

Energy Tidbits

Tease for LNG Canada Phase 2? Deputy PM Freeland “We Will Always be Looking at Economically Viable LNG Projects”

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October 16, 2022

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Short-Term Energy Outlook

Forecast highlights

Winter Fuels Outlook

- In our [Winter Fuels Outlook](#), we forecast that average household expenditures for home heating fuels will increase this winter because of both higher expected fuel costs and higher energy consumption due to colder temperatures. Compared with last winter, in nominal terms, we forecast expenditures for homes that heat with natural gas will rise by 28%, heating oil by 27%, electricity by 10%, and propane 5% from October–March.

Global liquid fuels

- The Brent crude oil spot price in our forecast averages \$93 per barrel (b) in the fourth quarter of 2022 (4Q22) and \$95/b in 2023. Potential petroleum supply disruptions and slower-than-expected crude oil production growth could lead to higher oil prices, while the possibility of slower-than-forecast economic growth may contribute to lower prices.
- [OPEC+ announced a production cut](#) of 2 million barrels per day (b/d) on October 5. OPEC crude oil production in our forecast falls from an average of 29.6 million barrels per day (b/d) in September to an average of 28.6 million b/d over 4Q22 and 1Q23.
- U.S. crude oil production in our forecast averages 11.7 million b/d in 2022 and 12.4 million b/d in 2023, which would surpass the record high set in 2019.
- We forecast that global consumption of liquid fuels will rise by an average of 2.1 million b/d for all of 2022 and by an average of 1.5 million b/d in 2023.
- U.S. retail gasoline prices in our forecast average \$3.80 per gallon (gal) in 4Q22 and \$3.57/gal in 2023. Retail diesel prices average \$4.86/gal in 4Q22 and \$4.29/gal in 2023.
- We expect U.S. gasoline consumption in 2022 to average 8.8 million b/d, down 40,000 b/d from 2021, and we expect it to stay near that level in 2023, with rising fuel efficiency offsetting price- and economy-driven increases in transportation demand.

Natural gas

- We expect the Henry Hub natural gas spot price to average about \$7.40 per million British thermal units (MMBtu) in 4Q22 and then fall below \$6.00/MMBtu in 2023 as U.S. natural gas production rises.

- We forecast that U.S. natural gas inventories will end the injection season (April–October) at nearly 3.5 Tcf, which would be 6% below the five-year (2017–2021) average.
- U.S. consumption of natural gas will average 87.9 billion cubic feet per day (Bcf/d) in 2022, up 3.9 Bcf/d from 2021, reflecting more consumption across almost all sectors. Consumption falls by 2.6 Bcf/d in the 2023 forecast because of lower consumption in the electric power and industrial sectors.
- In 3Q22, U.S. dry natural gas production averaged 98.5 Bcf/d, up from 95.1 in 1Q22. We forecast natural gas production to average 99.1 Bcf/d in 4Q22 and 99.6 Bcf/d in 2023.

Electricity, coal, renewables, and emissions

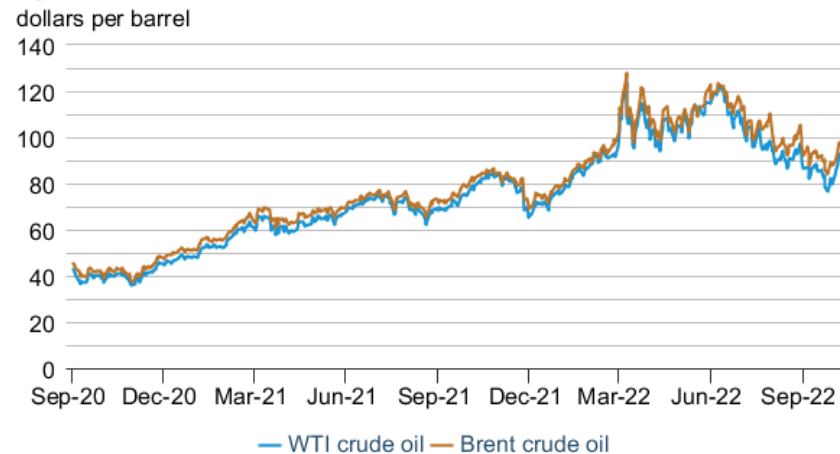
- We expect U.S. sales of electricity to ultimate customers to rise by 2.7% in 2022, mostly because of more economic activity but also because of slightly hotter summer weather than last year. We forecast U.S. sales of electricity to fall by 0.9% in 2023.
- Increases in U.S. electricity generation in our forecast come almost entirely from solar and wind. We expect renewable sources will provide 22% of U.S. generation in 2022 and 24% in 2023, up from 20% in 2021.
- Natural gas fuels 38% of U.S. electricity generation in 2022, up from 37% in 2021, but we forecast it to fall back to 36% in 2023. Coal-fired electricity generation falls from 23% of the U.S. total last year to 20% in 2022 and 19% in 2023. Growing generation from renewable sources limits growth in natural gas-fired generation, and coal's generation share declines because of the expected retirement of some coal-fired capacity.
- We forecast that wholesale electricity prices at major power trading hubs will be about 20-60% higher on average this winter. The highest wholesale electricity prices are likely to be in New England because of possible natural gas pipeline constraints, reduced fuel inventories for power generation, and uncertainty regarding liquefied natural gas (LNG) shipments given the tight global supply conditions.
- We forecast the U.S. residential price of electricity will average 14.9 cents per kilowatthour in 2022, up 8% from 2021. Higher retail electricity prices largely reflect an increase in wholesale power prices, which are driven by higher natural gas prices.
- U.S. coal production in the forecast increases by 20 million short tons (MMst) in 2022 to total 598 MMst for the year. We expect coal production will fall to 581 MMst in 2023.
- We expect energy-related carbon dioxide emissions in the United States to increase by 1.5% in 2022 and then to decrease 2.3% in 2023 to just under 2021 levels.

Petroleum and Natural Gas Markets Review

Crude oil

Prices: The front-month futures price for Brent crude oil settled at \$94.42 per barrel (b) on October 6, an increase of \$2.06/b from the September 1 price of \$92.36/b. The front-month futures price for West Texas Intermediate (WTI) crude oil for delivery at Cushing, Oklahoma, increased by \$1.84/b during the same period, settling at \$88.45/b on October 6 (**Figure 1**). These price increases are mostly attributable to expectations around crude oil production cuts by OPEC+ producers, which were announced at [2 million b/d on October 5](#). From September 30 to October 6, the front-month futures price for Brent crude oil increased by \$6.46/b and the front-month futures price for WTI crude oil increased by \$8.96/b.

Figure 1. Crude oil front-month futures prices



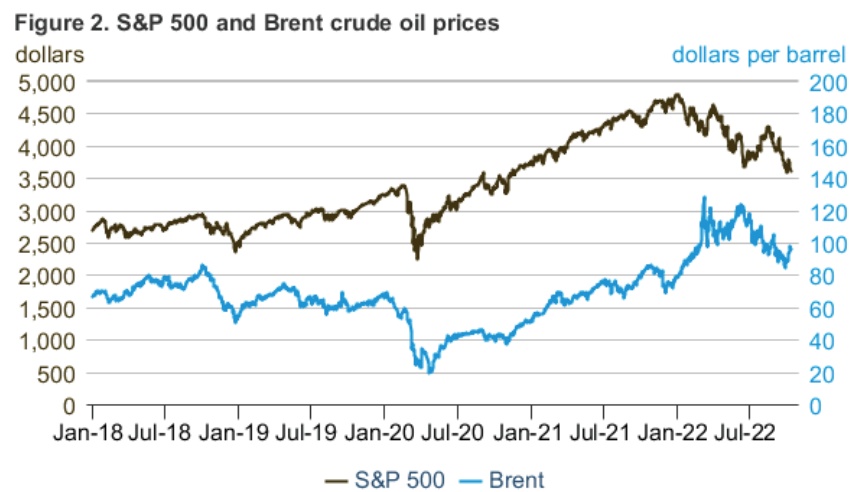
 Data source: CME Group, Intercontinental Exchange, and Bloomberg L.P.
Note: WTI=West Texas Intermediate

Prior to the OPEC+ announcement and the speculation of cuts in the days immediately preceding the announcement, crude oil prices were generally decreasing due to increasing concerns around weakening global economic conditions. In addition, the 180 million barrel Strategic Petroleum Reserve release conducted in recent months may also have relieved supply concerns. The front-month futures price for Brent crude oil averaged \$7/b lower in September than in August. September marked the third consecutive month in which the Brent crude oil futures price decreased, bringing the total decrease to \$27/b in those three months. These decreases in crude oil prices have not affected all countries evenly, however, because Brent crude oil is priced in U.S. dollars. Investors have increasingly purchased U.S. financial assets as a result of the Federal Reserve raising interest rates to curb inflation and because investors seek out U.S. currency as a safe-haven asset during uncertain economic conditions. This trend has led to the U.S. dollar increasing to its highest value since 2002. For countries using other currencies, including many of the globe's emerging markets, the strengthening U.S. dollar makes it more expensive to convert local currency into the U.S. dollars necessary to import crude oil. A

strengthening dollar also creates additional macroeconomic uncertainty by raising debt servicing costs for countries holding U.S. dollar-denominated debt.

With macroeconomic uncertainty rising, Oxford Economics lowered its forecast for global GDP growth to 2.2% for 2023, down from 2.7% last month. We use Oxford Economics' forecast as an input into our global oil demand model. This reduction in forecast GDP led us to lower our forecast for global petroleum demand in 2023 by 0.5 million b/d compared with the [September Short-Term Energy Outlook](#).

Brent price and S&P 500: In the past few years, the price of Brent crude oil has often, but not always, moved in the same direction as the value of the S&P 500, an equity index of widely traded U.S. public companies. For example, from the second half of 2020 (2H20) through 2021, the Brent crude oil price and the value of the S&P 500 both increased as economic growth was reflected in the rising profitability of companies as well as in rising demand for oil (**Figure 2**).



 Data source: CME Group, Intercontinental Exchange, and Bloomberg L.P.

Oil prices and equities began moving in opposite directions in early 2022, when the price of crude oil continued increasing as Russia's full-scale invasion of Ukraine intensified global petroleum supply concerns. These price increases contributed to higher inflation and input costs for companies, leading to a decline in the S&P 500. As the Federal Reserve has increased interest rates to curb inflation, borrowing costs for companies have grown and expectations for economic growth have declined, putting further downward pressure on the S&P 500. However, from July to September 2022, the price of Brent crude oil resumed a positive relationship with equity prices, with both declining as concerns about global economic conditions also reduced expectations of petroleum demand growth, accompanied by pressure from the strong US dollar (discussed above).

Brent price and inflation expectations: Inflation expectations also often move together with crude oil prices. One measure of inflation expectations is the percentage difference between

yields for five-year Treasury Inflation-Protected Securities (TIPS) and U.S. treasury bonds. This spread indicates expectations for what the inflation rate will be in five years. Inflation expectations peaked in March at 3.6% (**Figure 3**), decreasing in recent months in part due to:

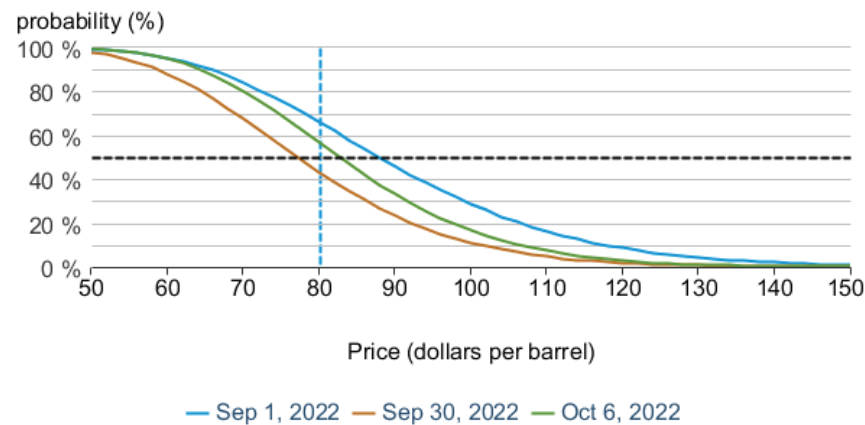
- Inflation, as measured by the U.S. Consumer Price Index, has flattened and slightly decreased recently, in part because energy-sector inflation has slowed down as oil prices have dropped; and
- Expectations for future economic activity, which have also fallen.



Although the price of Brent crude oil continued to increase from April to June when inflation expectations were decreasing, persistent concerns about economic conditions and petroleum demand have contributed to crude oil prices decreasing with inflation expectations from July through September.

Market-derived probabilities: Crude oil prices have been subject to high levels of uncertainty due to geopolitical factors, uncertain OPEC+ production, and concerns that a global recession could reduce crude oil demand. [Market-derived price probabilities](#) that are based on futures and options prices reflect this price uncertainty. They also reflect the downward price movements in September and the upward price movements in October. As of September 30, the probability of the December 2022 WTI contract expiring at more than \$80/b was 43%, a decrease from 66% on September 1 (**Figure 4**). The probability of the December 2022 WTI contract expiring above \$90/b was 23% on September 30, and the probability of it expiring above \$100/b was 11%. Conversely, there was also a 32% chance of the December WTI crude oil contract expiring at or below \$70/b as of September 30. But in October, when crude oil prices began to rise in anticipation of OPEC production cuts, higher future crude oil prices became more likely. As of October 6, the probability of WTI expiring above \$80/b was 57% and the probability of it expiring above \$90/b was 33%, both increases from September 30 but decreases from September 1.

Figure 4. Probability of June 2022 WTI futures contracts expiring above different price levels



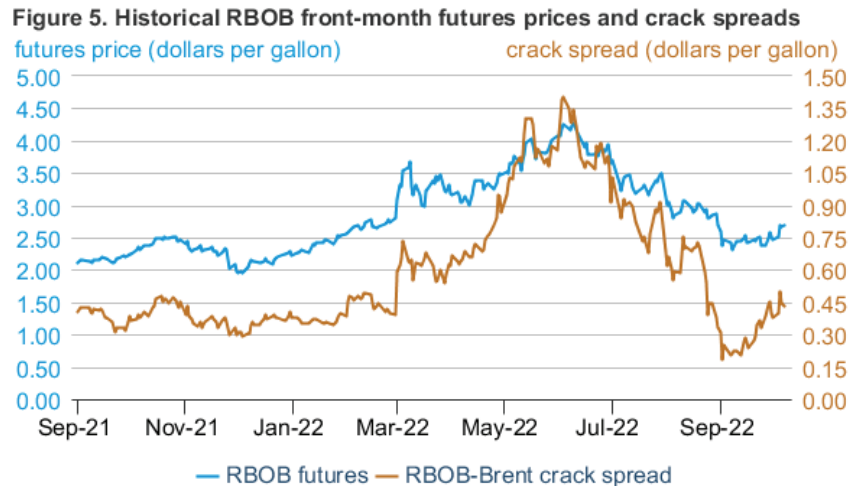
Data source: U.S. Energy Information Administration, CME Group
Note: WTI=West Texas Intermediate


We forecast the WTI crude oil price to be \$85/b in December and \$87/b in January. We expect the WTI crude oil price to increase to an average of \$89/b in 2023, and we expect the Brent crude oil price to be **\$6/b higher than the WTI price throughout 2023**.

We forecast oil prices to generally remain near current levels in 2023 with Brent averaging \$95/b. We lowered our price forecast for 2023 by \$2/b compared with last month's forecast, which largely reflected a 0.5 million b/d reduction in our forecast for global oil consumption in response to a lower forecast for global GDP from Oxford Economics. Lower oil consumption resulted in us lowering our price forecast in early 2023. We also reduced our forecast for global oil production by 0.6 million b/d in 2023, with the largest downward revision for next year in 4Q23. As a result of lower production at the end of next year, we forecast Brent prices will end 2023 higher than previously expected, despite a lower crude oil price forecast on average for next year. Our forecast had already included a reduction in OPEC+ crude oil production that was largely consistent with the cuts the group announced on October 5. Accounting for these changes, global oil markets are relatively balanced in our 2023 forecast. The possibility of petroleum supply disruptions and slower-than-expected crude oil production growth continues to create the potential for higher oil prices, while the possibility of slower-than-forecast economic growth creates the potential for lower prices.

Petroleum products

Gasoline prices: The front-month futures price of RBOB (reformulated blendstock for oxygenate blending, the petroleum component of gasoline used in many parts of the country) settled at \$2.68 per gallon (gal) on October 6, up 30 cents/gal from September 1 (**Figure 5**). The RBOB-Brent crack spread (the difference between the price of RBOB and the price of Brent crude oil) settled at 43 cents/gal on October 6, up 25 cents/gal since September 1.



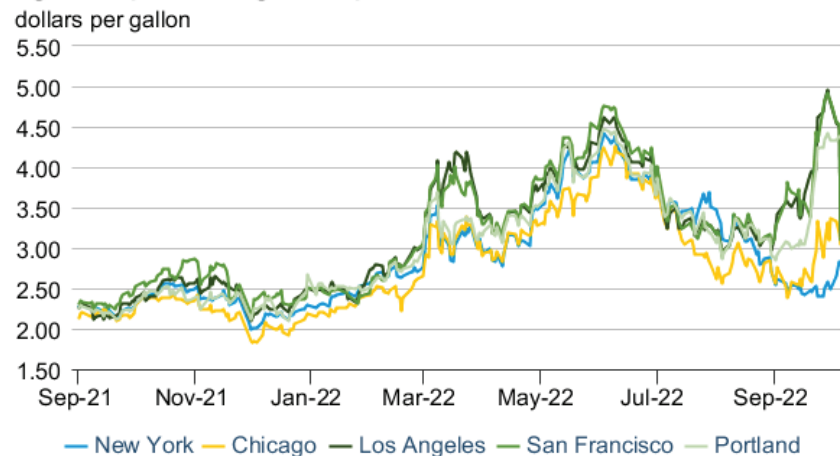
 Data source: CME Group and Bloomberg L.P.
 Note: RBOB is the petroleum component of gasoline used in many parts of the country.

RBOB prices started September at their lowest level since January after the RBOB front-month contract rolled over to October delivery, which reflects [winter grade gasoline](#) that is cheaper for refiners to produce. Through the end of September, RBOB prices increased by more than crude oil prices as higher gasoline export levels offset lower-than-average domestic gasoline consumption amid low inventory levels. We estimate U.S. gasoline consumption averaged 8.8 million barrels a day (b/d) in September, which is 2% (0.2 million b/d) lower than the five-year (2017–2021) average for that month. U.S. gasoline exports for the four weeks ending September 30 averaged 1.0 million b/d according to EIA’s [Weekly Petroleum Status Report](#) (WPSR). If confirmed in monthly data, this level would be 32% (240,000 b/d) higher than the five-year average export volume for September. We estimate gasoline inventories declined by 3% (7.2 million barrels) to 208 million barrels in September, which is 10% below the five-year average and the lowest end-of-September level since 2012.

Declining crude oil prices contributed to the RBOB-Brent crack spread increasing in September after reaching its lowest level since February 2021 on September 1. The average RBOB-Brent crack spread in September was 30 cents/gal, 29 cents/gal lower than in August but still 7 cents/gal higher than the five-year average for September. From September 30 to October 6, RBOB prices rose by 8%, and Brent crude oil prices increased by 7% over the same period.

Spot market gasoline prices: Although West Coast spot market prices for gasoline are typically priced higher than in other parts of the country, West Coast premiums in late September increased to more than \$2/gal on average over New York RBOB prices. In September, spot gasoline prices in Los Angeles, San Francisco, and Portland increased by at least 50% while prices in New York decreased by 4% over the same time period (**Figure 6**).

Figure 6. Spot market gasoline prices

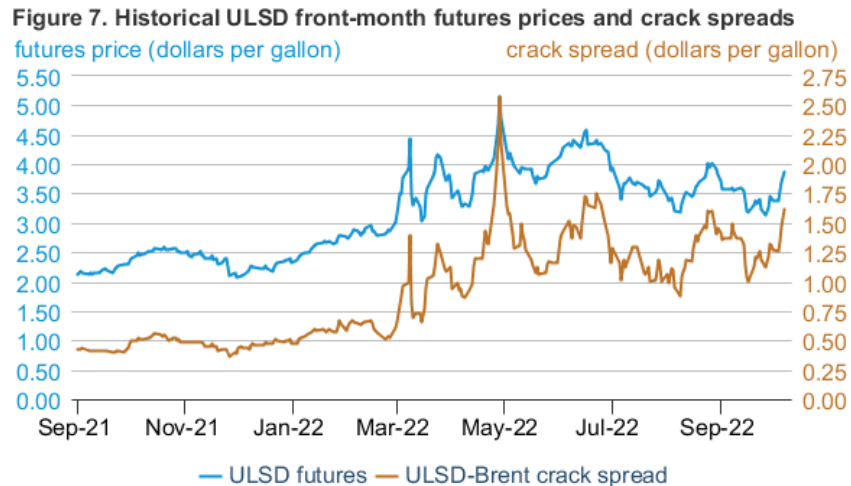


Data Source: Bloomberg L.P.

Multiple refinery outages for planned and unplanned maintenance on the West Coast, amid West Coast gasoline inventories at their lowest level since May 2012, contributed to the price increase along with lower imports. Gasoline imports to the West Coast, which have historically increased supplies during **past instances** of market tightness, did not materialize in a substantial way through the end of September. **WPSR** data show West Coast gasoline imports averaged 30,000 b/d for the four weeks ending September 30, after unusually low import levels in the second half of July and all of August. This lack of imports contributed to an increase in West Coast retail gasoline prices, which rose 17% (84 cents/gal) from September 19 to October 3. The California Air Resources Board issued a **notice** on September 30 to allow the early sale of winter-blend gasoline to help reduce high prices. From October 4 to October 6, West Coast premiums over New York RBOB declined by 92 cents/gal on average as some refinery capacity came back online in California and expectations rose for an increase in short-term imports.

In the Midwest, a similar situation is developing as **unplanned outages** at two refineries led to an increase in the Chicago spot gasoline price by 30% in September. Subsequently, Midwest retail gasoline prices increased 6% (20 cents/gal) from September 19 to October 3.

Ultra-low sulfur diesel prices: The front-month futures price for ultra-low sulfur diesel (ULSD) for delivery in New York Harbor settled at \$3.86/gal on October 6, a 30 cents/gal increase from September 1 (**Figure 7**). The ULSD-Brent crack spread (the difference between the price of ULSD and the price of Brent crude oil) increased 25 cents/gal during the same period and settled at \$1.62/gal on October 6.



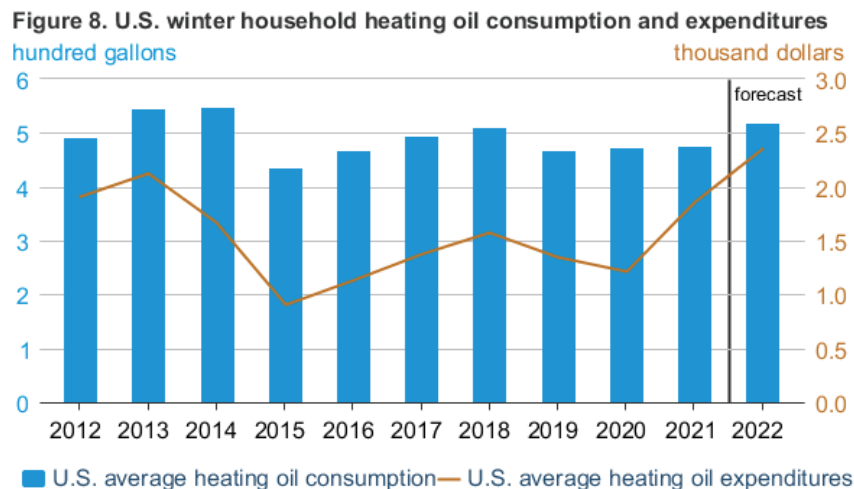
eia Data source: CME Group and Bloomberg L.P.
 Note: ULSD=ultra-low sulfur diesel, monthly labels indicate first day per month

ULSD prices and crack spreads both decreased in September on a monthly average basis in response to lower estimated demand in the United States and broader expectations of wavering economic activity. In addition to lower crude oil prices in September, we estimate monthly average distillate consumption in September was 3.7 million b/d, the lowest consumption so far in 2022, likely because of lower trucking and industrial demand related to decreasing economic expectations. We expect distillate consumption to increase in the fourth quarter of 2022, primarily in response to seasonal factors, including agricultural demand brought on by the fall harvest season and winter demand for distillate heating oil. These seasonal factors along with rising crude oil prices are likely contributing to the sharp increase in distillate prices in early October. Agricultural demand is primarily concentrated in the Midwest, and heating demand for distillate is primarily in the Northeast. Distillate inventories in the Midwest and Northeast have both been below their five-year lows through the summer of 2022, so transport constraints between Gulf Coast producers and these regions present the potential for relatively higher distillate prices in these markets.

We expect downward pressure on distillate prices and crack spreads, related to economic conditions, to continue through the end of 2022 and the first half of 2023, but we still forecast distillate crack spreads to remain well above historical levels through the end of the year. The potential for further low demand related to uncertain economic conditions, as well as potential variability in harvest or heating oil demand, are all significant factors in our forecast. Changes in distillate net exports present an additional source of uncertainty, which could mean fewer distillate imports into the United States (primarily to the East Coast) as well as further calls on U.S. distillate exports (mostly from the Gulf Coast) from international markets.

U.S. heating oil expenditures: In the 2022–2023 winter season (October 2022 through March 2023), we currently estimate U.S. average household heating oil consumption—most of which occurs in the Northeast—will be 519 gallons, which would be the most since the 2014–2015

winter season (**Figure 8**). High heating oil prices going into this winter, combined with higher forecast consumption result in our expectation that heating oil expenditures will be about \$2,350 this winter, for homes in which heating oil is the primary space heating fuel. Expenditures at that level would be the highest since 2013–2014 winter season when adjusted for inflation.



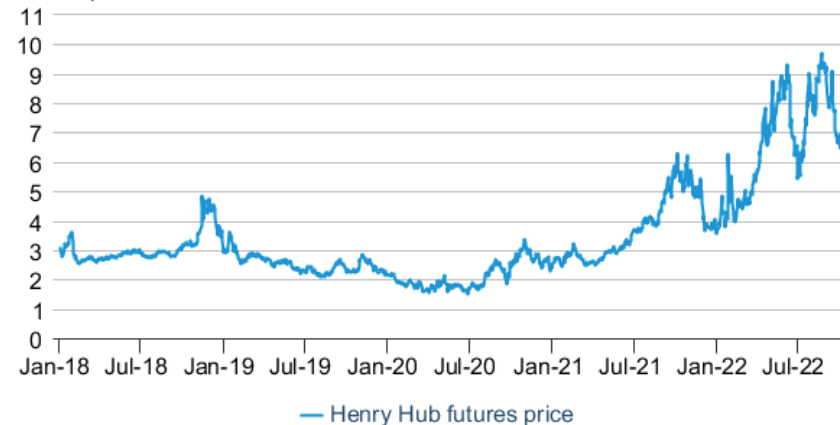
Data source: U.S. Energy Information Administration, Short Term Energy Outlook
 Note: Winter refers to October of the indicated year through March of the following year

The high estimated consumption this winter is a result of our estimates for higher heating degree days, based on the current winter outlook from the National Oceanic and Atmospheric Administration (NOAA). For more information, please see our [Winter Fuels Outlook](#).

Natural Gas

Prices: The front-month natural gas futures contract for delivery at the Henry Hub settled at \$6.97 per million British thermal units (MMBtu) on October 6, 2022, down \$2.29/MMBtu from September 1, 2022 (**Figure 9**). The price for front-month natural gas futures contracts averaged \$7.76/MMBtu in September, compared with \$8.78/MMBtu in August.

Figure 9. Historical nominal front-month U.S. natural gas prices
dollars per million British thermal units

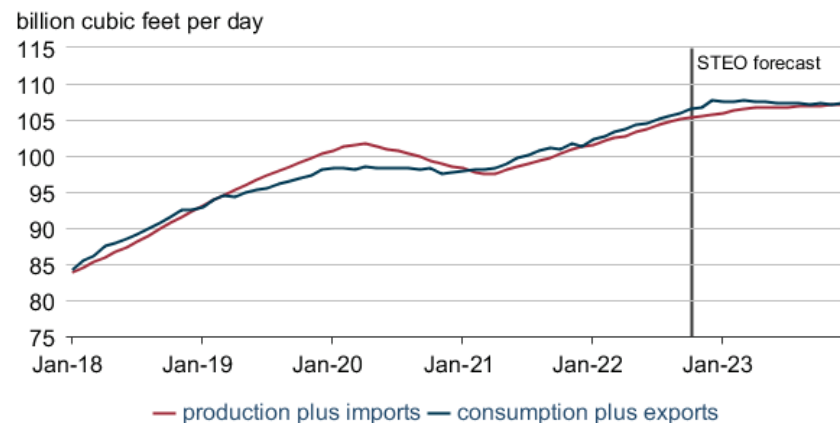


eia Data source: CME Group and Bloomberg L.P.

We estimate U.S. dry natural gas production in September reached a record-high 98.8 billion cubic feet per day (Bcf/d). The record production contributed to September's natural gas stock builds of 428 Bcf, which were 20% higher than the five-year (2017–2021) average. Despite the above-average builds, natural gas inventories at the end of the month were 3,135 Bcf, which is 8%, or 280 Bcf, below the five-year average. U.S. liquefied natural gas (LNG) exports averaged 10.1 Bcf/d in September, as liquefaction terminals other than the off-line Freeport terminal operated near full capacity.

Supply and demand balance: When natural gas supply (production plus imports) is lower than natural gas demand (consumption plus exports), natural gas prices tend to increase as more natural gas is pulled from storage to meet demand. The 12-month rolling average of natural gas demand has exceeded supply since February 2021 (**Figure 10**), which has contributed to an elevated Henry Hub spot price that [doubled between June 2021 and July 2022](#). Monthly storage inventories have remained below the five-year average since June 2021, except for in [December 2021](#) when unusually warm weather led to [lower-than-normal storage withdrawals](#). We expect the Henry Hub spot price to remain elevated until the second quarter of 2023 when we forecast the 12-month rolling average of supply to rise closer to average demand and inventories to rise above the five-year average.

Figure 10. Natural gas production plus imports and consumption plus exports, 12-month moving average



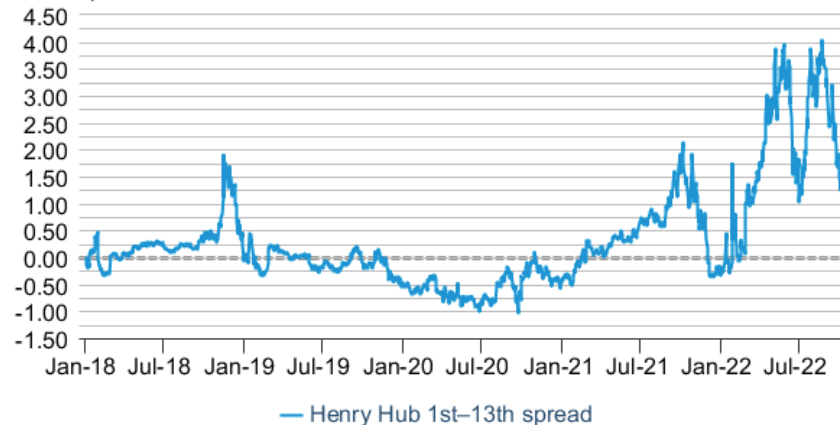
eia Data source: U.S. Energy Information Administration, Short-Term Energy Outlook (STEO)

As a result of higher forecast natural gas prices and consumption, we expect households that use natural gas as their primary space heating fuel will spend 28% more this winter (October 2022 through March 2023) than they spent last winter. Nearly half of all U.S. households heat primarily with natural gas. We expect average household winter consumption to be 58 thousand cubic feet (Mcf), up 5% from last winter. For more information, please see our [Winter Fuels Outlook](#).

We forecast the Henry Hub spot price will start to decline in the first half of 2023 as producers continue to increase supply. In the first three quarters of 2022, U.S. dry natural gas production grew steadily. We forecast dry natural gas production to continue to increase, averaging 99.1 Bcf/d in 4Q22.

Futures price spreads: Natural gas futures contracts allow natural gas to be bought and sold for delivery at specific dates in the future corresponding to the start of each month. The natural gas 1st–13th month spread represents the difference between the price of natural gas sold for delivery 1 month from now compared to natural gas sold for delivery 13 months from now. The natural gas 1st–13th month price spread averaged \$2.32/MMBtu in September, down nearly \$1.13 from the record-high monthly average of \$3.45/MMBtu set in August (**Figure 11**). The 1st–13th price spread has averaged over \$2.00/MMBtu every month since April. During that time, natural gas prices have remained elevated, averaging \$7.74/MMBtu, and natural gas inventories remained 8% or more below the five-year average.

Figure 11. Natural gas 1st–13th futures price spread
dollars per million British thermal units



eia Data source: CME Group and Bloomberg L.P.

When the 1st–13th price spread is positive, known as backwardation, near-term contract prices for the current month are higher than longer-dated contract prices for natural gas delivery one year further in the future. This difference reflects a market that puts greater value on natural gas sold for delivery one month from now compared with natural gas sold for delivery at the same time next year, encouraging market participants to sell natural gas from inventories instead of storing for future sales. Often, this situation occurs when natural gas demand is greater than supply, drawing inventories below the five-year range. The high 1st–13th price spread since April 2022 reflects the [highest annual natural gas demand on record](#), driven by the electric power sector and high LNG export levels. High demand is keeping inventories at a deficit to the five-year average. Dry natural gas production has increased since April but not by enough to significantly reduce the storage deficit to the five-year average. As a result, the 1st–13th price spread has remained at its highest monthly levels on record.

We expect natural gas spot prices to remain elevated in late 2022 before falling in 2023. We forecast the Henry Hub spot price to average about \$7.40/MMBtu in 4Q22, then fall below \$6.00/MMBtu in 2023 as U.S. natural gas production rises.

Notable forecast changes

- Global oil production for 2023 in our forecast averages 100.7 million barrels per day (b/d). Our production forecast is 0.6 million b/d lower than in the September STEO and reflects announced cuts from OPEC+ as well as lower forecast crude oil production in the United States.
- Our forecast for global oil consumption forecast for 2023 is 101.0 million b/d, which is 0.5 million b/d lower than in the September STEO and reflects Oxford Economics

lowering its forecast for global GDP growth in 2023 to 2.2% this month from 2.7% last month.

- We expect U.S. crude oil production will average 12.4 million b/d in 2023, which is down from a forecast of 12.6 million b/d last month. Lower crude oil production in the forecast reflects lower crude oil prices in 4Q22 than we previously expected.
- Our 2023 forecast for U.S. gasoline consumption was revised down by 0.1 million b/d. The downward revision reflects lower forecast vehicle miles traveled as a result of lower expected employment growth, based on forecasts from S&P Global, next year as well as higher expected growth in vehicle fuel efficiency.
- We forecast the Henry Hub natural gas spot price will average about \$7.40 per million British thermal units (MMBtu) in 4Q22, which is about \$1.60/MMBtu less than we forecast in the September STEO. The forecast largely reflects price declines in September that lowered the starting point for our forecast, amid slightly higher expectations for U.S. production in late 2022.
- We raised our forecast for electricity generation by natural gas-fired power plants as a result of lower natural gas prices in recent weeks. We forecast natural gas-fired generation will rise by 5% in 2022, compared with expected growth of 3% in the previous STEO. We have also lowered our forecast for coal-fired generation, which is now expected to fall by almost 7% in 2022 compared with a forecast decline of 4% in the previous STEO.
- You can find more information in the [detailed table of forecast changes](#).

This report was prepared by the U.S. Energy Information Administration (EIA), the statistical and analytical agency within the U.S. Department of Energy. By law, EIA's data, analyses, and forecasts are independent of approval by any other officer or employee of the U.S. Government. The views in this report therefore should not be construed as representing those of the U.S. Department of Energy or other federal agencies.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - October 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Production (million barrels per day) (a)															
OECD	30.26	30.85	31.15	32.23	31.66	31.87	32.54	33.19	33.63	33.67	33.60	34.09	31.13	32.32	33.75
U.S. (50 States)	17.79	19.16	19.03	19.91	19.44	20.12	20.36	20.72	20.93	21.01	21.03	21.37	18.98	20.16	21.09
Canada	5.62	5.37	5.49	5.68	5.66	5.53	5.72	5.85	5.92	5.88	5.90	5.92	5.54	5.69	5.91
Mexico	1.93	1.95	1.90	1.92	1.91	1.89	1.89	1.86	1.90	1.87	1.83	1.79	1.92	1.89	1.85
Other OECD	4.92	4.37	4.73	4.71	4.65	4.34	4.56	4.75	4.87	4.91	4.83	5.01	4.68	4.58	4.91
Non-OECD	62.57	63.98	65.61	66.11	67.21	66.78	68.64	67.68	66.46	67.16	67.56	66.74	64.58	67.58	66.98
OPEC	30.34	30.88	32.28	33.10	33.75	33.80	34.68	34.08	34.32	34.43	34.55	34.20	31.66	34.08	34.37
Crude Oil Portion	25.08	25.49	26.84	27.67	28.19	28.36	29.20	28.56	28.73	28.96	29.05	28.66	26.28	28.58	28.85
Other Liquids (b)	5.26	5.39	5.44	5.44	5.56	5.44	5.48	5.52	5.59	5.46	5.50	5.54	5.38	5.50	5.52
Eurasia	13.42	13.66	13.63	14.27	14.39	13.33	13.70	13.67	12.42	12.25	12.27	12.28	13.75	13.77	12.31
China	4.99	5.03	5.01	4.93	5.18	5.16	5.14	5.18	5.22	5.25	5.24	5.28	4.99	5.16	5.25
Other Non-OECD	13.81	14.41	14.69	13.80	13.90	14.49	15.12	14.74	14.51	15.23	15.50	14.98	14.18	14.57	15.06
Total World Production	92.83	94.83	96.76	98.34	98.87	98.65	101.18	100.86	100.09	100.83	101.16	100.83	95.71	99.90	100.73
Non-OPEC Production	62.48	63.95	64.47	65.24	65.13	64.86	66.50	66.78	65.78	66.40	66.61	66.63	64.05	65.82	66.36
Consumption (million barrels per day) (c)															
OECD	42.59	44.14	45.87	46.89	45.85	45.42	45.69	46.86	46.24	45.27	45.91	46.31	44.89	45.96	45.93
U.S. (50 States)	18.58	20.13	20.30	20.54	20.22	20.27	20.15	20.76	20.22	20.52	20.61	20.81	19.89	20.35	20.54
U.S. Territories	0.21	0.19	0.19	0.20	0.22	0.20	0.20	0.22	0.22	0.20	0.21	0.22	0.20	0.21	0.21
Canada	2.19	2.16	2.43	2.33	2.26	2.19	2.36	2.37	2.30	2.25	2.34	2.32	2.28	2.30	2.30
Europe	11.96	12.67	13.88	13.94	13.15	13.42	13.77	13.80	13.57	13.19	13.59	13.35	13.12	13.54	13.42
Japan	3.77	3.07	3.17	3.66	3.70	3.03	3.16	3.49	3.72	3.06	3.09	3.39	3.41	3.34	3.31
Other OECD	5.89	5.93	5.90	6.23	6.30	6.32	6.04	6.22	6.22	6.05	6.08	6.22	5.99	6.22	6.14
Non-OECD	51.78	52.21	52.53	53.64	53.13	53.37	53.85	54.03	55.04	55.47	55.12	54.76	52.54	53.60	55.10
Eurasia	4.66	4.73	5.09	4.95	4.55	4.40	4.76	4.69	4.29	4.44	4.76	4.67	4.86	4.60	4.54
Europe	0.74	0.74	0.74	0.76	0.76	0.76	0.76	0.77	0.75	0.77	0.77	0.78	0.75	0.76	0.77
China	15.27	15.48	14.99	15.33	15.14	15.12	15.11	15.56	16.35	16.24	15.62	15.54	15.27	15.23	15.93
Other Asia	13.43	12.98	12.84	13.69	13.80	13.81	13.50	13.88	14.41	14.39	13.81	14.10	13.23	13.75	14.18
Other Non-OECD	17.68	18.27	18.87	18.91	18.89	19.27	19.72	19.13	19.24	19.63	20.17	19.67	18.44	19.25	19.68
Total World Consumption	94.37	96.34	98.40	100.53	98.98	98.79	99.54	100.89	101.27	100.74	101.03	101.07	97.43	99.55	101.03
Total Crude Oil and Other Liquids Inventory Net Withdrawals (million barrels per day)															
U.S. (50 States)	0.36	0.51	0.37	0.83	0.81	0.51	0.43	0.55	0.00	-0.36	-0.06	0.49	0.52	0.57	0.02
Other OECD	0.87	0.15	0.97	0.67	-0.12	-0.19	-0.66	-0.17	0.38	0.09	-0.02	-0.08	0.66	-0.29	0.09
Other Stock Draws and Balance	0.31	0.86	0.31	0.68	-0.57	-0.19	-1.40	-0.35	0.80	0.19	-0.05	-0.17	0.54	-0.63	0.19
Total Stock Draw	1.55	1.52	1.65	2.18	0.11	0.13	-1.64	0.02	1.18	-0.09	-0.13	0.24	1.72	-0.35	0.30
End-of-period Commercial Crude Oil and Other Liquids Inventories (million barrels)															
U.S. Commercial Inventory	1,311	1,281	1,251	1,199	1,154	1,180	1,218	1,196	1,198	1,246	1,257	1,222	1,199	1,196	1,222
OECD Commercial Inventory	2,917	2,874	2,755	2,641	2,607	2,651	2,751	2,744	2,712	2,752	2,765	2,738	2,641	2,744	2,738

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

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

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

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

- = no data available

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

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

Notes: EIA completed modeling and analysis for this report on October 6, 2022.

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

Historical data: Latest data available from Energy Information Administration international energy statistics.

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

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 4a. U.S. Petroleum and Other Liquids Supply, Consumption, and Inventories
U.S. Energy Information Administration | Short-Term Energy Outlook - October 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Supply (million barrels per day)															
Crude Oil Supply															
Domestic Production (a)	10.82	11.34	11.18	11.66	11.47	11.69	11.83	11.99	12.27	12.29	12.36	12.50	11.25	11.75	12.36
Alaska	0.46	0.44	0.41	0.44	0.45	0.44	0.43	0.44	0.44	0.38	0.40	0.41	0.44	0.44	0.41
Federal Gulf of Mexico (b)	1.83	1.80	1.49	1.71	1.67	1.70	1.78	1.80	1.88	1.86	1.79	1.78	1.71	1.74	1.83
Lower 48 States (excl GOM)	8.54	9.10	9.29	9.50	9.35	9.56	9.63	9.75	9.95	10.04	10.17	10.32	9.11	9.57	10.12
Crude Oil Net Imports (c)	2.88	2.94	3.64	3.13	3.00	2.81	2.47	3.33	2.89	3.25	3.47	3.11	3.15	2.90	3.18
SPR Net Withdrawals	0.00	0.18	0.04	0.26	0.31	0.80	0.85	0.31	0.01	0.17	0.06	0.11	0.12	0.57	0.09
Commercial Inventory Net Withdrawals	-0.19	0.60	0.30	-0.01	0.08	-0.03	-0.13	-0.07	-0.26	0.12	0.19	-0.08	0.18	-0.04	-0.01
Crude Oil Adjustment (d)	0.30	0.59	0.44	0.44	0.71	0.81	1.18	0.16	0.22	0.22	0.23	0.16	0.44	0.72	0.21
Total Crude Oil Input to Refineries	13.81	15.65	15.61	15.49	15.56	16.09	16.20	15.73	15.13	16.04	16.30	15.81	15.15	15.89	15.82
Other Supply															
Refinery Processing Gain	0.85	0.98	0.96	1.04	0.95	1.07	1.06	1.04	1.01	0.97	0.98	1.00	0.96	1.03	0.99
Natural Gas Plant Liquids Production	4.89	5.50	5.56	5.74	5.61	5.92	6.09	6.25	6.25	6.32	6.28	6.39	5.42	5.97	6.31
Renewables and Oxygenate Production (e)	1.04	1.13	1.11	1.24	1.19	1.20	1.16	1.23	1.19	1.21	1.19	1.26	1.13	1.20	1.21
Fuel Ethanol Production	0.90	0.99	0.96	1.06	1.02	1.01	0.97	1.01	0.97	0.98	0.96	1.00	0.98	1.00	0.98
Petroleum Products Adjustment (f)	0.20	0.22	0.22	0.23	0.22	0.23	0.22	0.22	0.21	0.22	0.22	0.22	0.22	0.22	0.21
Product Net Imports (c)	-2.79	-3.07	-3.19	-3.79	-3.74	-3.99	-4.29	-4.01	-3.82	-3.59	-4.06	-4.32	-3.21	-4.01	-3.95
Hydrocarbon Gas Liquids	-1.95	-2.25	-2.15	-2.18	-2.14	-2.31	-2.25	-2.52	-2.55	-2.54	-2.55	-2.55	-2.14	-2.31	-2.55
Unfinished Oils	0.18	0.30	0.25	0.10	0.09	0.25	0.39	0.28	0.20	0.26	0.37	0.20	0.21	0.26	0.26
Other HC/Oxygenates	-0.08	-0.04	-0.03	-0.05	-0.09	-0.10	-0.07	-0.05	-0.06	-0.04	-0.03	-0.03	-0.05	-0.08	-0.04
Motor Gasoline Blend Comp.	0.55	0.79	0.67	0.43	0.40	0.60	0.46	0.36	0.42	0.66	0.36	0.39	0.61	0.45	0.46
Finished Motor Gasoline	-0.64	-0.64	-0.68	-0.88	-0.76	-0.73	-0.80	-0.65	-0.59	-0.53	-0.71	-0.81	-0.71	-0.74	-0.66
Jet Fuel	0.03	0.08	0.08	0.01	-0.04	-0.06	-0.11	-0.06	-0.09	0.00	0.04	0.07	0.05	-0.07	0.00
Distillate Fuel Oil	-0.48	-0.87	-0.91	-0.86	-0.81	-1.15	-1.38	-1.05	-0.71	-1.02	-1.16	-1.14	-0.78	-1.10	-1.01
Residual Fuel Oil	0.07	0.05	0.08	0.15	0.14	0.10	0.07	0.20	0.13	0.14	0.14	0.17	0.09	0.13	0.14
Other Oils (g)	-0.48	-0.49	-0.50	-0.50	-0.54	-0.59	-0.59	-0.52	-0.57	-0.52	-0.52	-0.62	-0.49	-0.56	-0.56
Product Inventory Net Withdrawals	0.55	-0.27	0.03	0.58	0.42	-0.25	-0.29	0.31	0.25	-0.65	-0.31	0.46	0.22	0.05	-0.06
Total Supply	18.54	20.13	20.30	20.53	20.22	20.27	20.15	20.76	20.22	20.52	20.61	20.81	19.88	20.35	20.54
Consumption (million barrels per day)															
Hydrocarbon Gas Liquids	3.43	3.33	3.34	3.66	3.87	3.43	3.43	3.97	4.07	3.55	3.52	3.95	3.44	3.68	3.77
Other HC/Oxygenates	0.11	0.13	0.13	0.16	0.13	0.17	0.16	0.22	0.21	0.21	0.20	0.26	0.13	0.17	0.22
Unfinished Oils	0.08	0.07	-0.05	0.00	0.13	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.02	0.05	0.00
Motor Gasoline	8.04	9.09	9.14	8.98	8.47	9.00	8.82	8.82	8.42	8.98	8.94	8.85	8.82	8.78	8.80
Fuel Ethanol blended into Motor Gasoline	0.81	0.93	0.94	0.95	0.87	0.93	0.90	0.92	0.86	0.93	0.92	0.93	0.91	0.91	0.91
Jet Fuel	1.12	1.34	1.52	1.50	1.45	1.61	1.59	1.56	1.45	1.59	1.66	1.63	1.37	1.55	1.58
Distillate Fuel Oil	3.99	3.96	3.90	4.03	4.14	3.89	3.75	3.93	4.05	3.93	3.84	3.94	3.97	3.93	3.94
Residual Fuel Oil	0.26	0.25	0.35	0.40	0.38	0.31	0.34	0.44	0.37	0.39	0.41	0.41	0.31	0.37	0.40
Other Oils (g)	1.54	1.95	1.98	1.81	1.65	1.82	2.02	1.82	1.64	1.87	2.04	1.77	1.82	1.83	1.83
Total Consumption	18.58	20.13	20.30	20.54	20.22	20.27	20.15	20.76	20.22	20.52	20.61	20.81	19.89	20.35	20.54
Total Petroleum and Other Liquids Net Imports	0.09	-0.13	0.45	-0.65	-0.74	-1.18	-1.81	-0.68	-0.93	-0.34	-0.59	-1.21	-0.06	-1.10	-0.77
End-of-period Inventories (million barrels)															
Commercial Inventory															
Crude Oil (excluding SPR)	502.5	448.1	420.3	421.2	414.4	417.5	429.3	435.7	459.5	448.9	431.0	438.3	421.2	435.7	438.3
Hydrocarbon Gas Liquids	176.9	205.3	235.5	193.1	142.0	186.7	244.4	192.5	148.5	201.8	244.2	203.1	193.1	192.5	203.1
Unfinished Oils	92.5	92.3	89.5	79.7	87.9	88.8	82.0	81.0	91.7	89.4	88.4	81.3	79.7	81.0	81.3
Other HC/Oxygenates	29.3	27.7	25.7	28.7	34.1	29.4	28.1	28.4	30.5	29.2	28.9	29.2	28.7	28.4	29.2
Total Motor Gasoline	237.8	237.3	227.0	232.2	238.5	221.0	207.6	236.1	239.0	244.5	234.8	244.6	232.2	236.1	244.6
Finished Motor Gasoline	20.3	18.5	18.5	17.8	17.3	17.1	17.3	20.5	18.0	19.2	20.7	23.2	17.8	20.5	23.2
Motor Gasoline Blend Comp.	217.6	218.7	208.5	214.4	221.2	203.8	190.2	215.6	221.0	225.3	214.0	221.5	214.4	215.6	221.5
Jet Fuel	39.1	44.7	42.0	35.8	35.6	39.3	36.3	32.4	34.8	38.3	39.1	36.6	35.8	32.4	36.6
Distillate Fuel Oil	146.1	140.1	132.1	130.0	114.6	111.4	111.0	110.9	103.2	107.1	113.9	112.7	130.0	110.9	112.7
Residual Fuel Oil	30.9	31.5	27.8	25.8	27.9	29.2	28.8	27.0	29.1	27.8	26.9	25.3	25.8	27.0	25.3
Other Oils (g)	55.8	54.3	51.0	52.2	58.5	56.4	51.0	52.3	61.4	59.2	49.8	51.2	52.2	52.3	51.2
Total Commercial Inventory	1310.9	1281.4	1250.9	1198.6	1153.6	1179.7	1218.5	1196.2	1197.8	1246.2	1257.1	1222.4	1198.6	1196.2	1222.4
Crude Oil in SPR	637.8	621.3	617.8	593.7	566.1	493.3	415.4	386.8	385.6	370.0	364.8	354.3	593.7	386.8	354.3

(a) Includes lease condensate.

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

(c) Net imports equals gross imports minus gross exports.

(d) Crude oil adjustment balances supply and consumption and was previously referred to as "Unaccounted for Crude Oil."

(e) 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.

