world needs #Oil #NatGas. See 9 02/14/21 tweet.

@jimcramer @davidfaber @carlquintanilla just discussed Elon's #NatGas to power his Memphis AI data center.

#OOTT

🚥 – Dan Tsubouchi 🤣 @Energy_Tidbits · Feb 14, 2021

Elon warns #EnergyTransition "we can't just like stop instantaneously and not have oil and gas. We'll like die of starvation basically" "we're going need to burn fossil fuels for a long time" thx @elonmusk @joerogan for many great tidbits in interview. #NatGas #OOTT x.com/joerogan/statu...

SAF Group Created Transcript of Elon Musk Comments on Joe Rogan Experience JRE Elon Musk Episode #1609 – Feb 12, 2021 https://www.youtube.com/watch?v=jyToyhy9oUA

Items in "italics" are SAF Group created transcript

At 2hr 43: 50 min mark: Musk "by the way, I am actually not in favor of like demonizing the oil and gas industry. Because we can't just like stop instantaneously and not have oil and gas. We'l like die of starvation basically." "we're going need to burn Jossii (Just Jike stop instantaneously and not have oil and gas. We'l like die of starvation basically." Sever soling need to burn Jossii (Just Jike stop instantaneously and not have oil and gas. We'l like die of starvation basically." Severe should probably move there faster than slower. but the current approach is basically just demonize oil and gas and I'm like, okay, well there are people here who have spant their whole career in all and gas and darge started there are people here who have spant their whole career in all and gas and they storted out in their career when it didn't seem like that bad of a thing to do. so then they're like hey man, I just spent my whole career working hard to do useful things and now you're teiling me I'm the dewil. that's going to make them pretry upset. So i say instead of demonizing oil and gas, and they should stop lobbying against the carbon tax by the way. I hen just, honestly the smartest thing the oil and gas industry could do is say let's do a carbon tax. we'll just do a carbon tax and make us not the dewil."

7:57 AM · Nov 15, 2024 · 4,074 Views

SAF Dan Tsubouchi 🔗 @Energy_Tidbits

Oil price wildcard for 2025?

Could Trump surprise & do a deal with Iran without first hammering their cash flow by slashing their oil production & exports like he did in his 1st term?

Elon met with Iran UN to discuss defusing tensions reports \P @farnazfassihi.

#OOTT

🔞 The New York Times 🤣 @nytimes · Nov 14

Breaking News: Elon Musk, a top adviser to President-elect Donald Trump, met with Iran's UN ambassador to discuss defusing Iranian-U.S. tensions during the next Trump term, two Iranian officials said. nyti.ms/4hNLIUC

2:34 PM · Nov 15, 2024 · 2,845 Views

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321 crack spreads +\$0.69 WoW to \$17.99 on Nov 15.

WTI -\$3.36 WoW to \$67.02.

Reinforces WTI is impacted more by global markets than by cracks ie. OPEC lowered oil demand fcast, strong US\$, China oil imports, truce expectations, etc.

Thx @business #OOTT



5:37 PM · Nov 15, 2024 · 2,647 Views

saF---- Dan Tsubouchi 🤡 …… @Energy_Tidbits

Big continuing win for Cdn #Oil Q4/24 cash flows.

Ramp up of volumes on 590,000 b/d TMX has kept WCS less WTI differentials from normal Sept/Oct/Nov widening.

WCS less WTI diffs: 11/15/24: \$11,50 11/15/23: \$24.75 11/15/22: \$28.50

Thx @garquake @business #OOTT



5:50 PM · Nov 15, 2024 · 3,416 Views

Tough times in EU?

Daily Europe air traffic lowest since Apr.

7-day moving average as of:

Nov 14: -3.8% below pre-Covid Nov 7: -2.9% Oct 31: -2.0% Oct 24: -1.6% Oct 17: -1.9% Oct 10: -1.7% Oct 3: -2.9% Sept 26: -2.9% Sept 19: -2.8% Sept 12: -3.0%

Thx @eurocontrol #OOTT

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6:19 AM · Nov 16, 2024 · 1,947 Views

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AAA National average prices -\$0.01 WoW to \$3.08 on Nov 16, -\$0.12 MoM & -\$0.26 YoY.

California average prices -\$0.04 WoW to \$4.47, -\$0.20 MoM & -\$0.57 YoY

Grocery prices, not gasoline prices, was the cost of living factor in US Nov 5 election.

Thx @AAAnews #OOTT



SAF ---- Dan Tsubouchi 🤡 @Energy_Tidbits

Vortexa crude #Oil floating storage.

Oct/Nov is lowest since Covid.

-10.87 mmb WoW to 48.16 mmb at Nov 15.

7-wk moving average 56.88 mmb, lowest since Covid, only 5 times <60 mmb, all since Oct 1/24.

Revisions last 7-wks average -2.22 mmb/wk.

Thx @vortexa @business #OOTT





Why boast in advance you are the expert on understanding Trump.

Liberals FM Joly "If there is a country in the world that understands the US, it's Canada. So, that's why there are so many delegations, so many countries that are coming to see us. To ask us about the new Administration. To ask us about how we, they can adapt."

if it was sports, coach would be mad that gave the opponent extra motivation to run up the score.

Thx @judyatrinh #OOTT

A Judy Trinh @judyatrinh · Nov 15

Replying to @judyatrinh

Foreign Minister Melanie Joly says other nations at APEC are seeking advice from Canada on how to deal with incoming Trump administration



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Expect @JustinTrudeau to fight to push off sending Liberals to polls for

Will want global stage spotlight as 🙌 hosts #G7 in Kananaskis in June.