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

(g) "Other Oils" includes aviation gasoline blend components, finished aviation gasoline, kerosene, petrochemical feedstocks, special naphthas, lubricants, waxes, petroleum coke, asphalt and road oil, still gas, and miscellaneous products.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - October 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Supply (billion cubic feet per day)															
Total Marketed Production	98.57	102.12	102.88	105.43	103.27	106.14	107.27	<i>107.88</i>	<i>107.93</i>	<i>108.37</i>	<i>108.56</i>	<i>108.85</i>	102.27	<i>106.16</i>	<i>108.43</i>
Alaska	1.02	0.95	0.90	1.02	1.06	1.00	0.93	<i>1.00</i>	<i>1.00</i>	<i>0.92</i>	<i>0.84</i>	<i>0.98</i>	0.97	<i>1.00</i>	<i>0.94</i>
Federal GOM (a)	2.33	2.30	1.82	2.10	2.05	2.11	2.19	<i>2.16</i>	<i>2.18</i>	<i>2.12</i>	<i>1.99</i>	<i>1.95</i>	2.14	<i>2.13</i>	<i>2.06</i>
Lower 48 States (excl GOM)	95.22	98.87	100.16	102.30	100.16	103.03	104.15	<i>104.72</i>	<i>104.75</i>	<i>105.33</i>	<i>105.72</i>	<i>105.93</i>	99.16	<i>103.03</i>	<i>105.44</i>
Total Dry Gas Production	91.14	94.43	95.14	97.49	95.10	97.55	98.48	<i>99.05</i>	<i>99.20</i>	<i>99.57</i>	<i>99.73</i>	<i>100.00</i>	94.57	<i>97.56</i>	<i>99.63</i>
LNG Gross Imports	0.15	0.02	0.03	0.04	0.15	0.01	0.05	<i>0.06</i>	<i>0.10</i>	<i>0.04</i>	<i>0.04</i>	<i>0.06</i>	0.06	<i>0.07</i>	<i>0.06</i>
LNG Gross Exports	9.27	9.81	9.60	10.32	11.50	10.80	10.02	<i>11.75</i>	<i>12.47</i>	<i>12.53</i>	<i>12.10</i>	<i>12.28</i>	9.76	<i>11.01</i>	<i>12.34</i>
Pipeline Gross Imports	8.68	6.81	7.24	7.82	8.92	7.79	7.72	<i>7.59</i>	<i>8.30</i>	<i>6.87</i>	<i>7.05</i>	<i>7.44</i>	7.63	<i>8.00</i>	<i>7.41</i>
Pipeline Gross Exports	8.31	8.66	8.50	8.40	8.43	8.44	8.56	<i>9.19</i>	<i>9.64</i>	<i>9.10</i>	<i>9.44</i>	<i>9.75</i>	8.47	<i>8.66</i>	<i>9.49</i>
Supplemental Gaseous Fuels	0.17	0.18	0.18	0.19	0.21	0.15	0.19	<i>0.19</i>	<i>0.19</i>	<i>0.19</i>	<i>0.19</i>	<i>0.19</i>	0.18	<i>0.18</i>	<i>0.19</i>
Net Inventory Withdrawals	17.18	-9.12	-7.87	1.03	20.14	-10.25	-8.83	<i>3.03</i>	<i>15.53</i>	<i>-13.19</i>	<i>-9.23</i>	<i>3.76</i>	0.24	<i>0.95</i>	<i>-0.84</i>
Total Supply	99.74	73.84	76.62	87.84	104.59	76.01	79.04	<i>88.98</i>	<i>101.21</i>	<i>71.84</i>	<i>76.24</i>	<i>89.42</i>	84.46	<i>87.09</i>	<i>84.62</i>
Balancing Item (b)	1.28	-1.08	-0.66	-1.28	0.54	0.40	1.03	<i>1.22</i>	<i>1.75</i>	<i>1.20</i>	<i>-0.52</i>	<i>0.33</i>	-0.44	<i>0.80</i>	<i>0.68</i>
Total Primary Supply	101.03	72.76	75.96	86.56	105.13	76.42	80.07	<i>90.20</i>	<i>102.96</i>	<i>73.04</i>	<i>75.71</i>	<i>89.74</i>	84.01	<i>87.89</i>	<i>85.30</i>
Consumption (billion cubic feet per day)															
Residential	26.05	7.58	3.67	14.61	26.09	7.85	3.89	<i>16.84</i>	<i>25.74</i>	<i>7.92</i>	<i>4.17</i>	<i>16.75</i>	12.92	<i>13.62</i>	<i>13.59</i>
Commercial	15.03	6.31	4.73	10.17	15.62	6.70	5.02	<i>11.53</i>	<i>15.27</i>	<i>6.86</i>	<i>5.32</i>	<i>11.62</i>	9.04	<i>9.69</i>	<i>9.75</i>
Industrial	24.21	21.67	21.45	23.59	25.49	22.38	21.47	<i>23.31</i>	<i>23.46</i>	<i>21.11</i>	<i>21.36</i>	<i>24.06</i>	22.73	<i>23.15</i>	<i>22.50</i>
Electric Power (c)	26.79	29.20	37.94	29.47	28.65	31.12	41.14	<i>29.54</i>	<i>28.99</i>	<i>28.78</i>	<i>36.41</i>	<i>28.29</i>	30.88	<i>32.64</i>	<i>30.63</i>
Lease and Plant Fuel	5.02	5.20	5.24	5.37	5.26	5.41	5.46	<i>5.49</i>	<i>5.50</i>	<i>5.52</i>	<i>5.53</i>	<i>5.54</i>	5.21	<i>5.41</i>	<i>5.52</i>
Pipeline and Distribution Use	3.77	2.65	2.78	3.19	3.87	2.81	2.94	<i>3.35</i>	<i>3.84</i>	<i>2.69</i>	<i>2.79</i>	<i>3.33</i>	3.09	<i>3.24</i>	<i>3.16</i>
Vehicle Use	0.15	0.15	0.15	0.15	0.15	0.15	0.15	<i>0.15</i>	<i>0.15</i>	<i>0.15</i>	<i>0.15</i>	<i>0.15</i>	0.15	<i>0.15</i>	<i>0.15</i>
Total Consumption	101.03	72.76	75.96	86.56	105.13	76.42	80.07	<i>90.20</i>	<i>102.96</i>	<i>73.04</i>	<i>75.71</i>	<i>89.74</i>	84.01	<i>87.89</i>	<i>85.30</i>
End-of-period Inventories (billion cubic feet)															
Working Gas Inventory	1,801	2,585	3,306	3,210	1,401	2,325	3,135	<i>2,857</i>	<i>1,460</i>	<i>2,660</i>	<i>3,509</i>	<i>3,163</i>	3,210	<i>2,857</i>	<i>3,163</i>
East Region (d)	313	515	804	766	242	482	756	<i>650</i>	<i>215</i>	<i>572</i>	<i>879</i>	<i>747</i>	766	<i>650</i>	<i>747</i>
Midwest Region (d)	395	630	966	887	296	557	916	<i>795</i>	<i>325</i>	<i>650</i>	<i>1,000</i>	<i>860</i>	887	<i>795</i>	<i>860</i>
South Central Region (d)	760	993	1,053	1,143	587	885	1,003	<i>998</i>	<i>664</i>	<i>1,019</i>	<i>1,105</i>	<i>1,079</i>	1,143	<i>998</i>	<i>1,079</i>
Mountain Region (d)	113	175	205	171	90	137	184	<i>168</i>	<i>91</i>	<i>139</i>	<i>205</i>	<i>186</i>	171	<i>168</i>	<i>186</i>
Pacific Region (d)	197	246	248	218	165	240	247	<i>216</i>	<i>134</i>	<i>249</i>	<i>291</i>	<i>262</i>	218	<i>216</i>	<i>262</i>
Alaska	23	27	30	25	21	25	29	<i>29</i>	<i>29</i>	<i>29</i>	<i>29</i>	<i>29</i>	25	<i>29</i>	<i>29</i>

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

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

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

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

- = no data available

LNG: liquefied natural gas.

Notes: EIA completed modeling and analysis for this report on October 6, 2022.

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

Historical data: Latest data available from Energy Information Administration databases supporting the following reports: *Natural Gas Monthly*, DOE/EIA-0130; and *Electric Power Monthly*,

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

Forecasts: EIA Short-Term Integrated Forecasting System.

<https://www.nationalnewswatch.com/2022/10/13/melanie-joly-pushes-lng-ties-in-japan-and-south-korea-amid-north-korea-missiles/#.Y0i2VdfMIaa>

Mélanie Joly pushes LNG ties in Japan and South Korea, amid North Korea missiles

By [Dylan Robertson, The Canadian Press](#) — [The Canadian Press](#) — Oct 13 2022



OTTAWA — Foreign Affairs Minister Mélanie Joly says Canada is set to become a major energy supplier for Japan and South Korea.

On a visit to both countries this week, Joly said she found a growing appetite for liquefied natural gas from Canada beyond a looming megaproject.

A major export terminal is set to open in 2025 in Kitimat, B.C., with Japanese and Korean companies holding a 20 per cent stake.

"We will become a major supplier of key energy for them, starting in 2025," Joly said in a Thursday interview from Seoul.

"There is a lot of interest for all of us to go even further."

Joly said these types of projects will help Canada shore up energy security in the region, where China and Russia have been growing increasingly assertive.

"Japan and Korea were already very close to Canada, but it is now in Canada's interest more than ever, that they be best of friends," she said.

"We know that there's a lot of instability in the world, and when that's the case, Canada reaches out to the world to create more stability."

Joly said a series of missiles that North Korea launched over Japan this month loomed large in her talks with local officials and the Canadian navy.

She visited HMCS Vancouver, which is undertaking exercises to monitor sanctions on North Korea "in view of their reckless actions," Joly said. That often means monitoring ships that stop near each other, to see whether goods or fuel are being transferred.

In September, the Vancouver sailed through the Taiwan Strait alongside a U.S. warship to demonstrate Canada's position that the area near mainland China counts as international waters.

Joly's visit also touched on existing work to make more Canadian critical minerals available for Asian firms building electric vehicles and parts.

In Tokyo, she co-launched formal talks aimed at having Canada and Japan share military intelligence.

Joly's weeklong visit wraps up Saturday. She said the intent is to build on close ties with allies ahead of an Indo-Pacific strategy that should outline Ottawa's approach to dealing with China.

"The goal right now is to lay the foundation for the strategy," she said.

Joly has previously said that a major summit the Chinese Communist Party is holding next week will help inform Canada's Indo-Pacific strategy, which she has promised to release by the end of this year.

Opposition parties have argued the strategy is long overdue, and business groups say they need Ottawa to clarify the regions and industries where it wants closer ties, and which countries Canada deems to be riskier.

This report by The Canadian Press was first published Oct. 13, 2022.

Dylan Robertson, The Canadian Press

LNG Canada, country's \$40-billion 'second chance' at becoming a global LNG leader, takes shape

Already more than 70% complete, project promises to unlock full economic potential of Canada's rich gas reserves for first time

Author of the article: [Meghan Potkins](#)

Publishing date: Oct 04, 2022 • 9 minutes ago • 6 minute read • [_Join the conversation](#)



Construction of the LNG Canada site in Kitimat, B.C., in September 2022. PHOTO BY COURTESY LNG CANADA

On a drizzly stretch of B.C. coastline at the head of the Douglas Channel, Canada's first natural gas export terminal is taking shape.

The sprawling site on the traditional territory of the Haisla Nation teems with more than 5,000 construction and trades workers, working around the clock to bring the \$40-billion Shell Plc.-led LNG Canada terminal to completion.

The latest piece of the puzzle: a colossal 3,000-ton Baker Hughes compressor that arrived in Kitimat by boat from Italy on Sep. 20, the first of four that will form the powerful jet engine of the terminal's liquefaction process. Its arrival puts the project — and the country — one important step closer to seeing the first cargo of liquified natural gas depart from its shores.

Already more than 70 per cent complete, LNG Canada could be operational by the middle of the decade and promises to unlock the full economic potential of Canada's rich gas reserves for the first time.

It's a change that will take some adjusting to in the oilpatch. Despite being the fifth-largest supplier of natural gas in the world, Canada's energy sector has long seen its production hemmed in by pipeline constraints and market conditions in the U.S.

An export terminal on the West Coast providing access to global markets would be a game-changer for Canadian producers who have been maxing out the volumes they can push into the U.S. Midwest and Eastern Canada, said Richard Frey, an analyst with S&P Global Commodity Insights. In 2021, Canada exported an average of 7.6 billion cubic feet per day (Bcf/d) of natural gas to the U.S. and imported 2.2 Bcf/d.

"There's really not a whole lot of room to do anything more beyond what they're sending right now," Frey said. "So this will be an additional outlet and a large outlet at that, too. If North American prices remain high ... it could easily grow production by two (billion cubic feet of natural gas) per day."

Hundreds of kilometres inland, veteran oilpatch leaders in landlocked Alberta have watched as more than a dozen West Coast LNG ventures were shelved or cancelled over the years as regulatory delays or market conditions battered proposals and soured investors — all while nascent LNG export industries took off in Australia and the U.S.

Now, those same oilpatch veterans are urging Shell and its partners to quickly green-light a second phase of the project, effectively doubling the export capacity of the plant from 14 million tonnes of LNG per year in the first phase, to 28 million tonnes a year.



A view of the LNG Canada site. PHOTO BY

MEGHAN POTKINS/FINANCIAL POST

“We had an opportunity that required us getting after these projects 10 to 15 years ago. We didn’t for all kinds of reasons,” said Tourmaline Oil Corp. chief executive and founder Mike Rose. “Fortunately, we have a second crack at it. So I’d like to see more than just LNG Canada phase one — we’d like to see both phases of LNG Canada and more projects on the West Coast.”

Experts in the sector say Canada’s advantages as a West Coast LNG exporter are considerable. They include the significant low-cost supply from western gas fields such as the giant Montney formation that straddles the border between Northern B.C. and Alberta, shorter shipping distances to Asian markets, access to renewable hydroelectricity and a colder climate than U.S. Gulf Coast competitors who must expend more energy to cool gas through the liquefaction process. In combination, these factors mean LNG Canada’s facility in Kitimat will have one of the lowest carbon intensities of any LNG project in the world.

The \$40-billion facility is furthest along of a small pack of proposed West Coast projects that have benefited from the fresh interest in Canadian LNG brought on by the global energy crunch following Russia’s invasion of Ukraine.

In Kitimat, work can’t progress fast enough for LNG Canada’s investors, even as massive new pieces of equipment and machinery arrive almost weekly. A 56-meter-high circular tank — the second-largest LNG tank in the world — is also nearing completion and will eventually store the super-chilled natural gas until tankers arrive to carry it away.

But despite the current enthusiasm for Canada’s LNG potential, there are disadvantages to being a late entrant in a crowded global LNG market.

The long-term nature of investments in LNG present a risk if global demand for natural gas declines faster than expected. One of Shell’s own recently published climate models suggests that it is conceivable that global gas demand could peak in the 2030s as governments around the world switch to low-carbon energy sources — a timeline that has been vociferously contested on both sides of the climate debate.

“It doesn’t really make sense to build a facility if you don’t think you’re going to get a lot of good use out of it for at least a decade, if not two decades,” Frey said. “There’s a lot of questions right now about natural gas’s role in the future energy mix. So that’s what I would be the most concerned about: It looks great right now, but what does it look like in 2045?”

Among the factors helping to bolster local enthusiasm for Canada’s prospects as an LNG exporter is the energy sector’s growing relationship with Indigenous communities.

It looks great right now, but what does it look like in 2045?

RICHARD FREY

In a reversal from the industry’s old pattern in dealings with Indigenous peoples in Western Canada, the focus now is on consultations and carefully negotiated benefit agreements with communities affected by the energy sector’s activities.

In the case of LNG Canada, built on Haisla Nation territory, the project has brought revenue, employment opportunities and more than 20 joint-venture partnerships with related businesses. Haisla Chief Councillor Crystal Smith said she has urged members of her nation to take advantage of training and career opportunities to propel their careers, long after construction on the LNG Canada mega-project begins to taper off.

“That is the reason we wanted and supported this project,” Smith said. “I’m not saying that everything has been perfect,” Smith added, pointing to the area’s housing shortage and the difficulty in attracting and retaining teachers and an addictions counsellor.

“But for the most part, what we’re experiencing now is what we wanted for our people in our community and our region.”

Even better, Smith said, is the promise of the proposed \$3-billion Cedar LNG project, which would neighbour LNG Canada in Kitimat and be majority-owned by Indigenous groups. The project is currently awaiting a decision under B.C.’s environmental assessment process.

“I often describe our journey as one that started with not having a share or a say in any opportunity that occurred in our territory, to being active, at-the-table decision makers helping LNG Canada become successful. Now, we are ‘the’ decision makers in Cedar LNG, and that in itself is a huge legacy,” Smith said.

It’s unclear how many LNG projects will ultimately be approved by Canadian regulators.

Project proponents and investors will be watching closely as the governments of Canada and B.C. prepare to roll out more detailed plans to cut emissions from the oil and gas industry. Some oilpatch leaders and Indigenous groups with ambitions to invest in energy projects have warned that the introduction of a sector-specific emissions cap could thwart further investments in LNG.

Still, LNG Canada CEO Jason Klein said he remains optimistic about the economics of Shell’s project and the sector’s potential to endure as the global energy transition unfolds.

Pointing to the company’s 40-year permit to operate in Kitimat, Klein said he believes there is starting to be an acknowledgement that not all LNG projects are created equal.

“The cleanest molecule is going to be the last molecule standing,” Klein said. “That’s one of the reasons why I feel so good about LNG Canada, because we are that clean molecule. And when people start getting really picky, whether driven by carbon price or otherwise, the cleanest LNG will be the last LNG — which right now, in the world, that’s right here.”

• Email: mpotkins@postmedia.com | Twitter:

October 14, 2022 12:39 PM MDT Last Updated 5 hours ago

Canada would back 'economically viable' new LNG terminals -finmin

By [Steve Scherer](#)



Canada's Finance Minister Chrystia Freeland looks on during a news conference before delivering the 2022-23 budget, in Ottawa, Ontario, Canada, April 7, 2022. REUTERS/Blair Gable/File Photo

OTTAWA, Oct 14 (Reuters) - Canada will look at supporting more liquefied natural gas (LNG) terminals as long as they are economically feasible because they are needed to keep the world from burning coal again amid the current energy crunch, Finance Minister Chrystia Freeland said on Friday.

LNG "is an important transition fuel," Freeland told reporters in Washington at the end of annual IMF and World Bank meetings. "We will always be looking at economically viable LNG projects."

German Chancellor Olaf Scholz visited in August, looking for Canada - the world's fifth largest producer of natural gas - to play a "major role" in filling the shortfall brought on by Russia's invasion of Ukraine, but went home with no promises.

When Scholz was in Canada, Prime Minister Justin Trudeau said "there has never been a strong business case" for LNG on the country's east coast.

On Friday, Freeland appeared to leave the door open to the possibility, as has Natural Resources Minister [Jonathan Wilkinson](#), saying that she had heard finance ministers in Washington this week say they were having to burn more coal because of the soaring cost of LNG.

"I want to burn less coal,' one minister said quite movingly," Freeland said, but cannot because "LNG is too expensive right now."

Two east coast projects being discussed are Repsol's ([REP.MC](#)) intake facility in New Brunswick, which could be retooled for exports, and Pieridae Energy's ([PEA.TO](#)) proposed Goldboro LNG facility in Nova Scotia. Separately, Freeland indicated that Canada would need to spend far more to compete to become the "best and fastest" at creating green-transition industries after the U.S. passage of the Inflation Reduction Act.

When asked if Canada was increasing its incentives to scale up green technologies in order to match the United States, she responded: "It is something we are very, very focused on."

"We need to act even more energetically and aggressively than we have hitherto," she said. "We need to find ways to attract even more private capital."

Reporting by Steve Scherer, with additional reporting by Julie Gordon Editing by Chris Reese and Marguerita Choy

Items in “*italics*” are SAF Group created transcript

Approx 9:18am MT. Analyst asks if the future equity percentage you have for the natural gas supply be less than the offtake percentage you have for the LNG? Wael, “.. typically, what I would say, as much as possible, having access across the entire value chain in as close of a percentage as you can, helps ensure that wherever value might rate at any point in time, you are capturing that value. So in general. Take our LNG Canada investment that you just referenced in the second question, we would look to be able to at least assure ourselves that we are not caught up by vagaries of one part of the market. let’s say the gas supply, but we would want to have enough on the gas supply equity side to be able to make sure if gas prices go up there, we benefit from them while maybe disadvantaging the midstream or vice versa depending on where prices go. So we are not in the game of necessarily taking undue risk. we are in the game of creating integrated value chains that we can leverage as part of the broader portfolio. “

Scotiabank asks on the media report of the infrastructure issue on LNG Canada? Wael “ on the issues around LNG Canada, a few things to say. Firstly, we’re just, what is it 3 years, 3, 4 months since we have taken FID on that project. Just last oct we crossed the 50% completion on the site in Kitmat. Good progress and this was despite some real challenges with Covid. A lot of the modules coming from various yards in Asia being challenged. Credit to the team, I think some heroic efforts to be able to by and large continue to be on track. I think the challenge that you are referencing is more related to the pipeline – the Coastal GasLink pipeline. Multiple reasons for that which I won’t get into in detail. This is a question better addressed to CGL themselves directly. But suffice it to say that we do have some concerns around the cost of the pipeline, we are having deep discussions with TCE, who oversee the pipeline and therefore trying to see how we can mitigate some of these cost increases. But so far, we see TCE getting back on the ball and making sure they are able to move at the pace that ensures that we have pipe before we have the plant. The last comment I will make on that pipeline. Some of you may have picked up the press the incredibly sad events of a couple days ago where we strongly, strongly condemn some of the violence that was shown. Thankfully, no one got hurt in Houston, British Columbia when a specific part of the pipeline around the Maurice River. 20 or so people attacked those who were earning a living at night and thankfully, they all came out well and safe. These events are unfortunate and I’m sure TCE and RCMP will be able to address the issue sufficiently”

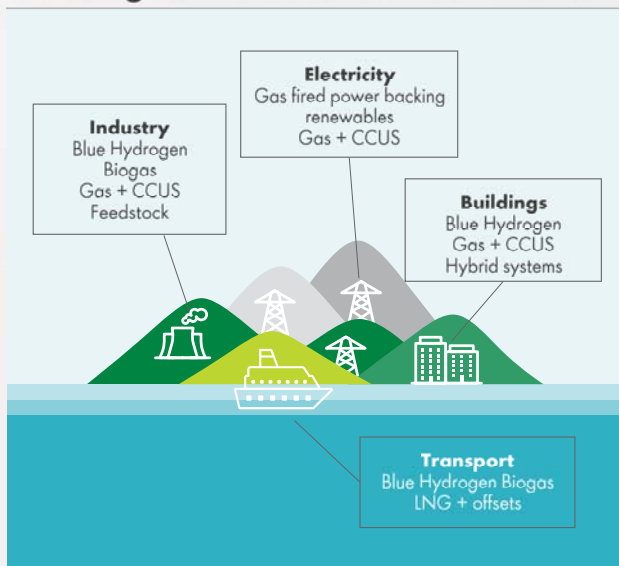
Sl 6. 8:36am MT. Sawan “That brings me to the future. Our current integrated gas business is doing what we said we would do and is on the right trajectory. But we are not yet where we want to be. We have opportunities that we are pursuing to do even better, with our existing assets, but also to position our growth portfolio to one with even stronger returns with lower carbon emissions. Let me expand on that a bit more. For our capital spend, we need to be even more focused with a continued emphasis on value over volume. We have a capital budget of \$4 to \$5 billion a year in the short to medium term. We are making good progress on our two LNG capacity expansion projects under construction. In Canada, Canada LNG surpassed recently the 50% completion mark last October, after three years of construction. The project remains dedicated to have the first cargo by the middle of this decade.” He then speaks of Nigeria and that construction there is now firmly underway, and then says “both these projects are competitively positioned for LNG growth markets in Asia. The same goes for most of our long term project funnel. We have several attractive expansion and backfill projects. A limited number of greenfield LNG projects and several promising low carbon new gaseous projects in early stages of development. For the pre-FID projects, we have an expected average internal rate of return of between 14% and 18%, and a unit technical cost below \$5/mmbtu. With most of these projects clearly having lower costs than the average in the industry. These are good numbers, but you will understand that we strive to push the IRR to the higher end and to push the unit costs down even further. But the long term role of gas depends on efforts to abate emissions and develop cleaner pathways for gas. This is why we continually try to reduce the carbon intensity of our new projects. Take LNG Canada currently under construction. It will run on hydropower and is set to deliver the lowest carbon intensity in the entire industry.”

LNG OUTLOOK

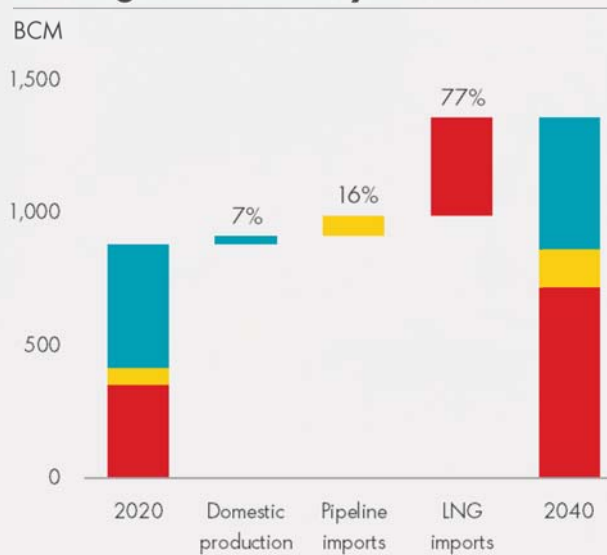
ENERGY SECURITY, EMISSIONS AND ECONOMIC GROWTH IN ASIA TO DRIVE FUTURE LNG DEMAND

- Gas has an important role in the journey to net-zero - as a partner to renewables for grid stability and an immediate option to lower emissions in hard-to-electrify energy demand sectors
- LNG needed for declining domestic gas production, coal to gas switching, substituting higher-emission energy sources, tackling air quality concerns – particularly in Asia

Use of gas in a decarbonised world



Asian gas demand by source



LNG imports by region



RUN THE BUSINESS ACTIVELY ADDRESSING OPERATIONAL GREENHOUSE GAS EMISSIONS

Cutting operational emissions

- Pearl GTL, Qatar: significant emissions reductions already achieved, further reductions and other improvements planned through innovative catalysts
- QGC, Australia: reduced venting from dehydration units and improved efficiency on well workovers resulting in 2,500 tonnes lower methane emissions in 2021
- Real Time Production Optimisation saving fuel gas and improving efficiency across LNG sites



Managing GHG intensity

- Implementing carbon management framework for projects and operating assets
- The IG operated portfolio is well within the Group's 2025 target of ensuring methane emissions intensity is below 0.2%
- No routine flaring in IGs operated portfolio



Spearheading methane reduction initiatives

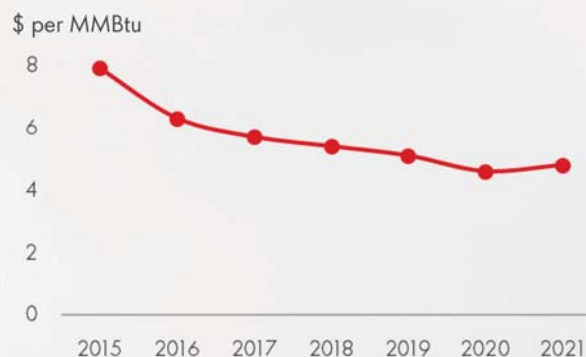
- Helping to deliver the Global Methane Pledge through oil and gas sector implementation working group
- Leading an industry working group to increase understanding of supply chain methane emissions data through detection and quantification field campaigns
- Joined industry project developing pioneering offshore North Sea drone-based methane emission quantification technology



GROW THE BUSINESS

OPTIMISING CAPITAL TO CREATE VALUE

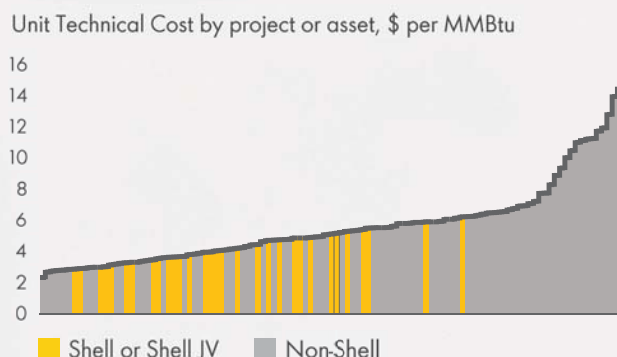
Unit technical cost reduced



Structural decrease in cost

- UTC stable below target of \$5/MMBtu set in 2015
- \$4 billion per annum selective investment in competitive LNG assets, including backfill and expansion options
- Examples of competitive pre-FID projects: LNG Canada Expansion, Manatee

Competitive project funnel



Commercially competitive

- Project funnel delivering LNG into Asia at total cost structure that is competitive in the industry
- We believe strong focus on scope 1 & 2 emissions reduction for new projects provides longer term competitive advantage and sustainability

Robust project delivery

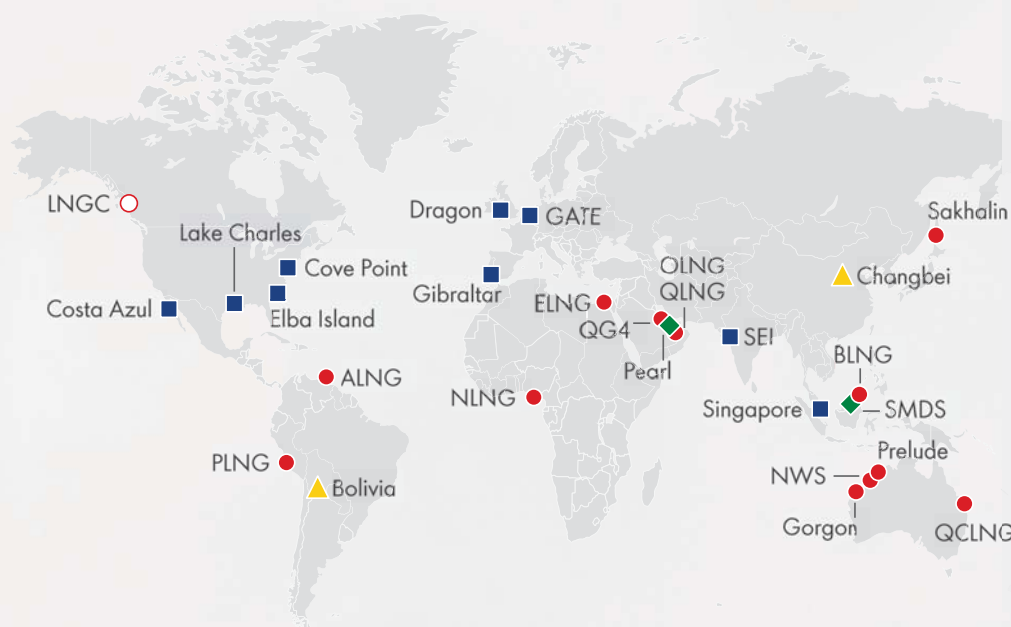


Building new capacity

- LNG Canada will deliver 14 mtpa of supply into Asia. The LNG project is designed to have the lowest carbon intensity in the industry
- Nigeria LNG T7 will deliver 7.6 mtpa into Europe and Asia, with key supply from offshore assets
- Both projects to be onstream around the middle of the decade



INTEGRATED GAS PORTFOLIO & MAJOR PROJECTS



KEY

- Liquefaction plants
- Liquefaction plants under construction
- Regasification terminals
- ◆ GTL
- ▲ On-stream gas projects

Project	Country	Shell share %	Peak production kboe/d	LNG capacity mtpa	Shell-operated
Under construction – Start-up 2022-2023					
Arrow - Surat Gas	Australia	50	backfill		
Colibri	Trinidad & Tobago	87	backfill		✓
Gorgon - Jansz	Australia	25	backfill		
QGC SW20+ Measure	Australia	62	backfill		✓
Oman Gas*	Oman	53	120		✓
Under construction – Start-up 2024+					
Gorgon - Jansz compression	Australia	25	backfill		
LNG Canada T1-2	Canada	40		14	
NLNG T7	Nigeria	26		7.6	
Pre-FID options					
Abadi	Indonesia	35	245	9.5	
East Med	Egypt	35	backfill		
LNG Canada Expansion	Canada	40		14	
Manatee	Trinidad & Tobago	100	backfill		✓
NWS - Browse	Australia	27	backfill		
Prelude - Crux	Australia	82	backfill		✓
Tanzania	Tanzania	25	[A]	15	✓

*FID of the project subject to the issuance of a Royal Decree by the government of the Sultanate of Oman confirming award of the Block 10 Concession Agreement.

INTEGRATED GAS

UPDATE SD21 TARGETS – PROGRESS MADE

Targets

~20%

Opex reduction
by 2022 vs 2019

Progress

Underlying 2021 IG Opex 15% lower than 2019

3 mtpa

Develop new
LNG markets
by 2025

On track to deliver
First LNG volumes supplied into Croatia

< \$5/MMBtu

Unit Technical Cost

Current project funnel average \$4.8/ MMBtu

14% - 18%

Average project IRR

Current project funnel average showing 14-18%

Targets

> 20%

Market share in
LNG bunkering
sales by 2030

Progress

- 12 LNG fuelled crude and product tankers in operation, with a further 24 on order with expected delivery by end 2023
- 5 bunker vessels in operation with a further 7 on order
- Completed over 700 global ship-to-ship bunkering at numerous ports in 10 countries
- First liquefied biomethane (BioLNG) bunkering trial in Rotterdam, together with CMA CGM

> 7 mtpa

New LNG capacity
onstream by the
middle of the decade

Progress made on NLNG T7 and LNGC. 7.6 mtpa
new capacity around middle of decade

GTL Uplift

Aiming to grow value
from GTL products

In Q3 2021 Pearl GTL achieved highest value uplift
from GTL products on record



Russian Energy Week International Forum plenary session

Vladimir Putin spoke at the plenary session of the Russian Energy Week International Forum. The topic of the panel discussion is Global Energy in a Multipolar World.

October 12, 2022 14:15 Moscow

Russian Energy Week International Forum plenary session

President of Russia Vladimir Putin: Good afternoon, friends, ladies and gentlemen.

I would like to welcome all the participants and guests of Russian Energy Week, a respected and recognised platform for dialogue on key global energy topics.

Such direct and transparent communication is essential now, when the global economy in general, the fuel and energy sector are in the middle of, let me be direct, an acute crisis due to unstable price dynamics of energy resources, an imbalance in supply and demand, and the overtly subversive actions of individual market participants, who are guided solely by their own geopolitical ambitions, resort to outright discrimination in the market, and if that does not work, they simply destroy the infrastructure of their competitors.

In this case, I am of course talking about the sabotage of the Nord Stream 1 and Nord Stream 2 gas pipelines. There is no doubt that this is an act of international terrorism, the purpose of which is to undermine the energy security of the entire continent. The logic is cynical: to destroy and block cheap energy sources, hence depriving millions of people, industrial consumers of gas, heat, electricity and other resources and forcing them to buy all this at much higher prices. Forcing.

The attack on the Nord Streams has set an extremely dangerous precedent, which shows that any critical piece of transport, energy or communications infrastructure is under threat, regardless of its location, management or whether it lies on the seabed or on land.

It was proven by, well, it may not be the right place to talk about this, as Russian Energy Week is not directly related. However, I must say that it was proven by the terrorist attack on the Crimean Bridge committed by Ukrainian intelligence. I have already said that the Kiev regime has long resorted to terrorist methods, organising political assassinations, ethnic purges and crackdowns on civilians. They upload results on the internet, and then realise it was a mistake and immediately delete them. But the content stays online. They do not stop at nuclear terrorism either, specifically the shelling of the Zaporizhzhya Nuclear Power Plant, terrorist attacks near the Kursk Nuclear Power Plant in Russia and, of course, sabotage attempts against TurkStream.

I would like to repeat that there is solid documented evidence. These crimes were plotted and ordered by the end beneficiaries seeking instability and conflicts.

And who stands behind the sabotage against the Nord Streams? Clearly, those who want to completely sever ties between Russia and the European Union, to fully undermine and crush Europe's political agency, weaken its industrial potential and seize the market. And, of course, those who – I want to stress it – have the technical capacity to organise such explosions and in fact have committed similar sabotage in the past and were caught red-handed but evaded punishment.

The beneficiaries are well known. I believe no specific details are necessary since the remaining gas systems will acquire greater geopolitical significance. They stretch across Poland (Yamal–Europe), and Ukraine, the two pipelines that Russia once built with its own money. And, of course, the United States, which will now be able to supply energy resources at high rates.

As they say, in decent companies, this is “highly likely.” Everything is clear. It is obvious who stands behind this and who stands to gain.

Now it is possible to impose large volumes of LNG from the United States on European countries, LNG which is obviously less competitive than Russian pipeline gas. After all, the price of American LNG is much higher, and this was common knowledge before. Now the difference is even greater and there are additional risks. The risks lie in high instability – any supplies may float away to other countries. Incidentally, we watched this happen quite recently, when American tankers carrying LNG to Europe turned around halfway and changed their destinations because LNG sellers were offered a higher price elsewhere. They ignored the interests of their European customers.

I would like to recall who helped Europe at that time and sent additional gas supplies to the European market. It was Russia. However, the leaders of these countries prefer not to recall this. Moreover, they deem it possible to reproach us for being "unreliable." Do we deny supplies to them? We are ready to ship and we are providing them with all the quantities, as agreed under our contracts. We are supplying them with all the contractual amounts. But if someone does not want to take our product, what do we have to do with this? That is your decision.

I have noted many times that the Nord Stream lacks any political background. It is a strictly commercial project, in which Russian and European companies take part on equal terms. Hence, Russia and our partners in EU countries should resolve the future of Nord Stream 1 and Nord Stream 2.

It is certainly possible to repair the damaged gas pipelines that run under the Baltic Sea. But this will make sense only if their further use is economically feasible and the safety of their routes can be ensured – this is the fundamental prerequisite.

If we come to an agreement with the Europeans to supply gas through the surviving branch – and one branch of Nord Stream 2, apparently, has survived... Unfortunately, we are not allowed to help inspect this branch, but the pipeline is holding pressure. It might be damaged, but we do not know this, because as I have said, we are not allowed to inspect it, but there is pressure, which means, apparently, that it is in working order. Its capacity is 27.5 billion cubic metres per year, which is about 8 percent of Europe's gas imports.

Russia is ready to begin deliveries. The ball is in the EU's court. If they want to, they can just turn on the tap and that is that. I repeat that we are not restricting anyone or anything, and are ready to supply additional volumes in the autumn and winter period.

We have spoken more than once, including at the Russian Energy Week platform, about the causes and nature of the crisis that is unfolding in the European market, including their excessive enthusiasm over renewable energy sources to the detriment of hydrocarbons. Of course, alternative types of energy should be explored – solar, wind, tidal and hydrogen energy. We need to explore them all, but we need to take into account the current volume of consumption, the growth rates of the global economy, the demand for energy resources and the level of technological development. But jumping the gun, for political reasons, especially populist domestic policies – come on, who does that? But this is what they did – and here is the result. The same holds true for the curtailment of nuclear energy, as well as the rejection of long-term contracts in the gas sector and the shift to exchange quotations.

Incidentally, according to expert estimates, this year alone, the spot gas pricing mechanics have caused Europe more than 300 billion euros in losses – about 2 percent of the Eurozone's GDP. This could have been avoided if they stuck to long-term oil-linked contracts. You are all professionals and must understand what I am saying: the price difference between the spot market and long-term contracts is three- or four-fold. And who did it? Was it Russia? They did it themselves. In fact, they imposed this trading system on us. They have essentially forced Gazprom to shift, in part, to a link to the spot market, and now they are groaning. Well, it is their own fault.

It is clear how this problem of high rates will be solved. We have seen the same strategy being used with other commodity groups. They simply print more money. In the past year alone, the money supply in the EU has increased by around one trillion euros. The problem is what Europe is going to do with this money. Europe will, just like with other goods, including food, grab them and gas from the global market. As a result, other countries, especially developing countries, will have to overpay for these energy resources.

The resources that come to the European market are sold literally triple the price, as I have said, and this feeds inflation. It has already reached 10 percent in the euro zone. It is hitting ordinary Europeans as their electricity and gas bills have more than tripled over the past year. The European population is stocking up on wood for winter, like in the Middle Ages.

What does Russia have to do with it? They are constantly trying to blame others for their own mistakes, in this case Russia. I want to stress again that it is their own fault. It is not even a result of certain actions during the special military operation in Ukraine and Donbass. Absolutely not. It is the result of years and years of bad energy policy. Years and years.

Rising costs are crippling local companies. Some industries are experiencing production decline in the double digits. Deprived of affordable energy resources from Russia, European businesses have to shut down and look for better conditions in other jurisdictions. This process is underway.

I cannot help but quote some statistical data. According to EU statistics, exports to Russia amounted to 89.3 billion euros in 2021 and imports from Russia to 162.5 billion euros. The deficit in Russia's favour is 73.2 billion euros. That is data for 2021. In the early months of 2022, this deficit increased to 103.2 billion euros.

What caused it? We sell our goods and we are ready to buy European products, but they refuse to sell them. They imposed embargos on several categories of goods one after another, hence the deficit. What does this have to do with us? They will blame us again. We sell what they want to buy – and at market rates. We are ready to buy from them but they will not sell. The deficit keeps growing, to repeat, through no fault of our own. Just do not walk away from cooperating with Russia. That is it.

I would like to note – as European officials at the highest level also mentioned – that European wellbeing in the past decades has been mainly based on cooperation with Russia.

The consequences of the partial rejection of Russian goods are already hitting the European economy and residents. But instead of working on restoring their own competitive advantage in the form of affordable and reliable Russian energy sources, the Eurozone countries are only making the situation worse, including by capping the price of oil and oil products from our country. But it is not only European countries; they are doing this together with North America, as planned, beginning December of this year.

I will quote the American economist, Nobel Prize winner Milton Friedman: “If you want to create a shortage of tomatoes, for example, just pass a law that retailers cannot sell tomatoes for more than two cents per pound. Instantly you will have a tomato shortage. It is the same with oil or gas,” end of quote. Let me remind you that Milton Friedman passed away in 2006. He had nothing to do with the Russian government and cannot be designated as a Russian agent of influence.

It would seem that these are truisms. But the leaders of some countries, their bureaucratic elites dismiss these obvious considerations, and, on someone else's command, are deliberately pursuing a policy of deindustrialising their countries, reducing people's quality of life, which will certainly entail irreversible consequences.

It should be clearly understood that if the price of oil from Russia or other countries is limited, if some artificial price caps are imposed, this will inevitably worsen the investment climate in the entire global energy sector, then exacerbate the global shortage of energy resources and further increase their cost, and this, I repeat, will primarily hit the poorest countries. These inevitable consequences are plain to see. And experts, including world-class ones – I just gave you a quote – talk about it all the time.

No amount of intervention or the unsealing of oil reserves will remedy the situation. They simply do not have as much spare resources as they need – that is the whole point. They need to understand this eventually.

The fact is that aggressive promotion of the green agenda, which, of course, needs support, as I said, but it should be done right, so, the aggressive promotion of this agenda, including in the euro area, has led to underinvestment in the global oil and gas sector. Already. Meanwhile, the EU and the United States have imposed sanctions on leading oil producers, which make up about 20 percent of the global output.

As a result, in 2020–2021, investment in oil and gas production dropped to the lowest levels in the past 15 years. You see, it happened in 2020 and 2021, long before our special operation in Donbass. Investment was less than half of what it was in 2014 in the wake of what the so-called Western politicians did, and businesses underinvested by \$2.5 trillion. I will come to that later: what does the OPEC+ decision have to do with it? The OPEC+ decision is designed solely to balance the global market. They have found their scapegoat in OPEC+. What does it have to do with anything? Clearly, to reiterate, they are simply covering up their mistakes. I will come to that later.

There is one more important point. Suppose the oil price cap is imposed. Who can guarantee that a similar cap will not be imposed in other sectors of the economy, such as agriculture, the production of semiconductors, fertilisers, or the metal industry, and not only with regard to Russia, but to any other country? No one can give such guarantees, meaning that with their reckless decisions, some Western politicians are breaking the global market economy and are, in fact, posing a threat to the well-being of billions of people.

The so-called neo-liberal ideologists of the West are known to have destroyed traditional values before, we all see. Now, they seem to have set their sights on free enterprise and private initiative.

As I mentioned earlier, Russia invariably fulfills its obligations in stark contrast to Western countries, which cynically refused to honour signed finance and technology, as well as equipment supply and maintenance contracts.

I am here to say one thing: Russia will not act contrary to common sense or underwrite someone else's prosperity. We are not going to supply energy to the countries that introduce price caps. I want to tell those who prefer con jobs and shameless blackmail to business partnerships and market mechanisms – we have been living in this political paradigm for decades now – you should know that we will not do anything that disadvantages us.

We strongly believe that stability, balanced energy markets and a secure future for all nations can only be ensured through joint efforts in an open and honest dialogue based on the principles of joint responsibility and consideration for each other's national interests.

This is the kind of dialogue we have established with our partners under the OPEC+ agreement, as I have just mentioned. As you know, we recently reached the most recent agreements, which primarily reflect supply and demand trends for oil, as well as long-term investment programmes for the oil industry, which, as I have already said, is objectively underfunded.

In October, the quota for oil production in our countries will remain at the August 2022 level, and then it will be cut by 2 million barrels per day. We hope that these decisions will suit both oil producers and consumers. At the same time, the coordination between the OPEC+ partners will certainly continue to ensure the stability and predictability of the market. Experts know that predictability is the key issue.

Colleagues,

Russia is one of the key participants in the global energy market and among the world leaders in oil and gas production and exports, as well as electricity generation and coal mining.

Despite the sanctions and sabotage of infrastructure, we do not intend to cede our positions. We will continue to ensure stable energy security and expand ties with countries that are interested in this.

Oil production in Russia has already recovered and is even slightly higher than last year. We plan that by 2025, our total oil exports, as well as production, will remain approximately at today's level.

There is something I would like to note. In recent decades, Russian oil production has been largely dependent on foreign equipment and services, but by 2025, we plan to increase the share of domestic equipment in the industry to 80 percent. That is, despite the Western companies leaving the Russian market (they are only making it worse for themselves), we will be able to ensure oil production at the required level.

As for Russian gas, we will certainly take our product to the international markets. Projects such as Power of Siberia and TurkStream have proven their effectiveness. We have the Blue Stream for Türkiye's domestic market, and 14 billion cubic metres of gas are in transit to Europe via TurkStream. Not a lot, but still something.

Here is what I would like to say in this regard. We could move the lost volume of transit through the Nord Stream pipelines along the bottom of the Baltic Sea to the Black Sea region and thus make Türkiye the main route for the supply of our fuel, our natural gas to Europe and create a major gas hub for Europe in Türkiye, if, of course, our partners are interested in seeing this happen. It is an economically viable project with much higher safety levels as can be seen from recent events.

The high-tech LNG segment is making strides. Its production in Russia increased by almost 60 percent in August. In particular, the unparalleled Yamal LNG plant located in the Arctic latitudes is operating successfully. Our systematic measures to develop the Arctic's resource base, the Northern Sea Route and the transport and icebreaker fleet have yielded good results.

We will continue to increase energy exports to fast-growing markets. Of course, we will be expanding the geography of our deliveries, identifying key pieces of infrastructure for doing so and building them, including promising projects such as Power of Siberia-2 and its Mongolian section Soyuz Vostok, as well as lining up the Asian and European segments of the national gas transmission system. We will continue to support LNG terminal projects. All of the strategic and very specific goals in this area have been set before the Government of Russia. I am sure they will be fulfilled.

We will continue the transition to settlements in national currencies when delivering Russian energy resources. I have already mentioned one such instance where Gazprom and its Chinese partners decided to switch to the ruble and the yuan in equal proportions when paying for supplied gas. Some European partners have also transitioned to payment in rubles for our gas, which you are well aware of as well.

Colleagues,

No doubt, Russia has been and will remain one of the global energy market's major participants. However, our key goal is to make sure that the domestic fuel and energy complex works for the benefit of the national economy, primarily, its competitiveness, the development and betterment of our regions, urban and rural areas, and improvement of the quality of life of our citizens.

Increasing the volume of raw material processing is a separate strategic goal. We are already implementing ambitious plans in this regard, including projects in the Far Eastern Federal District to develop large- and small-scale oil and gas chemical plants. The number of such projects will increase markedly in the years to come.

The social programme for connecting households to the gas distribution system is gaining momentum. I am referring to towns and villages where the gas network is available. By the beginning of October, over 300,000 addresses had been connected.

At the same time, the cost of gas equipment and installation is a heavy burden on many Russian families; we have already spoken about this. First of all, we are talking about large families, veterans, people with disabilities, and low-income families. We definitely need to help them, and we will. What kind of help are we talking about? I ask the regional authorities to ensure the provision of subsidies for the purchase and installation of gas equipment to those who cannot afford it. The subsidy should be at least 100,000 rubles per connection.

I am aware that different regions have different financial means, so these subsidies in regions with a low level of budget security will be supported by federal resources.

I ask the Government to monitor the implementation of this measure to support families and assess whether any additional steps are needed.

We have made one more decision – we agreed to include schools in the social programme to link them to the gas distribution system. I think that the Government and Gazprom should add medical facilities such as outpatient clinics, hospitals and rural health centres to the programme in the near future – it would be the right thing to do.

This will ensure that the key social facilities in the regions – medical and educational centres – have a source of cheap and environmentally friendly energy, which is especially important for rural areas.

Overall, taking into account the number of new applications from households and the growing number of newly connected facilities, I ask the Government to extend this social programme beyond 2022.

One more thing. Despite the difficult economic situation and the external restrictions, the Russian energy system continues to be updated. This year, facilities with a total capacity exceeding 2000 megawatts were built or modernised.

Due to this systematic approach, we have been able to keep electricity prices in Russia at the lowest level in Europe. Let me remind you that energy prices in the EU have increased several times over this year alone.

Particular attention should be paid to improving the reliability of the electric grids. Special programmes have been launched this year to support the regions where the situation is the most difficult, and I ask the Government to start implementing them as soon as possible.

Friends,

The global energy industry is now facing unprecedented challenges and problems. The short-sighted and erroneous actions by a number of Western countries have been pushing the international community into this situation for years – I have already mentioned this, and I think I was quite convincing.

Effective and constructive ways out of the situation should certainly be the subject of thorough, professional, and depoliticised discussions, including at Russian Energy Week.

I repeat: Russia is ready for a trust-based partnership in the energy sector that serves the interests of our countries' sustainable development and their reliable access to affordable energy. And we know that this approach is shared by the overwhelming majority of our partners and countries around the world.

I would like to wish you rewarding discussions and to thank you for your attention.

Thank you very much and all the best.

Highlights for the month	
	<ul style="list-style-type: none"> The consumption of petroleum products during April-Sept 2022 with a volume of 107.73 MMT reported a growth of 13.4% compared to the volume of 95.0 MMT during the same period of the previous year. This growth was led by 18.5% growth in MS, 16.1% in HSD & 72.1% in ATF consumption during the half year. The consumption of petroleum products during Sept 2022 recorded a growth of 8.1% with a volume of 17.2 MMT compared to the same period of the previous year.
	<ul style="list-style-type: none"> Indigenous crude oil and condensate production during September 2022 was down by 2.3 % than that of September 2021 as compared to a de-growth of 3.3 % during August 2022. OIL registered a growth of 5.2 % and ONGC registered a growth of 1.0 % during September 2022 as compared to September 2021. PSC registered de-growth of 13.9 % during September 2022 as compared to September 2021. De-growth of 1.3 % was registered in the total crude oil and condensate production during April - September 2022 over the corresponding period of the previous year.
	<ul style="list-style-type: none"> Total Natural Gas Consumption (including internal consumption) for the month of September 2022 was 5157 MMSCM which was 9.0% lower than the corresponding month of the previous year. The cumulative consumption of 31478 MMSCM for the current year till September 2022 was lower by 4.7 % compared with the corresponding period of the previous year.
	<ul style="list-style-type: none"> Crude oil processed during September 2022 was 19.5 MMT, which was 7.3 % higher than September 2021 as compared to a growth of 5.9 % during August 2022. Growth of 11.5 % was registered in the total crude oil processing during April-September 2022 over the corresponding period of the previous year.
	<ul style="list-style-type: none"> Production of petroleum products saw a growth of 6.6 % during September 2022 over September 2021 as compared to a growth of 7.0 % during August 2022. Growth of 9.9 % was registered in the total POL production during April- September 2022 over the corresponding period of the previous year.
	<ul style="list-style-type: none"> Ethanol blending with Petrol was 9.12% during Sept 2022 and cumulative ethanol blending during December 2021- Sept 2022 was 9.94%.

•	Gross production of natural gas for the month of September 2022 was 2852 MMSCM which was lower by 1.7% compared with the corresponding month of the previous year. The cumulative gross production of natural gas of 17184 MMSCM for the current financial year till September 2022 was higher by 1.7% compared with the corresponding period of the previous year.
•	LNG import for the month of September 2022 (P) was 2365 MMSCM which was 16.3% lower than the corresponding month of the previous year. The cumulative import of 14706 (P) MMSCM for the current year till September 2022 was lower by 11.3% compared with the corresponding period of the previous year.
•	Crude oil imports increased by 1% and 15.1% during September 2022 and April- September 2022 respectively as compared to the corresponding period of the previous year. The net import bill for oil & gas was \$10.7 billion in September 2022 compared to \$9.4 billion in September 2021. In this the crude oil imports constitutes \$12.8 billion, LNG imports \$1.0 billion and the exports were \$5.3 billion during September 2022.
•	POL products imports increased by 2.9% and 12% during September 2022 and April- September 2022 respectively as compared to the corresponding period of the previous year. Increase in POL products imports during April- September 2022 were due to increase in imports of all products except Liquefied petroleum gas (LPG), Aviation turbine fuel (ATF) and Superior kerosene oil (SKO) etc.
•	Exports of POL products increased by 4.5% and increased by 7% during September 2022 and April- September 2022 respectively as compared to the corresponding period of the previous year. Increase in POL products exports during April- September 2022 were due to increase in exports of all products except Naphtha, Superior kerosene oil (SKO), Fuel oil (FO), Bitumen and Vacuum Gas oil (VGO) etc.
•	The price of Brent Crude averaged \$89.87/bbl during September 2022 as against \$99.99/bbl during August 2022 and \$74.58/bbl during September 2021. The Indian basket crude price averaged \$90.71/bbl during September 2022 as against \$97.40/bbl during August 2022 and \$73.13 /bbl during September 2021.

1. Selected indicators of the Indian economy								
Economic indicators		Unit/ Base	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
1	Population (Census 2011)	Billion	1.2	-	-	-	-	-
2	GDP at constant (2011-12 Prices)	Growth %	6.8 3rd RE	6.5 2nd RE	4.0 1st RE	-6.6 1st RE	8.7 PE (2021-22)	13.5 QE (Q1, 2022-23)
3	Agricultural Production (Food grains)	MMT	285.0	285.2	297.5	310.7	315.7 4th AE	-
		Growth %	3.6	0.1	4.3	4.5	1.6	-
4	Gross Fiscal Deficit (as percent of GDP)	%	3.5	3.4	4.6	9.5 RE	6.8 BE	6.4 BE

Economic indicators		Unit/ Base	2020-21	2021-22 (P)	Sept		April-Sept	
					2021-22	2022-23 (P)	2021-22	2022-23 (P)
5	Index of Industrial Production (Base: 2011-12)	Growth %	-8.4	11.4	13.0*	-0.8* QE	29.0#	7.7#
6	Imports^	\$ Billion	394.4	611.9	45.1	61.9	218.2	318.0
7	Exports^	\$ Billion	291.8	419.7	33.4	33.9	164.4	193.5
8	Trade Balance	\$ Billion	-102.6	-192.2	-11.7	-28.0	-53.8	-124.5
9	Foreign Exchange Reserves @	\$ Billion	579.3	617.6	637.5	532.7	-	-

IIP is for the month of *Aug and #April-Aug; @2020-21-as on March 26, 2021, 2021-22 - as on March 26, 2022, Sept 2021 as on Sept 24, 2021 and Sept 2022-as on Sept 30, 2022; ^Imports & Exports are for Merchandise for the month of August 22; E: Estimates; PE: Provisional Estimates; AE-Advanced Estimates; RE-Revised Estimates; QE-Quick Estimates.

Source: 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	2020-21	2021-22 (P)	Sept		April-Sept	
					2021-22 (P)	2022-23 (P)	2021-22 (P)	2022-23 (P)
1	Crude oil production in India [#]	MMT	30.5	29.7	2.4	2.4	14.9	14.7
2	Consumption of petroleum products*	MMT	194.3	204.2	15.9	17.2	95.0	107.7
3	Production of petroleum products	MMT	233.5	254.3	19.1	20.3	119.3	131.1
4	Gross natural gas production	MMSCM	28,672	34,024	2,902	2,852	16,891	17,184
5	Natural gas consumption	MMSCM	60,815	63,907	5,667	5,157	33,042	31,478
6	Imports & exports:							
Crude oil imports		MMT	196.5	212.0	17.5	17.6	101.3	116.6
		\$ Billion	62.2	120.4	9.3	12.8	51.4	90.3
Petroleum products (POL) imports*		MMT	43.2	42.1	3.5	3.6	19.1	21.4
		\$ Billion	14.8	25.2	2.1	2.2	10.4	14.4
Gross petroleum imports (Crude + POL)		MMT	239.7	254.0	21.0	21.3	120.4	138.0
		\$ Billion	77.0	145.7	11.3	15.0	61.8	104.7
Petroleum products (POL) export		MMT	56.8	62.7	4.9	5.2	29.6	31.7
		\$ Billion	21.4	44.4	3.2	5.3	17.9	33.9
LNG imports*		MMSCM	33,031	30,776	2,827	2,365	16,572	14,706
		\$ Billion	7.9	13.4	1.3	1.0	5.8	6.6
Net oil & gas imports		\$ Billion	63.5	114.7	9.4	10.7	49.7	77.4
7	Petroleum imports as percentage of India's gross imports (in value terms)	%	19.5	23.8	25.1	24.3	28.3	32.9
8	Petroleum exports as percentage of India's gross exports (in value terms)	%	7.3	10.6	9.5	15.7	10.9	17.5
9	Import dependency of crude oil (on POL consumption basis)	%	84.4	85.7	84.2	86.8	84.8	86.8

#Includes condensate; *Private direct imports are prorated for the period April'22 to Sept'22 for POL & Natural Gas. RIL data prorated for Sept'22. Total may not tally due to rounding off.

3. Indigenous crude oil production (Million Metric Tonnes)								
Details	2020-21	2021-22 (P)	Sept			April-Sept		
			2021-22 (P)	2022-23 Target*	2022-23 (P)	2021-22 (P)	2022-23 Target*	2022-23 (P)
ONGC	19.1	18.5	1.5	1.6	1.5	9.2	9.6	9.3
Oil India Limited (OIL)	2.9	3.0	0.2	0.3	0.3	1.5	1.7	1.6
Private / Joint Ventures (JVs)	7.1	7.0	0.6	0.8	0.5	3.6	4.2	3.2
Total Crude Oil	29.1	28.4	2.3	2.7	2.3	14.3	15.5	14.1
ONGC condensate	1.1	0.9	0.08	0.0	0.1	0.5	0.0	0.5
PSC condensate	0.3	0.30	0.03	0.0	0.03	0.16	0.0	0.14
Total condensate	1.4	1.2	0.10	0.0	0.1	0.6	0.0	0.6
Total (Crude + Condensate) (MMT)	30.5	29.7	2.4	2.7	2.4	14.9	15.5	14.7
Total (Crude + Condensate) (Million Bbl/Day)	0.61	0.60	0.60	0.65	0.58	0.60	0.62	0.59

*Provisional targets inclusive of condensate.

4. Domestic oil & gas production vis-à-vis overseas production							
Details		2020-21	2021-22 (P)	Sept		April-Sept	
				2021-22 (P)	2022-23 (P)	2021-22 (P)	2022-23 (P)
Total domestic production (MMTOE)		59.2	63.7	5.3	5.2	31.8	31.9
Overseas production (MMTOE)		21.9	21.8	1.8	1.6	11.0	9.7
Overseas production as percentage of domestic production		37.0%	34.2%	33.5%	29.6%	34.6%	30.3%

Source: ONGC Videsh, GAIL, OIL, IOCL, HPCL & BPRL

5. High Sulphur (HS) & Low Sulphur (LS) crude oil processing (MMT)							
Details		2020-21	2021-22 (P)	Sept		April-Sept	
				2021-22 (P)	2022-23 (P)	2021-22 (P)	2022-23 (P)
1	High Sulphur crude	161.4	185.0	13.9	15.0	85.2	98.3
2	Low Sulphur crude	60.3	56.7	4.4	4.5	28.1	28.1
Total crude processed (MMT)		221.8	241.7	18.2	19.5	113.3	126.3
Total crude processed (Million Bbl/Day)		4.45	4.85	4.45	4.78	4.54	5.06
Percentage share of HS crude in total crude oil processing		72.8%	76.6%	76.0%	76.8%	75.2%	77.8%

6. Quantity and value of crude oil imports			
Year	Quantity (MMT)	\$ Million	Rs. Crore
2020-21	196.5	62,248	4,59,779
2021-22 (P)	212.0	120,445	8,99,312
April-Sept 2022(P)	116.6	90,335	7,07,797

7. Self-sufficiency in petroleum products (Million Metric Tonnes)							
Particulars		2020-21	2021-22 (P)	Sept		April-Sept	
				2021-22 (P)	2022-23 (P)	2021-22 (P)	2022-23 (P)
1	Indigenous crude oil processing	28.0	27.0	2.3	2.1	13.3	13.6
2	Products from indigenous crude (93.3% of crude oil processed)	26.1	25.2	2.2	2.0	12.4	12.7
3	Products from fractionators (Including LPG and Gas)	4.2	4.1	0.3	0.3	2.1	1.5
4	Total production from indigenous crude & condensate (2 + 3)	30.3	29.3	2.5	2.3	14.5	14.2
5	Total domestic consumption	194.3	204.2	15.9	17.2	95.0	107.7
% Self-sufficiency (4 / 5)		15.6%	14.3%	15.8%	13.2%	15.2%	13.2%

8. Refineries: Installed capacity and crude oil processing (MMTPA / MMT)										
Sl. no.	Refinery	Installed capacity (01.01.2022) MMTPA	Crude oil processing (MMT)							
			2020-21	2021-22 (P)	Sept			April-Sept		
					2021-22 (P)	2022-23 (Target)	2022-23 (P)	2021-22 (P)	2022-23 (Target)	2022-23 (P)
1	Barauni (1964)	6.0	5.5	5.6	0.1	0.5	0.5	2.4	3.1	3.4
2	Koyali (1965)	13.7	11.6	13.5	1.0	1.2	1.3	6.3	7.0	7.8
3	Haldia (1975)	8.0	6.8	7.3	0.6	0.7	0.7	3.9	4.2	4.2
4	Mathura (1982)	8.0	8.9	9.1	0.7	0.7	0.8	4.2	4.5	4.6
5	Panipat (1998)	15.0	13.2	14.8	1.1	0.6	1.2	7.3	6.8	7.2
6	Guwahati (1962)	1.0	0.8	0.7	0.08	0.1	0.1	0.20	0.5	0.5
7	Digboi (1901)	0.65	0.6	0.7	0.06	0.06	0.04	0.4	0.3	0.3
8	Bongaigaon(1979)	2.70	2.5	2.6	0.2	0.2	0.2	1.4	1.2	1.3
9	Paradip (2016)	15.0	12.5	13.2	0.8	1.3	0.275	6.0	5.9	5.6
	IOCL-TOTAL	70.1	62.4	67.7	4.7	5.4	5.1	32.0	33.5	35.0
10	Manali (1969)	10.5	8.2	9.0	0.5	0.6	1.0	4.0	4.8	5.8
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	8.2	9.0	0.5	0.6	1.0	4.0	4.8	5.8
12	Mumbai (1955)	12.0	12.9	14.4	1.0	1.2	1.3	6.9	6.6	6.6
13	Kochi (1966)	15.5	13.3	15.4	1.3	0.9	1.2	6.8	7.7	8.1
14	Bina (2011)	7.8	6.2	7.4	0.6	0.3	0.7	3.4	3.6	3.7
	BPCL-TOTAL	35.3	32.4	37.2	2.9	2.4	3.1	17.1	18.0	18.4
15	Numaligarh (1999)	3.0	2.7	2.6	0.2	0.2	0.2	1.3	1.4	1.6

Sl. no.	Refinery	Installed capacity (1.01.2022) (MMTPA)	Crude oil processing (MMT)							
			2020-21	2021-22 (P)	Sept			April-Sept		
					2021-22 (P)	2022-23 (Target)	2022-23 (P)	2021-22 (P)	2022-23 (Target)	2022-23 (P)
16	Tatipaka (2001)	0.066	0.081	0.075	0.007	0.005	0.007	0.036	0.030	0.035
17	MRPL-Mangalore (1996)	15.0	11.5	14.9	1.0	1.2	1.3	6.2	7.5	8.3
	ONGC-TOTAL	15.1	11.6	14.9	1.0	1.2	1.3	6.2	7.5	8.3
18	Mumbai (1954)	9.5	7.4	5.6	0.4	0.7	0.8	1.5	4.5	4.9
19	Visakh (1957)	8.3	9.1	8.4	0.5	0.8	0.8	3.5	4.4	4.4
20	HMEL-Bathinda (2012)	11.3	10.1	13.0	1.1	0.9	0.9	6.5	5.8	6.3
	HPCL- TOTAL	29.1	26.5	27.0	2.0	2.4	2.5	11.6	14.6	15.6
21	RIL-Jamnagar (DTA) (1999)	33.0	34.1	34.8	2.8	2.8	2.8	16.8	16.8	17.9
22	RIL-Jamnagar (SEZ) (2008)	35.2	26.8	28.3	2.4	2.4	1.8	14.3	14.3	13.6
23	NEL-Vadinar (2006)	20.0	17.1	20.2	1.7	1.7	1.7	10.0	10.0	10.2
All India (MMT)		251.2	221.8	241.7	18.2	19.0	19.5	113.3	121.0	126.3
All India (Million Bbl/Day)		5.02	4.45	4.85	4.45	4.65	4.78	4.54	4.85	5.06

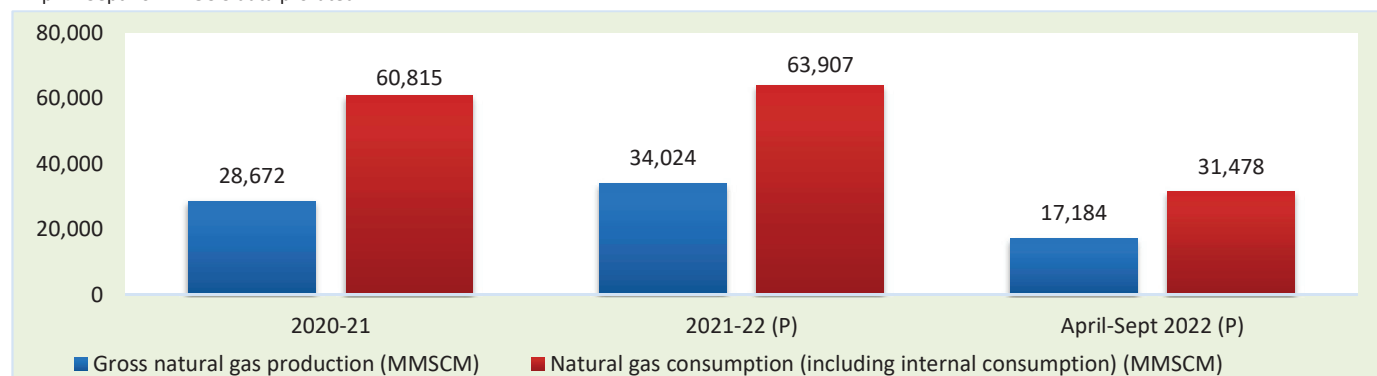
Note: Provisional Targets; Some sub-totals/ totals may not add up due to rounding off at individual levels.

9. Major crude oil and product pipeline network (as on 01.10.2022)										
Details		ONGC	OIL	Cairn	HMEL	IOCL	BPCL	HPCL	Others*	Total
Crude Oil	Length (KM)	1,284	1,193	688	1,017	5,301	937			10,420
	Cap (MMTPA)	60.6	9.0	10.7	11.3	48.6	7.8			147.9
Products	Length (KM)		654			9,661	2,596	3,775	2,386	19,072
	Cap (MMTPA)		1.7			49.0	23.0	34.1	9.4	117.2

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

18. Natural gas at a glance								
(MMSCM)								
Details	2020-21 (P)	2021-22 (P)	Sept			April-Sept		
			2021-22 (P)	2022-23 (Target)	2022-23 (P)	2021-22 (P)	2022-23 (Target)	2022-23 (P)
(a) Gross production	28,672	34,024	2,902	2,953	2,852	16,891	17,700	17,184
- ONGC	21,872	20,629	1,730	1,702	1,665	10,256	10,173	10,076
- Oil India Limited (OIL)	2,480	2,893	254	306	256	1,434	1,863	1,527
- Private / Joint Ventures (JVs)	4,321	10,502	918	945	931	5,200	5,664	5,582
(b) Net production (excluding flare gas and loss)	27,784	33,131	2,840		2,791	16,470		16,772
(c) LNG import [#]	33,031	30,776	2,827		2,365	16,572		14,706
(d) Total consumption including internal consumption (b+c)	60,815	63,907	5,667		5,157	33,042		31,478
(e) Total consumption (in BCM)	60.8	63.9	5.7		5.2	33.0		31.5
(f) Import dependency based on consumption (%), {c/d*100}	54.3	48.2	49.9		45.9	50.2		46.7

April - Sept 2022 DGCIS data prorated.



19. Coal Bed Methane (CBM) gas development in India (Sept 2022)			
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		17886	Sq. KM
Area awarded		20460	Sq. KM
Blocks awarded*		36	Nos.
Exploration initiated (Area considered if any boreholes were drilled in the awarded block)		10667***	Sq. KM
Production of CBM gas	April-Sept 2022 (P)	342.71	MMSCM
Production of CBM gas	Sept 2022 (P)	56.19	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 Bid Round 2021 in September 2022.

***Area considered if any boreholes were drilled in the awarded block.

20. Common Carrier Natural Gas pipeline network as on 30.06.2022														
Nature of pipeline		GAIL	GSPL	PIL	IOCL	AGCL	RGPL	GGL	DFPCL	ONGC	GIGL	GITL	Others*	Total
Operational	Length	9,602	2,695	1,459	143	107	304	73	42	24				14,449
	Capacity	167.2	43.0	85.0	20.0	2.4	3.5	5.1	0.7	6.0				333
Partially commissioned [#]	Length	4,519			166						1,131	365		6,180
	Capacity				-						-	-		-
Total operational length		14,121	2,695	1,459	309	107	304	73	42	24	1,131	365	0	20,629
Under construction	Length	5,404	100		1,265						1,201	1,666	3,550	13,186
	Capacity	-	3.0		-						-	-	149.0	-
Total length		19,524	2,795	1,459	1,574	107	304	73	42	24	2,332	2,031	3,550	33,815

Source: PNGRB; Length in KMs ; Authorized Capacity in MMSCMD; *Others-APGDC, HEPL, IGGL, IMC, Consortium of H-Energy

Total authorized Natural Gas pipelines including Tie-in connectivity, dedicated & STPL is 35208 Kms (P)

21. Existing LNG terminals			
Location	Promoters	Capacity as on 01.10.2022	% Capacity utilisation (April-Aug 2022)
Dahej	Petronet LNG Ltd (PLL)	17.5 MMTPA	86.6
Hazira	Shell Energy India Pvt. Ltd.	5.2 MMTPA	48.3
Dabhol	Konkan LNG Limited	*5 MMTPA	19.2
Kochi	Petronet LNG Ltd (PLL)	5 MMTPA	17.0
Ennore	Indian Oil LNG Pvt Ltd	5 MMTPA	12.0
Mundra	GSPC LNG Limited	5 MMTPA	17.8
Total Capacity		42.7 MMTPA	

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

BN 10/14 07:19 *GERMAN REGULATOR: JUST FULL GAS STORAGE 'NOT ENOUGH' FOR WINTER
BN 10/14 07:19 *GERMAN REGULATOR SAYS GAS STOCKPILES MUST BE 40% FULL IN FEB.

German Regulator: Near-Full Gas Storage 'Not Enough' for Winter
2022-10-14 07:38:37.396 GMT

By Vanessa Dezem

(Bloomberg) -- The fact that Germany's natural-gas storage sites are 95% full -- more than two weeks ahead of schedule -- will help during the winter, but stocks alone "are not enough," said Klaus Mueller, president of the Federal Network Agency, the country's energy regulator known as BNetzA.

* "In purely quantitative terms, gas volumes in the storage facilities are enough for about two cold winter months," he said in an e-mailed statement

* In order to avoid a gas emergency in winter, Germany needs to increase gas imports, supplies in neighboring countries must also remain stable, and consumption must fall by at least 20%, Mueller said

* "On February 1, the storage level should still be at least 40%. Firstly, because it can still get very cold in February and March, and secondly because the storage facilities must also be refilled for the winter of 2023-2024," he said

* "That can be more difficult given the lack of Russian gas then"

* MORE: Germany Reaches 95% Gas Storage Target Ahead of Schedule

* MORE: German Gas to Last Less Than 3 Months If Russia Cuts Supply

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To view this story in Bloomberg click here:

<https://blinks.bloomberg.com/news/stories/RJQF3BDWLU6B>

**Director's Cut
August 2022 Production**

Oil Production

July 33,251,598 barrels = 1,072,632 barrels/day (final)
(New Mexico) 47,234,860 barrels = 1,523,705 barrels/day (+2.2%)

August 33,274,710 barrels = 1,073,378 barrels/day (-0.0%) (RF + 7.3%)
1,031,327 barrels/day or 96% from Bakken and Three Forks
41,306 barrels/day or 4% from legacy pools

1,519,037 all-time North Dakota high Nov 2019

**Revised
Revenue
Forecast** = 1,200,000 → 1,100,000 → 1,000,000 barrels/day

Crude Price ¹	(\$/barrel)		
		North Dakota Light Sweet	WTI
July	98.12		99.39
August	90.14		91.48
Today	84.50		87.27
All-time high (6/2008)	\$125.62		\$134.02
			ND Market estimate
			97.20 (RF +94%)
			90.34 (RF +81%)
			85.89 (Est. RF +72%)
			\$126.75

**Revised
Revenue
Forecast** = \$50.00

Gas Production & Capture

July Production 96,263,466 MCF = 3,104,273 MCF/day
Gas Captured: 94% 90,351,422 MCF = 2,914,562 MCF/day

August Production 95,697,445 MCF = 3,087,014 MCF/day (+1.0%)
Gas Captured: 94% 89,796,650 MCF = 2,896,666 MCF/day
3,145,172 MCF/day all-time high production Nov 2019
2,914,562 MCF/day NEW all-time high capture July 2022

Fort Berthold Reservation Activity

	Total	Fee Land	Trust Land
Oil Production (barrels/day)	195,458	73,208	122,250
Drilling Rigs	6	3	3
Active Wells	2,629	642	1,987
Waiting on completion	17		
Approved Drilling Permits	260	49	211
Potential Future Wells	3,923	1,122	2,801

¹ Pricing References: WTI: [EIA](#) and [CME Group](#); ND Light Sweet: [Flint Hills Resources](#)

Rigs & Wells

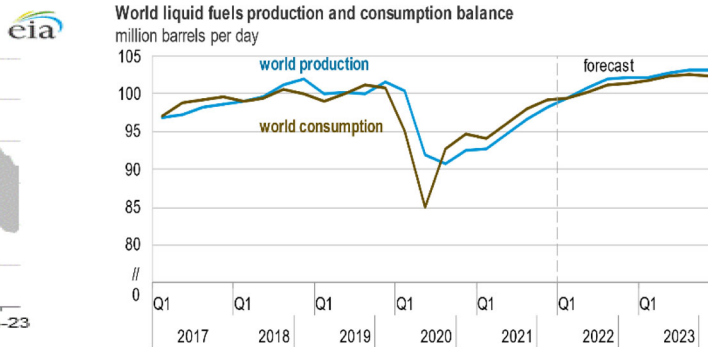
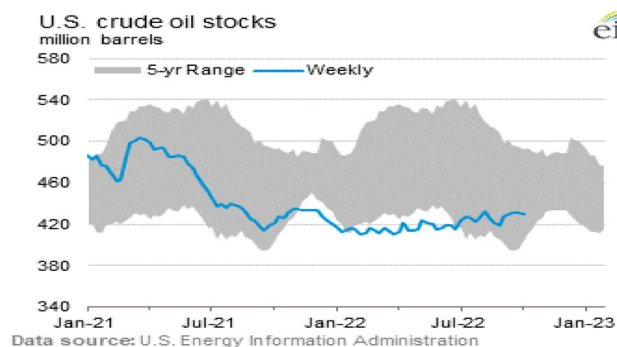
	July	August	September	Today
Rigs	45	46	45	43 New Mexico – 113 Federal Surface 2 All-time high – 218 (5/29/2012)
Permitted	53 drilling 0 seismic	102 drilling 0 seismic	65 drilling 0 seismic All-time high – 370 (10/2012)	-
Completed	74 (Preliminary)	66 (Preliminary)	81 (Preliminary) Revenue Forecast 30→40→50→60 (RF+62%)	-
Inactive²	1,655	1,714	-	-
Waiting on Completion³	465	477	-	-
Producing	17,381	17,616 (Preliminary) NEW All-time high 17,616 (8/2022) 15,367 (87%) from unconventional Bakken – Three Forks 2,249 (13%) from legacy conventional pools	-	-

Drilling and Completions Activity & Crude Oil Markets

The drilling rig count has stalled in the low to mid-forties with a gradual increase expected over the next 2 years.

The number of active completion crews decreased to 15 this week.

OPEC+ decided to cut production quotas 2 million barrels per day which is approximately 1 million barrels per day less than current production. Russia sanctions have created significant price volatility in an already tight market. Lower transportation fuels and crude oil demand are resulting in a US crude oil stock build.



² Includes all well types on IA and AB statuses: **IA** = Inactive shut in >3 months and <12 months;

AB = Abandoned (Shut in >12 months)

³ The number of wells waiting on completions is an estimate on the part of the director based on idle well count and a typical five-year average. Neither the State of North Dakota, nor any agency officer, or employee of the State of North Dakota warrants the accuracy or reliability of this product and shall not be held responsible for any losses caused by this product. Portions of the information may be incorrect or out of date. Any person or entity that relies on any information obtained from this product does so at his or her own risk.

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

- US Appeals Court for the ninth circuit upholding of a lower court ruling protecting the Swinomish Indian Tribal Community's right to sue to enforce an agreement that restricts the number of trains that can cross its reservation in northwest Washington state.
- DAPL Civil Action No. 16-1534 continues, but the courts have now ruled that DAPL can continue normal operations until the USACOE EIS is completed.
- Potential railroad worker strike – reported that a tentative deal has been reached.

Drilling activity is expected to slowly increase with operators maintaining a permit inventory of approximately 12 months. A survey of operators by JPT revealed the following:

“The surge in the cost of services and supplies pushed the average oil price needed to justify drilling a new oil well in the Mid-Continent to \$65/bbl, according to a survey of industry experts by the Federal Reserve Bank of Kansas City released on 8 July.

When they were asked what it would take to get them to substantially increase drilling, they put the number at \$98/bbl, which was higher than the closing price for the WTI price in futures trading on 14 July.”

Gas Capture

US natural gas storage is 6% below the five-year average. Both US and world crude oil inventories remain below normal. US strategic petroleum reserve is at the lowest level since 1984.

The price of natural gas delivered to Northern Border at Watford City has returned to an elevated level of \$4.96/MCF today for a current oil to gas price ratio of 17 to 1. The state-wide gas flared volume from July to August decreased 264 MCFD to 190,446 MCF per day, the statewide percent flared was unchanged at 6.0% while Bakken gas capture percentage decreased to 94%. The historical high flared percent was 36% in 09/2011.

Gas capture details are as follows:

Statewide	94%
Statewide Bakken	94%
Non-FBIR Bakken	95%
FBIR Bakken	92%
Trust FBIR Bakken	94%
Fee FBIR	77%
Big Bend	66%
Deep Water Creek Bay	85%
Twin Buttes	53%
Charlson	78%

The Commission established the following gas capture goals:

74%	October 1, 2014 - December 31, 2014
77%	January 1, 2015 - March 31, 2016
80%	April 1, 2016 - October 31, 2016
85%	November 1, 2016 - October 31, 2018
88%	November 1, 2018 - October 31, 2020
91%	November 1, 2020

Seismic

There are currently 0 active oil and gas seismic surveys.

Active Surveys	Recording	NDIC Reclamation Projects	Remediating	Suspended	Permitted
1	1	0	0	5	0

Agency Updates

BLM on 1/20/21 DOI issued order 3395 implementing a 60 day suspension of Federal Register publications; issuing, revising, or amending Resource Management Plans; granting rights of way and easements; approving or amending plans of operation; appointing, hiring or promoting personnel; leasing; and permits to drill. On 1/27/21 President Biden issued an executive order that mandates a “pause” on new oil and gas leasing on federal lands, onshore and offshore, “to the extent consistent with applicable law,” while a comprehensive review of oil and gas permitting and leasing is conducted by the Interior Department. There is no time limit on the review, which means the president’s moratorium on new leasing is indefinite. The order does not restrict energy activities on lands the government holds in trust for Native American tribes.

What is the percentage of federal lands in ND?

Mineral ownership in ND is 85% private, 9% federal (4% Indian lands and 5% federal public lands), and 6% state. 66% of ND spacing units contain no federal public or Indian minerals, 24% contain federal public minerals, 9% contain Indian minerals, 1% contain both.

How many potential wells could be delayed or not drilled by a Biden administration ban on drilling permits and hydraulic fracturing on federal lands?

A spatial query found 3,443 undrilled wells in spacing units that would penetrate federal minerals, 2,902 undrilled wells in spacing units would penetrate BIA Trust minerals (700 tribal minerals and 2,202 allotted minerals), and the total number of wells potentially impacted is 6,345. The minimum number of future Bakken wells is 24,000 so the 3,443 wells on federal public lands = 14%, and the 2,902 wells on trust lands = 12%.

What is the potential federal royalty loss from a Biden administration ban on drilling permits and hydraulic fracturing on federal lands?

A recent study from University of Wyoming estimated the ND loss as follows: 2021-2025 \$76 million, 2026-2030 \$113 million, 2031-2035 \$160 million, and 2036-2040 \$221 million for a total of \$570 million over 15 years. Please note that 50% of the royalties on federal public lands go to the state and 50% of the state share goes to the county where the oil was produced.

On 7/7/21 North Dakota sued the Department of Interior (DOI), Secretary of Interior Debra Haaland, Bureau of Land Management (BLM), Director of the BLM Nada Culver, and Director of the Montana-Dakotas BLM John Mehlhoff in US District Court for the District of North Dakota. The lawsuit requested the court:

Compel the Federal Defendants to hold quarterly lease sales. Oral arguments are scheduled for 1/12/22 in Bismarck. Prohibit the Federal Defendants from cancelling quarterly lease sales.

Enjoin the Secretary implementing a moratorium on federal lease sales.

Declare that Federal Defendants are in violation of MLA, FLPMA, NEPA, and APA.

Grant other relief sought and as the court deems proper to remedy the violations.

There are 811 tracts nominated for pending lease sales in ND:

569 are pending NEPA or surface manager concurrence

242 are fully evaluated with Record of Decision by US Forest Service and Corp of Engineers, and waiting for scheduled auction – value to ND 1,037 wells and \$4.9 billion (GPT, OET, NDTL royalties, federal royalties, sales tax and income tax)

On 01/14/2022 Judge Traynor denied North Dakota’s motion without prejudice. In the Order on Mandamus, the Court noted that “a fully developed factual record is necessary to resolve the instant dispute.” The Court also held that because Federal Defendants had given the Court “assurances at the hearing the process to start Federal oil and gas leasing sales in North Dakota was imminent” mandamus relief was “unnecessary.” However, the Court noted that “if the Defendants do not hold to their word and cancel any planned future sale, North Dakota may bring this action for review of the specifically cancelled sales once this Court has the benefit of a complete record.” Federal Defendants have cancelled the Q1 2022 lease sale, but have now published a potential Q2 sales listing with a protest period ending 5/18/22. The matters at issue in Louisiana v. Biden et al. continue to be litigated. For these reasons, North Dakota filed a motion with the Court to enter a Scheduling Order setting the following schedule for resolving North Dakota’s case:

1. Federal Defendants will prepare an administrative record for lodging and certification to this Court by no later than March 25, 2022.

2. North Dakota will file any motion to complete the administrative record within fourteen days from when the administrative record is lodged.

3. The dispositive briefing schedule will then proceed as follows:

a. North Dakota will file its opening brief within four weeks of when the administrative record is complete.

b. The Federal Defendants and Intervenor will simultaneously file their responsive briefs within four weeks of North

August oil production flat in North Dakota

- By Jackie Jahfetson The Bismarck Tribune
- Oct 14, 2022 Updated 2 hrs ago

North Dakota oil production in August remained flat, while natural gas production dropped by 1%, the state Department of Mineral Resources reported Thursday.

August oil production was 1.073 million barrels per day. That was up 746 barrels daily from July — “almost dead flat,” state Mineral Resources Director Lynn Helms said. The state’s oil figures lag two months as officials collect and analyze data from energy companies.

“It’s a preliminary number, and it may go up or down a little bit. But it isn’t even a 1% change,” Helms said, adding that the good news is that oil tax revenue is exceeding the state’s forecast by a little more than 7%.

August’s average oil price for North Dakota crude was \$90.34 per barrel, Helms said, explaining that exceeded the revenue forecast price by 81%.

“All the buckets are full. And so if you know how North Dakota plans to use oil and gas revenue, we learned from the boom and bust of the 1980s not to count on oil and gas revenue for ongoing bill payments, but to put the money in buckets (funds) and then spend it out of those buckets usually late in the biennium or the following biennium,” he said, referring to the state’s two-year budget cycle.

August natural gas production in North Dakota totaled 3.09 billion cubic feet per day, down from 3.1 billion cubic feet per day the previous month. The drop in production from July may be due to some plant outages, Helms said.

There was a “steady stream” of oil and gas drilling permit applications in August, he said. The drilling rig count continues to stall out in the mid-forties and is expected to do so for the rest of the year.

There is a steady stream of newly completed wells, with a projection that September’s numbers will continue to increase.

“So we would seriously anticipate we’re going to see an increase in production for the September report,” he said. “... We’re at a record number of producing wells (in August) but not a record production.”

Producers maintained 94% gas capture in August, the same as July, and exceeded the state’s 91% target. The rest was burned off at well sites in a wasteful process known as flaring, due to a lack of access to pipelines and processing plants.

MONTHLY UPDATE

OCTOBER 2022 PRODUCTION & TRANSPORTATION

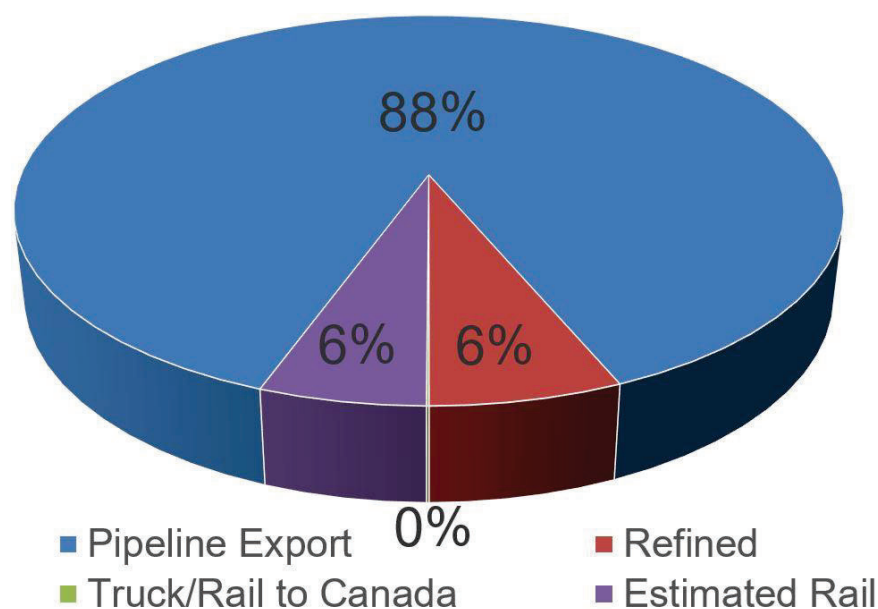
North Dakota Oil Production

Month	Monthly Total, BBL	Average, BOPD
July 2022 - Final	33,251,598	1,072,632
Aug. 2022 - Prelim.	33,274,710	1,073,378

North Dakota Natural Gas Production

Month	Monthly Total, MCF	Average, MCFD
July 2022 - Final	96,263,466	3,105,273
Aug. 2022 - Prelim.	95,697,445	3,087,014

Estimated Williston Basin Oil Transportation, Aug. 2022



CURRENT DRILLING ACTIVITY:

NORTH DAKOTA¹

43 Rigs

EASTERN MONTANA²

1 Rigs

SOUTH DAKOTA²

0 Rigs

SOURCE (OCT 13, 2022):

1. ND Oil & Gas Division
2. Baker Hughes

PRICES:

Crude (WTI): \$89.31

Crude (Brent): \$94.51

NYMEX Gas: \$6.57

SOURCE: BLOOMBERG
(OCT 13, 2022 11AM CST)

GAS STATS*

94% CAPTURED & SOLD

5% FLARED DUE TO
CHALLENGES OR
CONSTRAINTS ON EXISTING
GATHERING SYSTEMS

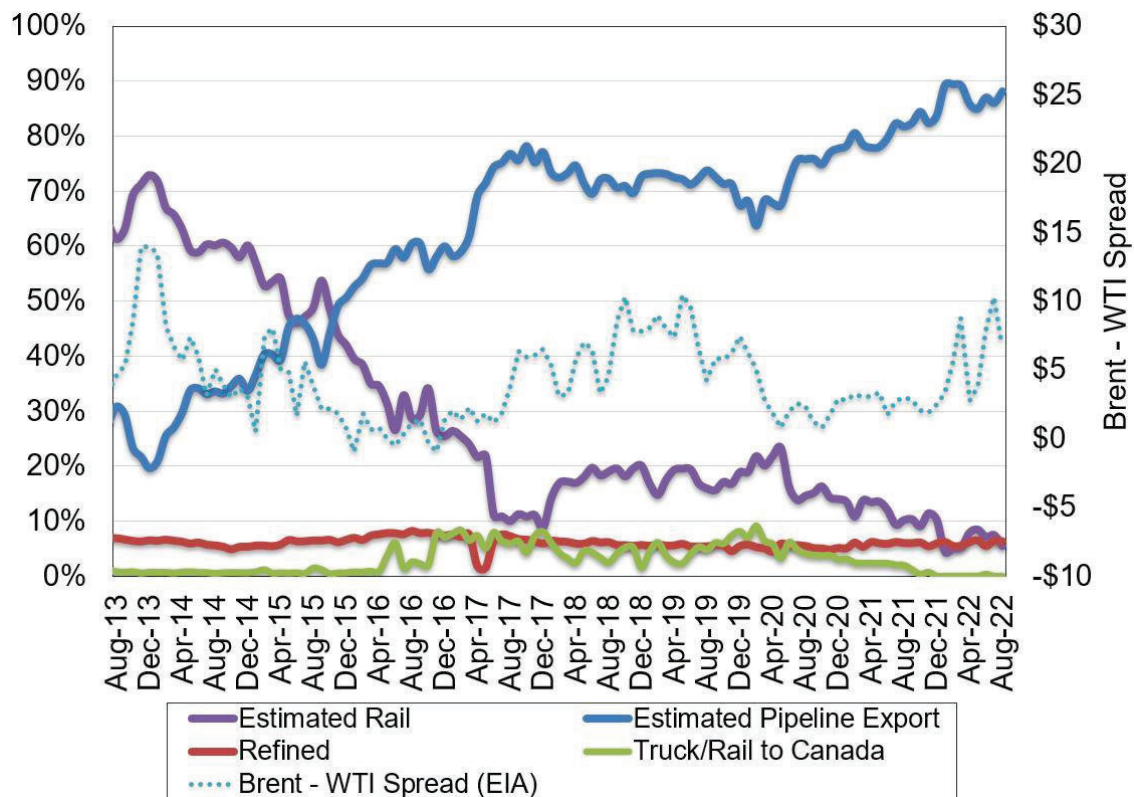
1% FLARED FROM WELL
WITH ZERO SALES

*AUG. 2022 NON-CONF DATA

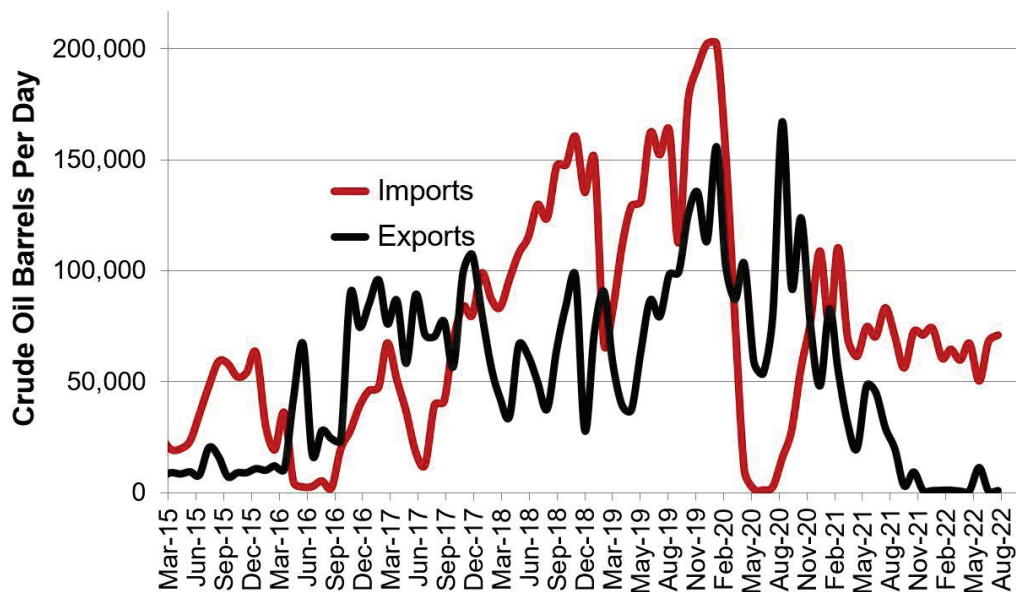
Estimated North Dakota Rail Export Volumes



Estimated Williston Basin Oil Transportation

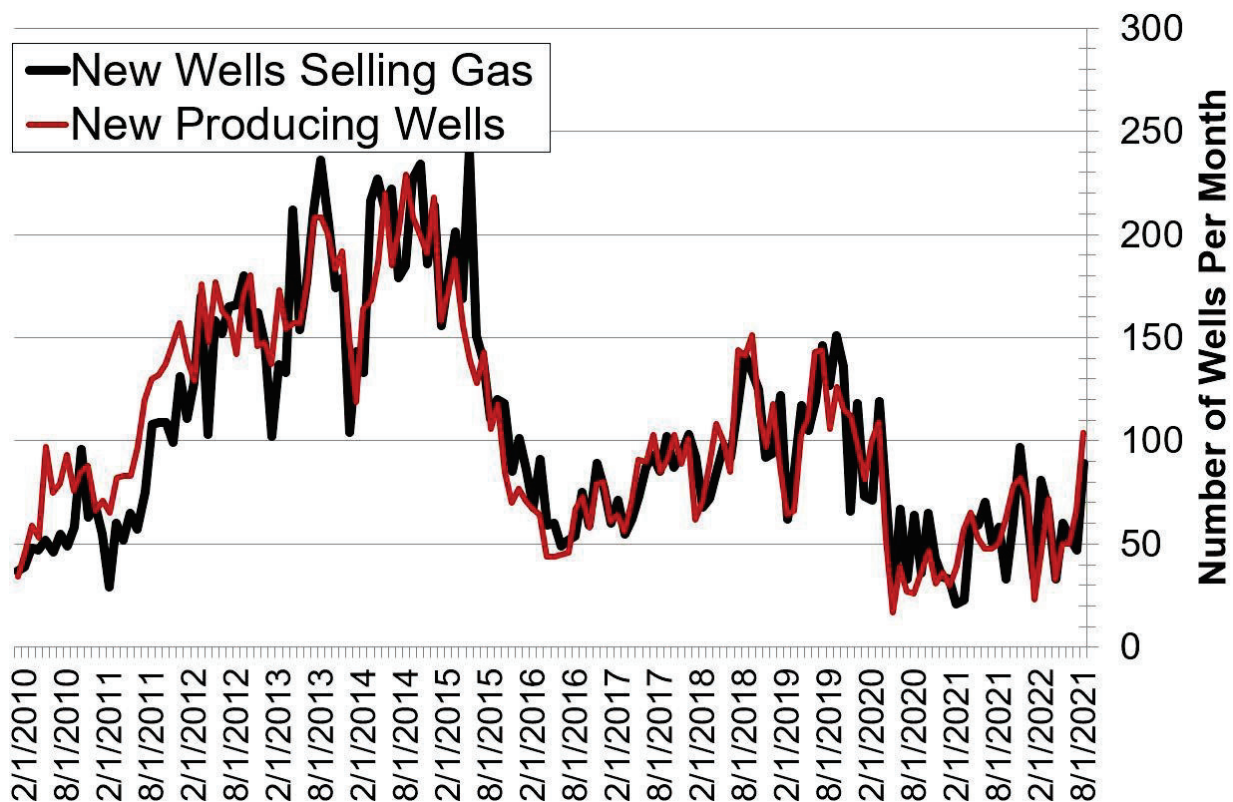


Williston Basin Truck/Rail Imports and Exports with Canada



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

New Gas Sales Wells per Month



US Williston Basin Oil Production, BOPD

2021

MONTH	ND	EASTERN MT*	SD	TOTAL
January	1,147,724	50,415	2,874	1,201,012
February	1,083,820	48,246	2,828	1,134,895
March	1,109,005	49,520	2,744	1,161,269
April	1,121,776	48,440	2,644	1,172,860
May	1,129,785	47,277	2,640	1,179,702
June	1,134,758	44,100	3,103	1,181,962
July	1,078,883	43,758	2,884	1,125,525
August	1,108,084	47,284	2,892	1,158,260
September	1,113,963	50,410	2,847	1,167,220
October	1,110,828	49,462	2,853	1,163,143
November	1,158,553	48,588	2,780	1,209,921
December	1,144,999	47,957	2,717	1,195,673

2022

MONTH	ND	EASTERN MT*	SD	TOTAL
January	1,091,895	47,598	2,709	1,142,202
February	1,093,902	46,946	2,742	1,143,590
March	1,128,397	50,497	2,709	1,181,603
April	905,965	49,825	2,338	958,128
May	1,059,735	49,159	2,648	1,111,542
June	1,096,783	52,196	2,764	1,151,743
July	1,072,632		2,774	
August	1,073,378			
September				
October				
November				
December				

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

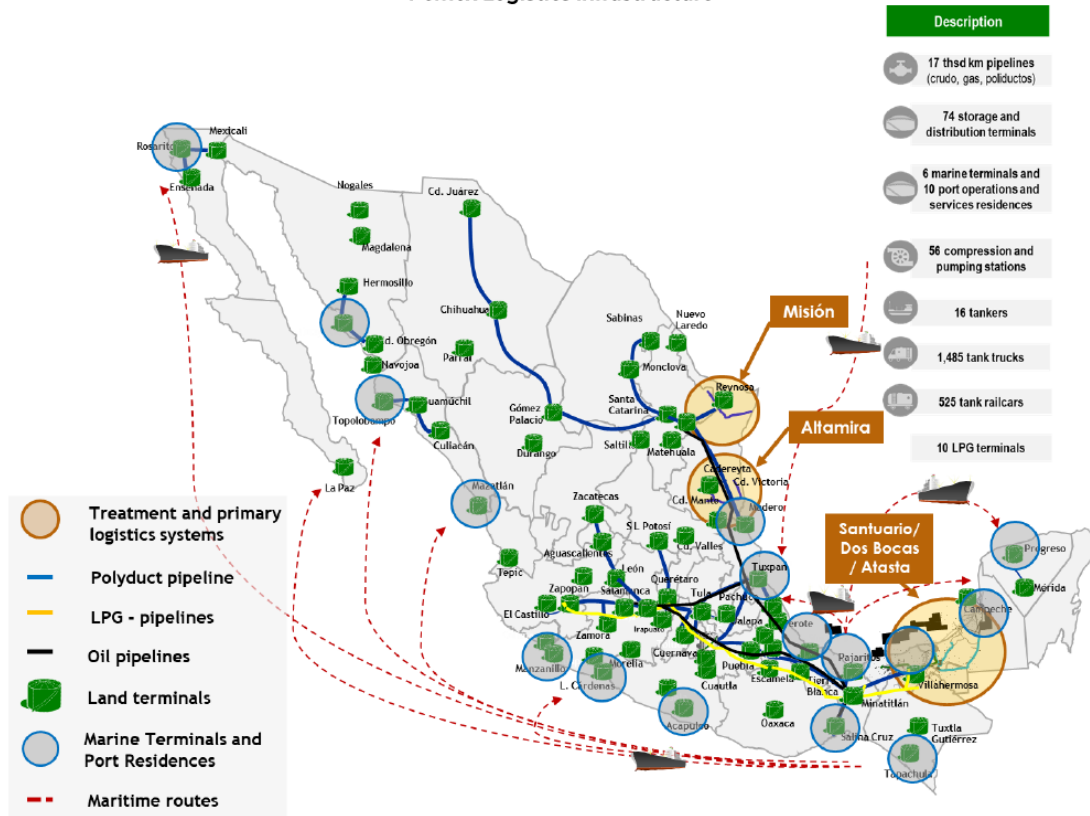


∴ General Synopsis 14/10/2022 8:00:00

Adverse conditions for offshore operations south of the Gulf of Mexico. Tropical Storm KARL is currently in the Sonda de Campeche approximately 45 km southwest of Cayo Arcas, 185 km northeast of Dos Bocas, Tab., and 145 km north-northwest of Ciudad del Carmen, Camp., has maximum sustained winds of 65 km / h (35 kt), gusts of 85 km / h (45 kt), displacement to the southeast at 9 km/h (5 kt) and a hazard index of 0.66. KARL will advance on the Campeche Probe throughout the day and is expected to make landfall on the coast of Tabasco between tonight and early Saturday at some point between Frontera and Dos Bocas. On the other hand, this morning there is a variable wind from the South in the Sonda de Campeche between 55 to 65 km / h (35-40 kt), with waves of 2.1 to 3.0 m (7 to 10 ft) of significant height; however, gusts are expected to reach up to 80 to 85 km/h (43-45 kt) in the vicinity of the centre of KARL, with an increase in swell of up to 3.0 to 3.7 m (10 to 12 ft), with both parameters beginning to decrease towards dawn and Saturday morning. Finally, off the coast of Tamaulipas and northern Veracruz dominates stable weather, with clear to partly cloudy skies and warm atmosphere; In addition, there is a north wind of 10 to 15 km / h (5-8 kt), with an estimated wave of 0.9 to 1.5 m (3 to 5 ft).- //Forecaster: M.I Adrián Marín Hernández / LCA. Rodrigo Flores Zamudio

Situación de Operaciones en el Golfo de México			
Puerto	Situación de Operación	Día/Hora Cerrado	Día/Hora Abierto
MADERO, TAMP.	Operando	|	|
TUXPAN, VER.	Operando	|	|
VERACRUZ, VER.	Operando	|	|
PAJARITOS, VER.	Suspende Operaciones	14/0000 | Total	|
DOS BOCAS, TAB	Suspende Operaciones	13/2200 | Total	|
CD. DEL CARMEN, CAMP.	Sin Operar	13/1800 | Total	|
FPSO. YUUM K'AK NÁAB (PTO)	Sin Operar	13/1800 | Total	|
PLAT. CAYO ARCAS	Sin Operar	13/1800 | Total	|
ÁREA DE PLATAFORMAS	Sin Operar	13/1800 | Total	|
SEYBAPLAYA, CAMP.	Suspende Operaciones	13/2200 | Total	|
LERMA, CAMP.	Suspende Operaciones	13/2200 | Total	|

Pemex Logistics infrastructure



Pemex industrial Transformation Infrastructure



PERN: We repaired the pipeline and restored oil pumping.

15 October 2022

On Saturday, PERN technical services restored the full functionality of the pipeline thread damaged a few days ago, which supplies crude oil to the company's German customers. Currently, deliveries are carried out using both pipelines of the Western Section.

The causes that led to the unsealing are being investigated. The event was immediately reported by the PERN automation systems. This allowed for efficient rescue operations and immediate commencement of repairs of the oil pipeline. Currently, the activity of pern services focuses on cleaning the area and restoring it to its original state.

Thank you very much to all the employees involved in the action, which was carried out day and night. I would also like to thank the external agencies, including the State Fire Service and the institutions responsible for environmental protection. Quick and decisive actions allowed for the maximum reduction of the effects of the event and the restoration of full customer service – emphasized Paweł Stańczyk, President of the Management Board of PERN.

<https://biuroprasowe.pern.pl/210904-sluzby-pern-dotarly-do-uszkodzonego-rurociagu-brak-znamion-dzialania-osob-trzecich>

PERN services reached the damaged pipeline, no signs of third party activity

12 October 2022

After removing most of the debris from the area near the oil pipeline damaged yesterday, PERN technical services located the site of the spill. From the first findings and from the method of deformation of the pipeline, it appears that at the moment there are no signs of interference by third parties. However, detailed analyzes are underway, the aim of which is to determine the cause of the incident and repair the bus so that the pressing of raw material starts as soon as possible.

In addition to the efforts to repair the western section that supplies crude oil to Germany, PERN has begun intensive reclamation work to restore the site as soon as possible. Remediation activities are carried out by employees from the PERN Environmental Protection Department and a specialist external company carrying out the operator's order.

PERN services are working intensively at the scene. The next update on this subject is scheduled for October 13 (Thursday) at 2 p.m.

Oil Market Highlights

Crude Oil Price Movements

The OPEC Reference Basket (ORB) declined m-o-m by \$6.58 in September, or 6.5%, to average \$95.32/b. Pressure from equity market selling, central bank interest rate hikes, and economic outlook concerns weighed on crude futures prices. The ICE Brent front-month declined \$7.17, or 7.3%, to average \$90.57/b in September while NYMEX WTI fell by \$7.68, or 8.4%, to average \$83.80/b. The Brent/WTI futures spread widened again m-o-m, expanding 51¢ to average \$6.77/b. The market structure of all three major crude benchmarks remained in backwardation. Hedge funds and other money managers resumed selling in both major futures contracts — ICE Brent and NYMEX WTI — especially during the last week of September.

World Economy

Global economic growth has entered into a period of significant uncertainty and deteriorating macroeconomic conditions, amid intensifying challenges including high inflation levels, tightening monetary policies by major central banks, rising interest rates and persisting supply chain issues. Moreover, geopolitical risks, extensions of COVID-19 related lockdowns and flare ups of the pandemic in the Northern Hemisphere during winter season remain uncertain. By taking these factors into account, the global economic growth forecast for both 2022 and 2023 are revised down to stand at 2.7% and 2.5%, respectively. For the US, GDP growth for 2022 is revised down to 1.5% and for 2023 it is lowered to 0.8%. In the Euro-zone, the 2022 GDP forecast is lowered to 3.0%, and for 2023 it is lowered to 0.3%. Japan's economic growth forecast for 2022 is revised up to 1.5% while for 2023 it is revised down to 1.0%. China's 2022 forecast is revised down to 3.1 % while for 2023 it stands at 4.8%. India's 2022 forecast is revised down for both 2022 and 2023 to 6.5% and 5.6%, respectively. Brazil's growth forecast for 2022 is unchanged at 1.5% while for 2023 it is revised down to 1.0%. Russia's 2022 forecast is revised up to show a contraction of 5.7%, with growth of 0.2% expected in 2023. Downside risks to this forecast includes continued inflationary trends, further monetary actions by major central banks, aggravated geopolitical tensions, worsening of the pandemic in the northern hemisphere during winter months, tightening labour markets and further supply chain constraints. These ongoing risks and challenges, especially the economic dynamics in 4Q22 and 1Q23 will require close monitoring.