That means @theJagmeetSingh leverage should increase until then.

And Cdns should expect push left. #OOTT @rmoutlook





US oil production higher for longer!

Even Dems have to admit putting Chris Wright (Liberty Energy CEO) as Energy Secretary, Doug Burgum (North Dakota Gov) as Interior Secretary & both on Council of National Energy gives best odds for US #Oil #NatGas production to be higher for longer.

#OOTT



- November 16, 2024 -

STATEMENT FROM PRESIDENT DONALD J. TRUMP

I am thrilled to announce that Chris Wright will be joining my Administration as both United States Secretary of Energy, and Member of the newly formed Council of National Energy.

Chris has been a leading technologist and entrepreneur in Energy. He has worked in Nuclear, Solar, Geothermal, and Oil and Gas. Most significantly, Chris was one of the pioneers who helped launch the American Shale Revolution that fueled American Energy Independence, and transformed the Global Energy Markets and Geopolitics.



A warm start to winter is never a positive to HH #NatGas prices.

concern is @NOAA updated 6-10 & 8-14 day temp outlook for Nov 22-30 calls for warmer than normal temperatures for most of east 1/2 of Lower 48 to end Nov.

#OOTT





Reason to be cautious on #NatGas with <a>@NOAA forecast warmer than normal temp to end Nov.

Other than 2022 when global #NatGas prices were driven up post RUS 02/24/22 UKR invasion, seasonal HH prices show weakening in Nov/Dec with warm or even normal temps in Nov/Dec.



concern is @NOAA updated 6-10 & 8-14 day temp outlook for Nov 22-30 calls for warmer than normal temperatures for most of east 1/2 of Lower 48 to end Nov....

Show more




Trump 2.0 key players warned the world needs & runs on #Oil #NatGas.

Elon warned "*we can't just like stop instantaneously and not have oil and gas. We'll like die of starvation basically*" See 02/14/21 tweet x.com/Energy_Tidbits...

Liberty CEO Wright (Energy Sec) warns on human impacts in the absence of oil & gas. See \P 09/11/21 tweet:

#OOTT

💵 – Dan Tsubouchi 🤣 @Energy_Tidbits · Sep 11, 2021

So much in great read \$LBRT ESG 2020 ie. simply not possible to discuss environmental & social impacts of #Oil #NatGas without considering the environmental & human impacts of the absence of O&G. Thx @Josh_Young \$LBRT Anjali Voria. #OOTT #EnergyTransition libertyfrac.com/wp-content/upl...



saf ----- Dan Tsubouchi 🤣 @Energy_Tidbits

Kremlin readout of Putin/Scholz call

Set up at request of Germany

Putin reiterates will look at a Ukraine deal BUT any deal must "*rest on the new territorial realities*"

ie. RUS retains captured lands.

Also explains why RUS doing full court press to regain Kursk.

#OOTT

Telephone conversation with German Chancellor Olaf Scholz	
November 15, 2024	
18:10	
President of the Russian Federation Vladimir Putin had a telephone conversation with Federal C of the Federal Republic of Germany <u>Qlaf Scholz</u> , held for the first time since December 2022 at the initiative of the German side	hancellor
The leaders had an in-depth and frank exchange of views on the situation in Ukraine. Vladimir Pr reiterated that the current crisis was a direct result of NATO's long-standing aggressive policy ai at creating a staging ground against Russia on Ukrainian soil, while showing disregard for Russia security concerns and trampling on the rights of Russian-speaking residents of Ukraine.	ıtin med ı's
Speaking on the prospects for reaching a political and diplomatic settlement of the conflict, the President of Russia pointed out that the Russian side had never rejected and was still open to resuming the talks broken off by the Kiev regime. Russia's proposals are well known and have putlined, in particular, in the President's speech at the Foreign Ministry in June. Any possible agr must address security concerns of the Russian Federation, fest on the new territorial realities , a mportantly, eliminate the original causes of the conflict.	been eements nd, most
The discussion also touched on the <u>state of affairs</u> in relations between Russia and Germany. V Putin noted their unprecedented decline in all areas, caused	adimir



Good recap of Trump's 30+ picks thru last night of cabinet and key roles:

Should see his financial/economic team this week.

Thx @sara_dorn @Pequeno04 @forbes

#OOTT

forbes.com/sites/saradorn...





From forbes.com 3:38 AM · Nov 17, 2024 · **925** Views ...



Last thing Ukraine needs as winter approaches.

Huge attack at UKR energy infra and 1/3 got got thru air defense.

Zelensky: "In total, around 120 missiles and 90 drones""Our air defenses destroyed more than 140 aerial targets.."

Too early for damage assessment.

kyivindependent.com/russia-launche...

#OOTT #NatGas

5:23 AM · Nov 17, 2024 · 933 Views

SAF @Energy_Tidbits

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Here's why UK Labour govt will try to find a work around the requirement BEVs are 22% min of sales in 2024.

"Sharon Graham, general secretary of Unite, the Labour Party's biggest union backer, suggested this weekend that momentum was building in Whitehall towards

plans to reform the Zev mandate and make it more appealing for carmakers such as Stellantis to keep building vehicles in the UK. "Unite is already having constructive discussions with government and industry to reform the Zev mandate to protect jobs," Graham said". Thx @ojngill #OOTT

thetimes.com/business-money...

8:31 AM · Nov 17, 2024 · 714 Views