World Oil Demand

Global oil demand growth in 2022 is revised down by 0.5 mb/d to reflect the recent macroeconomic trends and oil demand developments in various regions. These developments include the extension of China's zero-COVID-19 restrictions in some regions, economic challenges in OECD Europe, and inflationary pressures in other key economies, which have weighed on oil demand, especially in 2H22. With this, global oil demand for 2022 is now expected to grow by about 2.6 mb/d. In the OECD, oil demand growth is estimated at about 1.4 mb/d with the non-OECD at about 1.3 mb/d. For 2023, world oil demand growth is revised down to stand at about 2.3 mb/d. The OECD is projected to grow by about 0.4 mb/d, and the non-OECD by about 2.0 mb/d.

World Oil Supply

Non-OPEC liquids supply growth in 2022 is forecast at 1.9 mb/d. Upward revisions in Latin America were more than offset by downward revisions to Other Eurasia, OECD Europe and Other Asia. The main drivers of liquids supply growth for 2022 are expected to be the US, Canada, China, Guyana and Brazil, while production is expected to decline mainly in Norway and Thailand. For 2023, the non-OPEC liquids production growth forecast is adjusted down to 1.5 mb/d. The main drivers for 2023 growth are expected to be the US, Norway, Brazil, Canada, Kazakhstan and Guyana, with oil production declines mainly seen coming from Russia and Mexico. Uncertainty about the geopolitical situation remains high, and there is potential for further US shale liquid production. OPEC NGLs and non-conventional liquids in 2022 are forecast to grow by 0.1 mb/d and then by 50 tb/d in 2023 to average 5.4 mb/d. OPEC-13 crude oil production in September increased by 146 tb/d m-o-m to average 29.77 mb/d, according to available secondary sources.

Product Markets and Refining Operations

Refinery margins showed diverging trends in September. In the Atlantic Basin, margins increased as the start of peak refinery maintenance season led to a reduction in product output, exerting pressure on product balances,

Oil Market Highlights

particularly gasoil. This provided solid support to products markets in both the US Gulf Coast and Northwest Europe, mainly for middle distillates. Meanwhile, refinery margins suffered losses in Asia, pressured by the recent release of China's fourth batch of export quotas as it set the stage for stronger product exports in the near term. In addition, expectations of a fifth batch of export quotas exacerbated bearish product market sentiment within the region, leading ultimately to a downturn in Asian product performance all across the barrel, with the exception of naphtha, which continued to gain favour as the preferred petrochemical feedstock given high natural gas prices. In September, global refinery processing rates declined in line with historical trends, down by 1.2 mb/d in response to a rise in offline capacity amid the start of autumn maintenance season. Preliminary data points to refinery intakes declining further in the coming months by nearly 900 tb/d.

Tanker Market

Very Large Crude Carrier (VLCC) rates continued to gather strength in September, with gains seen on all major routes, supported increased demand on longer haul routes. Spot VLCCs rates on the Middle East-to-East route rose 26%, while on the West Africa-to-East route they gained 23%. Suezmax and Aframax rates fell from the elevated levels seen since March, as the refinery maintenance season kicked off. Suezmax rates on the US Gulf Coast-to-Europe route declined by 7%, while Aframax spot rates on the Mediterranean routes lost 13%. Clean rates saw diverging trends, with gains East of Suez and declines West of Suez.

Crude and Refined Products Trade

Preliminary data showed that the US crude imports to average 6.3 mb/d in September, while exports reached a record high of 4.0 mb/d. China's crude imports averaged 9.5 mb/d. The increase came amid expectations for a pickup in domestic product demand in 4Q22 and as the potential for product exports increased. India's crude imports fell to 4.1 mb/d in August, following strong performance seen over the last four months, but remained broadly in line with seasonal levels. India's product exports increased, driven primarily by higher outflows of jet fuel and gasoil, despite the government imposing higher export duties. Japan's crude imports showed strong performance in August, averaging just under 3.0 mb/d, the strongest figure since March 2020, supported by summer demand for gasoline and healthy fuel oil consumption for power generation. Preliminary figures show crude imports into the OECD Europe region remaining high compared with last year, despite steady m-o-m declines in seaborne Russian imports.

Commercial Stock Movements

Preliminary August data shows total OECD commercial oil stocks up 7.8 mb, m-o-m. At 2,712 mb, inventories were 111 mb less than the same month a year ago, 267 mb lower than the latest five-year average, and 273 mb below the 2015–2019 average. Within components, crude and product stocks rose 6.8 mb and 1.0 mb, respectively, compared with the previous month. At 1,315 mb, OECD crude stocks were 0.7 mb lower than the same month last year, 105 mb below the latest five-year average and 133 mb lower than the 2015–2019 average. OECD product stocks stood at 1,398 mb, representing a m-o-m deficit of 110 mb, 162 mb lower than the latest five-year average and 140 mb below the 2015–2019 average. In terms of days of forward cover, OECD commercial stocks rose by 0.2 days m-o-m in August to stand at 59.3 days. This is 1.3 days below August 2021 levels, 5.0 days less than the latest five-year average and 3.8 days lower than the 2015–2019 average.

Balance of Supply and Demand

Demand for OPEC crude in 2022 is revised down by 0.2 mb/d from the last month's assessment to stand at 28.7 mb/d. This is around 0.6 mb/d higher than in 2021. Demand for OPEC crude in 2023 is revised down by 0.3 mb/d from the last month's assessment to stand at 29.4 mb/d. This is around 0.8 mb/d higher than in 2022.

Feature Article

Winter oil market outlook

In August 2022, global refinery intake level has reached 81 mb/d, the highest monthly level registered since the emergence of the COVID-19 pandemic (**Graph 1**). The strong product consumption during the summer season, amid positive fuel requirements from the industrial and manufacturing sectors, led to an increase of 2.5mb/d, y-o-y. However, in September, refinery intake fell by nearly 1.2 mb/d m-o-m with the start of peak autumn refinery maintenance in the US and Europe.

Meanwhile, global oil demand is now expected to grow by about 2.6 mb/d in 2022. However, risks are skewed to the downside, with slowing growth in the global economy, if continued, likely leading to lower oil demand in the months to come. While the first half of the year saw good levels of mobility, industrial activity and petrochemical feedstock requirements, the momentum has seen a slowdown due to reduced economic activity in recent months. A decrease in product output since last year due to refinery closures, pipeline and weather issues and other constraints, weighed heavily on total OECD product inventories, raising refinery margins to record-high levels.

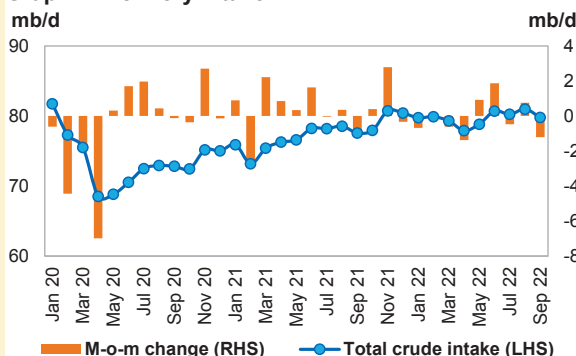
On the US Gulf Coast, refinery margins soared to a record high of \$49.92/b in June. Nevertheless,

seasonal demand for gasoline throughout the driving season in the US was lower than expected, showing y-o-y declines from June to September 2022. In China, the government's zero-COVID policy restrictions led to a y-o-y decline in oil demand in 2Q22, followed by a brief recovery in 3Q22. The newly announced lockdowns are expected to add to the uncertainty going forward. Looking ahead, refinery runs are expected to slow going into 4Q22 as heavy maintenance work unfolds globally. However, ongoing tightness in product availability, particularly for gasoil, should remain supportive for refinery runs, along with expectations of a slight pick-up in diesel consumption for heating demand amid some additional potential for gas-to-oil switching. This will also depend on the severity of the winter in the Northern Hemisphere. Nevertheless, current signs of economic slowdown may further soften oil market fundamentals beyond the seasonal refinery turnaround period.

Looking to the coming winter season, a seasonal pick-up in heating oil demand due to rising requirements in the Northern Hemisphere is projected. In 4Q22, OECD Europe and Americas, as well as OECD Asia Pacific, are expected to see an increase in demand for fuel oil and distillates required for heating (**Graph 2**). In addition, rising natural gas prices will potentially lead to some degree of gas-to-oil switching in power generation in both Europe and Asia, supporting demand for residual fuels, heating oil and other fuels, which are forecast to grow by 0.5 mb/d y-o-y in 4Q22. In OECD Europe and the US, heating oil will be the main driver, followed by residual fuels, while in OECD Asia Pacific, residual fuels and other fuels are expected to drive heating fuel demand. In 1Q23, global demand for heating fuel is expected to grow by 0.6 mb/d, y-o-y. OECD Europe is expected to account for the largest increase by 0.4 mb/d, mostly heating oil. Heating fuel demand in OECD Asia Pacific is also expected to grow by 0.1 mb/d, y-o-y, while the US is forecast to show only marginal y-o-y growth.

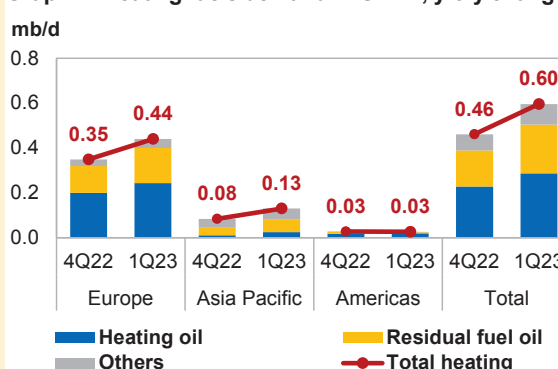
Looking ahead, and despite the usual seasonal hike in oil demand for heating, the challenges presented by the heightened levels of uncertainty, the slowing economic growth and a possible resurgence of COVID restrictions in China and elsewhere are expected to impact oil demand in 2022 and 2023. With this in mind, the participating countries of the Declaration of Cooperation (DoC), in their 5th October 2022 meeting have pre-emptively and proactively decided to adjust their overall production, starting November 2022, downward by 2 mb/d (from the August 2022 required production levels), in an ongoing and relentless effort to provide a sustainable stability to the market.

Graph 1: Refinery intake



Source: OPEC.

Graph 2: Heating fuels demand in OECD, y-o-y change



Note: 4Q22-1Q23 = Forecast. Source: OPEC.

World Oil Demand

World oil demand growth in 2022 is revised down by 0.5 mb/d to reflect recently observed trends and developments in various regions. These include the extension of China's zero-COVID-19 restrictions in some regions, economic challenges in OECD Europe, and inflationary pressures in other key economies which could taper overall demand. Accordingly, demand is projected to grow by 2.6 mb/d.

Total oil demand is projected to average 99.7 mb/d in 2022. In the OECD region, oil demand is anticipated to rise by 1.4 mb/d to 46.2 mb/d y-o-y. OECD America's demand is expected to rise the most in 2022, led by the US on the back of recovering diesel demand. Light distillates are also projected to support demand growth this year.

In the non-OECD region, total oil demand for the year is anticipated to rise by 1.3 mb/d to 53.5 mb/d. A steady increase in industrial and transportation fuel demand, supported by a recovery in economic activity is projected to support the region's demand in 2022.

For 2023, world oil demand growth is also revised down to stand at 2.3 mb/d, subject to headwinds given the uncertainty that surrounds the global economic outlook and factors related to the pandemic.

The OECD is projected to grow by 0.4 mb/d, to reach 46.6mb/d. OECD Americas is expected to climb, with US oil demand above 2019 levels mainly due to the recovery in transportation fuels and light distillate demand. The should also rise above 2019 consumption levels.

In the non-OECD, oil demand is projected to rise by 2.0 mb/d to 55.4 mb/d, with the largest growth seen in China and India, supported by a recovery in transportation fuels and industrial fuel demand, including petrochemical feedstock. Regions such as Other Asia, Latin America and the Middle East are also expected to see decent gains, supported by a positive economic outlook in the region. In terms of fuels, gasoline and diesel are assumed to lead oil demand growth next year.

Table 4 - 1: World oil demand in 2022*, mb/d

World oil demand	2021	1Q22	2Q22	3Q22	4Q22	2022	Change 2022/21	
							Growth	%
Americas	24.33	24.79	24.98	25.10	25.27	25.04	0.70	2.89
of which US	20.03	20.38	20.41	20.58	20.83	20.55	0.52	2.58
Europe	13.13	13.15	13.42	14.09	14.00	13.67	0.54	4.07
Asia Pacific	7.38	7.85	6.99	7.31	7.84	7.50	0.11	1.55
Total OECD	44.85	45.79	45.39	46.50	47.12	46.20	1.35	3.02
China	14.97	14.74	14.56	14.69	15.64	14.91	-0.06	-0.40
India	4.77	5.18	5.16	4.95	5.35	5.16	0.39	8.11
Other Asia	8.63	9.09	9.27	8.73	8.85	8.98	0.35	4.11
Latin America	6.23	6.32	6.36	6.55	6.40	6.41	0.18	2.92
Middle East	7.79	8.06	8.13	8.47	8.17	8.21	0.41	5.32
Africa	4.22	4.51	4.15	4.25	4.53	4.36	0.14	3.27
Russia	3.61	3.67	3.42	3.45	3.59	3.53	-0.08	-2.32
Other Eurasia	1.21	1.22	1.16	1.03	1.21	1.15	-0.06	-4.61
Other Europe	0.75	0.79	0.75	0.73	0.80	0.77	0.01	1.63
Total Non-OECD	52.18	53.58	52.95	52.83	54.53	53.47	1.29	2.47
Total World	97.03	99.36	98.34	99.33	101.64	99.67	2.64	2.72
Previous Estimate	96.92	99.36	98.63	99.67	102.42	100.03	3.10	3.20
Revision	0.11	0.00	-0.29	-0.33	-0.78	-0.35	-0.46	-0.48

Note: * 2022 = Forecast. Totals may not add up due to independent rounding. Source: OPEC.

Table 4 - 2: World oil demand in 2023*, mb/d

World oil demand	2022	1Q23	2Q23	3Q23	4Q23	2023	Change 2023/22 Growth	%
Americas	25.04	25.05	25.29	25.44	25.55	25.33	0.30	1.19
of which US	20.55	20.53	20.55	20.84	20.98	20.72	0.17	0.85
Europe	13.67	13.19	13.48	14.17	14.08	13.73	0.06	0.46
Asia Pacific	7.50	7.88	7.04	7.35	7.86	7.53	0.04	0.48
Total OECD	46.20	46.12	45.81	46.96	47.49	46.60	0.40	0.86
China	14.91	15.07	15.44	15.28	16.07	15.47	0.56	3.76
India	5.16	5.41	5.44	5.21	5.59	5.41	0.25	4.94
Other Asia	8.98	9.42	9.61	9.09	9.20	9.33	0.35	3.85
Latin America	6.41	6.48	6.48	6.71	6.54	6.55	0.15	2.29
Middle East	8.21	8.45	8.46	8.80	8.46	8.54	0.33	4.06
Africa	4.36	4.71	4.34	4.44	4.72	4.55	0.19	4.36
Russia	3.53	3.65	3.44	3.62	3.77	3.62	0.09	2.52
Other Eurasia	1.15	1.22	1.16	1.04	1.22	1.16	0.01	0.72
Other Europe	0.77	0.80	0.76	0.75	0.82	0.78	0.02	2.32
Total Non-OECD	53.47	55.21	55.13	54.94	56.39	55.42	1.95	3.64
Total World	99.67	101.33	100.94	101.91	103.88	102.02	2.34	2.35
Previous Estimate	100.03	101.80	101.50	102.60	104.99	102.73	2.70	2.70
Revision	-0.35	-0.48	-0.56	-0.69	-1.11	-0.71	-0.36	-0.35

Note: * 2022 and 2023 = Forecast. Totals may not add up due to independent rounding. Source: OPEC.

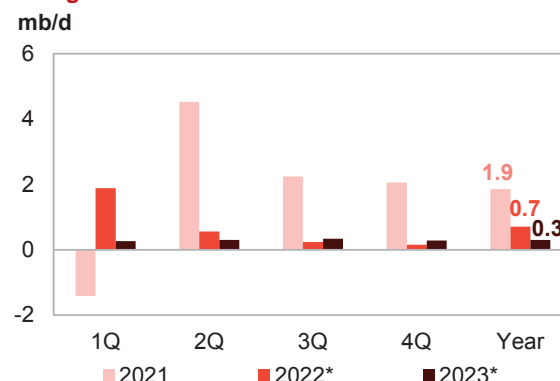
OECD

OECD Americas

Update on the latest developments

Oil demand in the US remained weak at 0.2 mb/d y-o-y growth in July, partly attributed to the strong baseline of comparison. Demand was mostly affected by continued high inflation and the decline in real wages eating into consumers' purchasing power. The US inflation rate slipped to 8.5% in July, with real wages falling by 3% in 2022. Despite the decline in gasoline prices in July, travel demand continued to weaken. Vehicle miles travelled in millions of miles improved by only 1% in July compared with June. July's demand growth was led by LPG, which posted growth of 0.4 mb/d y-o-y as compared to 0.1 mb/d y-o-y in June. Other products also grew by 0.3 mb/d y-o-y in July compared with 0.1 mb/d y-o-y growth in June. However, gasoline has experienced an unusual seasonal decline, falling by 0.6 mb/d y-o-y compared with a decline of 0.2 mb/d y-o-y in June. Finally, naphtha and residuals fuels remained sluggish in July.

Graph 4 - 1: OECD Americas oil demand, y-o-y change



Note: * 2022-2023 = Forecast. Source: OPEC.

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

By product	Jul 21	Jul 22	Change Jul 22/Jul 21 Growth	%
LPG	3.32	3.67	0.36	10.7
Naphtha	0.22	0.14	-0.08	-34.7
Gasoline	9.30	8.75	-0.55	-5.9
Jet/kerosene	1.50	1.60	0.10	6.8
Diesel	3.68	3.72	0.04	1.2
Fuel oil	0.35	0.33	-0.02	-6.8
Other products	2.11	2.42	0.32	15.0
Total	20.46	20.63	0.17	0.8

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

Near-term expectations

In 4Q22, the US GDP is projected to decline by 0.4% y-o-y. The recent interest rate hikes to contain persistently elevated inflation and declining household spending will likely weigh on consumers' purchasing power, potentially affecting oil demand. In 4Q22, oil demand is expected to grow by 0.1 mb/d y-o-y. Gasoline demand is due for a slight rebound following a steady and expected further decline in retail prices. The beginning of winter in 4Q22 will aid the demand for heating fuels. In addition, on the back of continued steady improvements in air travel demand, jet/kerosene will remain positive. However, the risk is skewed to the downside.

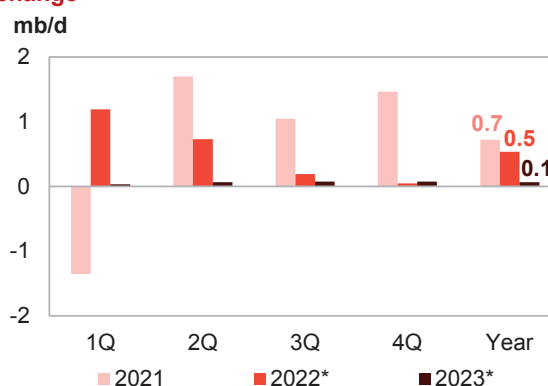
In 1Q23, the US GDP growth is forecast at 0.2% y-o-y. Accordingly, economic activity is not expected to improve significantly due to the factors mentioned for 4Q22. In addition, industrial output is on a downward trend. Oil demand is projected to grow by 0.15 mb/d y-o-y, in 1Q23, mostly supported by distillates and heating fuels, while improvements in air travel will support jet/kerosene demand. Road mobility activity is expected to soften due to reduced economic activity in the winter, thus dampening gasoline demand. The risks are still skewed to the downside in 1Q23.

OECD Europe

Update on the latest developments

Oil demand in OECD Europe weakened further to 80 tb/d y-o-y growth in July from 0.4 mb/d in June as inflation and geopolitical tensions continued to impact the region's economic activity. However, the level of consumption in July is higher than in the same period in 2021. The Euro-zone's annual inflation rate was 8.9% in July 2022, up from 8.6% in June. Similarly, the manufacturing PMI fell five points in July compared to June. Oil demand growth in July was driven mostly by jet/kerosene. The International Air Transport Association (IATA) Air Passenger Market Analysis for July indicates that airlines based in Europe achieved growth of 115.6% in international revenue passenger kilometres (RPKs) in the year to July and reached 79.7% of pre-pandemic levels. On the back of this healthy development, OECD Europe jet/kerosene grew by 0.4 mb/d y-o-y, in July.

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



Note: * 2022-2023 = Forecast. Source: OPEC.

Residual fuels also remained in positive territory by posting growth of 0.1 mb/d y-o-y, and other fuels recorded 70 tb/d y-o-y growth. However, the inflation-induced rise in production costs, geopolitical developments and trade-related bottlenecks weighed heavily on distillates, with demand declining by 0.2 mb/d y-o-y in July. Furthermore, geopolitical-related factors affected the demand for light distillates in the region's petrochemical sector, with demand for naphtha and LPG slowing by 0.2 mb/d y-o-y and 30 tb/d y-o-y, respectively. Finally, rising inflation and high fuel taxes in the region weighed on mobility. Gasoline demand recorded a decline of 70 tb/d y-o-y in July.

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

By product	Jul 21	Jul 22	Change Jul 22/Jul 21 Growth	%
LPG	0.42	0.38	-0.04	-8.4
Naphtha	0.49	0.41	-0.07	-15.3
Gasoline	1.23	1.21	-0.02	-1.5
Jet/kerosene	0.46	0.78	0.33	71.3
Diesel	3.19	3.03	-0.15	-4.8
Fuel oil	0.17	0.24	0.06	35.8
Other products	0.49	0.48	-0.01	-2.6
Total	6.44	6.54	0.09	1.5

Note: * Germany, France, Italy and the UK. Totals may not add up due to independent rounding.

Sources: JODI, UK Department for Business, Energy & Industrial Strategy, Unione Petrolifera and OPEC.

Near-term expectations

The GDP of the Euro-zone is forecast to slow from a growth rate of 2.0% in 3Q22 to 0.5% in 4Q22. Slowing economic growth, geopolitical tension and trade-related bottlenecks are expected to continue affecting economic activity in the region, particularly manufacturing. These factors may affect the region's oil demand, is expected to remain flat at zero level in 4Q22.

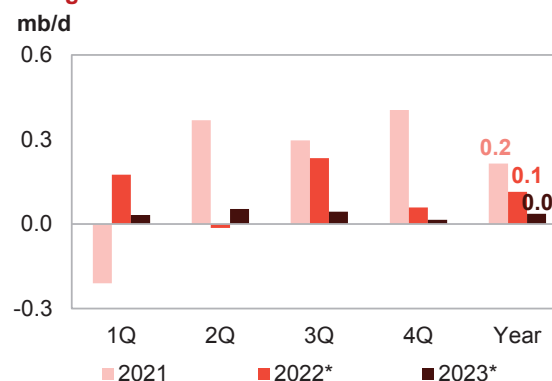
The outlook for European oil demand in 1Q23 is expected to be muted as the GDP growth is projected to decline from 0.5% in 4Q22 to a decline by 0.8%. Rising energy prices, geopolitical tension and supply-chain bottlenecks will likely keep input costs high in the manufacturing sector. This will potentially lead to slackening oil demand in the region's manufacturing in 1Q23. Nevertheless, the expected high heating demand amidst the natural gas crisis will continue favouring gas-to-oil switching, increasing the demand for distillate and fuel oil in the region. In addition, healthy air travel will aid jet/kerosene demand. Accordingly, oil demand in OECD Europe is projected to rise slightly by 30 tb/d annually in 1Q23.

OECD Asia Pacific

Update on the latest developments

Oil demand in OECD Asia Pacific sharply overshot expectations, rebounding in July by 0.2 mb/d y-o-y from a decline of 0.2 mb/d y-o-y in June. July demand was driven by petrochemical feedstock requirements for naphtha, including demand from South Korea's giant petrochemical producer LG Chemical. Naphtha posted growth of 0.1 mb/d y-o-y, compared to a decline of 60 tb/d y-o-y in June. Gradual improvements in the region's mobility also helped gasoline to recover by 90 tb/d y-o-y from a decline of 60 tb/d y-o-y in June. As airlines in the Asia Pacific recorded the strongest y-o-y growth rates for international RPKs, the fifth month of consecutive growth for this region, jet/kerosene posted 80 tb/d y-o-y growth from 40 tb/d in June. Similarly, diesel began to recover and posted growth of 70 tb/d y-o-y from a decline of 40 tb/d y-o-y in June. However, LPG softened by 0.2 mb/d y-o-y.

Graph 4 - 3: OECD Asia Pacific oil demand, y-o-y change



Note: * 2022-2023 = Forecast. Source: OPEC.

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

By product	Aug 21	Aug 22	Change Aug 22/Aug 21	
			Growth	%
LPG	0.32	0.21	-0.11	-34.1
Naphtha	0.66	0.69	0.03	3.8
Gasoline	0.77	0.78	0.01	1.5
Jet/kerosene	0.22	0.22	0.00	2.1
Diesel	0.68	0.73	0.05	7.7
Fuel oil	0.24	0.28	0.04	17.8
Other products	0.22	0.37	0.14	64.5
Total	3.10	3.27	0.17	5.6

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

Near-term expectations

The impact of COVID-19 has become more localised as the year has progressed. Therefore, mobility and other economic activity have started improving, as the July data shows. The gradual resumption of economic activity is expected to support consumer confidence and the mobility recovery in the region. In 2022, the region is projected to grow by 2.0%. Furthermore, improvements in the region's aviation operations could boost transportation fuels and petrochemical feedstock demand in the region. The growth in air travel will boost jet/kerosene demand in the region. Accordingly, oil demand is projected to grow by 0.1 mb/d y-o-y in 4Q22.

In 1Q23, the outlook for the region is still tepid due to the expected slow pace of the economic recovery. The region's economy is expected to grow by 1.2% in 2023. Similarly, geopolitical-induced tailbacks render

additional strains for the region's economy, weighing on oil demand in 2023. On average, oil demand is expected to remain at about 30 tb/d in 1Q23.

Nevertheless, regional governments will likely increase fiscal support to mitigate the effects of the elevated inflation, thus boosting consumers' purchasing power. Additionally, the South Korean government's subsidy rate hike and current Japanese subsidies on gasoline will likely bolster oil demand in the region in the short term.

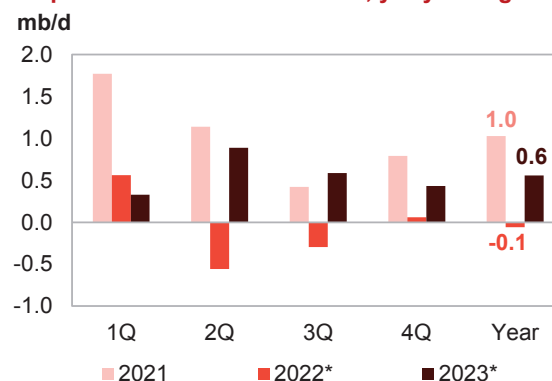
Non-OECD

China

Update on the latest developments

Extended zero-COVID-19 restrictions continue to sap business and consumer confidence and weaken economic and social activity, weighing heavily on oil demand in **China**. August data shows a decline of 0.45 mb/d y-o-y in China. Despite the softening of oil demand, demand for distillates remains positive and posted 20 tb/d y-o-y growth in August. Distillates were aided by a gradual uptick in construction activity and trucking in some regions. China eased movement restrictions in Chengdu, a south western city with more than 21 million population, after authorities stated that the COVID-19 outbreak was effectively controlled. On the back of residential and petrochemical industry requirements, naphtha posted a growth of 0.2 mb/d y-o-y.

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



Note: * 2022-2023 = Forecast. Source: OPEC.

One major Chinese petrochemical maker – Wanhua Chemical – was reported to have recently started importing LPG from Algeria. However, LPG posted a decline of 80 tb/d y-o-y.

Nevertheless, mobility restrictions primarily affected gasoline demand, declining by 0.3 mb/d y-o-y. The COVID-19 restrictions have also negatively impacted airline activity in China. Jet/kerosene demand declined by 20 tb/d y-o-y on the back of softening domestic airline activity. Finally, other fuels and residuals declined by 0.2 mb/d and 80 tb/d, y-o-y growth respectively.

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

By product	Aug 21	Aug 22	Change Growth	Aug 22/Aug 21 %
LPG	2.16	2.09	-0.08	-3.6
Naphtha	1.95	2.13	0.18	9.0
Gasoline	2.99	2.70	-0.29	-9.7
Jet/kerosene	0.50	0.53	0.02	4.3
Diesel	3.06	3.08	0.02	0.6
Fuel oil	0.75	0.67	-0.08	-10.1
Other products	1.68	1.46	-0.22	-13.1
Total	13.10	12.65	-0.45	-3.4

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

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

Near-term expectations

Looking ahead, an expected gradual loosening of the lockdowns combined with GDP growth of 3.1% could result in a sharp rebound in oil consumption from 4Q22 onwards. Accordingly, a seasonal uptick in construction activity in September and October will drive diesel demand higher. Petrochemical feedstock demand has also shown signs of improvement. For example, petrochemical refiner Shenghong resumed crude buying ahead of the start of its 320,000 b/d refinery at Lianyungang in October. Along with a week-long public holiday, these factors are expected to support oil consumption in 4Q22, with demand rising by 0.1 mb/d y-o-y.

By 2023, China's GDP is expected to expand by 4.8%. Additionally, China's zero-COVID-19 policy could be significantly relaxed should the pandemic wane. Improving economic activity and government support is

expected to boost oil demand. In June, Beijing ordered local governments to sell a record 1 trillion yuan (\$157 billion) in bonds for infrastructure projects, likely stimulating fuel, and raw materials demand. Meanwhile, by Q3 2023, the improvement in the property market will likely renew the construction material demand, boosting the demand for petrochemical feedstock.

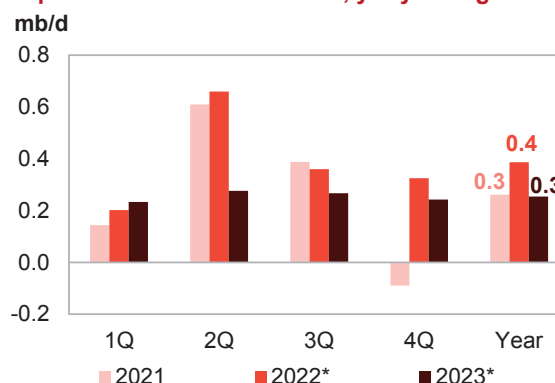
Furthermore, China unveiled an ambitious long-term highway expansion and development plan, which is likely to boost demand for bitumen as the construction season kicks into high gear. Finally, a swift recovery can be expected in air travel in response to easing travel restrictions. The combined effects of these factors should help oil demand to grow by 0.3 mb/d y-o-y in 1Q23. However, the demand prospects largely depend on the development of the COVID-19 situation and concomitant government response.

India

Update on the latest developments

Oil demand in India rebounded in August to reach 0.6 mb/d y-o-y growth, up from 0.3 mb/d y-o-y growth in July. Oil demand was strongly supported by the healthy economic growth of 7.1% in 2022, combined with a positive manufacturing PMI of 55.62, the highest in the last eight months. India's oil demand has been rising steadily since the easing of COVID-19 restrictions. In August, other products were the main driver of demand, which rose by 0.2 mb/d y-o-y, following a growth of 30 tb/d y-o-y in July. Road construction-driven demand for bitumen supported the demand for other products. About 97% of the bitumen was consumed by road construction activity; the demand for bitumen recorded a growth of 51% y-o-y, in August.

Graph 4 - 5: India's oil demand, y-o-y change



Note: * 2022-2023 = Forecast. Source: OPEC.

Similarly, diesel improved significantly from 0.1 mb/d y-o-y in July to 0.2 mb/d y-o-y in August. The two major diesel demand sources are high-speed diesel (HSD), aided by manufacturing activity and the sowing season for kharif crops, and light diesel oil (LDO), which was largely driven by small scale industries, power generation as well as iron and steel. Gasoline also improved from 50 tb/d y-o-y growth in July to 90 tb/d y-o-y growth. Gasoline demand was aided by rising consumer incomes and a heavy influx of travellers during the month, boosting economic activity. Naphtha recovered from a decline of 20 tb/d y-o-y in July to an increase of 60 tb/d y-o-y in August. Petrochemical industry requirements supported the domestic demand for naphtha to grow by 23% over 2021 y-o-y growth. Similarly, LPG registered 30 tb/d y-o-y growth (about 3%) in August, mostly driven by household cooking needs. Finally, jet/kerosene demand was 15.8% higher than a year earlier, posting y-o-y growth of 30 tb/d in August on the back of an air travel recovery stemming from the relaxation of lockdowns. India's overall air passenger traffic (domestic and international) inched closer to pre-COVID-19 levels.

Table 4 - 7: India's oil demand, mb/d

By product	Aug 21	Aug 22	Change Growth	Aug 22/Aug 21 %
LPG	0.84	0.87	0.03	3.2
Naphtha	0.20	0.26	0.06	30.2
Gasoline	0.74	0.82	0.09	11.6
Jet/kerosene	0.19	0.22	0.03	15.8
Diesel	1.51	1.67	0.17	11.0
Fuel oil	0.24	0.26	0.02	7.4
Other products	0.59	0.79	0.20	34.6
Total	4.30	4.89	0.59	13.7

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

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

Near-term expectations

India's oil demand outlook in 4Q22 is expected to continue rising on the back of strong GDP growth of 6.5% and positive manufacturing activity. An expected rise in consumer confidence will likely support mobility and

World Oil Demand

industrial product demand. Furthermore, the post-monsoon Kharif harvesting season and construction activity are also expected to support demand growth. Accordingly, oil demand is expected to grow at 0.3 mb/d, in 4Q22 amidst economic and social activity recovery.

Distillates are expected to be supported by harvesting, construction and manufacturing activity in October. Additionally, annual traditional festivities and an influx of travellers will likely support mobility and boost gasoline demand, and improvements in air travel will aid jet/kerosene demand. Finally, rising natural gas prices will likely lead to gas-to-oil switching in power generation and the industrial sector, thus improving the demand for fuel oil and distillates.

In 1Q23, India's oil demand is expected to remain on a positive trajectory, growing on average at 0.2 mb/d y-o-y. In 1Q23, gas-to-oil switching is expected to continue. Similarly, Zaid crops are sown and harvested between March and July. Given these factors combined with healthy GDP growth of 5.6%, oil demand is expected to grow by 0.2 mb/d y-o-y. The improvement in demand growth will likely be aided by mobility and steady manufacturing and construction demand for distillates. Finally, the residential and petrochemical sectors' demand for light distillates will remain steady amidst the aviation sector's demand for jet/kerosene.

Latin America

Update on the latest developments

Oil demand in Latin America improved from 0.1 mb/d y-o-y growth in June to 0.2 mb/d y-o-y growth in July. COVID-19 has remained contained in the region, and economic and social activity is gradually recovering. Evidence of improvements in industrial and overall economic activity in the region's largest economy is illustrated in the Brazilian PMI, which increased from 52.3 in June to 54.06 in July. Other products led the demand improvement to post growth of 80 tb/d y-o-y. On the back of the improved COVID-19 situation, air travel activity supported jet/kerosene demand to grow by 60 tb/d y-o-y. Similarly, diesel demand improved marginally from 30 tb/d y-o-y in June to 40 tb/d y-o-y in July. However, gasoline fell by 0.4 tb/d y-o-y in June to 10 tb/d y-o-y in July. Finally, both naphtha and LPG demand slowed in July.

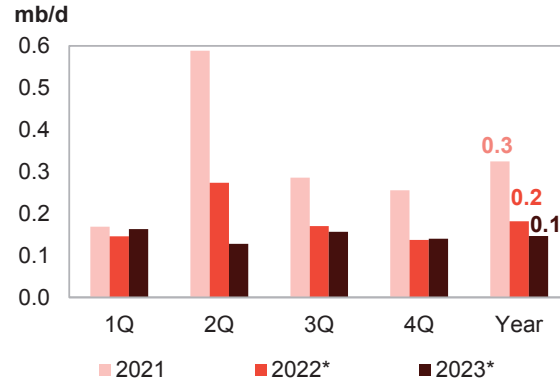
Similarly, diesel demand has marginally improved from 30 tb/d y-o-y in June to 40 tb/d y-o-y in July. However, gasoline has softened by 0.1 tb/d y-o-y in June to a growth of 10 tb/d y-o-y in July. Finally, both naphtha and LPG deaccelerated in July.

Near-term expectations

Oil demand in the region is expected to continue to improve in 4Q22, supported by projected GDP growth of 2.7%. The improved manufacturing PMI amidst a decline in COVID-19 in big consuming countries will support oil demand recovery in the region. Accordingly, oil demand growth in the region is expected to increase by 0.1 mb/d in 4Q22.

Oil demand growth is forecast to rise by 0.2 mb/d in 1Q23 amidst annual GDP growth of 1.0% in 2023 combined with continuous improvements in the COVID-19 situation in the region as vaccination programmes accelerate. The prospects for oil demand in the region still largely hinge on the strength of the region's economic recovery, containment of the pandemic and global economic environment.

Graph 4 - 6: Latin America's oil demand, y-o-y change



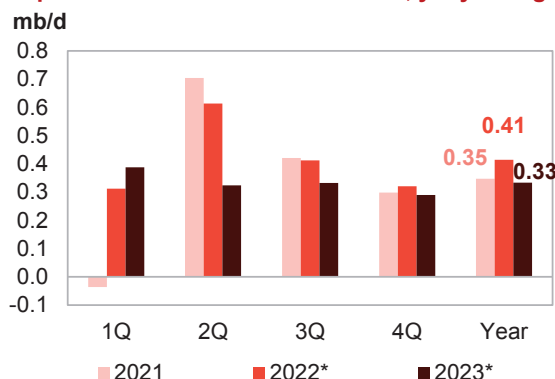
Note: * 2022-2023 = Forecast. Source: OPEC.

Middle East

Update on the latest developments

Oil demand in the Middle East remained strong at 0.6 mb/d y-o-y in July. Requirements for power generation, other fuels and residuals supported demand in July, with other products posting growth of 0.2 mb/d y-o-y while residual fuels grew by 0.1 mb/d y-o-y. Demand in the Saudi Arabian and Iraqi power generation sectors due to hot weather are the main drivers of the region's demand growth for residual fuels and other products. Furthermore, mobility in the region remains very strong, with gasoline demand growing by 60 tb/d y-o-y. Gas diesel remains on a positive growth trajectory at 0.1 mb/d y-o-y, significantly improved from 70 tb/d annual growth in June.

Graph 4 - 7: Middle East's oil demand, y-o-y change



Note: * 2022-2023 = Forecast. Source: OPEC.

The IATA Air Passenger Market Analysis for July suggests that airline activity continues on a strong positive trend in the Middle East, with jet/kerosene growing by 50 tb/d y-o-y. LPG has remained at 20 tb/d y-o-y, the same as in June. However, naphtha improved from a y-o-y decline of 20 tb/d in June to a 10 tb/d y-o-y decline in July.

Latest data on Saudi Arabia in August a strong growth of 0.2 mb/d, y-o-y. Diesel posted a growth of 0.14 mb/d, y-o-y. Similarly, fuels oil grew by 40 tb/d, y-o-y, as gasoline posted a growth of 30 tb/d, y-o-y.

Table 4 - 8: Saudi Arabia's oil demand, mb/d

By product	Aug 21	Aug 22	Change Aug 22/Aug 21	
			Growth	%
LPG	0.04	0.04	0.00	0.1
Gasoline	0.47	0.50	0.03	6.7
Jet/kerosene	0.04	0.04	0.00	-0.6
Diesel	0.53	0.67	0.14	26.6
Fuel oil	0.65	0.69	0.04	5.9
Other products	0.72	0.75	0.02	3.4
Total	2.47	2.70	0.24	9.6

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

Sources: JODI and OPEC.

Near-term expectations

Strong economic activity in the region will continue to support oil demand in the near future. Saudi Arabia's economy is expected to grow by 9.0% in 2022. Similarly, the United Arab Emirates (UAE) is expected to grow robustly by 7.0% over 2022 as the country continues to recover from the pandemic. The anticipated strong economic growth in the region is expected to support consumer spending and accelerate mobility and industrial activity in the region. In addition, the hot season is expected to boost electricity demand due to the requirements for air conditioning. Hence, demand for residual and fuel oil will continue to accelerate in 4Q22, increasing oil demand by 0.3 mb/d, y-o-y. Similarly, as the recovery in international air traffic persists, the jet/kerosene demand will further support oil demand growth in the region.

In 2023, the oil demand momentum will increase from the pace of 4Q22 and is projected to grow by 0.4 mb/d y-o-y in 1Q23. Economic growth in the region is expected to be robust across the board. Gasoline, transportation diesel and jet/kerosene are expected to lead oil demand growth, with gasoil/diesel and fuel oil demand for power generation further supporting strong oil demand growth momentum.

World Oil Supply

Non-OPEC liquids supply (including processing gains) is forecast to grow by 1.9 mb/d in 2022 to average 65.6 mb/d, revised down by 0.2 mb/d compared with the previous assessment. An upward revision to oil production in Latin America was more than offset by downward revisions to Other Eurasia, OECD Europe and OECD Asia Pacific. In addition, there is considerable uncertainty regarding Russia's liquids output this year.

In the US, solid increases in oil and gas rig counts and high fracking activity are expected to support production going forward. However, severe inflationary pressure, coupled with logistical bottlenecks and shortages of material and labour, are posing additional challenges. So far, the hurricane season has not weighed materially on production, but remains a source of uncertainty. Lower-than-expected tight oil production in recent months necessitated a downward revision to the US liquids supply growth forecast for 2022 by 20 tb/d, with output now forecast to grow by 1.1 mb/d y-o-y. The production forecast for Other Eurasia was also revised down, due to lower-than-expected output in Azerbaijan and export terminal disruptions, as well as extended maintenance in Kazakhstan. The main drivers of liquids supply growth for the year are expected to be the US, Canada, China, Guyana and Brazil, while production is expected to decline, mainly in Norway and Thailand.

Non-OPEC liquids production growth in 2023 is revised down by 0.2 mb/d and is expected to grow by 1.5 mb/d to average 67.1 mb/d (including 70 tb/d in processing gains). Liquids supply in the OECD countries is forecast to grow by 1.6 mb/d, while the non-OECD region is forecast to decline by 0.1 mb/d. The main drivers of liquids supply growth are expected to be the US, Norway, Brazil, Canada, Kazakhstan and Guyana, whereas oil production is forecast to decline, mainly in Russia and Mexico. Nevertheless, uncertainty about the geopolitical situation in Eastern Europe and US shale production potential remains high.

OPEC NGLs and non-conventional liquids production in 2022 is forecast to grow by 0.1 mb/d to average 5.4 mb/d. For 2023, it is forecast to grow by 50 tb/d to average 5.4 mb/d. OPEC-13 crude oil production in September increased by 146 tb/d m-o-m to average 29.77 mb/d, according to available secondary sources.

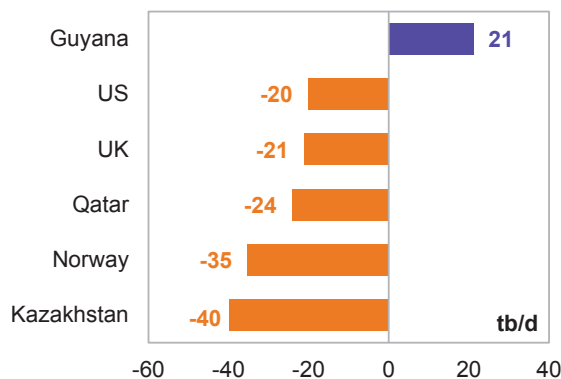
Preliminary non-OPEC liquids production in September, including OPEC NGLs, is estimated to have increased m-o-m by 0.8 mb/d to average 71.7 mb/d, up by 2.9 mb/d y-o-y. As a result, preliminary data indicates that the global oil supply in September increased by 0.93 mb/d m-o-m to average 101.5 mb/d, up by 5.43 mb/d y-o-y.

The **non-OPEC liquids supply forecast for 2022** was revised down by 0.2 mb/d to average 65.6 mb/d. Y-o-y growth averaged at 1.9 mb/d, lower by 0.2 mb/d compared to the previous month.

The **OECD** supply growth forecast for 2022 was revised down by 77 tb/d. The US and OECD Europe saw downward revisions to their growth forecasts. Growth for OECD Asia Pacific was also revised down from the previous month's assessment.

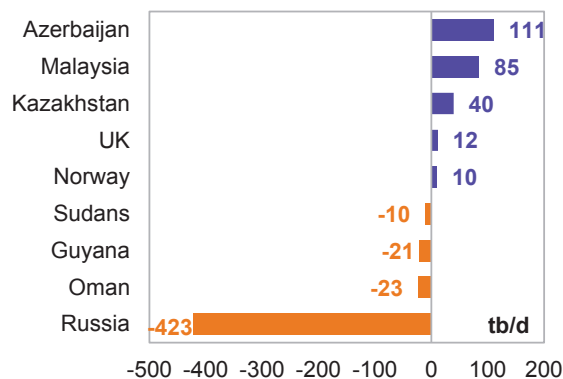
The **non-OECD** supply forecast for 2022 was revised down by 178 tb/d. An upward revision to Latin America was more than offset by downward changes in Other Eurasia, OECD Europe and Other Asia.

Graph 5 - 1: Major revisions to annual supply change forecast in 2022*, MOMR Oct 22/Sep 22



Non-OPEC liquids production growth in 2023 was revised down by 0.2 mb/d compared with the previous month's assessment, mainly due to a higher-than-expected decline for Russia.

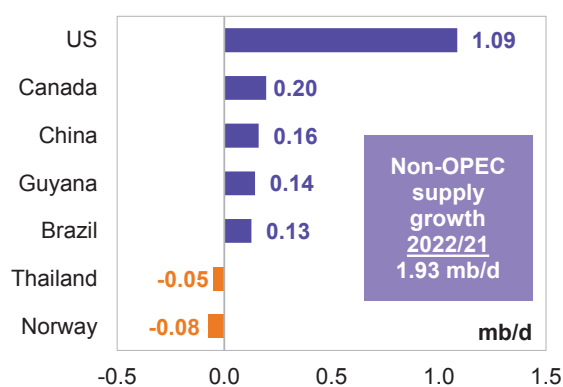
Graph 5 - 2: Major revisions to annual supply change forecast in 2023*, MOMR Oct 22/Sep 22



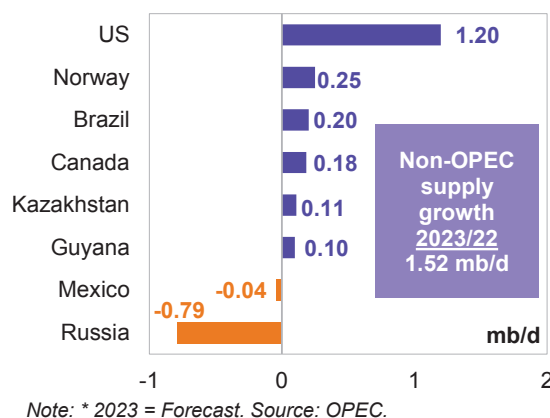
Key drivers of growth and decline

The **key drivers of non-OPEC liquids supply growth in 2022** are projected to be the US, Canada, China, Guyana and Brazil, while oil production is expected to decline mainly in Norway and Thailand.

Graph 5 - 3: Annual liquids production changes for selected countries in 2022*



Graph 5 - 4: Annual liquids production changes for selected countries in 2023*



For **2023**, the key drivers of non-OPEC supply growth are forecast to be the US, Norway, Brazil, Canada, Kazakhstan and Guyana, while oil production is projected to decline, mainly in Russia and Mexico.

Non-OPEC liquids production in 2022 and 2023

Table 5 - 1: Non-OPEC liquids production in 2022*, mb/d

Non-OPEC liquids production	2021	1Q22	2Q22	3Q22	4Q22	2022	Change 2022/21	
							Growth	%
Americas	25.25	25.86	26.27	26.91	27.26	26.58	1.33	5.26
of which US	17.85	18.27	18.83	19.19	19.44	18.93	1.09	6.08
Europe	3.76	3.73	3.43	3.62	3.91	3.67	-0.08	-2.18
Asia Pacific	0.51	0.49	0.51	0.50	0.53	0.51	0.00	-0.96
Total OECD	29.52	30.08	30.22	31.03	31.69	30.76	1.24	4.21
China	4.31	4.50	4.50	4.44	4.43	4.47	0.16	3.72
India	0.77	0.77	0.77	0.76	0.81	0.78	0.00	0.64
Other Asia	2.41	2.37	2.31	2.31	2.38	2.34	-0.06	-2.60
Latin America	5.95	6.11	6.15	6.37	6.53	6.29	0.34	5.68
Middle East	3.24	3.29	3.33	3.38	3.35	3.34	0.10	3.08
Africa	1.35	1.33	1.32	1.33	1.31	1.32	-0.03	-1.91
Russia	10.80	11.33	10.63	10.91	10.59	10.86	0.06	0.59
Other Eurasia	2.93	3.05	2.77	2.73	3.17	2.93	0.00	0.17
Other Europe	0.11	0.11	0.11	0.10	0.10	0.11	-0.01	-6.36
Total Non-OECD	31.87	32.85	31.89	32.34	32.68	32.44	0.58	1.81
Total Non-OPEC production	61.39	62.94	62.11	63.37	64.38	63.20	1.82	2.96
Processing gains	2.29	2.40	2.40	2.40	2.40	2.40	0.11	4.90
Total Non-OPEC liquids production	63.67	65.34	64.51	65.77	66.78	65.60	1.93	3.03
Previous estimate	63.67	65.33	64.48	66.17	67.12	65.78	2.11	3.31
Revision	0.00	0.00	0.03	-0.39	-0.34	-0.18	-0.18	-0.28

Note: * 2022 = Forecast. Totals may not add up due to independent rounding. Source: OPEC.

Table 5 - 2: Non-OPEC liquids production in 2023*, mb/d

Non-OPEC liquids production	2022	1Q23	2Q23	3Q23	4Q23	2023	Change 2023/22	
							Growth	%
Americas	26.58	27.57	27.67	28.04	28.41	27.92	1.34	5.05
of which US	18.93	19.75	20.05	20.24	20.47	20.13	1.20	6.33
Europe	3.67	4.00	3.94	3.86	3.98	3.94	0.27	7.30
Asia Pacific	0.51	0.52	0.48	0.51	0.47	0.50	-0.01	-2.26
Total OECD	30.76	32.08	32.10	32.41	32.85	32.36	1.60	5.20
China	4.47	4.52	4.51	4.48	4.48	4.50	0.03	0.64
India	0.78	0.80	0.79	0.78	0.77	0.79	0.01	1.12
Other Asia	2.34	2.40	2.40	2.37	2.39	2.39	0.05	1.97
Latin America	6.29	6.45	6.62	6.70	6.76	6.63	0.34	5.41
Middle East	3.34	3.35	3.36	3.39	3.38	3.37	0.03	0.99
Africa	1.32	1.32	1.34	1.35	1.37	1.35	0.03	1.89
Russia	10.86	9.92	10.06	10.13	10.19	10.08	-0.79	-7.26
Other Eurasia	2.93	3.14	3.08	3.04	3.12	3.09	0.16	5.56
Other Europe	0.11	0.10	0.10	0.10	0.10	0.10	0.00	-2.83
Total Non-OECD	32.44	32.00	32.26	32.35	32.56	32.30	-0.15	-0.45
Total Non-OPEC production	63.20	64.09	64.36	64.76	65.41	64.66	1.45	2.30
Processing gains	2.40	2.47	2.47	2.47	2.47	2.47	0.07	2.96
Total Non-OPEC liquids production	65.60	66.56	66.83	67.23	67.88	67.13	1.52	2.32
Previous estimate	65.78	67.16	67.19	67.55	68.12	67.51	1.73	2.63
Revision	-0.18	-0.60	-0.36	-0.32	-0.24	-0.38	-0.20	-0.30

Note: * 2022-2023 = Forecast. Totals may not add up due to independent rounding. Source: OPEC.

OECD

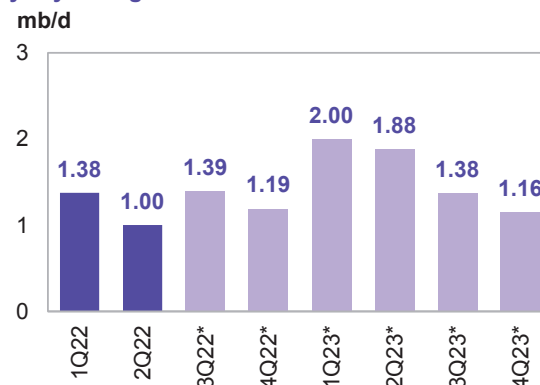
OECD liquids production in 2022 is forecast to increase by 1.2 mb/d y-o-y to average 30.8 mb/d. This has been revised down by 78 tb/d, compared with a month earlier, on the back of downward revisions for OECD Europe, the US and Australia.

OECD Americas was revised down slightly by 12 tb/d, compared with last month's assessment, and is now expected to grow by 1.3 mb/d to average 26.6 mb/d. Oil production in OECD Europe is anticipated to decline y-o-y by 0.1 mb/d to average 3.7 mb/d, while OECD Asia Pacific is projected to remain broadly unchanged y-o-y to average 0.5 mb/d.

For **2023**, oil production in the OECD is forecast to grow by 1.6 mb/d to average 32.4 mb/d, with growth of 1.3 mb/d from OECD Americas to average 27.9 mb/d.

Yearly liquids production in OECD Europe is anticipated to grow by 0.3 mb/d to average 3.9 mb/d, while OECD Asia Pacific is expected to decline by a minor 11 tb/d y-o-y to average 0.5 mb/d.

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



Note: * 3Q22-4Q23 = Forecast. Source: OPEC.

OECD Americas

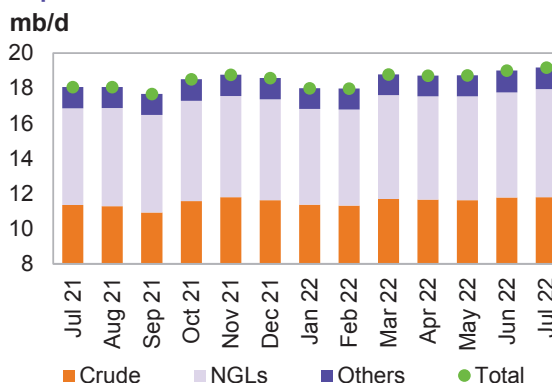
US

US liquids production increased by 166 tb/d m-o-m in **July 2022** to average 19.2 mb/d, up by 1.1 mb/d compared with July 2021.

Crude oil and condensate production rose in **July 2022** by a minor 12 tb/d m-o-m to average 11.8 mb/d, up by 0.5 mb/d y-o-y.

Regarding the **crude and condensate production breakdown by region (PADDs)**, production increased mainly in the US Gulf Coast (USGC), up by 90 tb/d, to average 8.5 mb/d. While the West Coast and East Coast showed slight increases, the Midwest and the Rocky Mountains showed decreases of 76 tb/d and 13 tb/d, respectively. Production growth in the main regions was primarily driven by higher completion activities and recovery to normal production in the GoM after 2Q22 maintenance.

Graph 5 - 6: US monthly liquids output by key component



Source: OPEC.

NGLs production was up by 162 tb/d m-o-m to average 6.1 mb/d in July, up higher by 0.6 mb/d y-o-y. Production of **non-conventional liquids** (mainly ethanol) decreased by 8 tb/d m-o-m to average 1.2 mb/d in July, according to the US Department of Energy (DoE). Preliminary estimates see non-conventional liquids averaging 1.2 mb/d in August 2022, down by 46 tb/d compared with the previous month.

Production in the Gulf of Mexico (GoM) rose m-o-m by 10 tb/d in July to average 1.8 mb/d as maintenance wrapped up in the Gulf Coast offshore platforms, allowing volumes to return to normal. In the **onshore Lower 48**, July production decreased m-o-m by 11 tb/d to average 9.6 mb/d.

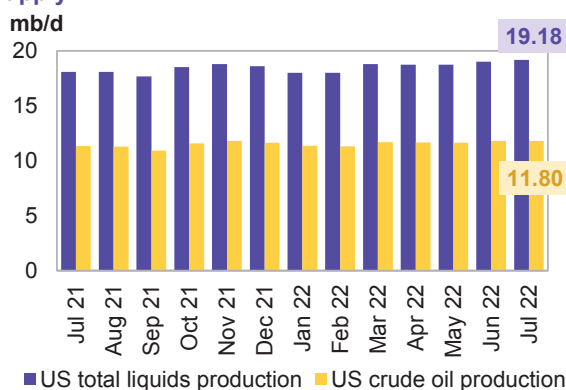
Looking at **individual states**, oil production in New Mexico increased by 38 tb/d m-o-m to average 1.6 mb/d, 296 tb/d higher than a year ago. Production in Texas was up by 43 tb/d to average 5.0 mb/d, 193 tb/d higher than a year ago. In the Midwest, production in North Dakota decreased by 54 tb/d m-o-m to average 1.0 mb/d, down by 36 tb/d y-o-y, and production in Oklahoma was down by 25 tb/d to average 0.4 mb/d. Oil output in Alaska was up by 13 tb/d, while in Colorado, it was down by 13 tb/d m-o-m.

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

State				Change	
	Jul 21	Jun 22	Jul 22	m-o-m	y-o-y
Texas	4,812	4,962	5,005	43	193
Gulf of Mexico (GOM)	1,848	1,752	1,762	10	-86
New Mexico	1,272	1,530	1,568	38	296
North Dakota	1,070	1,088	1,034	-54	-36
Colorado	411	433	420	-13	9
Alaska	380	419	432	13	52
Oklahoma	381	425	400	-25	19
Total	11,347	11,788	11,800	12	453

Sources: EIA and OPEC.

Graph 5 - 7: US monthly crude oil and total liquids supply



Sources: EIA and OPEC.

US tight crude output in July 2022 is estimated to be broadly unchanged m-o-m to average 7.7 mb/d, according to data from the Energy Information Administration (EIA). This was 0.3 mb/d higher than the same month a year earlier.

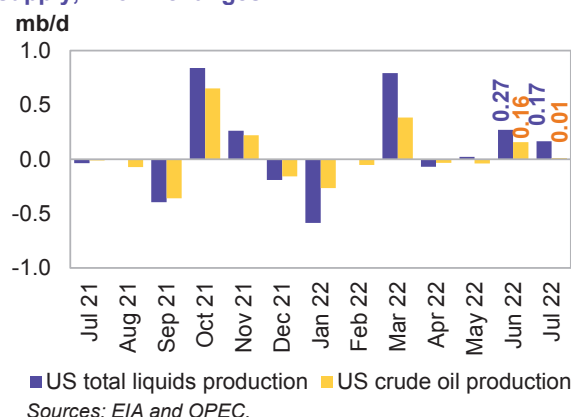
The m-o-m increase from shale and tight formations through horizontal wells came from the Permian, which increased by 38 tb/d to average 4.5 mb/d. This was up by 0.3 mb/d, y-o-y.

In the Williston Basin, production in the Bakken shale decreased by 28 tb/d to average 1.0 mb/d, down by 10 tb/d y-o-y. Tight crude output at Eagle Ford in Texas fell marginally by 5 tb/d to average 0.9 mb/d, down by 45 tb/d y-o-y, whereas production in Niobrara-Codell in Colorado and Wyoming was unchanged and averaged 0.45 mb/d.

US liquids production in 2022, excluding processing gains, is forecast to grow y-o-y by 1.1 mb/d to average 18.9 mb/d, revised down by 20 tb/d compared with the previous assessment. The downward revision was due to lower-than-projected production in tight oil basins in recent months.

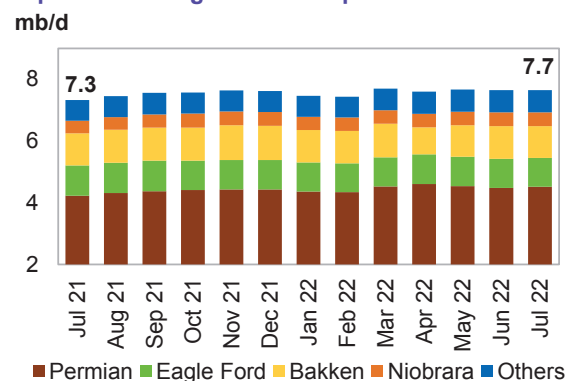
Tight crude is forecast to grow by 0.6 mb/d in 2022, to average 7.9 mb/d. In addition, NGLs (mainly from unconventional basins) are projected to grow by 0.5 mb/d to average 4.9 mb/d, and production in the GoM is anticipated to increase by 50 tb/d. Non-conventional liquids are projected to grow by 40 tb/d to average 1.2 mb/d. However, the expected growth will be partially offset by natural declines in onshore conventional fields of 0.1 mb/d y-o-y.

Graph 5 - 8: US monthly crude oil and total liquids supply, m-o-m changes



Sources: EIA and OPEC.

Graph 5 - 9: US tight crude output breakdown



Sources: EIA, Rystad Energy and OPEC.

Given the current pace of drilling and well completions in oil fields, **production of crude oil and condensate** is forecast to grow by 0.5 mb/d y-o-y to average 11.8 mb/d in 2022. This forecast assumes continued capital discipline, current inflation rates, continuing supply chain issues and oil field service section limitations (labour and equipment) in 2022. The hurricane season in the US Gulf Coast is still a source of uncertainty in the forecast.

US liquids production in 2023, excluding processing gains, is expected to grow by 1.2 mb/d y-o-y to average 20.1 mb/d, unchanged from the previous assessment. In addition, increased drilling activities and fewer supply chain issues in the prolific Permian Basin, Eagle Ford and Bakken shale sites are assumed for 2023. Crude oil output is anticipated to increase by 0.8 mb/d y-o-y to average 12.6 mb/d.

At the same time, NGL production and non-conventional liquids, particularly ethanol, are projected to increase by 0.35 mb/d and 40 tb/d y-o-y, to average 6.3 mb/d and 1.3 mb/d, respectively. Average tight crude output in 2023 is expected at 8.7 mb/d, up by 0.8 mb/d y-o-y.

Graph 5 - 10: US liquids supply developments by component

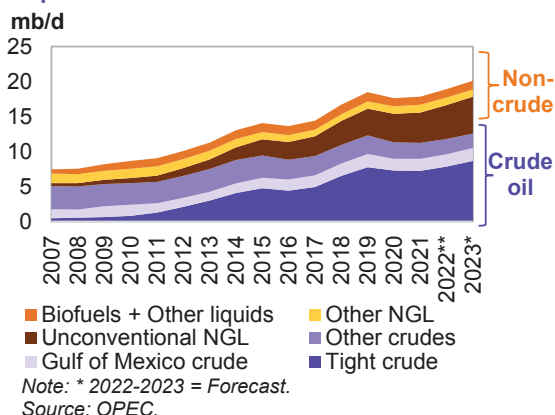


Table 5 - 4: US liquids production breakdown, mb/d

US liquids	2021	Change 2021/20	2022*	Change 2022/21	2023*	Change 2023/22
Tight crude	7.27	-0.05	7.86	0.59	8.66	0.80
Gulf of Mexico crude	1.71	0.04	1.76	0.05	1.86	0.10
Conventional crude oil	2.28	-0.06	2.17	-0.11	2.08	-0.09
Total crude	11.25	-0.06	11.78	0.52	12.59	0.81
Unconventional NGLs	4.30	0.22	4.86	0.55	5.26	0.40
Conventional NGLs	1.12	0.03	1.10	-0.03	1.04	-0.05
Total NGLs	5.42	0.25	5.95	0.53	6.30	0.35
Biofuels + Other liquids	1.17	0.02	1.21	0.04	1.25	0.04
US total supply	17.85	0.21	18.93	1.09	20.13	1.20

Note: * 2022-2023 = Forecast. Sources: EIA, OPEC and Rystad Energy.

US tight crude production in the Permian in 2022 is forecast to increase by 0.5 mb/d to 4.7 mb/d and is projected to grow by 0.7 mb/d y-o-y to average 5.3 mb/d in 2023.

The decline in **Bakken** shale production that occurred in 2020 and 2021 is expected to continue in 2022. Tight crude production in the Bakken is forecast to decline by 26 tb/d in 2022 to average 1.1 mb/d, which is lower than the pre-pandemic average output of 1.4 mb/d. Drilling activities in North Dakota and available DUC wells are lower than the required levels to revive output. In 2023, growth is forecast at 21 tb/d to average 1.1 mb/d.

The **Eagle Ford** in Texas saw an output of 1.2 mb/d in 2019, followed by a decline in 2020 and 2021, and is forecast to grow in 2022 by a minor 5 tb/d to average 1.0 mb/d. Growth of 40 tb/d is expected for 2023 to average 1.0 mb/d.

Production in **Niobrara** is forecast to grow by 37 tb/d in 2022 and 30 tb/d in 2023 y-o-y to average 450 tb/d and 480 tb/d, respectively. Other shale plays are expected to show marginal increases totalling 42 tb/d and 40 tb/d in 2022 and 2023, given current drilling and completion activities.

Graph 5 - 11: US tight crude output by shale play, y-o-y changes

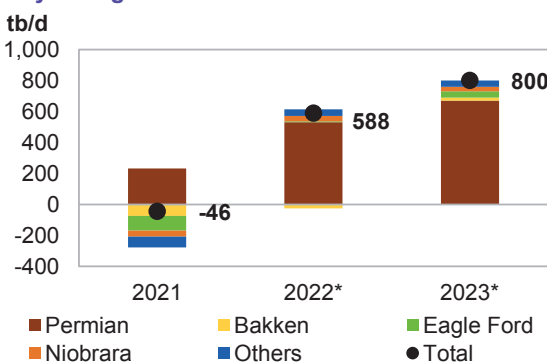


Table 5 - 5: US tight oil production growth, mb/d

US tight oil	2021	Change 2021/20	2022*	Change 2022/21	2023*	Change 2023/22
Permian tight	4.14	0.23	4.67	0.53	5.34	0.67
Bakken shale	1.08	-0.07	1.05	-0.03	1.07	0.02
Eagle Ford shale	0.96	-0.09	0.97	0.01	1.01	0.04
Niobrara shale	0.41	-0.04	0.45	0.04	0.48	0.03
Other tight plays	0.67	-0.07	0.71	0.04	0.75	0.04
Total	7.27	-0.05	7.86	0.59	8.66	0.80

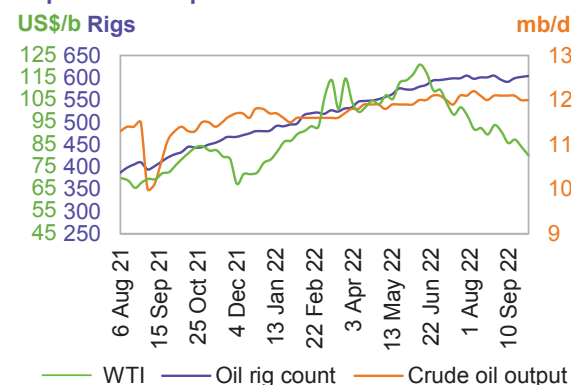
Note: * 2022-2023 = Forecast. Source: OPEC.

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

Total **US active drilling rigs** increased by one unit to 765 rigs in the week ending 30 September but were up by 237 rigs compared with a year ago. The number of active offshore rigs remained unchanged w-o-w at 16, up from 13 in the same month a year earlier. At the same time, onshore oil and gas rigs increased by one w-o-w to stand at 745 rigs, up by 232 rigs y-o-y, with four rigs in inland waters.

The **US horizontal rig count** rose by three w-o-w to 696, compared with 474 horizontal rigs a year ago. The number of drilling rigs for oil rose by two to 604 w-o-w, while gas-drilling rigs decreased by one to 159.

The rig count in the Permian remained unchanged w-o-w at 344 rigs. At the same time, operating rigs remained unchanged w-o-w in the Eagle Ford and Williston basins, at 72 and 39, respectively. However, the rig count increased by one in the Cana Woodford to 26 w-o-w. There were the same number of operating rigs w-o-w in the DJ-Niobrara and Barnett basins, 17 and 3, respectively.

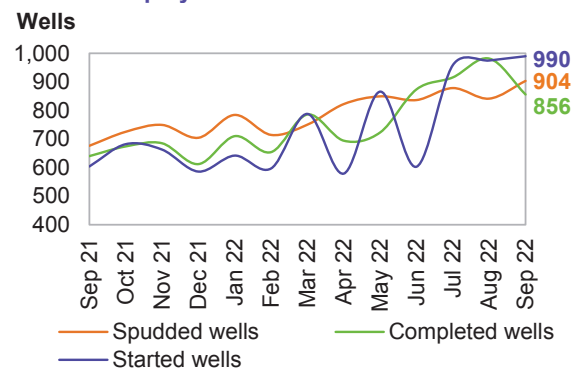
Graph 5 - 12: US weekly rig count vs. US crude oil output and WTI price

Sources: Baker Hughes, EIA and OPEC.

Drilling and completion (D&C) activities for spudded, completed and started wells in all US shale plays, based on the EIA-DPR regions, saw 842 horizontal wells spudded in August 2022 (as per preliminary data), down by 37 m-o-m, but 20% higher than in August 2021.

In August 2022, preliminary data indicates a higher number of completed wells at 982 m-o-m and up by 30% y-o-y. Moreover, the number of started wells was estimated at 975, which is 30% higher than in August 2021.

Preliminary data for September estimates 904 spudded, 856 completed and 990 started wells, according to Rystad Energy.

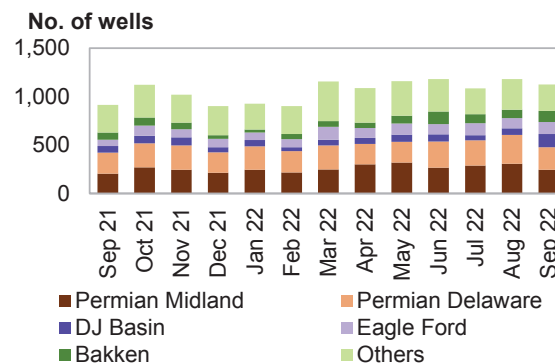
Graph 5 - 13: Spudded, completed and started wells in US shale plays

Note: Aug 22-Sep 22 = Preliminary data.
Sources: Rystad Energy and OPEC.

Regarding identified **US oil and gas fracking operations by region**, Rystad Energy reported that 1,083 wells were fracked in July 2022, and 1,181 and 1,124 wells started to frack in August and September, respectively. These preliminary numbers are based on an analysis of high-frequency satellite data.

Preliminary data on fracking in August showed that 308 and 297 wells were fracked in the Permian Midland Tight and Permian Delaware Tight, respectively. In comparison with July, there was a rise of 18 wells fracked in the Midland as well as an increase of 37 wells fracked in the Delaware tight, according to preliminary data. Data also indicated that 68 wells were fracked in the DJ Basin, 104 in the Eagle Ford and 86 in the Bakken during August.

Graph 5 - 14: Fracked wells count per month



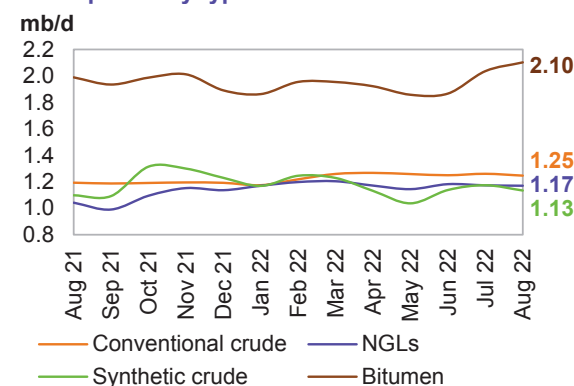
Canada

Canada's liquids production in August is estimated to have inched up by a minor 9 tb/d m-o-m to average 5.7 mb/d, as seasonal maintenance from 2Q22 was partially completed.

Crude bitumen production output decreased by 40 tb/d, while synthetic crude increased by 66 tb/d m-o-m in August. Taken together, crude bitumen and synthetic crude production rose by 26 tb/d to 3.2 mb/d. Production of conventional crude decreased by a slight 14 tb/d m-o-m to average 1.2 mb/d. NGL output remained broadly unchanged m-o-m to average 1.2 mb/d.

Canadian production is forecast to grow in 4Q22 as upgraders return from maintenance and oil sands ramp-ups/optimizations continue.

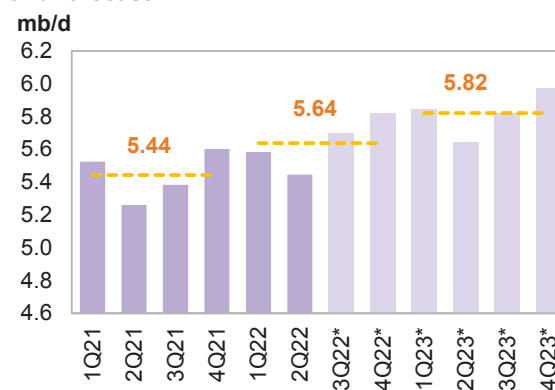
Graph 5 - 15: Canada's monthly liquids production development by type



Canadian liquids supply in **2022** is forecast to grow by 0.2 mb/d to average 5.6 mb/d, broadly unchanged from the previous assessment. Oil sands project expansion/optimizations and the return of upgraders from maintenance are expected to increase output up to December.

For **2023**, Canada's liquids production is forecast to increase gradually at a pace similar to 2022, rising by 0.2 mb/d to average 5.8 mb/d. Incremental production will come mainly from Alberta's oil sands, which saw an average output of 3.1 mb/d from January to August 2022. New heavy oil pipelines are required for oil sands production to support growth, specifically the Trans Mountain Expansion (TMX). Delays to the pipeline would negatively affect oil sands growth.

Graph 5 - 16: Canada's quarterly liquids production and forecast



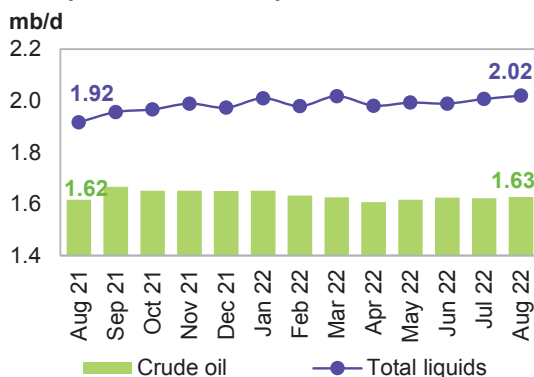
Mexico

Mexico's crude output remained largely unchanged m-o-m, in **August** to average 1.6 mb/d, while NGL output increased by a minor 9 tb/d, due to the extended ramp-up of condensate fields, leading to Mexico's total liquids output in August increasing by 13b tb/d m-o-m to average 2.0 mb/d, according to Pemex.

For 2022, liquids production in Mexico is forecast to average 2.0 mb/d, broadly unchanged from the previous month. The 2022 increase is expected to be driven by foreign-operated fields, while minor growth is also expected in Pemex-operated fields. There is upside potential to the 4Q22 forecast due to assumed maintenance at the Ku-Maloob-Zaap asset, as Pemex has not confirmed the maintenance plan for this year, yet.

For **2023**, liquids production is forecast to decline by 39 tb/d to average 1.96 mb/d, unchanged from the previous assessment. Pemex' total crude production decline in mature fields is forecast to outweigh production ramp-ups in other fields.

Graph 5 - 17: Mexico's monthly liquids and crude production development



Sources: PEMEX and OPEC.

OECD Europe

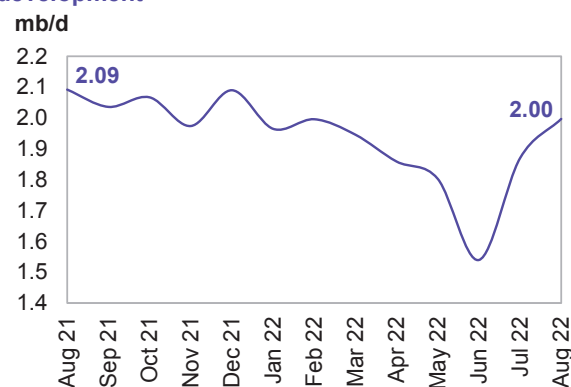
Norway

Norwegian liquids production in **August** rose by 127 tb/d m-o-m to average 2.0 mb/d. Some offshore fields returned from summer maintenance, pushing output to the highest level yet in 2022.

Norway's crude production increased by 132 tb/d m-o-m in August to average 1.8 mb/d, broadly unchanged y-o-y. Oil production in August was 3.1% lower than the Norwegian Petroleum Directorate's (NPD) forecast.

On the other hand, the production of NGLs and condensates decreased by a minor 5 tb/d m-o-m to average 0.2 mb/d, according to NPD data.

Graph 5 - 18: Norway's monthly liquids production development



Sources: NPD and OPEC.

For **2022**, production growth is revised down by 35 tb/d y-o-y to average 2.0 mb/d, mainly due to the downward revision in 3Q22 output, on the back of maintenance activities at a number of key fields. In addition, the maintenance plan for some fields, including Oseberg and Troll, has been deferred to September. Growth is expected in 4Q22 from some small start-ups, in addition to the return from maintenance, and the start of production at the second phase of the Johan Sverdrup field development.

For **2023**, Norwegian liquids production is forecast to grow by 0.25 mb/d, revised up by 10 tb/d compared with the previous month, to average 2.2 mb/d. A number of small-to-large projects are scheduled to ramp up in 2023. However, the Johan Sverdrup Phase 2 is projected to be the main source of increased output for the year, accounting for roughly 35% of Norway's total crude and condensate production. Equinor indicated it is currently exploring the possibility of a third phase, intended to enhance recovery from Johan Sverdrup, rather than expand the recoverable resources.

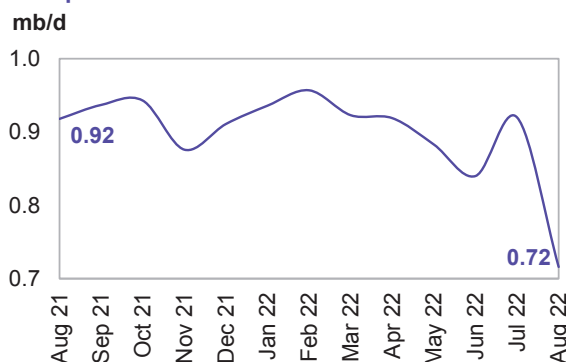
UK

UK liquids production decreased in **August** by 204 tb/d m-o-m to average 0.7 mb/d. Crude oil output decreased by 194 tb/d m-o-m to average 0.6 mb/d, according to official data, and was down by 213 tb/d y-o-y. NGL output also declined by 10 tb/d to average 77 tb/d. UK production was affected by scheduled work on the Forties fields in August.

For **2022**, UK liquids production is forecast to decline by a minor 8 tb/d to average 0.9 mb/d, revised down by 21 tb/d from the previous assessment, mainly due to lower-than-expected production in 2Q22 and maintenance in 3Q22. Lower production for 4Q22 is also projected.

For **2023**, UK liquids production is forecast to increase marginally by 13 tb/d to average 0.9 mb/d. Project sanctioning will be essential to maintain future oil and gas output as UK production has seen a steep natural decline rate, according to Offshore Energies UK. Therefore, a number of larger-sized projects would need to be implemented, just to maintain UK oil production levels.

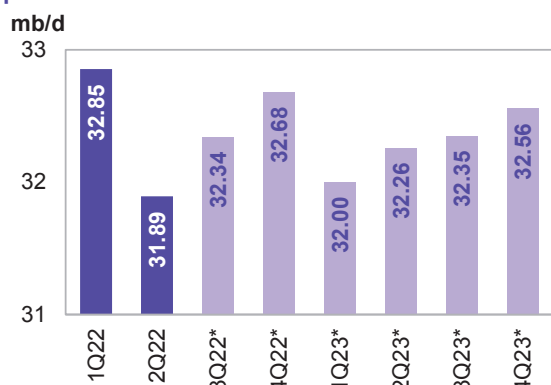
Graph 5 - 19: UK monthly liquids production development



Sources: Department of Energy & Climate Change and OPEC.

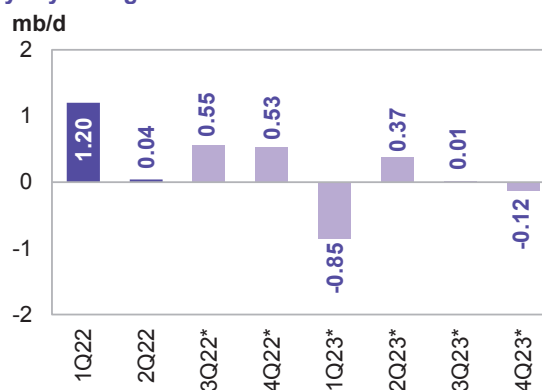
Non-OECD

Graph 5 - 20: Non-OECD quarterly liquids production and forecast



Note: * 3Q22-4Q23 = Forecast. Source: OPEC.

Graph 5 - 21: Non-OECD quarterly liquids supply, y-o-y changes



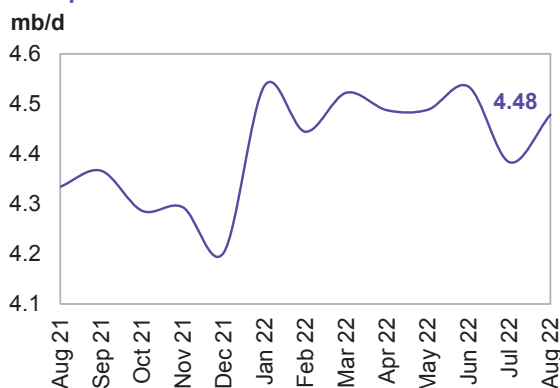
Note: * 3Q22-4Q23 = Forecast. Source: OPEC.

China

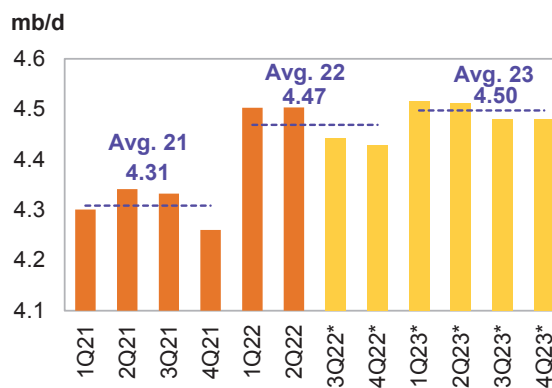
China's liquids production increased m-o-m in **August** by 95 tb/d to average 4.5 mb/d, which was up by 144 tb/d y-o-y, according to official data. Crude oil output in August averaged 4.1 mb/d, up by 91 tb/d compared with the previous month, and was higher by 115 tb/d y-o-y. Liquids production over the first seven months of the year averaged 4.5 mb/d, higher by 3.8% compared with the same period last year.

For **2022**, growth of 160 tb/d is forecast for an average of 4.5 mb/d, broadly unchanged from the previous assessment. Natural decline rates are expected to be offset by Chinese national oil companies' considerable investments. The Chinese companies expect additional growth through more in-fill wells and enhanced oil recovery projects.

For **2023**, y-o-y growth of 30 tb/d is forecast for an average of 4.5 m/d. The new projects will slightly offset declines from the mature onshore production base. The country's crude output is expected to rise over the coming years because of strong growth in offshore production, as the China National Offshore Oil Company (CNOOC) expects its domestic crude production to reach 1.2 mb/d in 2025, growth of 8.6% during 2022–2025.

Graph 5 - 22: China's monthly liquids production development

Sources: CNPC and OPEC.

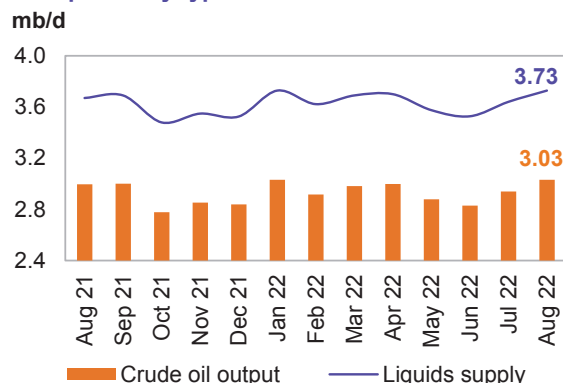
Graph 5 - 23: China's quarterly liquids production and forecast

Note: * 3Q22-4Q23 = Forecast. Sources: CNPC and OPEC.

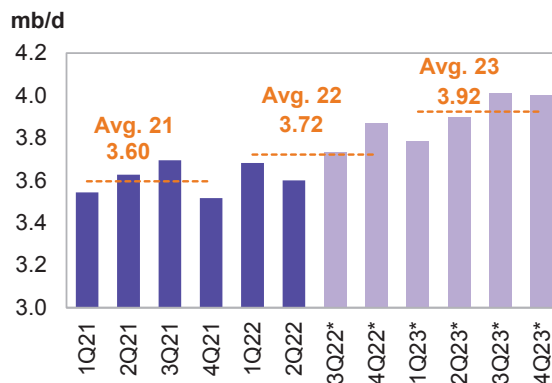
Latin America

Brazil

Brazil's crude output in August increased by 91 tb/d m-o-m to average 3.0 mb/d. NGL production was largely unchanged at an average of 85 tb/d and is expected to remain flat in September. Biofuel output (mainly ethanol) also remained unchanged in August to average 612 tb/d, with preliminary data showing a flat trend in September. Therefore, total liquids production increased by 88 tb/d in August to average 3.7 mb/d, up by 58 tb/d y-o-y. Brazil recorded six consecutive months of record-setting crude oil output from production-sharing fields in August, whereas Petrobras carried out maintenance on the four floating production, storage and offloading vessels installed at the Buzios field in recent months.

Graph 5 - 24: Brazil's monthly liquids production development by type

Sources: ANP, Petrobras and OPEC.

Graph 5 - 25: Brazil's quarterly liquids production

Note: * 3Q22-4Q23 = Forecast. Sources: ANP and OPEC.

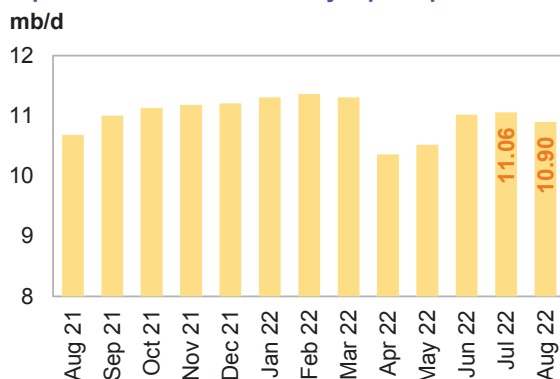
For **2022**, Brazil's liquids supply, including biofuels, is forecast to increase by 0.1 mb/d y-o-y to average 3.7 mb/d, unchanged from the previous month's assessment. Growth in 2022 will be driven by the continued ramp-up of the Sepia field and the start-up of Mero 1 in the pre-salt Santos basin and Peregrino (Phases 1 and 2).

For **2023**, Brazil's liquids supply, including biofuels, is forecast to increase by 0.2 mb/d y-o-y to average 3.9 mb/d. Crude oil output is expected to increase through production ramp-ups in the Mero (Libra NW), Buzios (Franco), Tupi (Lula), Peregrino, Sepia and Itapu (Florim) fields. However, offshore maintenance is expected to cause interruptions in major fields. First oil from the 150 tb/d Almirante Barroso FPSO is forecast for the middle of next year. Equinor also announced that it expects to take delivery of its Bacalhau FPSO in 2024 (the first phase of the Bacalhau field in Brazil's pre-salt Santos Basin).

Russia

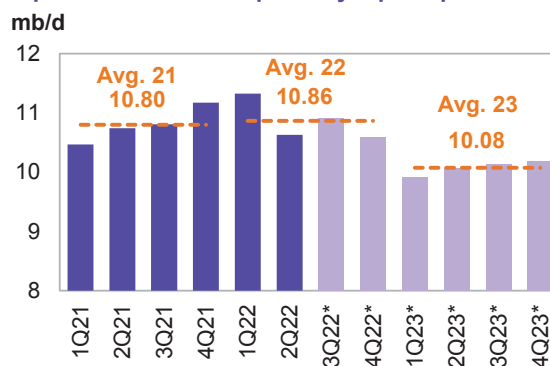
Russia's liquids production in August decreased m-o-m by 160 tb/d to average 10.9 mb/d. This includes 9.8 mb/d of crude oil and condensate and 1.1 mb/d of NGLs. A preliminary estimate for Russia's crude and condensate production in September 2022 shows a further decrease of 0.1 mb/d m-o-m to average 9.7 mb/d, while around a 10 tb/d decline is expected for NGLs.

Graph 5 - 26: Russia's monthly liquids production



Sources: Nefte Compass and OPEC.

Graph 5 - 27: Russia's quarterly liquids production



Note: * 3Q22-4Q23 = Forecast.

Sources: Nefte Compass and OPEC.

Russian liquids output in **2022** is forecast to increase by 64 tb/d y-o-y to average 10.9 mb/d, revised down by 19 tb/d from the previous month's assessment, mainly due to lower expected output during 4Q22.

For **2023**, Russian liquids production is forecast to decrease by 0.8 mb/d to average 10.1 mb/d, revised down by 0.4 mb/d from the previous assessment. It should be noted that the Russian oil forecast remains subject to high uncertainty.

Caspian

Kazakhstan & Azerbaijan

Liquids output in Kazakhstan decreased by 187 tb/d to average 1.6 mb/d in **August**. Crude production was down by 152 tb/d m-o-m to average 1.2 mb/d. Production of NGLs also declined by 35 tb/d m-o-m to average 0.3 mb/d. This was due to an observed sour gas leakage in the Kashagan oilfield and emergency repairs at the Caspian Pipeline Consortium (CPC) terminal on Russia's Black Sea coast.

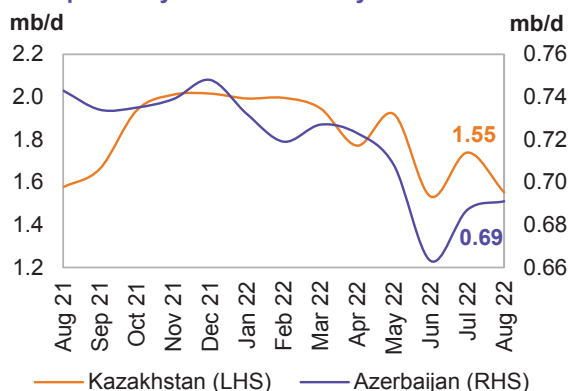
Kazakhstan's liquids supply for **2022** is now forecast to grow by 16 tb/d to average 1.9 mb/d, down by 40 tb/d compared with the previous month's assessment, due to downward revisions applied to 3Q22 and 4Q22. According to preliminary estimates by the Kazakh Energy Ministry, output could be fully restored by 20 October.

For **2023**, liquids supply is forecast to increase by 0.1 mb/d, due to production ramp-ups in the Kashagan oil field. Oil production in the Tengiz field and gas condensate output in the Karachaganak field are also expected to rise marginally.

Azerbaijan's liquids production in August remained broadly unchanged m-o-m to average 0.7 mb/d, but was down by 52 tb/d y-o-y. Crude production averaged 554 tb/d, while NGL output averaged 137 tb/d, according to official sources.

For **2022**, liquids supply in Azerbaijan is forecast to grow marginally y-o-y to average 0.7 mb/d, down by 19 tb/d because of lower-than-expected production in the major oil fields in August. No new projects are expected to come online in the country in 2022, and the main declines in the legacy fields are expected to be offset by ramp-ups in other fields.

Graph 5 - 28: Caspian monthly liquids production development by selected country



— Kazakhstan (LHS) — Azerbaijan (RHS)

Sources: Nefte Compass and OPEC.

Azerbaijan's liquids supply for **2023** is forecast to rise by 49 tb/d for an average of 0.8 mb/d, according to the voluntary production levels agreed upon at the 33rd OPEC and non-OPEC Ministerial Meeting.

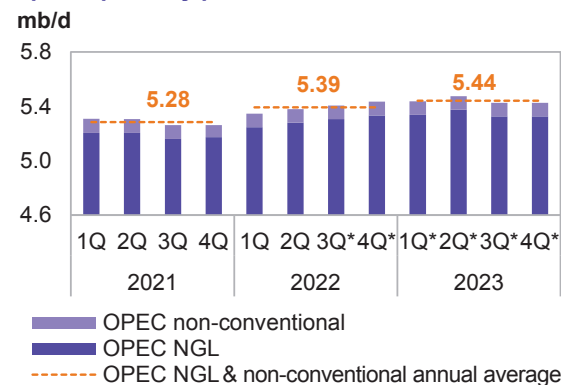
OPEC NGLs and non-conventional oils

OPEC NGLs and non-conventional liquids in 2022 are forecast to grow by 0.1 mb/d to average 5.4 mb/d, unchanged from the previous assessment.

The output of NGLs in 2Q22 is estimated to have averaged 5.3 mb/d, while OPEC non-conventional output remained steady at 0.1 mb/d. Taken together, 5.4 mb/d is expected for August, according to preliminary data.

The preliminary **OPEC NGLs and non-conventional liquids in 2023** forecast indicates growth of around 50 tb/d for an average of 5.4 mb/d. NGL production is projected to grow by 50 tb/d to average 5.3 mb/d, while non-conventional liquids are projected to remain unchanged at 0.1 mb/d.

Graph 5 - 29: OPEC NGLs and non-conventional liquids quarterly production and forecast



Note: * 3Q22-4Q23 = Forecast. Source: OPEC.

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

OPEC NGL and non-conventional oils	Change		Change								Change
	2021	21/20	2022	22/21	1Q23	2Q23	3Q23	4Q23	2023	23/22	
OPEC NGL	5.18	0.12	5.29	0.11	5.34	5.37	5.33	5.33	5.34	0.05	
OPEC non-conventional	0.10	0.00	0.10	0.00	0.10	0.10	0.10	0.10	0.10	0.00	
Total	5.28	0.12	5.39	0.11	5.44	5.47	5.43	5.43	5.44	0.05	

Note: 2022-2023 = Forecast. Source: OPEC.

OPEC crude oil production

According to secondary sources, total **OPEC-13 crude oil production** averaged 29.77 mb/d in September 2022, higher by 146 tb/d m-o-m. Crude oil output increased mainly in Saudi Arabia, Nigeria, Libya and the UAE, while production in Iraq, Venezuela and IR Iran declined.

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

Secondary sources	2020	2021	1Q22	2Q22	3Q22	Jul 22	Aug 22	Sep 22	Change Sep/Aug
Algeria	904	913	984	1,015	1,036	1,031	1,039	1,040	1
Angola	1,245	1,117	1,152	1,171	1,173	1,164	1,171	1,184	13
Congo	289	266	265	269	265	259	264	272	8
Equatorial Guinea	114	98	92	90	92	99	88	89	0
Gabon	191	182	199	190	199	200	197	201	4
IR Iran	1,991	2,392	2,529	2,555	2,564	2,564	2,571	2,557	-14
Iraq	4,076	4,049	4,286	4,440	4,528	4,521	4,546	4,518	-28
Kuwait	2,439	2,419	2,614	2,692	2,803	2,774	2,811	2,823	12
Libya	367	1,143	1,063	750	988	694	1,123	1,152	29
Nigeria	1,578	1,372	1,376	1,211	1,092	1,131	1,057	1,087	31
Saudi Arabia	9,204	9,114	10,165	10,450	10,878	10,738	10,909	10,991	82
UAE	2,804	2,727	2,954	3,045	3,163	3,131	3,168	3,193	25
Venezuela	512	555	684	714	666	660	678	659	-19
Total OPEC	25,714	26,348	28,362	28,591	29,447	28,964	29,621	29,767	146

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

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

Direct communication	2020	2021	1Q22	2Q22	3Q22	Jul 22	Aug 22	Sep 22	Change Sep/Aug
Algeria	899	911	984	1,016	1,050	1,040	1,053	1,058	5
Angola	1,271	1,124	1,161	1,173	1,151	1,180	1,179	1,091	-88
Congo	300	267	267	258	261	250	262	271	8
Equatorial Guinea	114	93	95	91	83	89	85	75	-10
Gabon	207	181	197	184	198	191	212	191	-21
IR Iran	..	..	..	..	..	..	..	..	..
Iraq	3,997	3,971	4,188	4,472	4,632	4,584	4,651	4,662	11
Kuwait	2,438	2,415	2,612	2,694	2,799	2,768	2,811	2,818	7
Libya	389	1,207	1,151	..	..	746	..	..	..
Nigeria	1,493	1,323	1,299	1,133	999	1,084	972	938	-35
Saudi Arabia	9,213	9,125	10,224	10,542	10,968	10,815	11,051	11,041	-10
UAE	2,779	2,718	2,949	3,042	3,170	3,133	3,184	3,193	9
Venezuela	569	636	756	745	673	629	723	666	-57
Total OPEC	..	..	..	..	..	..	..	..	..

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

Commercial Stock Movements

Preliminary August data sees total OECD commercial oil stocks up m-o-m by 7.8 mb. At 2,712 mb, they were 111 mb less than the same time one year ago, 267 mb lower than the latest five-year average and 273 mb below the 2015-2019 average. Within the components, crude and product stocks rose m-o-m by 6.8 mb and 1.0 mb, respectively.

At 1,315 mb, OECD crude stocks were 0.7 mb lower than the same time a year ago, 105 mb below the latest five-year average and 133 mb lower than the 2015-2019 average. OECD product stocks stood at 1,398 mb, representing a deficit of 110 mb from the same time a year ago, 162 mb lower than the latest five-year average and 140 mb below the 2015-2019 average.

In terms of days of forward cover, OECD commercial stocks rose by 0.2 days m-o-m in August to stand at 59.3 days. This is 1.3 days below August 2021 levels, 5.0 days less than the latest five-year average and 3.8 days lower than the 2015-2019 average.

Preliminary data for September showed that total US commercial oil stocks fell by 4.2 mb m-o-m to stand at 1,221 mb. This is 30.0 mb, lower than the same month in 2021 and 88.0 mb, below the latest five-year average. Crude stocks rose by 2.0 mb, while product stocks fell by 6.2 mb.

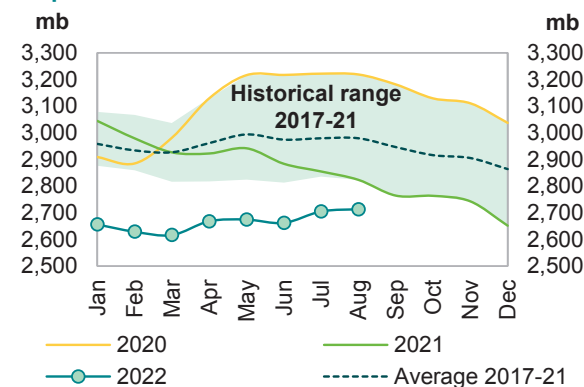
OECD

Preliminary **August** data sees **total OECD commercial oil stocks** up m-o-m by 7.8 mb. At 2,712 mb, they were 111 mb less than the same time one year ago, 267 mb lower than the latest five-year average and 273 mb below the 2015-2019 average.

Within the components, crude and product stocks rose m-o-m by 6.8 mb and 1.0 mb, respectively. Total commercial oil stocks in August rose in OECD Americas and OECD Asia Pacific, while OECD Europe saw a stock draw.

OECD commercial **crude stocks** stood at 1,315 mb in August. This is 0.7 mb lower than the same time a year ago, 105 mb below the latest five-year average and 133 mb lower than the 2015-2019 average.

Graph 9 - 1: OECD commercial oil stocks



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

Compared with the previous month, OECD Europe saw a stock draw of 0.3 mb, OECD Americas stocks rose by 3.0 mb, and stocks in OECD Asia Pacific increased by 4.1 mb.

Total product inventories stood at 1,398 mb in August. This is 110 mb below the same time a year ago, 162 mb lower than the latest five-year average and 140 mb below the 2015-2019 average. Product stocks in OECD Americas and OECD Asia Pacific rose by 7.8 mb and 2.2 mb, respectively, while they fell m-o-m by 8.9 mb in OECD Europe.

Table 9 - 1: OECD's commercial stocks, mb

OECD stocks	Aug 21	Jun 22	Jul 22	Aug 22	Change Aug 22/Jul 22
Crude oil	1,315	1,294	1,308	1,315	6.8
Products	1,508	1,367	1,397	1,398	1.0
Total	2,823	2,661	2,705	2,712	7.8
Days of forward cover	60.6	58.3	59.1	59.3	0.2

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

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

In terms of **days of forward cover**, OECD commercial stocks rose by 0.2 days m-o-m in August to stand at 59.3 days. This is 1.3 days below August 2021 levels, 5.0 days less than the latest five-year average and 3.8 days lower than the 2015-2019 average.

All three OECD regions were below the latest five-year average: the Americas by 3.8 days at 59.9 days; the Asia Pacific by 7.3 days at 46.5 days; and Europe by 6.0 days at 64.8 days.

OECD Americas

OECD Americas total commercial stocks rose by 10.8 mb m-o-m in August to settle at 1,472 mb. This is 54 mb less than the same month in 2021 and 102 mb lower than the latest five-year average.

Commercial **crude oil stocks** in OECD Americas rose m-o-m by 3.0 mb in August to stand at 734 mb, which is 15 mb lower than in August 2021 and 34 mb less than the latest five-year average. The monthly build in crude oil stocks can be attributed to lower crude imports, as well as additional barrels released from strategic petroleum reserves (SPRs).

Total product stocks in OECD Americas also rose m-o-m by 7.8 mb in August to stand at 738 mb. This was 39 mb lower than the same month in 2021 and 68 mb below the latest five-year average. Lower total consumption in the region was behind the product stock build.

OECD Europe

OECD Europe total commercial stocks fell m-o-m by 9.2 mb in August to settle at 905 mb. This is 29 mb less than the same month in 2021 and 91 mb below the latest five-year average.

OECD Europe's **commercial crude stocks** fell by 0.3 mb m-o-m to end the month of August at 415 mb, which is 25 mb higher than one year ago and 13 mb below the latest five-year average. The drop in crude oil inventories came despite slightly lower m-o-m refinery throughput in the EU-14, plus the UK and Norway.

Europe's **product stocks** also fell m-o-m by 8.9 mb to end August at 490 mb. This is 54 mb lower than a year ago and 78 mb below the latest five-year average.

OECD Asia Pacific

OECD Asia Pacific's total commercial oil stocks rose m-o-m by 6.3 mb in August to stand at 335 mb. This is 28 mb lower than a year ago and 74 mb below the latest five-year average.

OECD Asia Pacific's **crude inventories** rose by 4.1 mb m-o-m to end July at 166 mb, which is 11 mb lower than one year ago and 58 mb below the latest five-year average.

OECD Asia Pacific's **total product inventories** also rose m-o-m by 2.2 mb to end August at 170 mb. This is 17 mb lower than the same time a year ago and 16 mb below the latest five-year average.

US

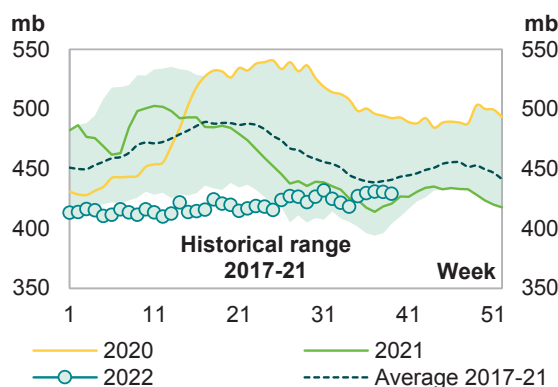
Preliminary data for September showed that **total US commercial oil stocks** fell by 4.2 mb m-o-m to stand at 1,221 mb. This is 30.0 mb, or 2.4%, lower than the same month in 2021 and 88.0 mb, or 6.7%, below the latest five-year average. Crude stocks rose by 2.0 mb, while product stocks fell by 6.2 mb.

US commercial crude stocks in September stood at 429.2 mb. This is 8.9 mb, or 2.1%, higher than the same month of the previous year, but 16.8 mb, or 3.8%, below the latest five-year average. The monthly build in crude oil stocks can be attributed to higher imports, which increased by 0.1 mb/d to 6.3 mb/d.

By contrast, **total product stocks** fell in September to stand at 791.8 mb. This is 38.8 mb, or 2.7%, below September 2021 levels and 71.2 mb, or 8.2%, lower than the latest five-year average. The stock draw was mainly driven by higher product consumption.

Gasoline stocks fell m-o-m by 7.3 mb to settle at 207.5mb. This is 19.6 mb, or 8.6% lower than in the same month in 2021 and 22.5 mb, or 9.8%, lower than the latest five-year average.

Graph 9 - 2: US weekly commercial crude oil inventories



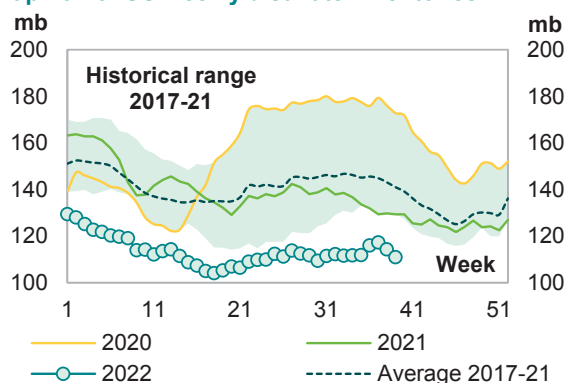
Sources: EIA and OPEC.

Distillate stocks also decreased m-o-m in September by 0.9 mb to stand at 110.9 mb. This is 21.2 mb, or 16.0%, lower than the same month of the previous year and 31.3 mb, or 22.0%, below the latest five-year average.

Jet fuel stocks also dropped m-o-m by 2.5 mb, ending September at 36.2 mb. This is 5.8 mb, or 13.8%, lower than the same month in 2021 and 7.2 mb, or 16.5%, below the latest five-year average.

By contrast, residual **fuel oil stocks** rose by 1.5 mb m-o-m in September. At 28.7 mb, this was 1.0 mb, or 3.6%, higher than a year earlier, but 1.7 mb, or 5.6%, below the latest five-year average.

Graph 9 - 3: US weekly distillate inventories



Sources: EIA and OPEC.

Table 9 - 2: US commercial petroleum stocks, mb

US stocks	Sep 21	Jul 22	Aug 22	Sep 22	Change Sep 22/Aug 22
Crude oil	420.3	424.2	427.2	429.2	2.0
Gasoline	227.0	225.6	214.8	207.5	-7.3
Distillate fuel	132.1	112.5	111.8	110.9	-0.9
Residual fuel oil	27.8	29.1	27.3	28.7	1.5
Jet fuel	42.0	41.2	38.7	36.2	-2.5
Total products	830.6	791.3	798.0	791.8	-6.2
Total	1,250.9	1,215.5	1,225.1	1,221.0	-4.2
SPR	617.8	468.0	442.5	416.4	-26.1

Sources: EIA and OPEC.

Japan

In Japan, total commercial oil stocks in August rose m-o-m by 6.3 mb to settle at 120.0 mb. This is 8.7 mb, or 6.7%, lower than the same month in 2021 and 22.0 mb, or 15.5%, below the latest five-year average. Crude and product stocks rose m-o-m by 4.1 mb and 2.2 mb, respectively.

Japanese commercial crude oil stocks rose in August to stand at 64.2 mb. This is 2.9 mb, or 4.3% lower than the same month of the previous year, and 14.2 mb, or 18.1%, lower than the latest five-year average. The build came off the back of higher crude imports.

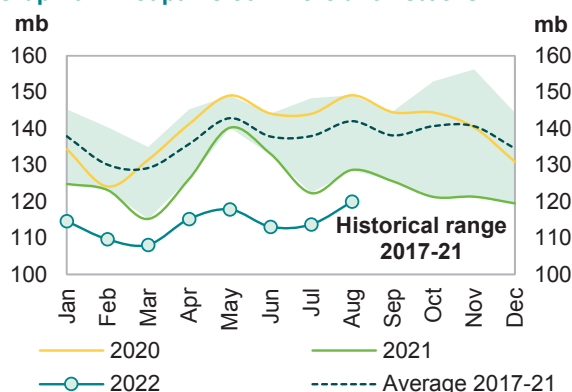
Japan's total product inventories also rose m-o-m by 2.2 mb to end August at 55.8 mb. This is 5.8 mb, or 9.4%, lower than the same month in 2021 and 7.9 mb, or 12.3%, below the latest five-year average.

Gasoline stocks rose by 0.7 mb m-o-m to stand at 9.7 mb in August. This was 0.4 mb, or 3.7% lower than a year earlier and 0.9 mb, or 8.6%, lower than the latest five-year average. The build came on higher gasoline production by 9.4% m-o-m.

Distillate stocks rose m-o-m by 1.9 mb to end August at 26.6 mb. This is 3.2 mb, or 10.8%, lower than the same month in 2021 and 4.0 mb, or 13.2%, below the latest five-year average. Within distillate components, jet fuel, kerosene and gasoil stocks went up by 6.6%, 14.5% and 0.8%, respectively.

Total residual fuel oil stocks also rose m-o-m by 0.7 mb to end August at 11.4 mb. This is 0.9 mb, or 7.5%, lower than in the same month of the previous year and 1.4 mb, or 10.6%, below the latest five-year average. Within the components, fuel oil A and fuel oil BC stocks fell by 2.3% and 9.1%, m-o-m, respectively.

Graph 9 - 4: Japan's commercial oil stocks



Sources: METI and OPEC.

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

Japan's stocks	Aug 21	Jun 22	Jul 22	Aug 22	Change Aug 22/Jul 22
Crude oil	67.1	59.8	60.1	64.2	4.1
Gasoline	10.0	10.0	8.9	9.7	0.7
Naphtha	9.4	9.6	9.3	8.1	-1.2
Middle distillates	29.8	22.3	24.7	26.6	1.9
Residual fuel oil	12.4	11.3	10.8	11.4	0.7
Total products	61.6	53.3	53.6	55.8	2.2
Total**	128.7	113.1	113.7	120.0	6.3

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

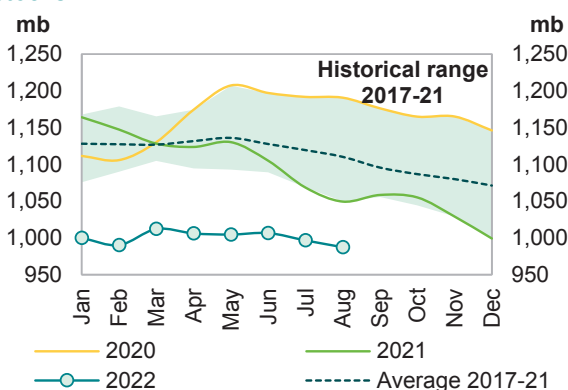
Sources: METI and OPEC.

EU-14 plus UK and Norway

Preliminary data for August showed that **total European commercial oil stocks** fell m-o-m by 9.2 mb to stand at 987.4 mb. At this level, they were 62.2 mb, or 5.9%, below the same month a year earlier and 122.9 mb, or 11.1% lower than the latest five-year average. Crude and product stocks fell m-o-m by 0.3 mb and 8.9 mb, respectively.

European **crude inventories** fell in August to stand at 432.5 mb. This is 1.2 mb, or 0.3%, lower than the same month in 2021 and 41.1 mb, or 8.7%, below the latest five-year average. The drop in crude oil inventories came despite slightly lower m-o-m refinery throughput in the EU-14, plus the UK and Norway, which declined by 40 tb/d to stand at 10.10 mb/d.

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



Sources: Argus, Euroilstock and OPEC.

Total European product stocks also fell m-o-m by 8.9 mb to end August at 554.8 mb. This is 61.0 mb, or 9.9%, lower than the same month of the previous year and 81.8 mb, or 12.8%, below the latest five-year average.

Gasoline stocks fell m-o-m by 1.8 mb in August to stand at 106.9 mb. At this level, they were 6.1 mb, or 6.0%, higher than the same time a year earlier, but 0.9 mb/d, or 0.9%, below the latest five-year average.

Distillate stocks also fell m-o-m by 5.9 mb in August to stand at 359.6 mb. This is 68.7 mb, or 16%, below the same month in 2021 and 77.6 mb, or 17.8%, less than the latest five-year average.

Residual fuel stocks also fell m-o-m by 0.3 mb in August to stand at 59.4 mb. This is 3.0 mb, or 4.9%, lower than the same month in 2021 and 5.5 mb, or 8.5%, below the latest five-year average.

Naphtha stocks dropped by 1.0 mb in August, ending the month at 29.0 mb. This is 4.7 mb, or 19.3%, higher than August 2021 levels and 2.3 mb, or 8.7%, higher than the latest five-year average.

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

EU stocks	Aug 21	Jun 22	Jul 22	Aug 22	Change Aug 22/Jul 22
Crude oil	433.7	434.4	432.8	432.5	-0.3
Gasoline	100.8	111.5	108.7	106.9	-1.8
Naphtha	24.3	30.3	29.9	29.0	-1.0
Middle distillates	428.3	370.0	365.5	359.6	-5.9
Fuel oils	62.5	60.5	59.7	59.4	-0.3
Total products	615.8	572.3	563.8	554.8	-8.9
Total	1,049.5	1,006.6	996.6	987.4	-9.2

Sources: Argus, Euroilstock and OPEC.

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

Singapore

In August, **total product stocks in Singapore** rose m-o-m by 3.1 mb to 46.7 mb. This is 1.4 mb, or 3.1%, higher than the same month in 2021.

Light distillate stocks fell m-o-m by 1.3 mb in August to stand at 16.3 mb. This is 3.1 mb, or 23.8%, higher than the same month of the previous year.

Middle distillate stocks also fell m-o-m by 0.1 mb in August to stand at 7.7 mb. This is 3.6 mb, or 31.9%, lower than a year earlier.

By contrast, **residual fuel oil stocks** rose m-o-m by 4.6 mb, ending August at 22.7 mb. This is 1.9 mb, or 9.1%, higher than August 2021.

ARA

Total product stocks in ARA rose m-o-m for the third consecutive month in August by 0.9 mb. At 41.1 mb, they were 1.5 mb, or 3.7%, higher than the same month in 2021.

Gasoline stocks in August fell by 0.2 mb m-o-m to stand at 11.5 mb, which is 5.8 mb, or 100.9%, higher than the same month of the previous year.

Jet oil stocks fell by 0.7 mb m-o-m to stand at 5.8 mb. This is 2.2 mb, or 27.4%, lower than levels seen in August 2021.

By contrast, **gasoil stocks** rose by 1.6 mb m-o-m, ending August at 12.7 mb. This is 2.7 mb, or 17.4%, lower than levels seen in August 2021.

Meanwhile, **fuel oil stocks** remained almost unchanged m-o-m in August to stand at 7.5 mb, which is 0.2 mb, or 2.5%, lower than in August 2021.

Fujairah

During the week ending 29 September 2022, **total oil product stocks in Fujairah** rose w-o-w by 2.55 mb to stand at 24.56 mb, according to data from Fed Com and S&P Global Platts. At this level, total oil stocks were 9.03 mb higher than at the same time a year ago.

Light distillate stocks rose by 0.93 mb w-o-w to stand at 7.40 mb in the week to 29 September 2022, which is 2.29 mb higher than the same period a year ago. **Middle distillate stocks** also rose by 1.72 mb to stand at 4.71 mb, which is 1.01 mb higher than a year ago. By contrast, **heavy distillate stocks** fell w-o-w by 0.10 mb to stand at 12.45 mb, which is 5.73 mb higher than the same time last year.

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

World oil demand and supply balance	2019	2020	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
World demand													
Americas	25.42	22.47	24.33	24.79	24.98	25.10	25.27	25.04	25.05	25.29	25.44	25.55	25.33
of which US	20.58	18.35	20.03	20.38	20.41	20.58	20.83	20.55	20.53	20.55	20.84	20.98	20.72
Europe	14.31	12.41	13.13	13.15	13.42	14.09	14.00	13.67	13.19	13.48	14.17	14.08	13.73
Asia Pacific	7.95	7.17	7.38	7.85	6.99	7.31	7.84	7.50	7.88	7.04	7.35	7.86	7.53
Total OECD	47.68	42.05	44.85	45.79	45.39	46.50	47.12	46.20	46.12	45.81	46.96	47.49	46.60
China	13.81	13.94	14.97	14.74	14.56	14.69	15.64	14.91	15.07	15.44	15.28	16.07	15.47
India	4.99	4.51	4.77	5.18	5.16	4.95	5.35	5.16	5.41	5.44	5.21	5.59	5.41
Other Asia	9.06	8.13	8.63	9.09	9.27	8.73	8.85	8.98	9.42	9.61	9.09	9.20	9.33
Latin America	6.59	5.90	6.23	6.32	6.36	6.55	6.40	6.41	6.48	6.48	6.71	6.54	6.55
Middle East	8.20	7.45	7.79	8.06	8.13	8.47	8.17	8.21	8.45	8.46	8.80	8.46	8.54
Africa	4.34	4.05	4.22	4.51	4.15	4.25	4.53	4.36	4.71	4.34	4.44	4.72	4.55
Russia	3.57	3.39	3.61	3.67	3.42	3.45	3.59	3.53	3.65	3.44	3.62	3.77	3.62
Other Eurasia	1.19	1.07	1.21	1.22	1.16	1.03	1.21	1.15	1.22	1.16	1.04	1.22	1.16
Other Europe	0.76	0.70	0.75	0.79	0.75	0.73	0.80	0.77	0.80	0.76	0.75	0.82	0.78
Total Non-OECD	52.52	49.13	52.18	53.58	52.95	52.83	54.53	53.47	55.21	55.13	54.94	56.39	55.42
(a) Total world demand	100.20	91.19	97.03	99.36	98.34	99.33	101.64	99.67	101.33	100.94	101.91	103.88	102.02
Y-o-y change	1.00	-9.01	5.85	5.18	2.64	1.59	1.21	2.64	1.97	2.60	2.57	2.23	2.34
Non-OPEC liquids production													
Americas	25.84	24.75	25.25	25.86	26.27	26.91	27.26	26.58	27.57	27.67	28.04	28.41	27.92
of which US	18.49	17.64	17.85	18.27	18.83	19.19	19.44	18.93	19.75	20.05	20.24	20.47	20.13
Europe	3.70	3.89	3.76	3.73	3.43	3.62	3.91	3.67	4.00	3.94	3.86	3.98	3.94
Asia Pacific	0.52	0.52	0.51	0.49	0.51	0.50	0.53	0.51	0.52	0.48	0.51	0.47	0.50
Total OECD	30.07	29.16	29.52	30.08	30.22	31.03	31.69	30.76	32.08	32.10	32.41	32.85	32.36
China	4.05	4.15	4.31	4.50	4.50	4.44	4.43	4.47	4.52	4.51	4.48	4.48	4.50
India	0.82	0.78	0.77	0.77	0.77	0.76	0.81	0.78	0.80	0.79	0.78	0.77	0.79
Other Asia	2.72	2.51	2.41	2.37	2.31	2.31	2.38	2.34	2.40	2.40	2.37	2.39	2.39
Latin America	6.08	6.03	5.95	6.11	6.15	6.37	6.53	6.29	6.45	6.62	6.70	6.76	6.63
Middle East	3.19	3.19	3.24	3.29	3.33	3.38	3.35	3.34	3.35	3.36	3.39	3.38	3.37
Africa	1.51	1.41	1.35	1.33	1.32	1.33	1.31	1.32	1.32	1.34	1.35	1.37	1.35
Russia	11.51	10.54	10.80	11.33	10.63	10.91	10.59	10.86	9.92	10.06	10.13	10.19	10.08
Other Eurasia	3.07	2.91	2.93	3.05	2.77	2.73	3.17	2.93	3.14	3.08	3.04	3.12	3.09
Other Europe	0.12	0.12	0.11	0.11	0.11	0.10	0.10	0.11	0.10	0.10	0.10	0.10	0.10
Total Non-OECD	33.08	31.66	31.87	32.85	31.89	32.34	32.68	32.44	32.00	32.26	32.35	32.56	32.30
Total Non-OPEC production	63.15	60.82	61.39	62.94	62.11	63.37	64.38	63.20	64.09	64.36	64.76	65.41	64.66
Processing gains	2.37	2.16	2.29	2.40	2.40	2.40	2.40	2.40	2.47	2.47	2.47	2.47	2.47
Total Non-OPEC liquids production	65.52	62.97	63.67	65.34	64.51	65.77	66.78	65.60	66.56	66.83	67.23	67.88	67.13
OPEC NGL + non-conventional oils	5.21	5.17	5.28	5.35	5.38	5.41	5.43	5.39	5.44	5.47	5.43	5.43	5.44
(b) Total non-OPEC liquids production and OPEC NGLs	70.73	68.14	68.96	70.68	69.89	71.18	72.21	71.00	72.00	72.30	72.66	73.31	72.57
Y-o-y change	2.18	-2.59	0.82	2.73	1.23	2.20	2.00	2.04	1.31	2.41	1.48	1.10	1.57
OPEC crude oil production (secondary sources)	29.36	25.71	26.35	28.36	28.59	29.45							
Total liquids production	100.09	93.85	95.31	99.04	98.48	100.63							
Balance (stock change and miscellaneous)	-0.10	2.67	-1.73	-0.32	0.14	1.29							
OECD closing stock levels, mb													
Commercial	2,894	3,038	2,648	2,618	2,681								
SPR	1,535	1,541	1,484	1,442	1,348								
Total	4,429	4,579	4,131	4,060	4,028								
Oil-on-water	1,033	1,148	1,202	1,222	1,290								
Days of forward consumption in OECD, days													
Commercial onland stocks	69	68	57	58	58								
SPR	37	34	32	32	29								
Total	105	102	89	89	87								
Memo items													
(a) - (b)	29.47	23.05	28.07	28.68	28.45	28.15	29.43	28.68	29.33	28.63	29.25	30.57	29.45

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

Source: OPEC.

Oil Market Report - October 2022

About this report

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

Highlights

- The relentless deterioration of the economy and higher prices sparked by an OPEC+ plan to cut supply are slowing world oil demand, which is now expected to contract by 340 kb/d y-o-y in 4Q22. Demand growth has been reduced to 1.9 mb/d in 2022 and to 1.7 mb/d next year, down by 60 kb/d and 470 kb/d, respectively, from last month's Report. World oil demand is now forecast to average 101.3 mb/d in 2023.
- World oil supply rose by 300 kb/d in September to 101.2 mb/d, with OPEC+ providing over 85% of the gains. After a massive 2.1 mb/d boost from 2Q22 to 3Q22, growth is forecast to decelerate markedly, to 170 kb/d from 3Q22 to 4Q22, following the OPEC+ decision to cut official production targets by 2 mb/d from November – a 1 mb/d cut to actual output given the bloc's underperformance vis-à-vis quotas.
- Global refining activity is responding to the slowdown in demand and lower refinery margins, with 3Q22 runs coming in lower than expected. Our forecasts for 4Q22 and 2023 have been revised down by 340 kb/d and 720 kb/d, respectively, following demand downgrades and OPEC+ production cuts. Runs are now expected to increase by 2.2 mb/d in 2022 and 1.2 mb/d next year.
- Russian oil exports fell by 230 kb/d to 7.5 mb/d in September, down 560 kb/d from pre-war levels. Shipments to the EU dropped by 390 kb/d m-o-m. With less than two months to go before a ban on Russian crude oil imports comes into effect, EU countries have yet to diversify more than half of their pre-war import levels away from Russia. The country's export revenues were down \$3.2 bn to \$15.3 bn.
- Global observed inventories rebounded by 36.5 mb in August, as lower onshore inventories (-27.8 mb) were offset by a surge in oil on water (+64.3 mb). OECD commercial oil inventories built for a second consecutive month, by 15 mb in August, but remained a steep 243 mb below the five-year average despite the release of 32.8 mb of government stocks.
- Brent futures fell by 7% m-o-m in September and touched their lowest level since the start of the year, at \$84/bbl on 26 September. The decision by OPEC+ in early October to curtail supply pushed Brent up by around \$14/bbl, to \$97.92/bbl, before easing somewhat. Brent backwardation steepened for the first time in four months in September while open interest fell to seven-year lows.

Compounding risks

Disruptive market forces are multiplying as the world struggles to navigate the worst global energy crisis in history. The OPEC+ bloc's plan to sharply curtail oil supplies to the market has

derailed the growth trajectory of oil supply through the remainder of this year and next, with the resulting higher price levels exacerbating market volatility and heightening energy security concerns. Benchmark crude oil prices spiked by around \$14/bbl from a September low and Brent once again flirted with triple digits. With unrelenting inflationary pressures and interest rate hikes taking their toll, higher oil prices may prove the tipping point for a global economy already on the brink of recession.

The stronger economic headwinds have led us to lower our forecast for world oil demand growth for 2023 by 470 kb/d from last month's Report, to 1.7 mb/d. Our revisions are underpinned by further downgrades to global GDP growth expectations from major institutions, with recession now expected in several European countries and risks increasing for emerging and developing economies. For this year, world oil demand growth has been further reduced, to 1.9 mb/d from 3.2 mb/d expected before Russia's invasion of Ukraine. The still relatively robust headline figure masks a sharp slowdown underway, with demand now forecast to contract by 340 kb/d y-o-y in 4Q22, despite increased gas-to-oil switching in power generation and industry.

The decline in OPEC+ supply will be smaller than the announced 2 mb/d reduction in production targets, with the majority of the alliance's members already producing well below their ceilings due to capacity constraints. Our current estimate is for a decrease of around 1 mb/d in OPEC+ crude oil output from November, with the bulk of the cuts delivered by Saudi Arabia and the UAE. Further production losses could come from Russia in December, when an EU embargo on crude oil imports and a ban on maritime services go into full effect. Russian officials have threatened to cut oil production in order to offset the negative impact of proposed price caps.

While previous large spikes in oil prices have spurred a strong investment response leading to greater supply from non-OPEC producers, this time may be different. US shale producers, traditionally the most responsive to changing market conditions, are struggling with supply chain constraints and cost inflation – and, so far, they are maintaining capital discipline. This casts doubt on suggestions that higher prices will necessarily balance the market through additional supply.

The massive cut in OPEC+ oil supply increases energy security risks worldwide. Even taking into account lower demand expectations, it will sharply reduce a much needed build in oil stocks through the rest of this year and into the first half of 2023. At end-August, OECD industry inventories remained a steep 243 mb below the five-year average, at 2 736 mb. They would have been significantly lower had it not been for the release of 185 mb of IEA member country government stocks from March through August. The recent wave of market disruptors underscores that energy security is as important today as it was 48 years ago when the IEA was founded. Now, as then, commercial and residential consumers are taking measures to reduce their energy bills and those effort could well have a lasting impact on oil markets.

OPEC+ crude oil production¹
million barrels per day

	Aug Supply	Sep Supply	Sep Prod vs Target	Sep 2022 Target	Sustainable Capacity ²	Eff Spare Cap vs Sep ³
Algeria	1.02	1.02	-3%	1.06	1.01	
Angola	1.18	1.18	-35%	1.53	1.16	
Congo	0.26	0.27	-6%	0.33	0.28	0.01
Equatorial Guinea	0.10	0.08	-5%	0.13	0.11	0.03
Gabon	0.19	0.20	1%	0.19	0.20	0.00
Iraq	4.53	4.54	-11%	4.65	4.70	0.16
Kuwait	2.77	2.80	-1%	2.81	2.79	-0.01
Nigeria	1.08	0.98	-85%	1.83	1.33	0.35
Saudi Arabia	10.81	10.96	-4%	11.00	12.22	1.26
UAE	3.33	3.40	22%	3.18	4.12	0.72
Total OPEC-10	25.27	25.43	-126%	26.69	27.93	2.52
Iran ⁴	2.49	2.52			3.80	
Libya ⁴	0.65	1.08			1.20	0.12
Venezuela ⁴	0.63	0.69			0.76	0.07
Total OPEC	29.04	29.72			33.69	2.71
Azerbaijan	0.56	0.55	-16%	0.72	0.58	0.03
Kazakhstan	1.40	1.24	-47%	1.71	1.65	0.41
Mexico ⁵	1.62	1.65		1.75	1.66	0.01
Oman	0.87	0.85	-3%	0.88	0.86	0.01
Russia	9.82	9.77	-123%	11.00	10.20	
Others ⁶	0.00	0.00	-22%	1.11	0.93	0.10
Total Non-OPEC	15.13	14.95	-211%	17.16	15.88	0.51
OPEC+ 19 in cut deal⁴	38.78	38.73	-337%	42.10	42.15	3.03
Total OPEC+	44.17	44.67			49.57	3.22

1. Excludes condensates. 2. Capacity levels can be reached within 90 days and sustained for an extended period. 3. Excludes shut in Iranian, Russian crude. 4. Iran, Libya, Venezuela exempt from cuts. 5. Mexico excluded from OPEC+ compliance. Only cut in May, June 2020. 6. Bahrain, Brunei, Malaysia, Sudan and South Sudan.

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

2022-10-13 08:00:00.3 GMT

By Kristian Siedenburg

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

	4Q	3Q	2Q	1Q	4Q	3Q	2Q	1Q		
	2023	2023	2023	2023	2022	2022	2022	2022	2023	2022
	Demand									
Total Demand	102.9	102.1	100.4	99.5	100.6	100.0	98.5	99.4	101.3	99.6
Total OECD	46.9	46.9	45.7	46.1	46.8	46.6	45.4	45.8	46.4	46.2
Americas	25.2	25.4	25.1	24.7	25.0	25.3	25.0	24.8	25.1	25.0
Europe	13.8	14.0	13.5	13.4	14.0	14.1	13.4	13.2	13.7	13.7
Asia Oceania	7.9	7.4	7.2	8.0	7.8	7.2	7.0	7.9	7.6	7.5
Non-OECD countries	56.0	55.2	54.7	53.4	53.8	53.3	53.0	53.6	54.8	53.5
FSU	4.8	4.8	4.6	4.5	4.8	5.0	4.7	4.7	4.7	4.8
Europe	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
China	16.4	15.7	15.5	14.9	15.1	14.5	14.2	15.4	15.6	14.8
Other Asia	14.9	14.2	14.5	14.6	14.1	13.4	14.0	14.1	14.5	13.9
Americas	6.1	6.2	6.1	5.9	6.1	6.1	6.1	5.9	6.1	6.0
Middle East	8.8	9.5	9.3	8.7	8.7	9.5	9.2	8.5	9.1	9.0
Africa	4.2	4.0	4.1	4.1	4.1	4.0	4.1	4.2	4.1	4.1
	Supply									
Total Supply	n/a	n/a	n/a	n/a	n/a	100.9	98.8	98.7	n/a	n/a
Non-OPEC	66.5	66.6	65.9	65.1	66.3	65.9	64.7	64.9	66.0	65.5
Total OECD	31.3	31.0	30.6	30.3	30.2	29.5	28.9	28.8	30.8	29.4
Americas	27.4	27.3	26.8	26.5	26.5	26.0	25.4	25.0	27.0	25.7
Europe	3.5	3.3	3.3	3.3	3.3	3.1	3.0	3.3	3.3	3.2
Asia Oceania	0.4	0.5	0.4	0.5	0.5	0.4	0.5	0.5	0.5	0.5
Non-OECD	29.8	29.8	29.9	30.0	30.8	30.8	30.5	31.4	29.9	30.8
FSU	12.5	12.4	12.5	12.6	13.6	13.7	13.4	14.4	12.5	13.8
Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	4.1	4.2	4.2	4.2	4.1	4.1	4.2	4.2	4.2	4.2
Other Asia	2.6	2.6	2.6	2.6	2.7	2.7	2.7	2.8	2.6	2.7
Americas	6.1	6.0	5.9	5.9	5.8	5.7	5.5	5.4	6.0	5.6
Middle East	3.2	3.2	3.2	3.2	3.2	3.3	3.2	3.2	3.2	3.2
Africa	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Processing Gains	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.4	2.3
Total OPEC	n/a	n/a	n/a	n/a	n/a	34.9	34.1	33.8	n/a	n/a
Crude	n/a	n/a	n/a	n/a	n/a	29.6	28.7	28.5	n/a	n/a
Natural gas										
liquids NGLs	5.5	5.5	5.4	5.4	5.4	5.4	5.4	5.3	5.4	5.3
Call on OPEC crude										
and stock change *	30.9	30.1	29.1	29.0	28.9	28.6	28.4	29.2	29.8	28.8

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

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

SOURCE: International Energy Agency

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Mark Evans

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

2022-10-13 08:00:00.2 GMT

By Kristian Siedenburg

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

	Sept.	Aug.	Sept.
	2022	2022	MoM
Total OPEC	29.89	29.77	0.12
Total OPEC10	25.51	25.43	0.08
Algeria	1.02	1.02	0.00
Angola	1.09	1.17	-0.08
Congo	0.28	0.26	0.02
Equatorial Guinea	0.09	0.08	0.01
Gabon	0.22	0.21	0.01
Iraq	4.55	4.54	0.01
Kuwait	2.82	2.80	0.02
Nigeria	0.96	0.98	-0.02
Saudi Arabia	11.03	10.96	0.07
UAE	3.45	3.41	0.04
Iran	2.54	2.57	-0.03
Libya	1.16	1.08	0.08
Venezuela	0.68	0.69	-0.01

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

OPEC10 excludes Iran, Libya and Venezuela.

SOURCE: International Energy Agency

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IEA REPORT WRAP: 2023 Oil Demand Slashed as OPEC+ Props Up Price

2022-10-13 08:45:09.772 GMT

By Stephen Voss

(Bloomberg) -- Summary of stories from IEA's monthly Oil

Market Report on Thursday:

- * IEA warns OPEC+ cuts risk oil-price spike and world recession
- ** 2023 global oil demand revised down by 470k b/d to 101.3m b/d
- ** Cites China outlook and high prices for slowing demand
- ** Global demand to grow 1.9m b/d in 2022, 1.7m b/d in 2023

- ** Nov. OPEC+ cuts equate to 1m b/d actual output loss: IEA
- ** Russian oil exports fell 230k b/d to 7.5m b/d in September
- ** EU yet to replace more than half pre-war Russian imports
- * See summary of key IEA world oil supply demand forecasts
- ** Click here for detailed quarterly forecast table
- * OPEC+ crude output edges higher in September on Libya, Saudi
- ** OPEC-13 group +120k b/d m/m to 29.89m b/d
- ** See full table for the 13 members
- ** The broader, OPEC+ group raised production by 90k b/d
- ** OPEC+ supply was 3.4m b/d short of its official target in Sept.
- * Russia earns less amid falling oil flows in September
- * Russian oil exports fall in Sept. as shipments to Asia slow
- * Over 95% of 2023 oil demand gains will be in Asia
- * Refinery runs forecast lowered as OPEC+ cuts curb margins
- * West Africa crude prices weakened by rival Libya, US supply
- * NOTE: OPEC already issued its own monthly report on Oct. 12, in which it slashed projections for the amount of crude it will need to pump this quarter. The US EIA issued its monthly short-term energy outlook later the same day
- * NOTE: OPEC+ agreed Oct. 5 to cut its collective production target by 2m b/d, and to meet less regularly

--With assistance from Rachel Graham, Grant Smith, Jack Wittels, James Herron, Kristian Siedenburg, Sherry Su, Christopher Sell and Bill Lehane.

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OPEC+ Cuts Risk Oil-Price Spike and World Recession, IEA Warns

2022-10-13 08:00:00.18 GMT

By Grant Smith

(Bloomberg) -- The OPEC+ decision to sharply curtail oil production threatens to push prices to levels that tip the global economy into recession, the International Energy Agency warned.

"The massive cut in OPEC+ oil supply increases energy security risks worldwide," with "resulting higher price levels exacerbating market volatility," the IEA said in its monthly report. "Oil prices may prove the tipping point for a global

economy already on the brink of recession."

It's an unusually strong rebuke from the Paris-based agency, which advises most major economies on energy policy. It

slashed forecasts for global oil demand growth for next year by 470,000 barrels a day -- or roughly 20% -- because of "stronger economic headwinds" ranging from inflation to higher interest rates.

Crude futures briefly surged last week when Saudi Arabia and its partners announced a substantial 2 million barrel-a-day output cut, ignoring entreaties from consumers such as the US. Prices have since subsided a little, but remain above \$90 a barrel in London.

President Joe Biden fiercely criticized Riyadh's move, accusing the kingdom of aiding fellow producer Russia as it wages war on Ukraine. He said he would re-evaluate America's decades-long diplomatic relationship with the Saudis.

The OPEC+ decision "will sharply reduce a much needed build in oil stocks through the rest of this year and into the first half of 2023," the IEA said. Inventories in developed nations are a "steep" 243 million barrels below their five-year average.

Saudi Arabia and others in the 23-nation alliance have countered that the supply curbs were necessary in the face of extreme economic uncertainty. The International Monetary Fund warned on Tuesday that the worst of the current turmoil "is yet to come."

Global oil consumption will increase in 2023 by 1.7 million barrels a day, down from a forecast of 2.1 million in last month's report, the IEA said. This year, demand will expand by 1.9 million barrels a day to average 99.6 million a day.

The Organization of Petroleum Exporting Countries and its partners will likely implement only half of their advertised 2 million-barrel cut, because production in most member countries is already far below their assigned targets, the IEA said.

Still, global supplies may take a further hit in the months ahead as the European Union enacts a ban on Russian oil imports, the agency predicted. The country's oil exports fell by 230,000 barrels a day to 7.5 million a day in September, according to the IEA's estimates.

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IEA World Oil Supply/Demand Key Forecasts

2022-10-13 08:00:00.5 GMT

By Kristian Siedenburg

(Bloomberg) -- World oil demand 2023 forecast was revised

to 101.3m b/d from 101.8m b/d in Paris-based Intl Energy Agency's latest monthly report.

- * 2022 world demand was revised to 99.6 from 99.7m b/d
- * Demand change in 2023 est. 1.7% y/y or 1.7m b/d
- * Non-OPEC supply 2023 was revised to 66.0m b/d from 66.2m b/d
- * Call on OPEC crude 2023 was revised to 29.8m b/d from 30.1m b/d
- * Call on OPEC crude 2022 was unrevised at 28.8m b/d
- ** OPEC crude production in Sept. rose by 120k b/d on the month to 29.89m b/d
- * Detailed table: FIFW NSN RJOJUBGQOFSW <GO>
- * NOTE: Fcasts based off IEA's table providing one decimal point

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OPEC+ Crude Output Edges Higher in September on Libya, Saudi

2022-10-13 08:00:00.26 GMT

By Christopher Sell

(Bloomberg) -- OPEC+ crude output increased by 90k b/d in September, with gains by Libya, Saudi Arabia and the UAE offsetting maintenance and operational issues affecting Angola, Nigeria and Kazakhstan, the IEA said in its monthly oil market report.

* Total OPEC production rose by 120k b/d to 29.89m b/d; non-OPEC eased by 30k b/d to 14.89m

** Russia's crude output held steady at 9.74m b/d

** Saudi Arabia rose by 70k b/d to top 11m b/d, a monthly level reached only three times previously, according to the IEA

** Kazakhstan's supply declined for second month, easing by 40k b/d to 1.21m b/d of crude

** The UAE raised supply by 40k b/d to 3.45m b/d, but production is "expected to fall around 160k b/d from next month -- in line with the new OPEC+ cuts"

* Combined African members of OPEC+ inched up 30k b/d

** Libya rose by 80k b/d to 1.16m b/d

** Angola posted the single largest decline within OPEC+, with output falling 80k b/d to 1.09m

** Nigeria eased 20k b/d to 960k b/d

* Total OPEC+ supply was 3.4m b/d short of its official target last month

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Russia Earns Less Amid Falling Oil Flows in September, IEA Says

2022-10-13 08:00:00.11 GMT

By Bloomberg News

(Bloomberg) -- Russia's oil-export revenue shrank to \$15.3 billion in September, the lowest so far this year, amid falling crude exports and prices, according to the International Energy Agency.

That's a drop of \$3.2 billion, or 17.3% from a month earlier, the IEA said in its monthly Oil Market Report. A drop in crude exports of 260,000 barrels a day contributed to the steepest decline in Russia's revenue this year, the agency estimated.

Revenues "were still higher than the average monthly revenue in 2021," which was \$14.9 billion, it said.



The European Union will halt all seaborne imports of Russia's crude and most of pipeline flows from Dec. 5 in condemnation of Russia's invasion of Ukraine. From Feb. 5, an EU ban on Russian oil-product shipments will also take effect.

In September, Russia's daily flows of crude oil and products to the EU decreased by 390,000 barrels to 2.6 million barrels. The share of the European market in the nation's total exports fell to just 35% compared to 50% at the start of the year, the IEA said.

Another blow for Russia's revenue came from lower crude prices. In September, the average price for benchmark Urals crude fell 8.7% from a month earlier to \$68.65 a barrel, according to Russia's Finance Ministry.

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Russian Oil Exports Fall as Shipments to Asia Slow, IEA Says

2022-10-13 08:00:00.1 GMT

By Sherry Su

(Bloomberg) -- Russian crude exports fell in September as the reallocation of trade flows following the invasion of Ukraine has started to slow, the IEA said in its monthly Oil

Market Report. Revenue remains higher than the 2021 monthly average.

* "While it has taken seven months for them to replace 800k b/d of Russian crude oil imports, they will need to switch an additional 1.3m b/d of seaborne and pipeline volumes in the two months remaining until the EU ban on kicks in"

* In total, Russian oil exports fell by 230k b/d in September to 7.5m b/d

** Crude was down 260k b/d and products up by 30k b/d

** Revenue fell by \$3.2b to \$15.3b on both lower volumes and prices

* Shipments to EU countries slid by 390k b/d m/m to 2.6m b/d, with its share down to 35% compared with 50% at the start of the year

** EU crude oil imports from Russia fell to 1.6m b/d in September

** Diesel shipments slid by 70k b/d m/m to 510k b/d

* Exports to India were stable m/m at just under 1m b/d, while loadings to China and Turkey were down by 115k b/d and 50k b/d, respectively; final numbers might revised much higher with almost 500k b/d of oil going to as yet unidentified destinations

* In September, the declared shipments to China and India combined were 160k b/d higher than those to Europe, including EU and non-EU countries

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More than 95% of 2023 Oil Demand Gains Will Be in Asia: IEA

2022-10-13 08:00:00.35 GMT

By Jack Wittels

(Bloomberg) -- Asia will account for 96% of next year's expected 1.7m b/d global oil demand growth, the International Energy Agency said in its monthly Oil Market Report.

* Gradual rebound in Chinese activity is single biggest part of next year's demand gains, contributing 810k b/d

** Other 2023 demand growth gains include:

*** India: +180k b/d

*** Singapore: +90k b/d

*** Japan: +70k b/d

* World oil demand growth has eroded during 2022, easing from +4.9m b/d in 1Q to +1.2m b/d in 3Q

** Contraction of 340k b/d seen in 4Q

* Jet fuel demand was severely impacted by the pandemic and has taken longer to rebound than any other product

** This year, jet fuel has been relatively immune to the worsening macroeconomic environment

** Excluding jet/kerosene, oil demand is set to contract by 1.1m b/d in 4Q and by 790k b/d in 1Q of 2023

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IEA Lowers Forecast for Refinery Runs as OPEC+ Cuts Curb Margins

2022-10-13 08:00:00.12 GMT

By Rachel Graham

(Bloomberg) -- The IEA cut its forecast for refinery throughput into 2023, resulting in a net draw in products next year,

* Refinery runs will rise by less than previously forecast as OPEC+ curbs push up feedstock costs at a time when the global economy is fragile, the agency said in a report Thursday

* Crude runs in 2023 seen at 81.6m b/d, compared with 80.4m this year

** Next year's figure has been revised down by 720k b/d

* For 4Q, the forecast has been cut by 340k b/d, led by Europe and Asia

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West Africa Crude Prices Weakened By Rival Supply From Libya, US

2022-10-13 08:00:00.27 GMT

By Bill Lehane

(Bloomberg) -- West African premiums to North Sea Dated continued to narrow last month, as elevated exports from Libya and the US put pressure on sweet grades, IEA says in monthly report.

* Differentials were also impacted by the ongoing halt in Nigeria's Forcados loadings and the shut-in of a key pipeline for Bonny Light, the IEA said

** READ: Nigeria's Forcados Exports to Resume By End of October: Shell

** READ: Nigeria's Declining Oil Output Forces Deferred Gasoline Payments

* Angolan differentials also fell with Girassol down by \$3.97/bbl to \$2.45/bbl and Cabinda by \$3.10/bbl to \$1.73/bbl on average in September

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Aramco CEO: Energy Transition Lacks 'Constructive Dialogue'

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Published: Thu, Oct 6, 2022

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Energy Intelligence's 2020 Energy Executive of the Year, Amin Nasser, CEO of Saudi Aramco, the world's number one oil firm, spoke to the Energy Intelligence Forum on the threats facing the energy industry, the state of the market, his firm's strategy and the energy transition. Edited highlights follow.

Q. From your unique perspective as the world's biggest oil exporter, can you tell us how you see the Ukraine crisis and the current energy crisis in Europe reshaping the flows?

A. The crisis between Russia and Ukraine and the amount of production that Russia is contributing to the market is significant, and it has its own impact on the global energy supply. **However, I need to say that we have seen the tightness in the market even before the crisis.** The crisis between Russia and Ukraine only intensified what's happening [already]. The embargo will only happen in December and then the products [in] first quarter next year. **For the time being, the more serious issue, I think, is gas and LNG. First of all, there's no spare capacity available in the market. These are all long-term contracts and also you need to build LNG terminals, receiving terminals, that will take a couple of years so it's a much bigger issue for gas and LNG than [for] crude oil.**

Q. In the short term, how do you see this impacting Aramco operations? Are you finding that there is more demand in Europe? Will you be cutting allocations to Asia?

A. First, you know, to us, the Asian market is the main market. We have a lot of our investment in Asia, and we are going to grow the number of investments that we have in Asia. So, it is a very critical and important market. We have long-term customers, great relationships, and we also have long term contracts with these customers. So, we will maintain our position, and we didn't see any impact because of the shifting of barrels from Europe to Asia. We also maintain good markets in Europe and North America. And we will continue to meet the call on us to the extent possible in Europe because they are really facing problems right now.

Q. You mentioned the discounted barrels, the Russian discounts. Is that affecting at all Aramco operations in terms of market share? Are there [concerns]?

A. None whatsoever. Let me put it that way. Even with these discounts, as I said, we have long-term relations, long-term contracts. These markets, we have to also understand, they don't want to create an overdependence on one source.

Q. In your view, how prepared is Europe for the embargoes?

A. Crude oil, it's a fungible commodity. It will be shifting. The issue, I think, for Europe is gas and LNG because there is no spare capacity available. These are all in long-term contracts. As you drop supply coming from Russia, no one else really can step up and meet the additional demand. So, it is going to be a major issue for Europe when it comes to gas and LNG. For crude oil, you know, these are markets and you know the right price crude will be shifting from one location to the other.

Q. I know that the Jafoura sour gas field [in Saudi Arabia] is one of the priorities for Aramco. Is there a potential for Aramco to export gas?

A. We are going to export hydrogen, blue hydrogen. So, our priority, you know, we are expanding our gas by close to 60% over the next eight years, which is significant growth in gas, and this is to satisfy local demand and eliminate liquid burning in the kingdom. We have close to a million barrels liquid burning in the kingdom. It will improve the economics, in terms of using gas. It will reduce the emissions and it will also help Aramco because we receive power to the grid, in [terms of] Scope 2 emissions.

Some of the Jafoura gas will be going to blue hydrogen and will be exported to different markets. Similarly, you know, LNG and others will be considered based on supply and the kingdom's needs.

Q. Are you finding markets for blue hydrogen at the moment, and when do you think this market is going to develop?

A. I think the challenge for hydrogen is infrastructure and costs. Customers would like to have hydrogen but not at any cost. That is the issue. So, today, we are identifying customers based mainly in East Asia—Japan and Korea, South Korea, and some of the Europeans.

For the prices of hydrogen to go down, you need to scale up. So, when you scale up, you know, technologies will be developed and efficiencies and all of that you will be able to reduce costs. But if you are going to develop it now, you need an offtake agreement, for at least 15 to 20 years, in order to develop all of this blue hydrogen.

Q. Why is the oil market behaving the way it is? Why is there a pressure on prices when we're seeing tightness around supply and also around the spare capacity?

A. I think the market is focusing on short-term economics rather than supply fundamentals. They are focusing on what could happen to demand if a recession happened in different parts of the world. They are not focusing, as you mentioned, on supply fundamentals. Today, inventories are extremely low, spare capacity is also extremely low. And if China opens up a little bit, you will find out that spare capacity will be eroded completely. The aviation industries by the way, compared to pre-Covid levels, we are still 1.7 million barrels per day in jet fuel lower than pre-Covid. And the spare capacity that we have currently is like almost one and a half percent of total supply, talking about 100 million [barrels per day]. So, even if the aviation industry picks up, you will erode that spare capacity, and when you erode that spare capacity ... the world should be worried, because there is not going to be any buffer for any hiccup, any interruption, any unforeseen events anywhere in the world.

Today, what's happening to gas is the same, LNG, everything available is long-term contracts going to certain markets. There is no available capacity to meet any interruptions in the system.

Q. That leads well into my next question about underinvestment. When do you believe that there's going to be a return of investment into the sector?

A. Unfortunately, the underinvestment is still going on. You know, it's the pressure the companies are seeing from regulators, policymakers, shareholders, about no need for investment.

We decided to go to 13 million b/d capacity in 2020. It's going to come in 2027. These things take time. So, we're talking about six to seven years from the time you take the decision for that additional barrels to come to the market. Unfortunately, because of all the pressure that we are seeing on companies, from different policymakers and regulators, and the sentiment that is there in the market, we see only short-cycle projects coming on, but not long-term projects that will sustain a plateau for a longer period of time. The increment we are talking about is going to sustain the plateau for 20 and 30 years. You need to believe in the long term.

Q. Can you tell us a little bit more about your plans to build capacity to 13 million b/d? Where are you exactly in the process?

A. That additional capacity is coming mainly from offshore, a number of increments that we are bringing on stream. We are bringing Marjan, we are bringing Berri, Zuluf, heavy and also Safaniyah. Marjan and Berri is currently under construction, Zuluf contracts were awarded, and Safaniya is under FEED (front-end engineering and design). But progress is going very well. We are on target to meet our plan to add 1 million barrels, go from 12 million to 13 million barrels of capacity.

Q. I am sure you've been asked this question a million times, but given the current market tightness, how fast could Aramco reach the 12 million b/d, and how long could you sustain it for?

A. You know, based on our maximum sustained capacity policy, it's 90 days to bring that capacity. But in 2020, we were asked by the Ministry of Energy... [and] we brought it in 30 days. But I said it before and I'm going to say it again, we should be really concerned if we reach that level, because it means you are running in the world with no spare capacity. You will have volatility and prices will escalate so fast.

Q. Let's move to the demand side. Where does Aramco see it?

A. For us, what we believe is that demand will continue to grow to 2030 and beyond. And that's where we made the decision, as I said, in 2020, to expand our capacity to 13 million b/d.

If you think about it today, alternatives, solar, wind, only contribute 2% to the primary industry, 10% in electric power, electric cars 2% of the total global fleet. So, alternatives are not ready yet. Until they are ready, we need to work in parallel. We need to develop our oil and gas and make sure that we decarbonize our resources that by building carbon capture and sequestration.

Also, we are involved in building our renewables, blue hydrogen, other means of alternatives to eliminate any emissions. We are for climate protection, but we need to work in parallel.

Look at what's happening globally today: 8 billion tons of coal [consumption]. This is the highest in history. So, if you think about it, we are transitioning to coal. Think about it. These are the signals. You know, affordability and availability is key.

Q. You've mentioned renewables, and this is something that Aramco is working on, and you do have a net-zero target by 2050. What progress are you making towards reaching that target?

A. We are progressing very well. We issued our sustainability report this year. In that sustainability report we put our roadmap to achieve net zero Scope 1 and 2 by 2050. We had an interim target of reducing 52 million tons by 2035 compared to our baseline in 2018. We will be doing that by efficiency improvements in our existing facilities. By shifting the power sector to gas, we will reduce Scope 2 emissions coming to the company by carbon [capture and] sequestration [CCS].

The biggest element is CCS because we will be building the biggest [project] in the world. And of course, we will be building our low-carbon or no carbon energy in terms of renewables, blue hydrogens. At the same time, we're working on a lot of technologies that will also help us, in addition to nature-based solutions. We are talking about 300 million mangroves in kingdom and out of kingdom. And at the same time, we're working on deployment of separate carbon economies and creation of these separate carbon economies. Techniques and direct air capture, more engine efficiencies, and mobile CO2 capture, there's a lot of things that are part of our strategy to achieve our net zero Scope 1 and 2 by 2050.

Q. I don't know if you agree with me or not, but when we talk about the energy transition, usually what we see in the mass media are the extreme voices from both ends of the argument, and it ends up being a kind of shouting match. What is your view on arguments that oil companies should contribute to civil society?

A. As I said, you know, we are for climate protection. And we are an integral part of the solution, the energy industry as a whole. We need to work together. We need to ensure that we have enough supplies of oil and gas with much less emissions than it is today going on. The energy industry has the experience. It has the capabilities, the subject matter experts to do the giga and mega projects, capabilities available for them to do all of these projects, in hydrogen—in green, blue, in renewables, in all of these things.

Unfortunately, there is no constructive dialogue currently going on. Even though as I said, you see in some of these [demand] scenarios talking about 70 million [barrels per day of demand] in 2030. Why would you do an investment to start with if you are thinking in 2030 there will be 70 million barrels [per day of demand]? We need to have a much better dialogue, because this is only going to work if we put our heads together and find the solution to what's going on. Otherwise you will see more utilization of coal going on. And because we will need energy at the end of the day. So, I think the energy industry as a whole has the experience and capabilities available for creating the right transition that we're all aiming for.

GLOBAL

ABSOLUTE POWER

Asked about the murder of Jamal Khashoggi, Mohammed bin Salman said, “If that’s the way we did things, Khashoggi would not even be among the top 1,000 people on the list.”

By Graeme Wood

Photographs by Lynsey Addario



A woman walks past a poster showing Crown Prince Mohammed bin Salman (*left*) with his father (*right*) and grandfather (*top*), at the old market in Taif, Saudi Arabia. (Lynsey Addario for The Atlantic)

MARCH 3, 2022, 6 AM ET

SHARE

MOHAMMED BIN SALMAN, the crown prince of Saudi Arabia, is 36 years old and has led his country for almost five years. His father, the 86-year-old King Salman, has rarely been seen in public since 2019, and even MBS—as he is universally known—has faced the world only a few times since the pandemic began. Once, he was ubiquitous, on a never-ending publicity tour to promote his plan to modernize his father’s kingdom. But soon after the murder of the *Washington Post* columnist Jamal Khashoggi in 2018, MBS curtailed his travel. His last interview with non-Saudi press was more than two years ago. The CIA concluded that he had ordered Khashoggi’s murder, and Saudi Arabia’s own prosecutors found that it had been conducted by some of the crown prince’s closest aides. They are thought to have dismembered Khashoggi and disintegrated his corpse.

MBS had already developed a reputation for ruthlessness. In 2017, he rounded up hundreds of members of his own family and other wealthy Saudis and imprisoned them in Riyadh’s Ritz-Carlton hotel on informal charges of corruption. The Khashoggi murder fixed a view of the crown prince as brutish, thin-skinned, and psychopathic. **Among those who share a dark appraisal of MBS is President Joe Biden, who has so far refused to speak with him.** Many in Washington and other Western capitals hope his rise to the throne might still be averted.

But within the kingdom, MBS's succession is understood as inevitable. "Ask any Saudi, anyone at all, whether MBS will be king," a senior Saudi diplomat told me. "If there are people in Washington who think he will not be, then I cannot help them. I am not a psychiatrist."

His father's eventual death will leave him as the absolute monarch of the birthplace of Islam and the owner of the world's largest accessible oil reserves. He will also be the leader of one of America's closest allies and the source of many of its headaches.

I've been traveling to Saudi Arabia over the past three years, trying to understand if the crown prince is a killer, a reformer, or both—and if both, whether he can be one without the other.

Even MBS's critics concede that he has roused the country from an economic and social slumber. In 2016, he unveiled a plan, known as Vision 2030, to convert Saudi Arabia from—allow me to be blunt—one of the world's weirdest countries into a place that could plausibly be called normal. It is now open to visitors and investment, and lets its citizens partake in ordinary acts of recreation and even certain vices. The crown prince has legalized cinemas and concerts, and invited notably raw hip-hop artists to perform. He has allowed women to drive and to dress as freely as they can in dens of sin like Dubai and Bahrain. He has curtailed the role of reactionary clergy and all but abolished the religious police. He has explored relations with Israel.

He has also created a climate of fear unprecedented in Saudi history. Saudi Arabia has never been a free country. But even the most oppressive of MBS's predecessors, his uncle King Faisal, never presided over an atmosphere like that of the present day, when it is widely believed that you place yourself in danger if you criticize the ruler or pay even a mild compliment to his enemies. MBS's critics—not regicidal zealots or al-Qaeda sympathizers, just ordinary people with independent thoughts about his reforms—have gone into exile. Some fear that if he keeps getting his way, the modernized Saudi Arabia will oppress in ways the old Saudi Arabia never imagined. Khalid al-Jabri, the exiled son of one of MBS's most prominent critics, warned me that worse was yet to come: "When he's King Mohammed, Crown Prince MBS is going to be remembered as an angel."

For about two years, MBS hid from public view, as if hoping the Khashoggi murder would be forgotten. It hasn't been. But the crown prince still wants to convince the world that he is saving his country, not holding it hostage—which is why he met twice in recent months with me and the editor in chief of this magazine, Jeffrey Goldberg.

In our meetings, the crown prince was charming, warm, informal, and intelligent. But even at its most affable, absolute monarchy cannot escape weirdness. For our first meeting, MBS summoned us to a remote palace by the Red Sea, his family's COVID bunker. The protocols were multilayered: a succession of PCR tests by nurses from the Royal Clinics; a Gulfstream jet in the middle of the night from Riyadh; a convoy from a deserted airstrip; a surrender of electronic devices; a stopover at a mysterious guesthouse visible in satellite photos but unmarked on Google Maps. He invited us to his palace at about 1:30 a.m., and we spoke for nearly two hours.

For the second meeting, in his palace in Riyadh, we were told to be ready by 10 a.m. It also began after midnight. The halls were astir. The crown prince had just returned after nearly two years of remote work, and aides and ministers padded red carpets seeking meetings, their first in months, with the boss. Neglected packages and documents had piled up on the desks and tables in his office, which was large but hardly opulent. The most obvious concession to high taste was an old-fashioned telescope on a tripod, its altitude set shallow enough that it appeared to be pointed not at the heavens but at Riyadh, the sprawling and unsightly desert metropolis from which the Saud family has ruled for most of the past three centuries.

At the outset of both conversations, MBS said he was saddened that the pandemic precluded giving us hugs. He apologized that we all had to wear masks. (Each meeting was attended by multiple, mainly silent princes wearing identical white robes and masks, leaving us unsure, to this day, who exactly was present.) The crown prince left his tunic unbuttoned at the collar, in a casual style now favored by young Saudi men, and he gave relaxed, nonpsychopathic answers to questions about his personal habits. He tries to limit his Twitter use. He eats breakfast every day with his kids. For fun, he watches TV, avoiding shows, like *House of Cards*, that remind him of work. Instead, he said without apparent irony, he prefers to watch series that help him escape the reality of his job, such as *Game of Thrones*.

Before the meetings, I asked one of MBS's advisers if there were any questions I could ask his boss that he himself could not. "None," he answered, without pausing—"and that is what makes him different from every crown prince who has come before him." I was told he derives energy from being challenged.

MBS said it was "obvious" he had not ordered the killing of Khashoggi. "It hurt me a lot," he said. "It hurt me and it hurt Saudi Arabia, from a feelings perspective."

During our Riyadh encounter, Jeff asked MBS if he was capable of handling criticism. "Thank you very much for this question," the prince said. "If I couldn't, I would not be sitting with you today listening to that question."

"I'd be in the Ritz-Carlton," Jeff suggested.

"Well," he said, "at least it's a five-star hotel."

Difficult questions caused the crown prince to move about jumpily, his voice vibrating at a higher frequency. Every minute or two he performed a complex motor tic: a quick backward tilt of the head, followed by a gulp, like a pelican downing a fish. He complained that he had endured injustice, and he evinced a level of victimhood and grandiosity unusual even by the standards of Middle Eastern rulers.

When we asked if he had ordered the killing of Khashoggi, he said it was "obvious" that he had not. "It hurt me a lot," he said. "It hurt me and it hurt Saudi Arabia, from a feelings perspective."

"From a feelings perspective?"

"I understand the anger, especially among journalists. I respect their feelings. But we also have feelings here, pain here."

The crown prince has told two people close to him that "the Khashoggi incident was the worst thing ever to happen to me, because it could have ruined all of my plans" to reform the country.

In our Riyadh interview, the crown prince said that his *own* rights had been violated in the Khashoggi affair. "I feel that human-rights law wasn't applied to me," he said. "Article XI of the Universal Declaration of Human Rights states that any person is innocent until proven guilty." Saudi Arabia had punished those responsible for the murder, he said—yet comparable atrocities, such as bombings of wedding parties in Afghanistan and the torture of prisoners in Guantánamo Bay, have gone unpunished.

The CIA concluded that Mohammed bin Salman ordered the murder of the *Washington Post* columnist Jamal Khashoggi. Saudi Arabia's own prosecutors found that it had been conducted by some of the crown prince's closest aides. (Moises Saman / Magnum)

The crown prince defended himself in part by asserting that Khashoggi was not important enough to kill. "I never read a Khashoggi article in my life," he said. To our astonishment, he added that if he *were* to send a kill squad, he'd choose a more valuable target, and more competent assassins. "If that's the way we did things"—murdering authors of critical op-eds—"Khashoggi would not even be among the top 1,000 people on the list. If you're going to go for another operation like that, for another person, it's got to be professional and it's got to be one of the top 1,000." Apparently, he had a hypothetical hit list, ready to go. Nevertheless, he maintained that the Khashoggi killing was a "huge mistake."

"Hopefully," he said, no more hit squads would be found. "I'm trying to do my best."

If his best is not good enough for Joe Biden, MBS said, then the consequences of running a moralistic foreign policy would be the president's to discover. "We have a long, historical relationship with America," he said. "Our aim is to keep it and strengthen it." Biden and Vice President Kamala Harris have called for "accountability" for Khashoggi's murder, as well as the humanitarian disaster in Yemen, due to war between Saudi Arabia and Iranian-backed Houthi rebels. The Americans also refuse to treat him as Biden's counterpart—Biden's peer is the king, they insist—even though the crown prince rules the country with his father's blessing. This stings. MBS has lines open to the Chinese. "Where is the potential in the world today?" he said. "It's in Saudi Arabia. And if you want to miss it, I believe other people in the East are going to be super happy."

We asked whether Biden misunderstands something about him. "Simply, I do not care," he replied. Alienating the Saudi monarchy, he suggested, would harm Biden's position. "It's up to him to think about the interests of America." He gave a shrug. "Go for it."

Also risible to the crown prince was the notion that his citizens fear speaking out against him. We need dissent, he said, "if it's objective writing, without any ideological agenda." In practice, I noted, dissent seemed to be nonexistent. In September 2017, MBS ordered a boycott of Qatar, citing the country's support for the Iranian government, the Muslim Brotherhood, al-Qaeda, and other Islamist organizations in the region. His tiny neighbor suddenly transformed from official friend into official villain, and those expressing a kind word toward it disappeared into prison.

These sentiments, apparently, did not count as objective or nonideological. Qatar, MBS said, was comparable to Nazi Germany. "What do you think [would have happened] if someone was praising and trying to push for Hitler in World War II?" he asked. "How would America take that?" Of course Saudis would react strongly to Nazi sympathizers in their midst. Three years later, however, the countries reconciled, and the Saudi government tweeted out a photo of MBS and Hitler—that is, Qatari Emir Tamim Al Thani—wearing board shorts and smiling at MBS's Red Sea palace. "Sheikh Tamim's an amazing person," MBS said. The fight between them had been no big deal, "a fight between brothers." The relationship is now "better than ever in history." The dissenters remain in prison, however, and I do not mean the Ritz-Carlton.

As for the actual Ritz-Carlton prisoners: They had it coming, the crown prince said. Overnight he'd rounded up hundreds of the most prominent Saudis, delivered them to Riyadh's most lavish hotel, and refused to let them go until they confessed and paid up. I said that sounded like he was eliminating rivals. MBS looked incredulous. "How can you eliminate people who don't have any power to begin with?" If they had power, he would not have been able to force them into the Ritz.

Does Joe Biden misunderstand something about him? “Simply, I do not care,” MBS replied. “It’s up to him to think about the interests of America.” He gave a shrug. “Go for it.”

The Ritz operation, MBS said, was a blitzkrieg against corruption, and wildly successful and popular because it started at the top and did not stop there. “Some people thought Saudi Arabia was, you know, just trying to get the big whales,” MBS said. They assumed that after the government extracted settlements from the likes of Alwaleed bin Talal, the kingdom’s richest man, corruption at lower levels would resume. MBS noted, proudly, that even the minnows had been hooked. **By 2019, everyone “understood that even if you steal \$100, you’re going to pay for it.” In just a few months, he claims to have recovered \$100 billion directly, and says that he will recover much more indirectly, as dividends of deterrence.**

MBS acknowledged that to outsiders the Ritz operation may have looked thuggish. But to him it was an elegant, and by the way nonviolent, solution to the problem of vampires feasting on the kingdom’s annual budget. (An adviser to MBS told me that one alternative his aides had suggested was executing a few prominent corrupt officials.) During the months that the Ritz served as a prison, the kingdom’s financial regulator was essentially made king pro tempore, to devote the full power of the government to bleeding the vampires dry. But the Ritz guests had not, MBS said, been placed under arrest. That would imply that they had entered the court system and faced charges. Instead, **he said, they had been invited to “negotiate”—and to his pleasure, 95 percent did so. “That was a strong signal,” he said. I’m sure it was.**

THE SAUDI THRONE does not, like the British throne once did, just pass to the next male heir. The king chooses his successor, and ever since the founding king of the modern Saudi state, Abdulaziz, chose his son Saud as crown prince in 1933, each king has chosen another son of Abdulaziz. (He had 36 sons—with multiple wives and concubines—who survived to adulthood.) All were old enough to remember the camels-and-tents days, before extreme wealth, and they ruled conservatively, as if to lock in their gains. Even the shrewdest and most ambitious kings accomplished little. Abdullah, who took power in 2005, began as a reformer, but much of the momentum of the first half of his reign was lost as he doddered in the second, and the royal treasury was looted. (One notorious alleged thief in the Ritz, a major figure in the Royal Court, was said to have stolen tens of billions of dollars during His Majesty’s decline.)

Salman, the current king and at 86 one of the youngest of Abdulaziz’s brood, saw the perils of unchecked gerontocracy and anointed a successor from the next generation. His choice of Mohammed was not obvious. King Salman’s sons include Faisal, 51, who has a doctorate in international relations from Oxford; and Sultan, 65, a former Royal Saudi Air Force pilot who in 1985 spent a week on the space shuttle Discovery as a payload specialist. Either of these competent and educated men, citizens of the world, might have been a natural successor. But Salman had an inkling that the next king would need a certain grit and fluency with power that cannot be acquired in a seminar or a flight simulator. The new generation, born into luxury, tended to be soft, and the next king would need to be a modern version of a desert warlord like his grandfather.

Outside the immediate family, Salman considered his nephew Mohammad bin Nayef, who is known as MBN, appointing him crown prince in 2015, when he was 55. As a spymaster and security official in the 2000s, MBN had led the country’s domestic war against al-Qaeda, and in the process had become well connected with counterparts in Washington and London. In 2009, MBN was injured when an al-Qaeda bomber packed his underpants with explosives and approached him at an event.

Foreign governments considered MBN a safe pick: old enough but not too old, a proven fighter, respected overseas. But for Salman he was merely a throne-warmer for his son. (MBS had held no high office prior to his father’s coronation and needed a couple of years as defense minister to burnish his CV.) In 2017, Salman fired MBN. When you fire a prince, you fire all those who staked their fortunes on his rise; among the opponents of MBS are foreign governments who had planned for the reign of King MBN, and Saudis whose wealth and influence flowed from him. MBN’s chief adviser, Saad al-Jabri, fled to Canada. He alleges that MBS sent a

team there to kill him. MBS's government alleges that al-Jabri stole a massive fortune and is bankrolling efforts to defame the crown prince. (Both parties deny the claims.) "MBN survived al-Qaeda," al-Jabri's son Khalid told me. "But he couldn't survive his own cousin."

Others have suggested Salman's younger brother Ahmed, a well-liked former deputy interior minister, as a throne-worthy alternative to MBS. Ahmed reportedly opposed MBS's appointment as crown prince. In 2020, he was arrested on suspicion of treason.

HAVING CONSOLIDATED POWER, MBS focused on Vision 2030. He is exasperated by the rest of the world's failure to acknowledge how well it has gone. "Saudi Arabia is a G20 country," he said. "You can see our position five years ago: It was almost 20. Today, we are almost 17." He noted strong non-oil GDP growth, and reeled off statistics about foreign direct investment, Saudi overseas investment, and the share of world trade that passes through Saudi waters. The economic success, the concerts, the social reform—these are all done deals, he said. "If we were having this interview in 2016, you would say I'm making assumptions," he said. "But we did it. You can see it now with your eyes."

He was not lying. Between my first visit to Saudi Arabia, in 2019, and this conversation two years later, I had gone to the movies in Riyadh and sat next to a Saudi woman I had never met. She wore jeans and canvas sneakers, and she bounced her bare ankle while we watched *Zombieland: Double Tap*. When I first visited, I ate at restaurants that had cinder-block walls dividing single men on one side from women and families on the other. These were sledgehammered down—a little Berlin 1989 in every restaurant—and now men and women can eat together without eliciting so much as a sideways glance from fellow diners.

Many of the crown prince's most persistent critics approve of these changes, and wish only that they had come sooner. (Khashoggi was such a critic. When I met him in London for brunch, shortly before his death, I asked him to list MBS's failings. He said "90 percent" of the reforms were prudent and overdue.) The most famous Saudi women's-rights activist, Loujain al-Hathloul, campaigned for women's right to drive, and against the Saudi "guardianship law," which prevented women from traveling or going out in public without a male relative. Al-Hathloul was thrown in prison on terrorism charges in 2018—*after* MBS and his father had announced the imminent end of both policies. In prison, her family says, she was electrocuted, beaten, and—this was just a few months before Khashoggi's murder—threatened with being chopped up and thrown in a sewer, never to be found. (The Saudi government has previously denied allegations of torturing prisoners.)



Left: Saudi Crown Prince Mohammed bin Salman is greeted by Qatar's Emir Sheikh Tamim Al Thani in Doha, Qatar, in 2021. *Center:* The Saudi activist Loujain al-Hathloul in 2021. *Right:* MBS and his father, King Salman, in 2017. (Saudi Press Agency / Reuters; Ahmed Yosri / Reuters; Saudi Press Agency / AP)

Al-Hathloul and other activists had demanded rights, and the ruler had granted them. Their error was in thinking those rights were theirs to take, rather than coming from the monarch, who deserved credit for having bestowed them. Al-Hathloul was released in February 2021, but her family says she is forbidden from traveling abroad or speaking publicly.

Another dissident, Salman al-Awda, is a preacher with a massive following. His original crime, too, was to utter publicly a thought that would later be shared by the crown prince himself. When MBS began squabbling with his counterpart in Qatar, al-Awda tweeted, “May God harmonize between their hearts, for the good of their people.” He was imprisoned, and actual harmony between the two leaders has not freed him. His son Abdullah, now in the United States, claims that his father, who is 65, is being held in solitary confinement and has been tortured.

The crown prince, one of his admirers told me, “put the Wahhabis in a cage, then he reached in with gardening shears and he cut their balls off.”

Saudi authorities say al-Awda is a terrorist and a member of the Muslim Brotherhood, which is supported by Qatar and intent on overthrowing the monarchy and replacing it with a theocracy. (The Muslim Brotherhood plays a bogeyman role in the Saudi imagination similar to the role of Communists in America during the Red Scare. Also like Communists, the Muslim Brotherhood really has worked covertly to undermine state rule, just not to the extent imagined.) Al-Awda’s defenders say he is being punished for daring to speak with a moral voice independent of the monarchy’s. He faces death by beheading.

Would MBS consider pardoning those who’d spoken out in favor of women driving and normalization with Qatar—both now the policy of the country? “That’s not my power. That’s His Majesty’s power,” MBS said. But, he added, “no king has ever used” the pardon power, and his father does not intend to be the first.

The issue, he said, is not a lack of mercy. It is a problem of balance. Yes, there are liberals and kumbaya types who have run afoul of state security—and perhaps some could be candidates for a royal pardon. But some of the others in his jails are bad hombres indeed, and pardons cannot be meted out selectively. “You have, let’s say, extreme left and extreme right,” he said. “If you give forgiveness in one area, you have to give it to some very bad people. And that will take everything backward in Saudi Arabia.”



Left: Saudi women attend a live music performance in Riyadh in January. The crown prince has legalized cinemas and concerts and permitted women to dress as freely as they can in places like Dubai and Bahrain. *Bottom:* A tenth-grade girls’ basketball team in Jeddah. Until recently, a man would have been forbidden to coach a girls’ team. (Lynsey Addario for *The Atlantic*)

On one side are liberals, tugging on the sympathies of Westerners; on the other, Islamists who are also opposed to the monarchy. Letting this latter group out would not just mean the end of rock concerts and coed dining. They would not stop until they brought down the House of Saud, seized the country’s estimated 268 billion barrels of oil and the holy cities of Mecca and Medina, and established a terrorist state. In private conversations with others, MBS has likened Saudi Arabia before the Saud family’s conquest in the 18th

century to the anarchic wasteland of the *Mad Max* films. His family unified the peninsula and slowly developed a system of law and order. Without them, it would be *Mad Max* all over again—or Afghanistan.

Still, the crown prince's argument—that if he extended forgiveness to good people who deserved it, he would have to extend it equally to bad people who did not—struck me as bizarre. Why would one require the other? Then I realized that MBS was not saying that the failure of his plan to remake the kingdom *might* lead to catastrophe. He was saying that he'd guarantee it would. Many secular Arab leaders before him have made the same dark implication: Support everything I do, or I will let slip the dogs of jihad. This was not an argument. It was a threat.



ALI SHIHABI, A Saudi financier and pro-MBS commentator, told me that the changes in Saudi Arabia could be compared to those in revolutionary France. An old order had been overturned, a priestly class crushed; a new order was struggling to be born.

The priestly class in particular interested me. The brand of conservative Islam practiced in Saudi Arabia—called Wahhabism, after the sect's 18th-century founder, Muhammad ibn Abd al-Wahhab—once wielded great power and enjoys at least some popular support. I asked Shihabi if MBS really had diminished the Wahhabis' role. "Diminished their role?" Shihabi asked me. "He put the Wahhabis in a cage, then he reached in with gardening shears"—here he made the universal *snip snip* gesture with his fingers—"and he cut their balls off."

My flight into Riyadh was packed with foreigners attending Stan Lee's Super Con. Ahead of me in the passport line I saw Lou Ferrigno, the Incredible Hulk.

In France, revolution worked out just as badly for the House of Bourbon as it did for the clergy. (Diderot famously wrote that the entrails of the priests would be woven into ropes to strangle kings.) The House of Saud wanted the anticlerical revolution while conveniently omitting the antiroyalist one. I wanted to see how that alliance between monarch and sansculottes was working.

Vision 2030 made modernization easier to observe now than it would have been just a few years ago. Until October 2019, tourist visas to Saudi Arabia did not exist. Then the Saudis realized that to attract crowds to the concerts they had legalized, they'd need to let in visitors. Overnight, a visa to Saudi Arabia went from one of the hardest in the world to get to one of the easiest. In minutes I had one valid for a whole year. My flight into Riyadh was packed with foreigners attending Stan Lee's Super Con. Ahead of me in the passport line I saw Lou Ferrigno, the Incredible Hulk, on his way to an autograph signing.

The new system arrived so fast that the first visitors were like an invasive species, an unnatural fit in the rigid social order of the kingdom. For years, almost every non-Saudi in the country had needed a document called an *iqama*. It was a sort of license to exist: Your *iqama* identified your Saudi patron, the local national whom you were visiting or working for, and who controlled your fate. Every Saudi patron had his own patron, too—sometimes a tribal leader, sometimes a regional one. Even those bigwigs paid obeisance to someone and, eventually, by the transitive property of Saudi deference, to the king himself. Saudi Arabia, MBS explained, "is not one monarchy. You have beneath it more than 1,000 monarchies—town monarchies, tribal monarchies,

semitribal monarchies.” The *iqama* guaranteed that every sentient creature fit into this scheme of Saudi society.

MBS batted away my suggestion that this system is antiquated and might be replaced with a constitutional monarchy—one where citizens have freestanding rights not granted by a monarch or a demi-monarch. “No,” he said. “Saudi Arabia is based on pure monarchy,” and he, as crown prince, would preserve the system. To remove himself from it would amount to a betrayal of all the monarchies and Saudis beneath him. “I can’t stage a coup d’état against 14 million citizens.”

But he has already forced that system to adapt. Nearly every day someone asked for my *iqama*, and I had to explain that I had none. They reacted as if I’d told them that I had no name. Renting a car, buying a train ticket, checking into a hotel—all of these interactions left some poor clerk baffled. But in the new Saudi Arabia I was free to wander, to listen, to overhear.



Left: Men talk over coffee in Riyadh. Right: Young women at a Formula E racing event. (Lynsey Addario for The Atlantic)

In Riyadh I found, effortlessly, young people thrilled by the reforms. Like the other major Saudi cities, Dammam and Jeddah, Riyadh has specialty coffee shops in abundance—little outposts of air-conditioning and caffeine, in an environment otherwise characterized by heat and boredom. Many of the Saudis I met professed a deep love for America. “I spent seven years at Cal State Northridge,” one told me, before rattling off a list of cities he had visited. He was one of several hundred thousand Saudi students who’d attended U.S. universities on government scholarships in the 2000s. “I studied finance,” he said. “But I never graduated. I had a wonderful time.” He listed his American friends, who had names like Mike and Emilio. “I drank and did too much meth, and my grades weren’t good.”

“Is it possible to do just the right amount of meth?” I asked.

“When I came back, I stopped.” He looked out the window of the coffee shop at the parched cityscape. “This country is the best rehab center on the planet.”

Now he was studying again, at a Saudi university, and planning to open his own business. He had already attended concerts, and he said his fondest wish was to listen to music in the open air and smoke a joint—just one, he promised. He asked if I thought that would happen. I said I did not think that was explicitly part of Vision 2030, but he’d probably get his wish. Later, with him in mind, I asked the crown prince whether alcohol would soon be sold in the kingdom. It was the only policy question that he refused to answer.

In another café, in the northern city of Ha'il, a man pointed to a mural, freshly painted, of the Lebanese singer Fairouz, her hair flowing beautifully over her shoulders. Next to her were her lyrics (in Arabic): "Bring me the flute and sing, for song is the secret to eternity."

"One year ago," he said, "that would not be possible." By "that," he meant pretty much everything: a woman's hair; a celebration of song; a celebration of a song about singing; and, on top of all this, the music playing in the café as we spoke. Before the rise of MBS, every component of this scene would have violated long-standing canons of Saudi morality enforcement. The religious police, known in Arabic as the *hay'a* or *mutawwi'in*, would have busted the joint. They used to show up in ankle-length white *thobes*, their beards curly and unkempt. They yelled at people for dressing immodestly, or thwacked at them with sticks to goad them to the mosque for one of the five daily prayers. For the flagrancy of the Fairouz sins, the café's managers would have been detained, questioned, and punished. "Screw those guys," the man said, in a succinct expression of the most common sentiment I heard about the religious police.

Encounters with the *hay'a* have provided many an appalling story for foreign visitors. When Maureen Dowd of *The New York Times* went to Riyadh in 2002, the *hay'a* spotted her in a shopping mall and objected to being able to see the outline of her body. Her host, the future foreign minister Adel al-Jubeir, pleaded with them, but they were unimpressed by his status as a prominent diplomat, and she fled to her hotel room. "I fretted that I was in one of those movies where an American makes one mistake in a repressive country and ends up rotting in a dungeon," Dowd wrote.

"Saudi Arabia is based on pure monarchy," MBS said. To remove himself from that system would amount to a betrayal of all the Saudis beneath him. "I can't stage a coup d'état against 14 million citizens."

I told one of MBS's advisers that the religious police had been an international PR problem. "May I be impolite?" he asked me. "I don't give a fuck about the *foreigners*. They terrorized *us*." He likened the religious police to J. Edgar Hoover's FBI, operating with unchecked authority. (The religious police's official Arabic name dates back hundreds of years, but still sounds Orwellian in English: the Committee for the Prevention of Vice and Promotion of Virtue.) Anyone who wished to drag down a professional or political rival could scrutinize him for sins, then call the religious police to set up a sting. Or the *hay'a* could flex its authority on its own, either for political reasons—toppling a prince they disliked—or for recreation.

"The religious police were the losers in school," Ali Shihabi told me. "Then they got these jobs and were empowered to go and stop the cute girls, break into the parties no one wanted them at, and shut them down. It attracted a very nasty group of people." The Saudi diplomat told me that he did not miss them, and that Saudi Arabia had needed someone with the crown prince's mettle to get rid of them. "When someone hits you because he does not like what you are wearing," he said, "that is not just a form of harassment. It is abuse."



*Left: Golf at the Boulevard in Riyadh. Right: A couple, newly engaged, dine at a restaurant in Jeddah in January. In the recent past, many restaurants had cinder-block walls dividing single men on one side from women and families on the other. (Lynsey Addario for *The Atlantic*)*

MBS ordered the religious police to stand down, and one of the enduring mysteries of contemporary Saudi Arabia is what these thwackers do, now that they are invisible on the streets. Fuad al-Amri, who runs

the *hay'a* in Mecca province, confessed to me that since the reforms, one of his main activities has been vetting his own employees, to ensure that they aren't fanatics loyal to the Muslim Brotherhood.



MBS'S GRANDFATHER KING Abdulaziz founded the modern Saudi state with the support of the clergy. But he also cracked down on them, hard, when they outlived their usefulness. MBS has recounted a famous anecdote about his grandfather. In 1921, Abdulaziz attended the funeral of the most senior religious scholar in the kingdom. The king told the assembled clerics that they were dear to his heart—in the Arabic idiom, “on my *iqal*,” the black cord that holds a Najd headdress in place. But then he warned them: “I can always shake my *iqal*,” he said, “and you will fall.”

For the past 50 years, Abdulaziz's successors have taken a softer line with the Wahhabis. The Saudi clerical class's power grew, and their imprimatur mattered. In 1964, they sealed the fate of the inept King Saud when his brothers Faisal and Mohammed sought and received religious approval for ousting him. To oppose the religious conservatives was risky. Peter Theroux, a former National Security Council director who worked on the Saudi portfolio during the 2000s, recalls being aghast at the vicious sermons still being preached by government-paid imams years after September 11. Theroux told me he confronted a senior Saudi official about the sermons. “You know,” the official apologized, “the big beards are kind of our constituency.” The rulers of Saudi Arabia put almost no limits on the speech or behavior of conservative clerics, and in return those clerics exempted the rulers from criticism. “That was the drug deal that the Saudi state was based upon for many years,” Theroux told me. “Until Mohammed bin Salman.”

Who could resist cheering on MBS as he renegotiated this relationship? One of MBS's most persistent critics in Washington, Senator Chris Murphy, a Democrat from Connecticut, told me the concerts and Comic-Cons in Riyadh have not yet translated into defunding Wahhabi intolerance overseas. “When I'm traveling the world, I still hear story after story of Gulf money and Saudi money fueling very conservative, intolerant Wahhabist mosques,” he said. A hallmark of traditional Wahhabism is hatred for non-Wahhabi Muslims, whom the Wahhabis view as even worse than unbelievers for perverting the faith. With little modification, Wahhabi teachings can lead to Osama bin Laden-style jihadism. Murphy said he thinks that isn't over. “The money that flows from Saudi Arabia into conservative Islam isn't as transparent as it was 10 years ago—much of it has been driven underground—but it still exists.”

Yet after spending hours in MBS's company, and in the company of his allies and enemies, I was convinced that neutering the clergy was not just symbolic. He was fighting them avidly, and personally. “The kings have historically stayed away from religion,” Bernard Haykel, a scholar of Islamic law at Princeton and an acquaintance of MBS's, told me. Outsourcing theology and religious law to the big beards was both an expedient and a necessity, because no ruler had any training in religious law, or indeed a beard of any significant size.

By contrast, MBS has a law degree from King Saud University and flaunts his knowledge and dominance over the clerics. “He's probably the only leader in the Arab world who knows anything about Islamic epistemology and jurisprudence,” Haykel told me.

“In Islamic law, the head of the Islamic establishment is *wali al-amr*, the ruler,” MBS explained. He was right: As the ruler, he is in charge of implementing Islam. Typically, Saudi rulers have sought opinions from clerics, occasionally leaning on them to justify a policy the king has selected in advance. MBS does not subcontract his religion out at all.

He explained that Islamic law is based on two textual sources: the Quran and the Sunna, or the example of the Prophet Muhammad, gathered in many tens of thousands of fragments from the Prophet’s life and sayings. Certain rules—not many—come from the unambiguous legislative content of the Quran, he said, and he cannot do anything about them even if he wants to. But those sayings of the Prophet (called Hadith), he explained, do not all have equal value as sources of law, and he said he is bound by only a very small number whose reliability, 1,400 years later, is unimpeachable. Every other source of Islamic law, he said, is open to interpretation—and he is therefore entitled to interpret them as he sees fit.

The effect of this maneuver is to chuck about 95 percent of Islamic law into the sandpit of Saudi history and leave MBS free to do whatever he wants. “He’s short-circuiting the tradition,” Haykel said. “But he’s doing it in an Islamic way. He’s saying that there are very few things that are fixed beyond dispute in Islam. That leaves him to determine what is in the interest of the Muslim community. If that means opening movie theaters, allowing tourists, or women on the beaches on the Red Sea, then so be it.”

MBS rebuked me when I called this attitude “moderate Islam,” though his own government champions the concept on its websites. “That term would make terrorists and extremists happy.” It suggests that “we in Saudi Arabia and other Muslim countries are changing Islam into something new, which is not true,” he said. “We are going back to the core, back to pure Islam” as practiced by Muhammad and his four successors. “These teachings of the Prophet and the four caliphs—they were amazing. They were perfect.”

Even the Islamic law that he is bound to implement will be implemented sparingly. MBS told me a story, reported in Hadith, about a woman who commits fornication, confesses her crime to the Prophet, and begs to be executed. The Prophet repeatedly tells her to go away—implying, the crown prince said, that the Prophet preferred to give sinners every chance at lenience. (MBS did not relate the end of the tale: The woman returns with indisputable evidence of her sin—a bastard son—and the Prophet acquiesces. She is buried to her chest and stoned to death.)

Instead of hunting for sin and punishing it as a matter of course, MBS has curtailed the investigative function of the religious police, and encourages sinners to keep their transgressions between themselves and God. “We should not try to seek out people and prove charges against them,” he said. “You have to do it the way that the Prophet taught us how to do it.” The law will be enforced only against those so flagrant that they are practically demanding to take their lumps.

He also stressed that none of these laws applies to non-Muslims in the kingdom. “If you are a foreign person who’s living or traveling in Saudi Arabia, you have all the right to do whatever you want, based on your beliefs,” he said. “That’s what happened in the Prophet’s time.”

It is hard to exaggerate how drastically this sidelining of Islamic law will change Saudi Arabia. Before MBS, influential clerics issued fatwas exhibiting what might charitably be called a pre-industrial view of the world. They declared that the sun orbited the Earth. They forbade women from riding bikes (“the devil’s horses”) and from watching TV without veiling, just in case the presenters could see them through the screen. Salih al-Fawzan, the most senior cleric in the kingdom today, once issued a chillingly anti-American fatwa forbidding all-you-can-eat buffets, because paying for a meal without knowing what you’ll be eating is akin to gambling.

Some of the clerics may have given in because they were convinced by the crown prince's legal interpretations. Others appear to have succumbed to good old-fashioned intimidation. Formerly conservative clerics will look you in the eye and without hesitation or scruple speak in Stepfordlike coordination with the government's program. The minister of Islamic affairs and guidance, normally an unsmiling type, now cheerily defended the opening of cinemas and mass layoffs of Wahhabi imams. I liked him immediately. His name, Abdullatif Al Asheikh, indicates that he is descended from a long line of stern moralists going back to Muhammad ibn Abd al-Wahhab himself. I told him I had seen the *Zombieland* sequel in his country, and if Woody Harrelson reprised his role in *Zombieland 3*, I would return to Riyadh so we could go to a theater and watch it together. "Why not?" he replied.

Mohammad al-Arefe, a preacher known for his good looks and conservative views, mysteriously began promoting Vision 2030 after a meeting with MBS in 2016. Previously, he had preached that Mada'in Saleh, a spectacular pre-Islamic archaeological site in northwest Saudi Arabia, was forbidden to Muslim tourists. God had struck down the civilization that once lived there, and the place was forever to remain a reminder of his wrath. The conventional view held that Muslims should follow the Prophet's warning to stay away from Mada'in Saleh, but if they absolutely must pass through, they should cast their gaze downward and maintain a fearful demeanor toward the Almighty. Then, in 2019, al-Arefe appeared in what seemed, to me, like some sort of hostage video, filmed by the Saudi tourism authority, lecturing about the site's history and inviting all to enjoy it. If he was displaying a fearful demeanor, it was not toward the Almighty.

IN THE SMALLER CITIES it isn't clear how quickly modernization is catching on. I visited Buraydah, the capital of Qassim, the most conservative part of the country. In two days, every woman I saw wore a black, flowing abaya. I attended the opening of a new shopping mall and showed up early to watch the crowds arrive. The sexes separated themselves without discussion: women in the front, all in black, near the stage where children recited poems and sang; men, in white *thobes*, in the back of the audience and on the sides. The process was unconscious and organic, but to an outsider remarkable, as if salt and pepper were shaken out onto a plate, and the grains slowly and perfectly segregated themselves. Cultural practices decades or centuries old do not yield suddenly.

Taif, a city an hour outside Mecca, was once the summer residence of the king and his family. The Prophet is thought to have visited there, and many Muslims supplement their pilgrimages to Mecca with side trips to other sites from the Prophet's life. The Wahhabis have, historically, treated these visits as un-Islamic and reprehensible. Whenever pilgrimage sites have fallen into Wahhabi hands, they have methodically and remorselessly destroyed them by leveling monuments, grave markers, and other structures sacred to Muslims in other traditions.

One morning I took a long walk to a mosque where the Prophet is said to have prayed. On arrival I found a building in disrepair, fenced off by rusty wire, with parts of it reduced to rubble. A sign at this site, posted by the Ministry of Islamic Affairs, noted in Arabic, Urdu, Indonesian, and English that the historical evidence for the Prophet's visit was uncertain. It suggested, further, that "to feel an adoring reverence or regard toward these places is a kind of heresy and fabrication in religion," an innovation not sanctioned by God that "leads to polytheism."

Later, I met Mohammad al-Issa, formerly the minister of justice under King Abdullah and now, as secretary-general of the Muslim World League, an all-purpose interfaith emissary for his country. In the past, Saudi clerics inveighed against infidels of all types. Now al-Issa spends his time meeting Buddhists, Christians, and Jews, and trying to stay ahead of the occasional surfacing of comments he made in less conciliatory times. I asked him about the site, and whether Saudi Arabia's new tolerance—which he emphasizes so energetically overseas, with non-Muslims—would apply domestically. He assured me that it already did. "If in the past there

were some mistakes, now there is correction,” al-Issa said. “Everyone has the right to visit the historic places, and there is a lot of care given to them.”

“But the signs are still up,” I said.

“Maybe they are there to remind people to be respectful,” he suggested. “You see signs like that at sites all over the world: ‘Don’t touch or take the stones.’”

But these signs are not meant to preserve the ruins. They are there to remind you that you are wicked for visiting at all.



A mosque in Taif where the Prophet Muhammad is said to have prayed. A sign posted by the Ministry of Islamic Affairs notes that the historical evidence for the Prophet’s visit is uncertain, and warns that “to feel an adoring reverence or regard toward these places is a kind of heresy.” (Lynsey Addario for *The Atlantic*)

The day after my trip to the mosque, I stopped by a Starbucks in Taif. It was early afternoon. When I pulled the door handle, it clunked—the shop was closed for prayer, just as it would have been if the religious police had been enforcing prayer times.

As I waited outside alone, a small police truck pulled up behind me. The police officer salaamed me, and I responded in Arabic. Only after a short interrogation (“What are you doing here? Why are you here?”) did he discover that I was American—not, as I think he suspected, Filipino—and apologize awkwardly and leave. It took me a minute to realize what had happened: The religious police have stood down, and the ordinary police have stood up in their place. The conservatism in society has not gone away. In some places, it has just undergone a costume change.

THESE LINGERING MANIFESTATIONS of intolerance illustrate what MBS’s critics say is his ultimate error: Even a crown prince can’t change a culture by fiat.

Belated realization of this error might be behind the grandest and most improbable of his projects. If existing cities resist your orders, just build a new one programmed to do your bidding from the start. In October 2017, MBS decreed a city in a mostly uninhabited area on the Gulf of Aqaba, adjacent to Egypt’s Sinai Peninsula, the southwestern edge of Jordan, and the Israeli resort town Eilat. The city is called Neom, from a violent collision between the Greek word *neos* (“new”) and the Arabic *mustaqbal* (“future”).

At present, little exists but an encampment for the employees of the Neom project, a small area of tract housing. Regular buses take them to shop in the nearest city, Tabuk, which is itself a city only by the standards

of the vacant, rock-strewn desert nearby. (If you recall the early scenes of *Lawrence of Arabia*, when a lonely camel-borne Peter O'Toole sings "The Man Who Broke the Bank at Monte Carlo" to the echoes of a sandstone canyon, then you know the spot.) The ambitions for this settlement are vast. Neom's administrators say they expect it to attract billions of dollars in investment and millions of residents, both Saudi and foreign, within 10 to 20 years. Dubai grew at a similar pace in the 1990s and 2000s. MBS said Neom is "not a copy of anything elsewhere," not a xerox of Dubai. But it has more in common with the great globalized mainstream than with anything in the history of a country that, until recently, was remarkably successful at walling off its traditional culture from the blandishments of modernity.

For a few hours, the Neom team showed me around and made grandiose promises about the future. Neom would lure its investors, I gathered, by creating the ideal regulatory environment, stitched together from best practices elsewhere. The city would profit from central planning. When New York or Delhi want to grow, they choke on their own traffic and decrepit infrastructure. Neom has no inherited infrastructure at all. The centerpiece of the project will be "The Line"—a 106-mile-long, very skinny urban strip connected by a single bullet train that will travel from end to end in 20 minutes. (No train capable of this speed currently exists.) The Line is intended to be walkable—the train will run underground—and a short hike perpendicular to its main axis will take you into pristine desert. Water will be desalinated; energy, renewable.

So far, Neom is less a city than an urbanist cargo cult. The practicalities can come later, or not at all. (The projected cost is in the hundreds of billions of dollars, a huge sum even for Saudi Arabia.) But many good ideas look crazy at first. What struck me was that Neom's vision is really an anti-vision. It is the opposite of the old Saudi Arabia. In the old Saudi Arabia, and even to an extent today, corruption and bureaucracy layered on each other to make an entrepreneur's nightmare. Riyadh has almost no public transportation. No matter where you are, you cannot walk anywhere, except perhaps to your local mosque. No one in Neom mentioned religion at all. Even Neom's location is suggestive. It is far from where Saudis actually live. Instead it is huddled in a mostly empty corner, as if seeking sustenance and inspiration from Jordan and Israel.

Seen this way, Neom is MBS's declaration of intellectual and cultural bankruptcy on behalf of his country. Few nations have as many carried costs as Saudi Arabia, and Neom zeroes them out and starts afresh with a plan unburdened by the past. To any parts of the kingdom that cling to their old ways, it promises that the future is everything they are not. And the future will wait only so long.



DURING THE 1990S AND 2000S, Saudi Arabia was a net exporter of vision, but it was a jihadist vision. The standard narrative, now accepted by the Saudi state itself, is that the kingdom was seduced by conservative Islam, and eventually the jihadists it sent overseas (most famously Osama bin Laden) redirected their efforts toward the Saudi monarchy and its allies. Fifteen of the 19 hijackers on 9/11 were Saudi citizens.

"A series of things happened that made the Saudis realize they couldn't keep playing the game they had been playing," Philip Zelikow, a State Department official under George W. Bush and the executive director of the 9/11 Commission, told me. The years of violence that followed 9/11 shocked the Saudis into realizing that they had a reckoning coming, though only after jihadists began attacking in the kingdom itself did the government move to crush them. What the Saudis did not have was a plan to redirect the jihadists' energy. "They needed to have some story of what kind of country they were going to be when they grew up," Zelikow said. Jihadism would not be that story. But there was no immediate alternative, either for society or for the individuals

attracted to jihadism. Saudi Arabia was left to do what most other countries, including the United States, have done, which is to imprison terrorists until they grow too old to fight.



Left: The aftermath of an al-Qaeda bombing in

Riyadh in 2003. Only after jihadists began attacking in the kingdom did the government move to crush them. Right: Saudi Special Security Forces at the Counterterrorism Training School in Riyadh in 2013. (Lynsey Addario)

Last year, Saudi officials informed me that the crown prince had a new plan to deprogram jihadists. One morning they sent a convoy of state-security SUVs to my hotel, and with lights flashing, we left behind the glassy skyscrapers of the capital and continued along one of the straight, hypnotic roads radiating from Riyadh to nowhere. An hour later, we turned off at an area called al-Ha'ir and went through a security checkpoint.

Ha'ir is a state-security prison, run by the Saudi secret police, which means that its prisoners are not car thieves and check forgers but offenders against the state. They include jihadists from al-Qaeda and the Islamic State—I met at least a dozen of each—as well as softer Islamists, like Salman al-Awda, the cleric.

We drove past the checkpoint and through the gates, into a windswept compound coated in a film of light-brown dust, like tiramisu. We were met by the director of state-security prisons, Muhammad bin Salman al-Sarrah, and what appeared to be a television crew of at least half a dozen men, each bearing a microphone or a camera. I worried about what would happen next. Newsworthy events inside the walls of terrorist prisons tend not to be good. Lurking in the background were several bearded men in identical gray business suits.

During the 1990s and 2000s, Saudi Arabia was a net exporter of vision, but it was a jihadist vision. Fifteen of the 19 hijackers on 9/11 were Saudi citizens.

Al-Sarrah, it turned out, was a real jihadism nerd, and over tea we reminisced about various luminaries in the history of Saudi terror. After this small talk, he invited me to join him in an auditorium that could have been a lecture hall on a small college campus. Shutters clicked as the cameramen followed.

In the auditorium, the men in suits took the stage. Their leader, a man named Abdullah al-Qahtani, explained that he and most of the others in the room were prisoners, and that they had a PowerPoint presentation they wished to show me about the enterprise they were running in the prison. The camera crew was made up of prisoners too, and they were documenting my visit for imprisoned members of jihadist sects.

What followed was the most surreal slide deck I have ever seen: a corporate org chart and plans for a set of businesses run from within the prison by jihadists and other enemies of the state. Al-Qahtani spoke in Arabic, translated by an excitable counterpart nearby.

The org chart showed CEO al-Qahtani at the top, with direct reports from seven offices beneath him, among them financial, business development, and “programs’ affairs.” Under the last of these was another sub-office, “social responsibility.”

Al-Qahtani explained that 89 percent of the prison population had taken part in the program so far. In a way, it was like any other prison-industry program; in the United States, prisoners staff call centers, raise tilapia, or just push brooms in the prison corridor for a dollar an hour. But the Ha'ir group, doing business as a company called, simply, Power, was aggressively corporate and entrepreneurial.

Al-Qahtani and the interpreter took me to a small garden, where prisoners cultivated peppers under plastic sheeting and raised bees and harvested their honey to sell at the prison shop, in little jars with the Power logo. They operated a laundromat and presented me with a price list. The prison will clean your clothes for free, they said, but staff and inmates alike could bring clothes here for special services, such as tailoring, for a fee. I could see shirts, freshly laundered and pressed, with prisoner numbers inked into the collars. Each number started with the year of entry on the Islamic calendar. I saw one that started in 1431, about 12 years ago.

Almost all the men wore thick beards, and many had a *zabiba* (literally “raisin”), the discolored, wrinkly spot one gets from pressing the head to the ground in prayer. Some of their products were artisanal and religious-themed. They led me into a tiny room, a factory for the production of perfumes for sale outside the prison, and to another room where they made prayer beads from olive pits.

“Here, smell this,” a former member of al-Qaeda commanded me, sticking under my nose a paper strip blotted with a chemical I could not identify. I think the scent was lavender. Another prisoner, at the Power-run prison canteen, offered me free frozen yogurt. As I walked around the prison, the yogurt began to melt, and my interpreter held it so I could take notes.

Strangest of all, I found, was Power’s corporate nerve center—a warren of drab, cubicle-filled offices. The employees wore uniforms: suits for the C-suite executives and blue Power-branded polo shirts for the mid-levels puttering on their computers. They had a conference room with a whiteboard (at the top, “In the name of God, the most gracious, most merciful” was written in Arabic, and partially erased; the rest was the remains of a sales brainstorming session), a reception desk, and portraits of the king and the crown prince overseeing it all.

Nothing is stranger than normalcy where one least expects it. These jihadists—people who recently would have sacrificed their life to take mine—had apparently been converted into office drones. Fifteen years ago, Saudi Arabia tried to deprogram them by sending them to debate clerics loyal to the government, who told the prisoners that they had misinterpreted Islam and needed to repent. But if this scene was to be believed, it turned out that terrorists didn’t need a learned debate about the will of God. They needed their spirits broken by corporate drudgery. They needed Dunder Mifflin.

My hyperactive interpreter, who had been gesticulating and yapping throughout the tour, was no ordinary jihadist. He was an American-born Saudi member of al-Qaeda named Yaser Esam Hamdi. Hamdi, now 41, emerged from a pile of rubble in northern Afghanistan in December 2001. His dear friend, pulled from the same rubble, was John Walker Lindh, the so-called American Taliban. Hamdi spent months in Guantánamo Bay before being transferred to the U.S.; he was released after his father, a prominent Saudi petrochemical executive, helped take Hamdi’s case to the Supreme Court, and won (*Hamdi v. Rumsfeld*). Hamdi was sent back to Saudi Arabia on the condition that he renounce his U.S. citizenship (he was born in Louisiana and left as a small child), but the Saudis decided he needed more time in prison and locked him up for eight years in a facility in Dammam, and for another seven in Ha’ir. He is due for release this year.

Hamdi guided me like a kid showing his parents around his sleepaway camp. He explained that Power is part of a larger entity at the prison, known as the “Management of Time” (*Idarat al-Waqt*)—a comprehensive but amorphous program meant to beguile the inmates out of bad ideas and replace them with good ones. It

involves corporate training, but also gathering the inmates together for song and music, for poetry readings, for the publishing of newspapers (I snagged a copy of the *Management of Time News*), and for the production of TV shows. I watched a room full of men sing a song they had written, “O My Country!,” and show videos in which they extolled the government and the crown prince. Al-Qaeda and ISIS forbid most music and revile the monarchy. Like so many other Saudis, these men seemed to have swapped their religious fanaticism for nationalist fanaticism. One wondered what they really believed.

Al-Sarrah followed close behind us, and I shot him a look when I heard the name of the program. One of the most famous jihadist texts, a playbook for ISIS, is “The Management of Savagery” (*Idarat al-Tawahhush*). It is a deranged manual for destroying the world and replacing it with a new one. That was what this program was doing in reverse: replacing the jihadists’ savage appetite for an imagined future with an appetite for the real, the now, and the ordinary.

A bookish man who had been with Osama bin Laden at Tora Bora looked me steadily in the eye, like he was trying to convince me and not himself. “Vision 2030 is real,” he said.

I told Hamdi that I had corresponded with his friend Lindh, who served 17 years in federal prison in the United States before his release in 2019. Our correspondence had led me to believe that he was just as radical as ever, and that his stay in prison—spent in solitary study of Islamic texts—had confirmed his violent streak and converted him from an al-Qaeda supporter to an ISIS supporter.

Graeme Wood: I wrote to John Walker Lindh. He wrote back.

“Really?” Hamdi asked, before venturing a guess as to why. “The United States doesn’t know how to deal with Muslims. When I was in Afghanistan, I had extreme thinking.” Going to a Saudi prison helped. “The difference is that in jail [here] we have a program. You want to explode the thinking we have in our brain. For 17 years he was alone.” The Saudis filled Hamdi’s time. They managed it. “We didn’t have time to read the Islamic books ... We didn’t have time to do anything but work to improve ourselves.” He was a specialist in Power’s media department, and could now produce videos of passable quality.

“I didn’t know what a montage was,” he said. “I didn’t know what a design was.” We were driving to another part of the prison with al-Sarrah in the front seat and Hamdi and me in the back. “Now I am professional!” he said. “I am a complete montage expert!” He pointed at al-Sarrah, who smiled but did not speak or even look back. “All thanks to this man! The government opened this for us! Now I am in a car! Talking to you! Normally! Peacefully! No kind of problems!” Upon release, he said, he might work for his father’s company, or even (this was his dream) go into film and television production. I wondered what it might be like to have a co-worker like Hamdi, with, shall we say, an unconventional work history, and a penchant for extremism and Osama bin Laden that he swore up and down had been thoroughly replaced with a love for film and video production and the crown prince of Saudi Arabia. I was pretty sure Hamdi would be a better colleague than John Walker Lindh.





Top left: A camel market about an hour

outside Riyadh, in January. *Top right:* A sign on the highway from Jeddah to Taif marking the turnoff for Mecca. *Bottom:* Women in Asir province. Outside Saudi Arabia's major cities, it isn't clear how quickly modernization is catching on. (Lynsey Addario for *The Atlantic*)

At the prison I asked many inmates how they could trade jihadism for these worldly things, which surely amounted to frippery compared with the chance to die in the path of God. They laughed, nervously, as if to ask what I was trying to do—get them to leave the prison and kill again? They were mostly still young, and they yearned for freedom. That they no longer wanted something thrilling and extraordinary was exactly the point. It is possible to have too much vision, or the wrong kind—some of them had gone to Syria, barely survived, and had had enough vision, thank you very much. “We don’t want anything but a normal life,” one told me. “I would be happy just to go outside, to walk on the Boulevard in Riyadh, to go to McDonald’s.”

“I went to Syria because I was offered to take part in a dream, the dream of a caliphate,” said another. Ali al-Faqasi al-Ghamdi, a bookish man who had been with bin Laden at Tora Bora, told me he now recognized such dreams as counterfeit. What, he asked, is the point of a big, exciting dream when it is a false one? A small ambition that can actually be fulfilled is preferable to a big one that cannot. He looked me steadily in the eye, like he was trying to convince me and not himself. “Vision 2030 is real.”



AMERICA MUST NOW decide whether that vision is worth encouraging. Twenty years ago, if you had told me that in 2022 the future king of Saudi Arabia would be pursuing a relationship with Israel; treating women as full members of society; punishing corruption, even in his own family; stanching the flow of jihadists; diversifying and liberalizing his economy and society; and encouraging the world to see his country and his country to see the world—Wahhabism be damned—I would have told you that your time machine was malfunctioning and you had visited 2052 at the earliest. Now that MBS is in power, all of these things are happening. But the effect is not as pleasing as I had hoped.

In 1804, another modernizing autocrat, Napoleon Bonaparte, arrested Louis Antoine, the duke of Enghien, on suspicion of sedition. The duke was young and foolish, and no great threat to Napoleon. But the future

emperor executed him. Around Europe, monarchs were shocked: If this was how Napoleon treated a harmless naïf like the duke, what could they expect from him as his power grew, and his domestic opposition dissolved in fear? The execution of Enghien alerted the most perceptive among them that Napoleon could not be managed or appeased. It took a decade of carnage to figure out how to stop him.

Enghien's schemes wouldn't have stopped Napoleon, and Khashoggi's columns wouldn't have stopped MBS. But his murder was a warning about the personality of the man who will be running Saudi Arabia for the next half century, and it is reasonable to worry about that man even when most of what he does is good and long overdue.

For now, MBS's main request to the outside world, and especially the United States, is the usual request of misbehaving autocrats—namely, to stay out of his internal affairs. "We don't have the right to lecture you in America," he said. "The same goes the other way." Saudi affairs are for Saudis. "You don't have the right to interfere in our interior issues."

But he acknowledges that the fates of the two countries remain linked. In Washington, many see MBS's rise as abetted, perhaps even made inevitable, by American support. "There was a moment in time where the international community could have made it clear that the Khashoggi murder was the straw that broke the camel's back, and that we weren't willing to deal with MBS," Senator Murphy told me. The Trump administration's support, when MBS was at his most vulnerable, saved him. "If MBS ultimately becomes king," Murphy said, "he owes no one bigger than Jared Kushner," Trump's personal envoy to the crown prince. ("You Americans think there is something strange about a ruler who sends his unqualified son-in-law to conduct international relations," one Saudi analyst told me. "For us this is completely normal.")

Some still hope that MBS will not accede to the throne. "Only one of the last five crown princes has eventually become king," Khalid al-Jabri noted to me, optimistically. But everything I see suggests that his ascent is certain, and that the search for alternatives is forlorn. Two of those four also-ran crown princes were sidelined or replaced by MBS himself. The other two died of old age.

The United States needs its partners in isolating Iran, and MBS is a stalwart there. And even domestically, he remains in some ways the right man for the job. He is at least, as Philip Zelikow reminded me, not a ruler in denial. "We wanted Saudi leadership who would face their problems, and embark on an ambitious and incredibly challenging generational struggle to remake Saudi society for the modern world," he told me. Now we have such a leader, and he is presenting a binary choice: support me, or prepare for the jihadist deluge.

"We don't have the right to lecture you in America," MBS said. "The same goes the other way."

MBS is correct when he suggests that the Biden administration's posture toward him is basically recriminatory. *Stop bombing civilians in Yemen. Stop jailing and dismembering dissidents.* The U.S. might, on the margins, be able to persuade MBS to use a softer touch—but only by first persuading him that he will be rewarded for his good behavior. And no persuasion will be possible at all without acknowledging that the game of thrones has concluded and he has won.

Many of the exiles I spoke with said their best hope now is that the crown prince will mellow, and that elder Saudi wise men will keep him from destroying the country with rash decisions, like the fight with Qatar, or the murder of Khashoggi. MBS does have a sense that being capricious and impulsive can be costly. "If we run the country randomly," he told me, "then the whole economy is going to collapse." Others had tried that strategy: "That's the Qaddafi way."

King Salman has instituted measures ostensibly intended to force his son to govern more inclusively after Salman's death. He changed the law of succession to prevent the next king from naming his own children, or indeed anyone from his own branch of the family, as his crown prince. I asked MBS if he understood that to be the rule, and he said yes. I asked if he had anyone in mind for the job. "This is one of the forbidden subjects," he said. "You will be the last to know."



WHEN HE IS KING, however, the rules will belong to him, and to ask him to abide by them against his wishes will be about as easy as negotiating from your suite at the Ritz-Carlton.

A crown prince with a subtler mind and a gentler soul might have implemented MBS's reforms without resorting to his brutal methods. But it is pointless to consider policy in a state of childlike fantasy, as if it were possible to conjure some new Saudi monarch by closing your eyes and wishing him into existence. Open your eyes, and MBS will still be there. If he is not, then the man ruling in his place will not be an Arab Dalai Lama. He will be, at best, a member of the unsustainable Saudi old guard, and at worst one of the big beards of jihadism, now richer than Croesus and ready to fight. As MBS told me, to justify the Ritz operation, "It's sometimes a decision between bad and worse."

Since reality has handed us MBS, the question for America is how to influence him. This question is practical rather than moral: If your moralism drives him into a partnership with China, what good will it have been? A fundamental principle of Chinese foreign relations is butting out of other countries' internal affairs and expecting the same from them. Certainly Beijing will not reprimand him for his treatment of dissidents.

In effect, both the Saudis and the Americans are now in the Ritz-Carlton, forced to bargain with a jailer who promises us prosperity if we submit to his demands, and *Mad Max* if we do not. The predicament is familiar, because it is the same barrel over which every secular Arab autocrat has positioned America since the 1950s. Egypt, Iraq, and Syria all traded semitribal societies for modern ones, and they all became squalid dictatorships that justified themselves as bulwarks against chaos.

Twenty years ago, Syria watchers praised Bashar al-Assad for his modernizing tendencies—his openness to Western influence as well as his Western tastes. He liked Phil Collins; how evil could he be? By now most everyone outside Damascus, Tehran, and Moscow recognizes him as Saddam Hussein's only rival in the dubious competition for most evil Arab leader.

MBS has completed about three-quarters of the transition from tribal king with theocratic characteristics to plain old secular-nationalist autocrat. The rest of that transition need not be as ruthless as the beginning, but MBS shows no sign of letting up. The United States can, and should, make the case that Saudi Arabia's security and development will demand different tools going forward. It might even suggest what those tools should be. But it probably cannot make MBS use them.

A more pragmatic approach is to make sure that the reforms he has instituted stick, and that the changes in Saudi culture become irreversible. The opening of the country and the forcible sidelining of a crooked royal class—these are hard changes to undo, and they bind even the absolute monarch who decreed

them. Granting women driver's licenses was ultimately a smooth process. Taking them back would disrupt millions of lives and sow protest across the kingdom. American influence can acknowledge and encourage such changes.

Sometimes this is how absolute power relaxes its grip: slowly, without anyone noticing. In England, the transition from absolute monarchy to a fully constitutional one took 200 years, not all of them superintended by the most stable kings. MBS is still young and hoarding power, and everyone who has predicted that he would ease up on dissent has so far been proved optimistic. But 50 years is a long reign. The madness of King Mohammed could give way to something else: a slow and graceful renunciation of power—or, as with Assad, an ever more violent exercise of it.

This article appears in the April 2022 print edition with the headline “Absolute Power.”

[Graeme Wood](#) is a staff writer at *The Atlantic* and the author of [The Way of the Strangers: Encounters With the Islamic State](#).

SAF Group created transcript of comments by Mike Muller (Vitol Asia Head) to Sean Evers (Founding P) on Gulf Intelligence Daily Energy Markets video podcast on October 9, 2022 https://twitter.com/gulf_intel/status/1578996289521737728

Items in '*italics*' are SAF Group created transcript

Evers asks Muller his views coming out of China's national congress this week given China is moving into its typical strong oil demand period going into Chinese New Year. Muller is based in Singapore. At 30:15 min mark, Muller "*.... there has been a lot of debate on this even though China has been largely on leave due to their Golden Week last week. But in the week before that during APEC, there were a few Chinese delegations that braved the quarantine restrictions and came over. And, they were all of the view that the easing of Covid restrictive measures will be gradual. There is a widespread concern and even a fear in the population of this thing running out of control and what it can do. And therefore, I don't think we are going to see the Chinese tourists in the sky and Chinese business people on airplanes and coming to conferences overseas anything like in Q4. The other concern of course in China is the economic data is not great. Parts of this mandatory exports of petroleum products seems to be part of wanting to improve trade statistics. But, what really bothers me is that the continued industrial output data, productivity data in China, is disappointing. Those German chemical plants that are not running all those German gas intensive heavy industries, you would assume that the global economy would need factories elsewhere to make up for any shortfalls that are not being made in the EU where the [xxx xxxx]. it's clearly not happening in China where it should be happening. So that tells you that Chinese demand is really down, petrochemicals in particular. So, I think China is going to take quite some time to deleverage its property problem, the evergrand issue and all that. And I don't think we're going to see any snap in Chinese demand. There may be some headlines coming out of next Sunday which give the market reasons to buy the market, but I don't see any huge fundamental changes, certainly not affecting oil demand.*"

Prepared by SAF Group

Oct 11, 2022 11:14:00

OIL DEMAND MONITOR: US Gasoline Usage Leaps, Air Travel Ticks Up

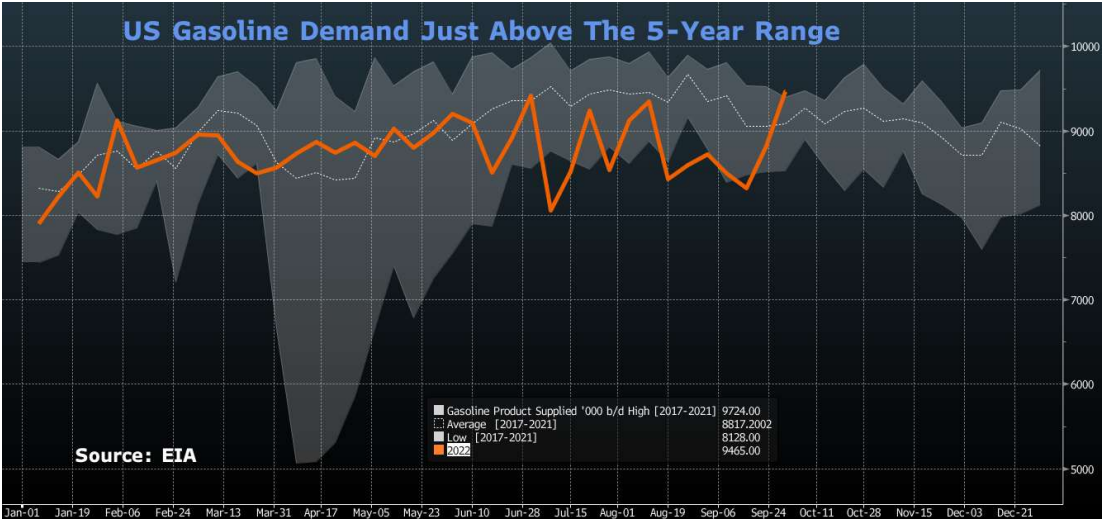
Volatile EIA estimate of demand is now top of five-year range
Commercial flights 10% down from 2019; was 14% early September

By Stephen Voss

(Bloomberg) -- US gasoline demand bounced higher in late September while Indian road fuel sales remained comfortably above pre-pandemic levels.

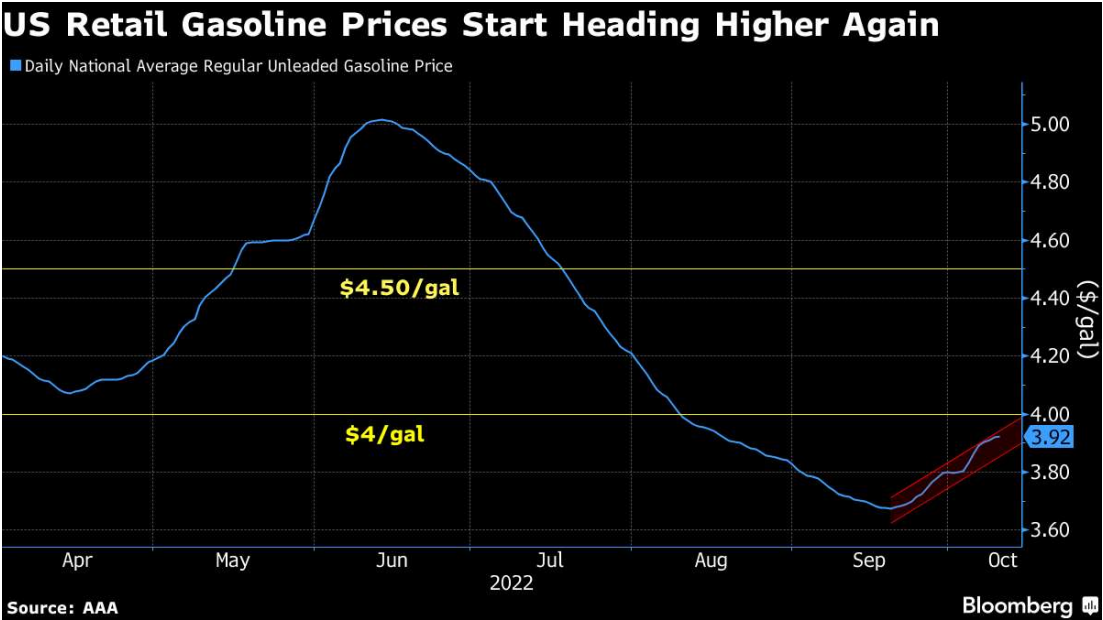
Holidays put a dent in road traffic in early October in some countries, including a week-long vacation in most of China, high-frequency congestion data showed. The number of worldwide commercial airline flights, meanwhile, has ticked upward so far in October, narrowing the gap to pre-Covid levels.

Demand for gasoline from American drivers jumped higher in the last week of September, peaking just above the five-year range at about 9.5 million barrels a day, after sliding below in recent weeks, according to the latest weekly report from the Energy Information Administration.



It's hard to know whether the notoriously volatile EIA estimate -- known as product supplied -- will stay at this elevated level, when the next estimate is published on Thursday. One headwind is a renewed upswing in gasoline pump prices, especially after last week's decision by the OPEC+ group of nations to cut oil production.

At the current rate, US retail prices could be back above \$4 a gallon by the end of October.



As noted in previous editions of this monitor, UK car use -- and road fuel demand -- still haven't fully returned to pre-pandemic levels. The latest information for early October from two government departments showed that, when measured against an early 2020 baseline, car usage was down 6% and combined sales of gasoline and diesel were down 9%.

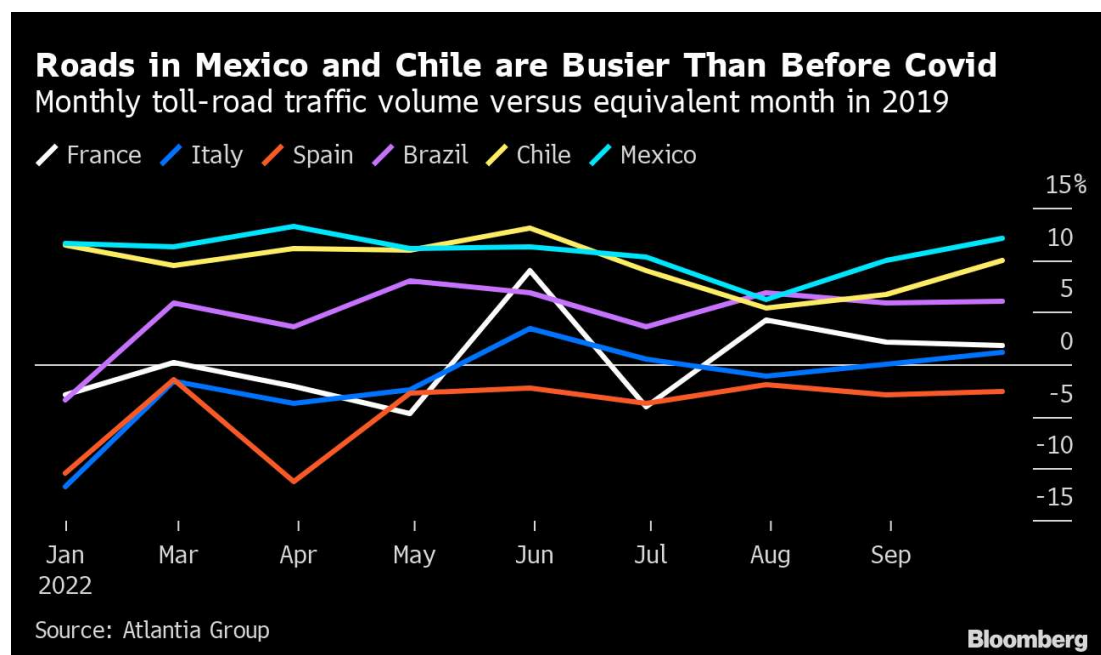
A survey-backed study earlier this year by the Centre for Research into Energy Demand Solutions, based at the University of Oxford, concluded that working from home played a critical role in reducing UK traffic levels, and that car ownership has fallen, even as retail spending has recovered.

City and Toll Road Traffic

Inner city traffic weakened on Monday, with only two of 13 cities regularly tracked in this monitor showing higher-than-2019-average congestion levels at 8 a.m. local time, down from four the prior week. A smattering of holidays kept cars in their driveways, notably in New York and Taipei, where congestion added only a mere four or five minutes to a journey that would take 60 minutes on empty roads.

London and Rome were the two cities where congestion exceeded the pre-Covid norm for that time of the week, according to data collected from in-car navigation devices by TomTom NV.

Broader data that measures toll road traffic volumes in six countries shows Latin America has recovered to well above pre-pandemic levels while Western Europe is only just reaching those levels in the past couple of months. The data from motorway-operator Atlantia Group covers France, Italy, Spain, Brazil, Chile and Mexico.



Traffic congestion in Chinese cities dropped markedly in the first few days of October amid national holidays and continued coronavirus restrictions in some places.

An aggregate measure of congestion across the 15 Chinese cities with the most cars fell to 108 on Oct. 3 from 116 a week earlier, according to calculations by BloombergNEF, based on Baidu data. Then, on Oct. 5, it dipped to 98, dropping below the baseline level of 100 for the first time since May 10.

Air Travel Uptick

A key measure of the strength of the jet fuel-consuming airline industry is the number of commercial flights worldwide, as tracked each day by Flightradar24. So far this year, that number has hovered roughly midway between the late-pandemic year of 2021 and pre-pandemic 2019. The latest data shows an uptick, with the global number currently trailing 2019 by 10%, which is an improvement from early September, when it was down by 14%.

Air travel across the whole of Europe, using separate data from Eurocontrol, is about 12% below the same week in 2019, though this figure varies by country, with Italy reduced by only 3.4% and Germany down 22%.

The Bloomberg oil-demand monitor uses a range of high-frequency data to help identify emerging trends.

Following are the latest indicators. The first three tables shows fuel demand and road congestion, the next shows air travel globally and the fifth is refinery activity:

Demand Measure	Location	% y/y	% vs 2020	% vs 2019	% m/m	Freq	Latest Date	Latest Value	Source
Gasoline product supplied	US	+0.4	+6.4	+3.6	+8.5 w		Sept. 30	9.47m b/d	EIA
Distillates product supplied	US	-6	+6.1	+3.7	+13 w		Sept. 30	4.11m b/d	EIA
Jet fuel product supplied	US	-13	+62	-16	+2.9 w		Sept. 30	1.47m b/d	EIA
Total oil products supplied	US	-3.2	+14	+0.3	+4.7 w		Sept. 30	20.83m b/d	EIA
All motor vehicle use index	UK	+2.1	+7.7	-2 unch	w		Oct. 3		98 DfT
Car use	UK	+3.3	+9.3	-6	+1.1 w		Oct. 3		94 DfT
Light commercial vehicle (vans)	UK	+4.6	+11	+14	+0.9 w		Oct. 3		114 DfT
Heavy goods vehicle use	UK	-2.8 unch		+6	+1 w		Oct. 3		106 DfT
Gasoline (petrol) avg sales per filling station	UK	-12	+6.3	-4.8	+4.5 m		Sept. 26- Oct. 2	6,819 liters/d	BEIS
Diesel avg sales per station	UK	-15	-4.0	-12	+9.7 m		Sept. 26- Oct. 2	9,061 liters/d	BEIS
Total road fuels sales per station	UK	-14	+0.2	-9	+7.4 m		Sept. 26- Oct. 2	15,880 liters/d	BEIS
China 15 cities congestion	China	+8.8			+0.9 d		Oct. 3		108 Baidu / BNEF
Gasoline	India			+23	-1.9	2/m	Sept. 1-30	2.66m tons	Bberg
Diesel	India			+15	+1.3	2/m	Sept. 1-30	5.99m tons	Bberg
LPG	India			+15	+4.3	2/m	Sept. 1-30	2.49m tons	Bberg
Jet fuel	India			-12	+3.9	2/m	Sept. 1-30	545k tons	Bberg
Total Products	India	+8.1	+14	+6.1	-3.6 m		September	17.2m tons	PPAC
Toll roads volume	France	-0.7		+1.8	m		September	n/a	Atlantia
Toll roads volume	Italy	-0.5		+1.1	m		September	n/a	Atlantia
Toll roads volume	Spain	-1.5		-2.6	m		September	n/a	Atlantia
Toll roads volume	Brazil	+2		+6.1	m		September	n/a	Atlantia
Toll roads volume	Chile	-4.7		+10	m		September	n/a	Atlantia
Toll roads volume	Mexico	+7.8		+12	m		September	n/a	Atlantia
Gasoline	Spain	+6.3			-11 m		September	533k m3	Exolum
Diesel (and heating oil)	Spain	+0.2			+0.8 m		September	2284k m3	Exolum
Jet fuel	Spain	+41			-5.9 m		September	594 m3	Exolum
Total oil products	Spain	+6.6			-1.4 m		September	3411 m3	Exolum
Road fuel sales	France	-2.3			-3.6 m		August	4.114m m3	UFIP
Gasoline	France	+4.8		+17	m		August	n/a	UFIP
Road diesel	France	-5		-6.3	m		August	n/a	UFIP
Jet fuel	France	+38		-16	+3.8 m		August	714k m3	UFIP
All petroleum products	France	-0.6			+2.1 m		August	4.638m tons	UFIP
All vehicles traffic	Italy	unch			-4 m		September	n/a	Anas
Heavy vehicle traffic	Italy	-3			+23 m		September	n/a	Anas
Gasoline	Portugal	+9.3	+18	+1	+20 m		August	112k tons	ENSE
Diesel	Portugal	+7.3	+13	+0.4	+15 m		August	453k tons	ENSE
Jet fuel	Portugal	+59	+161	+1	+1 m		August	159k tons	ENSE

Notes: Click here for a PDF with more information on sources, methods. The frequency column shows w for data updated weekly, 2/m for twice a month and m for monthly. The column showing “vs 2020” is used for some data, such as comparing Portuguese jet fuel sales for August 2022 vs August 2020.

In DfT UK daily data, which is updated once a week, the column showing versus 2019 is actually showing the change versus the first week of February 2020, to represent the pre-Covid era.

In BEIS UK daily data, the column showing versus 2019 is actually showing the change versus the average of Jan. 27-March 22, 2020, to represent the pre-Covid era. The publication frequency switched from weekly to monthly, after July 28.

Atlanta is publishing toll road data on a monthly basis, rather than the weekly format seen in 2021, and the US DoT also switched to monthly data after the week ended April 3.

City congestion:

Measure	Location	% chg vs avg 2019	% chg m/m	Oct. 10	Oct. 3	Sept 26	Sept 19	Sept 12	Sept 5	Aug 29	Aug 22	Aug 15	Aug 8
		(for Oct. 10)		Congestion mins added to 1 hr trip at 8am* local time									
Congestion	Tokyo	-79	-77	8	34	38	7	34	31	32	35	8	32
Congestion	Taipei	-90	-92	4	34	37	34	45	37	29	29	26	27
Congestion	Jakarta	-6	-3	37	36	34	36	38	37	36	38	39	37
Congestion	Mumbai	-49	-18	25	21	28	38	30	22	29	32	3	26
Congestion	New York	-83	-86	5	31	16	33	38 zero		17	13	14	17
Congestion	Los Angeles	-27	-32	26	37	27	37	38	2	35	33	31	19
Congestion	London	+41	+24	53	41	49	4	43	37	2	20	18	17
Congestion	Rome	+9	+26	53	56	40	54	42	41	12	5 zero		8
Congestion	Madrid	-14	+13	31	31	29	29	27	17	9	4 zero		3
Congestion	Paris	-12	-17	39	49	44	46	47	45	25	14	1	10
Congestion	Berlin	-13	-2	29	1	26	28	30	28	25	25	19	16
Congestion	Mexico City	-23	-20	38	39	40	45	47	50	44	37	37	32
Congestion	Sao Paulo	-28	-2	31	29	38	31	32	32	39	31	33	40

Source: TomTom. Click here for a PDF with more information on sources, methods.

* 9am statistics are used for Mumbai. All other cities use 8am.

NOTE: m/m comparisons are Oct. 10 vs Sept. 12. Tokyo, Taipei and US cities had public holidays on Oct. 10, reducing traffic flows, as did Berlin on Oct. 3. TomTom has been unable to provide data on most Chinese cities since April 2021. Taipei and Jakarta were added to the table in December 2021.

Chinese City Congestion:

Measure	Location	% chg vs Jan. 2021	% chg m/m	% chg w/w	Oct. 3	Sept 26	Sept. 19	Sept. 12	Sept. 5	Aug. 29	Aug. 22	Aug. 15	Aug. 8	Aug. 1
		(compare vs Oct. 3)												
Congestion	Beijing	+17	-8.1	-9.2	117	128	121	124	127	120	124	111	109	114
Congestion	Chengdu	+2	+31	-16	102	121	79	73	77	93	97	100	93	86
Congestion	Chongqing	+8	+8.8	-11	108	122	109	107	100	73	84	83	88	93
Congestion	Guangzhou	+15	-1.9	-2.5	115	118	120	118	118	121	114	111	112	109
Congestion	Shanghai	+21	-14	-7.9	121	131	142	128	140	123	120	112	113	108
Congestion	China-15	+8	+0.9	-7.1	108	116	111	107	107	103	105	102	103	101

Source: BNEF calculations based on Baidu congestion data, showing a seven-day moving average indexed against a January 2021 baseline of 100. China-15 is the weighted average of the 15 cities with the highest number of vehicle registrations. m/m comparisons are Oct. 3 vs Sept. 5.

Air Travel:

Measure	Location	y/y	vs 2 yrs ago	vs 2019	m/m	w/w	Freq.	Latest Date	Latest Value	Source
changes shown as %										

Airline passenger throughput per day	US	+15	+151	+3.6	+8	+13 d		Oct. 10	2.40m	TSA
Airline passenger throughput (7d avg)	US	+13	+163	-10	+5.8	+9.7 d		Oct. 10	2.21m	TSA
All flights	Worldwide	+12	+41	+7.9	+3.9	+0.5 d		Oct. 10	210,275	Flightradar24
Commercial flights	Worldwide	+13	+56	-10	+6.2	+6.7 d		Oct. 10	106,993	Flightradar24
Air traffic (flights)	Europe			-12	-6.8	-2.2 d		Oct. 10	28,656	Eurocontrol
Air traffic	UK			-12	-4.5	-1.5 d		Oct. 10	5,507	Eurocontrol

(flights)								
Air traffic (flights)	Germany			-22	-3.3	unch	d	Oct. 10 4,960 Eurocontrol
Air traffic (flights)	Italy			-3.4	-7.1	-2.3	d	Oct. 10 3,654 Eurocontrol
Air passenger traffic per month	China	+44	-30	-47	-1.7		m	August 2022 32.3m CACC
Heathrow airport passengers	UK	+171	+326	-21	-4.3		m	August 2022 6.04m Heathrow

NOTE: Comparisons versus 2019 are a better measure of a return to normal for most nations, rather than y/y comparisons.

FlightRadar24 data shown above, and comparisons thereof, all use 7-day moving averages, except for w/w which uses single day data.

Refineries:

Measure	Location	y/y	chg vs 2019	m/m chg	Latest as of Date	Latest Value	Source
		Changes are in ppt unless noted					

Crude intake	US	+1.4%	-0.3%	+0.2%	Sept. 30	16.0m b/d	EIA
Utilization	US	+1.7	+4.9	+0.4	Sept. 30	91.3 %	EIA
Utilization	US Gulf	+5.5	+5.7	-0.2	Sept. 30	94 %	EIA
Utilization	US East	-3.2	+19	-14	Sept. 30	85.9 %	EIA
Utilization	US Midwest	-2.8	-1.6	+8.1	Sept. 30	91.2 %	EIA
Utilization (indep. refs)	Shandong, China	-1.7	+1.9	+4.8	Oct. 7	66.3 %	Oilchem

NOTE: US refinery data is weekly. China Shandong utilization is updated twice a month. Changes are shown in percentages for the rows on crude intake and Chinese apparent oil demand, while refinery utilization changes are shown in percentage points. SCI99 data on Chinese refinery run rates was discontinued in late 2021.

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This story was produced with the assistance of Bloomberg Automation.

China Won't Rush Its Clean Energy Transformation, Xi Says

2022-10-16 06:46:06.856 GMT

By Bloomberg News

(Bloomberg) -- President Xi Jinping has promised a slow and steady end to the growth of planet-warming emissions in China, with energy security taking top priority as the country contends with a flagging economy and tumult on global fuel markets. In a two-hour speech to kick off the weeklong Communist Party Congress, Xi said that prudence would govern China's efforts to peak and eventually zero-out carbon emissions. The cautious wording comes after a spate of high-profile power shortages in recent years, and as global energy costs have soared after Russia's invasion of Ukraine upended trade flows. The speech made China's path to decarbonization clear: It won't stop burning fossil fuels until it's confident that clean energy can reliably replace them.

"We will work actively and prudently toward the goals of reaching peak carbon emissions and carbon neutrality," Xi said in his address. "Based on China's energy and resource endowments, we will advance initiatives to reach peak carbon emissions in a well-planned and phased way, in line with the principle of getting the new before discarding the old."

China is the world's largest emitter of greenhouse gases, and Xi electrified climate activists two years ago when he vowed to reach carbon neutrality by 2060 after peaking emissions before 2030. The announcement sparked a massive surge in investment in clean energy by local governments and state-owned firms.

Read how Xi's Green Dream has been tested by a weak economy and global strife

But last year, focus began to return to China's mainstay fuel of coal after a shortage triggered widespread power curtailments to factories, slowing economic growth. The country vowed to increase mining capacity, and production has risen to record levels this year, keeping storage sites well stocked and reducing imports.

China will also expand exploration and development of oil and gas resources, and increase reserves and production as part of the measures to ensure energy security, according to a congress work report released after Xi's speech.

China invests more than any other country in clean energy, and is on pace to shatter its record for new solar installations this year. But it hasn't been able to outrun the growth in energy demand, forcing it to burn more coal and setting a record for consumption last year that is likely to be eclipsed in 2022.

Xi made clear that fossil fuels and renewables will have to work in tandem. "Coal will be used in a cleaner and more efficient way and we will speed up the planning and development of new energy systems," he said.

He also vowed that China would be actively involved in the global response to climate change. His government was criticized

after it broke off climate negotiations with the US in August
after House Speaker Nancy Pelosi's visit to the contested island
of Taiwan.

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Oil & Gas industry

Chevron chief blames western governments for energy crunch

Mike Wirth points to 'unintended consequences' of pivot away from fossil fuels



Mike Wirth, Chevron chief executive, says the debate over energy has 'skewed towards climate, taking affordability and security for granted' © Jason Henry/FT

Derek Brower in San Ramon, California YESTERDAY

Western governments have made a global oil and gas crunch worse by “doubling down” on climate policies that will make energy markets “more volatile, more unpredictable, more chaotic”, the head of US supermajor Chevron has warned.

Mike Wirth, Chevron’s chief executive, said a premature effort to transition from fossil fuels had resulted in “unintended consequences”, including energy supply insecurity from [crisis-hit Europe](#) to California.

Despite heavy global investment in renewables in the past 20 years, fossil fuels still met about 80 per cent of global demand, and governments had to hold an “honest conversation” about the scale of the energy challenge, Wirth said.

“The conversation [about energy] in the developed world for sure has skewed towards climate, taking affordability and security for granted,” Wirth said in an interview at the company’s headquarters in San Ramon, California.

“The reality is, [fossil fuel] is what runs the world today. It’s going to run the world tomorrow and five years from now, 10 years from now, 20 years from now.”

The supermajor boss's comments come as western governments' climate commitments clash with an energy crisis following Russia's invasion of Ukraine, which has sent inflation soaring and threatens to topple the world into recession.

Last week, Russia and its ally Saudi Arabia also agreed to begin [cutting oil production](#) next month, a sign that Moscow's energy war on Europe was taking on a global complexion.

But Wirth said the source of the energy crunch predated Russia's invasion and followed years of under-investment in new oil supply. Annual capital spending on oil and gas projects was now about half the rate seen in years before the pandemic, he said, even though demand for the energy has continued to rise.

Meanwhile, spending on alternatives to oil and gas was "woefully short, trillions of dollars short", Wirth said. The mismatch "illustrates the risk in moving from a system that keeps the world functioning today aggressively to another system, and shutting down nuclear, shutting down coal, discouraging oil and gas", he added.

Wirth's comments are likely to draw criticism from environmental campaigners who believe oil groups are seizing on the energy crisis to deepen dependence on fossil fuels despite the urgent threat of global warming.

Chevron is the world's second-biggest supermajor by market capitalisation, after ExxonMobil, and produces almost 2 per cent of the world's oil.

Wirth was among energy executives [called to testify](#) in Congress last year as part of an investigation into what lawmakers described as "Big Oil's disinformation campaign to prevent climate action".

Chevron last year announced plans to spend [\\$10bn over seven years on low-carbon technologies](#), and has an "aspiration" to reduce its operational emissions to net zero by 2050, although this does not include pollution from the products it sells. Total capital spending this year would amount to \$15bn, including \$800mn on its low carbon business.

"The IPCC [UN climate report] concludes that anthropogenic climate change is a real thing and that the use of fossil fuels has contributed, and so we accept that," Wirth said.

But he rejected the blame attributed to oil companies for providing "a legal product that complies with all the laws", and for which there was still consumer demand —

and reiterated his pledge that Chevron would continue to increase oil supply.

“If people want to stop driving, stop flying . . . that’s a choice for society,” he said. “I don’t think most people want to move backwards in terms of their quality of their life . . . our products enable that.”

The US Congress recently passed [sweeping new climate legislation](#), including \$370bn worth of subsidies for clean energy, designed to accelerate an energy transition in the US.

But the Biden administration has also pushed for more immediate solutions to drive down the soaring US petrol prices that have dented the president’s approval ratings. Last year, Biden took aim at “potentially illegal conduct” by companies such as Chevron and ExxonMobil and [clashed with Wirth](#) this summer after telling the supermajors their record profits were “not acceptable”.

The administration has also released oil from its emergency stockpiles, loosened anti-smog rules and considered cutting fuel exports from the US in a bid to shelter domestic consumers from crude price rises.

Since Russia’s invasion of Ukraine, the White House has also called for US shale producers, including Chevron, to increase domestic supply, although producers are increasingly eschewing pricey new drilling campaigns in favour of bumper dividends.

Wirth said this was a dilemma for an administration that had entered office with a “very clear agenda . . . to make it more difficult for our industry to deliver energy to our customers”.

The White House’s responses to the global energy crisis were now “all tactical”, said Wirth.

“There’s not a lot of deep energy expertise in the administration . . . There’s a point of view that you find quite visible in the administration that we can move from system A to system B very quickly and easily. And it’s not that simple.”

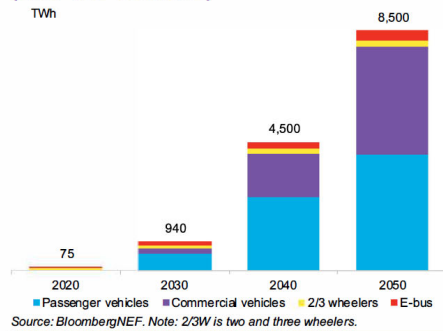
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Executive summary

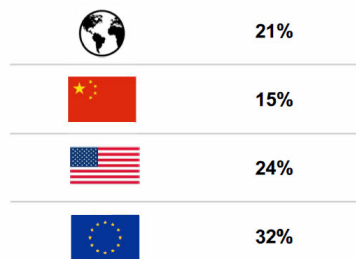
Passenger electric vehicles have surpassed 20% of total sales in China and Europe in recent quarters, and adoption is growing across the rest of the world too. By 2040, BloombergNEF expects there to be over 700 million EVs in the global fleet. While this bodes well for decarbonizing road transport, there are likely to be challenges ahead. Will electricity suppliers and grids be able to cope with demand? How will smart charging scale up? Has the current rise in electricity prices affected the industry? Will we be able to install the charging infrastructure required to sustain electric vehicle adoption? This talk was given at the BNEF Summit London on October 11, 2022.

EVs will grow to 21% of global electricity demand in a net-zero future

Global electricity demand from EVs (Net Zero Scenario)



Electricity demand from EVs as a share of all demand in 2050 (Net Zero Scenario)



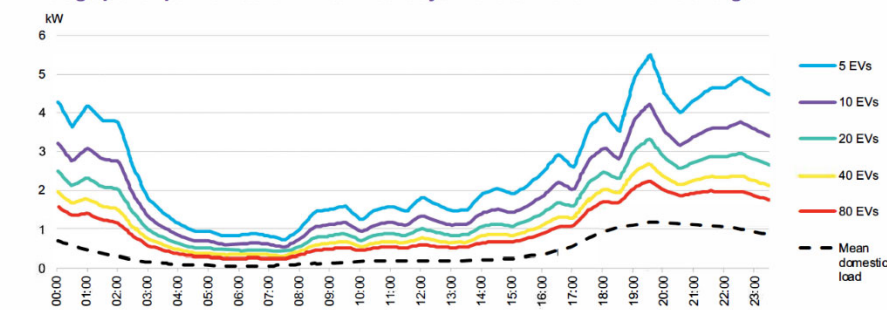
EVs significantly increase household electricity demand



Source: Bloomberg, Tesla, BMW, Ofgem, US EIA. Note: Figures on the left show annual consumption for EVs; those on the right are for average households without EVs.

Diversification of demand limits additional peak load to 1-2kW per house

Average power per vehicle on winter weekdays in the UK for a 7kW home charger



EU Ambassadors Annual Conference 2022: Opening speech by High Representative Josep Borrell

10.10.2022

Brussels

Check against delivery!

Good morning,

Welcome, welcome to all of you. I see some of you that I know personally, others I still do not know. But in any case, [I am] very happy to be here and to be able to discuss in person. Nothing substitutes the real interaction - the personal interactions - and I think that it is important that we see each other, and we discuss how do we work.

You will have an entire week and you will be hearing from many people – from our President [of the European] Commission [Ursula von der Leyen], [President of the European] Council [Charles Michel], Commissioners, think tankers, journalists. You will discuss about how the European Union should position [itself] in this competitive and fractured world.

I am the High Representative of the European Union for Foreign and Security Policy. I am in charge of building a Common Foreign and Security Policy (CFSP) and the [European] External Action Service – and in particular you - are supposed to support me on doing that.

And in doing that, we have to deal with the new ‘frontiers of diplomacy’ - which is the title of this meeting. **The new frontiers of diplomacy – it is a big range of issues**

You will talk about how to revitalise multilateralism at this time of power politics. You will talk about European security, in light of the war in Ukraine, but not only – there are other security crises, which are looming. We will talk about [the] energy and climate crisis and what the European Union should do. Both things go together. **We are facing one of the biggest energy crises since the first oil shock in the seventies. At that time, I was a student at the French Institute of Petroleum in Paris. It was 1972 and I was told that there was only oil for 20 years. Well, we are in 2022 and we still have a lot of oil, but at a very high price. So, energy and climate – both things together, are going to be a big challenge.**

We will talk about disinformation, **foreign interference in our political processes**, the digital revolution, the Global Gateway, gender and diversity. It is a very nice programme. I am not going to talk about all of them, and I am not going to follow all these different issues. It would be impossible, and I am not a specialist on almost any of them.

I want to structure my address today along two things. First, the ‘what’ questions. Second, the ‘how’ questions.

The ‘what’ questions [are]: What is happening? What is coming? What should we do?

And the ‘how’ questions [are]: How do we operate? How do we work? How do you work? How can we get more and better results?

This is not a moment when we are going to send flowers to all of you saying that you are beautiful, you work very well and we are very happy, we are one big family, etc. This is a moment to talk among

ourselves about what we do [not do] well enough, why I am not always happy with the way my [EU] Delegations work, and to send clear messages about how I would like you to improve.

First, about the 'what'. The world we are facing – as I said, I am not a specialist on almost any of the issues, but I have a broad political understanding. How are we facing the world? What world is this?

Well, it is a world of radical uncertainty. The speed and scope of change is exceptional. We should not try to deny it. We should not try to resist it. It would be a futile effort. We have to accept it and to adapt [to] it, prioritising flexibility and resilience.

But uncertainty is the rule. Events that one could imagine that they will never happen, they are happening one after the other.

At this pace, the black swan will be the majority. It will not be white swans – all of them will be black – because one after the other, things have happened that had a very low probability of happening, nevertheless they happened, and they had a strong impact and certainly they happened.

Let me try to summarise what is happening to us. Maybe I am wrong, but I want to discuss with you about it. I think that we Europeans are facing a situation in which we suffer the consequences of a process that has been lasting for years in which we have decoupled the sources of our prosperity from the sources of our security. This is a sentence to provide the headline, and I am taking that from Oliver Schmitt, who has been developing this thesis – I think - quite well.

Our prosperity has been based on cheap energy coming from Russia. Russian gas – cheap and supposedly affordable, secure, and stable. It has been proved not [to be] the case. And the access to the big China market, for exports and imports, for technological transfers, for investments, for having cheap goods. I think that the Chinese workers with their low salaries have done much better and much more to contain inflation than all the Central Banks together.

So, our prosperity was based on China and Russia – energy and market. Clearly, today, we have to find new ways for energy from inside the European Union, as much as we can, because we should not change one dependency for another. The best energy is the one that you produce at home. That will produce a strong restructuring of our economy – that is for sure. People are not aware of that but the fact that Russia and China are no longer the ones that [they] were for our economic development will require a strong restructuring of our economy.

The access to China is becoming more and more difficult. The adjustment will be tough, and this will create political problems.

On the other hand, we delegated our security to the United States. While the cooperation with the Biden Administration is excellent, and the transatlantic relationship has never been as good as it is today – [including] our cooperation with the United States and my friend Tony [Anthony] Blinken [US Secretary of State]: we are in a fantastic relationship and cooperating a lot; who knows what will happen two years from now, or even in November? What would have happened if, instead of [Joe] Biden, it would have been [Donald] Trump or someone like him in the White House? What would have been the answer of the United States to the war in Ukraine? What would have been our answer in a different situation?

These are some questions that we have to ask ourselves. And the answer for me is clear: we need to shoulder more responsibilities ourselves. We have to take a bigger part of our responsibility in securing security.

You - the United States - take care of our security. You - China and Russia – provided the basis of our prosperity. This is a world that is no longer there.

Inside our countries, there is a radical shift, and the radical right is increasing in our democracies, democratically – it is the choice of the people, it is not an imposition from any power. It is the people who go and vote here and there. I am not going to blame anyone, but you have in mind what I am talking about. The radical right is increasing their grasp in European politics.

So, we have a difficult cocktail – internal and external – and the old recipes do not work anymore. We have mounting security challenges and our internal cohesion is under threat.

So, let us look at the past few months in a little bit more detail.

Some things have happened in the past that we knew they could happen, but some of them have been a surprise.

First, how not? Ukraine. The war in Ukraine has persisted. We did not foresee how effectively Ukraine would resist. First, we did not believe that the war was coming. I have to recognise that here, in Brussels, the Americans were telling us “They will attack, they will attack”, and we were quite reluctant to believe it. And I remember very well when [US Secretary of State] Tony Blinken phoned me and told me “well, it is going to happen this weekend”. And certainly, two days later, at five o’clock in the morning, they started bombing Kyiv. We did not believe that this was going to happen, and we did not foresee that Ukraine was ready to resist as fiercely and as successfully as they are doing. Certainly, thanks to our military support. Without it, it would have been impossible, but they put some things from their part.

We had not foreseen either the capacity of Putin to escalate [with regards to] the level of mass mobilisation and open nuclear threats. I suppose that all of you have been reading and re-reading the latest speech of Putin when he declared the annexation. That is a must. Every European citizen must read this speech – and you, in particular. You have to explain to the world what does it mean, what does this approach against the West mean, and which are the real reasons of this war.

Second, the deep US-China competition. That was not a surprise. But the escalation of tension in Taiwan – yes, it was not in the agenda. It was triggered by an individual travel of a personality that brought the Taiwan Strait at the edge of – I would not say a war, but – a lot of war games.

The third issue was the world food and energy crises. It was predictable, it was predicted but not with the severity it has taken. And I am afraid that we are only at the beginning, that the food crisis will only make things worse in many parts of the world where you are deployed. [I am coming from \[a visit in\] Somalia](#) and, certainly, the Horn of Africa is a good example of how the climate change plus the war – both things together – are creating a humanitarian crisis of “dantesque” proportions that here, in Europe, we are not aware of.

This is a perfect storm. First, the prices increasing. Second, the reaction of the Central Banks raising interest rates in the United States. Everybody has to follow, because otherwise their currency will be devaluated. Everybody is running to raise interest rates. **This will bring us to a world recession.** The world following the Fed [the Federal Reserve], the world implementing the same monetary policy - because there is no other way, otherwise the capital will flow - reminds me of what was happening in Europe before the euro when everybody had to follow the monetary policy dictated by Germany. Because if you did not do the same thing, the capital was flowing, and you had to do it even if it was not the right policy for your internal reasons. What was happening among us before the euro is happening today on the world stage.

Then, the security situation. Do not limit it to Ukraine. We have a lot of security problems in our neighbourhood, and I want to address our colleagues who are in the Sahel. It was not a surprise either what is happening in the **Sahel. But certainly, the degree to which Russia is becoming a major factor in African theatres – yes, it is a surprise. We could not – we should [have] -, but we did not imagine how quickly, from the Central African Republic, now to Mali, and I do not know what is happening in Burkina Faso.**

So, do not look only at the Ukrainian crisis.

Well, this is what is happening. **Let us have a look now at the mega trends that will shape our world: Ukraine, but not only Ukraine. I want to insist on this.**

Last year, everybody was talking about Afghanistan. Afghanistan was the big issue, remember in August [and] in September [2021]. Where is Afghanistan now? In Afghanistan, certainly, but it is no

longer on the front pages of the newspapers. It looks like Afghanistan does not exist. The same problems exist – they are the same ones - but nobody talks about it. So, take care with the issues that appears – a crisis and then a following crisis erases the previous one, it looks like it is being solved but it is not solved. [It] is still there. There are many crises around the world, which are the trends that move this world.

First, a messy multipolarity. There is the US-China competition. This is the most important “structuring force”. The world is being structured around this competition - like it or not. The two big powers – big, big, big, very big – are competing and this competition will restructure the world. And this will coexist with a broader “democracies vs. authoritarians”, a big divide. I would not insist a lot on it because on our side, there are a lot of authoritarian regimes. We cannot say “we are the democracies”, and the ones which follow us are also democracies - that is not true. That is not true.

Yes, there is a fight between the democratic systems and the authoritarian systems. But authoritarianism is, unhappily, developing a lot. Not just China, not just Russia. There is an authoritarian trend. Sometimes, they are still wearing the democracy suit, but they are no longer democracies. There are some who are not democracies at all – they do not even take the pity to look like democracies.

So, this competition is a structuring force. The fight between democracies and authoritarians is there. But it is much more than that.

The world is not purely bipolar. We have multiple players and poles, each one looking for their interest and values. Look at Turkey, India, Brazil, South Africa, Mexico, Indonesia. They are middle powers. They are swing states – they vote on one side or the other according to their interests, not only their theoretical values. But these people – I mention them again: Turkey, India, Brazil, South Africa, Mexico, Indonesia – are players and poles. This creates this messy multipolarity. These people – and there are a lot of people inside – are there, and not always following us. Look at Mexico’s President [Andrés Manuel López Obrador]’s speech yesterday. Who is our Mexico delegate? Is he here? You heard what the Mexican President said about us yesterday.

The second characteristic is a competitive world where everything is being weaponised. Everything is a weapon: energy, investments, information, migration flows, data, etc. There is a global fight about access to some strategic domains: cyber, maritime, or outer space.

The third characteristic of this world is the rising nationalism, revisionism plus identity politics. Putin does not want to re-store communism. He knows that nobody wants communism again. Putin is using a resource, which is an everyday resource, very powerful and they never disappear. And this is radical nationalism and imperialism.

And in the middle of that, we have the Global South. These people do not want to be forced to take sides in this geopolitical competition. More [importantly], they feel that the global system does not deliver, and they are not receiving their part. They are not receiving enough recognition. They do not have the role they should have according to their population and their economic weight. And when facing these multiple crises – these multipolar crises - financial, food and energy crises – it is clear that they are not there following us because they blame us, rightly or not.

Let us see what will happen at [COP27 in] Sharm-el-Sheikh. But look at the Democratic Republic of the Congo (DRC) – who is our delegate in the DRC? You were there, you listened to what happened in the last meeting. The DRC said that they are not going to sacrifice their economic development to the climate fight.

We see that the war between states is coming back – like in the films, like in the Second World War (tanks, infantry). But, apart from that, there [are] the hybrid wars, there is the disinformation war that continues. I want to stress the importance of the war on information and disinformation – I will talk about it later.

This is what is coming, this is what we have to face. Let me go back to “how”.

I think that we have to think more politically. I think that we need to be more proactive, more reactive. **We have to make a link between all these problems**. We still operate in silos - I can tell you. I am supposed to be the one who bridges the [European] Commission and the Council and, inside the Commission, my colleagues from different policy [fields]. But we continue working in silos, and each policy continues having its own logic and its own rhythm – be it climate, be it trade, be [it] whatever.

Commission, College, the *communitarisation* of policies through the Commission, the nationalisation of policies through the Council. It continues being a difficult task. Certainly, the national policies and the Community policies, we want to bridge them – with Team Europe and the Global Gateway – but we [have] still a lot to do to be one power, someone that acts on behalf of the Union as a whole.

We think too much internally and then we try to export our model, but we do not think enough about how the others will perceive this exportation of models. Yes, we have the “Brussels effect” and we continue setting standards, **but I believe that, more and more, the rest of the world is not ready to follow our exportation of model**. “This is one model, it is the best one, so you have to follow it”.

For cultural, historical and economic reasons, this is no longer accepted.

We have to listen more. We have to be much more on “listening mode” to the other side – the other side is the rest of the world. We need to have more empathy. We tend to overestimate the rational arguments. “We are the land of reason”. We think that we know better what is in other people’s interests. We underestimate the role of emotions and the persisting appeal of identity politics.

Remember this sentence: “It is the identity, stupid”. It is no longer the economy, it is the identity. More and more, some identities are raising and willing to be recognised and accepted and not to be fused inside the “West” approach.

I think that we have to be faster and to take risks. I need you to report fast, in real time on what is happening in your countries. I want to be informed by you, not by the press. Sometimes, I knew more of what was happening somewhere by reading the newspapers than reading your reports. Your reports come sometimes too late. Sometimes, I read something happening somewhere and I ask “what [does our Delegation [say]. For the time being, nothing. “For the time being, nothing” is not affordable. You have to be on 24-hours reaction capacity. Immediately - something happens, you inform. I do not want to continue reading in the newspapers about things that happened somewhere with our Delegation having said nothing.

I do not want to “blame and shame”, but this is something that I have to tell you. I want you to be more reactive, 24 hours a day. We are living in a crisis, you have to be in the crisis mode. Explain what is happening - quickly, immediately. Even if you do not have the full information on the first hours, show that you are there. I should be the best-informed guy in the world. **Having all of you around the world, I should be the best informed person in the world – at** least as much as any Foreign Affairs Minister. I am “Foreign Affairs Minister of Europe”. Behave as you would behave if you were an Embassy: send a telegram, a cable, a mail - quickly. Quickly, please, react.

Take more initiative. Be ready to be bold. Whatever we do, there are taboo-breaking decisions. We break taboos on the Ukrainian war, using the European Peace Facility to buy arms – something that at the beginning [was] “oh, that is impossible, we have never done it”. “We have never done it” is not a recipe. Maybe we have to start doing things that we have never done in the past. When we hesitate, we regret it.

I think that, for example, [of] the discussion on the Ukrainian Training mission [EU Training Mission in Ukraine]. We had been discussing about the Ukrainian Training Mission before the war for months. “Do we have to send a training mission to Ukraine?”, “No, come on, Ukraine, training mission, military in Ukraine...”. And then, *boom*, the war comes and people said: “we should have done it.” Yes, we should have done it. And now we are doing it quickly – well, quickly for European standards. Quickly for European standards means a couple of months. But unhappily, the war is still there, our training mission will have had the possibility of acting.

We have to define better our goals and prepare for that. You know, here, we work a lot on seven-years scenarios, than one-year plan, and announcing big figures that people sometimes [do not] believe anymore. When we announce big figures, take into consideration which is the time scope of these figures. It does not mean anything one figure if you do not put a time dimension. “We are going to support with X money”. And you plan to spend it in how many years? Tomorrow or in the next seven years? Or when you say, “in the past, we have been supporting this country with this amount of money”. This amount of money - which is the time dimension? It has been spent in one year or in 10 years? Because it is completely different. We have the habit of just mentioning figures, avoiding the time dimension, and it does not mean anything.

Please, be prepared for better explanation of what we do with a time schedule. We should look for a balance between what we announce and what we implement, because sometimes some announcements discredit us if they are not being followed by concrete actions.

In general terms, I would say that we need a better balance between crisis-management and long-term [planning]. We live in crisis management: “what’s happening today?”, “what happened yesterday?”, “what is happening tomorrow?” Crisis, crisis, crisis. Foreign policy is not just managing crises one after the other. We have to try to think in the medium and long-term. With the pandemic, with the climate, with the energy crisis, we have to think a little bit about what is longer than what is going to happen tomorrow and what [was happening] yesterday.

We have to be a little bit out of the crisis mode. **This will require thinking more about how technology is reshaping the world and the nexus between energy, climate and raw materials.**

The other day, at the Prague [European] Council, President [of France, Emmanuel] Macron said that very clearly: **we cannot substitute one dependency by another. We are happy that we are importing a lot of Liquefied Natural Gas (LNG) from the United States – at a high price, by the way - and substituting Russian gas by American and Norwegian gas, or Azerbaijani gas – well, from Azerbaijan it’s a small quantity. But what would happen tomorrow if the United States, with a new President, decided not to be so friendly with the Europeans? Why not? You can imagine the situation in which our critical dependency from LNG coming from the United States could also be in crisis. Or that, tomorrow we do not have the cobalt, we do not have the rare materials that [come from] the DRC, South America, Afghanistan – they are [as] critical for us as oil and gas.**

We do not have a clear understanding that we are creating new dependencies in this link between energy, climate [and] technology. This is something that we have to be very clear on.

The last word about communication. Communication is our battlefield: we fight in communication. We do not fight with arms in [this] battlefield – thank, God – but we have to fight on communication. I spend a lot of time doing communication. Talking [during] the doorstep, the post-meeting step, my blog. My blog is not “my” blog. It is not my intellectual amusement, it’s my “consigna” [guidance]. And I am still surprised that, in some delegations, it seems that they do not take enough consideration of our communication, and they do not tweet and re-tweet the messages that we are delivering from the centre. You have to be a network that is repeating, transmitting, insisting.

This is a battle that we are not winning because we are not fighting enough. We do not understand that it is a fight. Apart from conquering a space, you have to conquer the minds. The Russians and the Chinese are very good in that. They are industrialising, they have [troll] farms systematically repeating, reaching everybody in the world - once and again, once and again. We do not have a Russia Today or a Sputnik, not even Radio Liberty. But I think that all of you have to do much more on communication. We provide you with materials and I have the feeling that you do not transmit the message strongly enough.

I need my delegations to step up on social media, on TV, in debates. Retweet our messages, our [European] External Action Service materials. Certainly, my blog, which is the everyday “consigna”. Tailor it to the local circumstances, use local languages. The first problem is that we speak English but a lot of people around the world do not speak English and do not understand if we address them

in English. Do it in local languages. We still have a “reflex” of European culture: we speak our languages, and we expect the rest of the world to understand us. Many, many people around the world do not understand, not even Spanish.

I need you to be much more engaged in this battle of narratives. It is not something secondary. It is not just winning the wars by sending tanks, missiles, and troops. It is a big battle: who is going to win the spirits and the souls of people?

When we say that China is our rival, systemic rival, systemic rival means that our systems are in rivalry. And the Chinese are trying to explain to the world that their system is much better. Because, well, maybe you are not going to choose your head of government, but you will have food, and heat and social services, you will improve your living conditions. Many people in the world, yes, they go and vote and choose their government, but their material conditions are not being improved. And in the end, people want to live a better life.

We have to explain what are the links between political freedom and a better life. We, Europeans, we have this extraordinary chance. We live in the world in this part of the world where political freedom, economic prosperity and social cohesion are the best, the best combination of all of that. But the rest of the world is not like this. Our fight is to try to explain that democracy, freedom, political freedom is not something that can be exchanged by economic prosperity or social cohesion. Both things have to go together. Otherwise, our model will perish, will not be able to survive in this world.

We are too much Kantians and not enough Hobbesians, as the philosopher says. Let's try to understand the world the way it is and bring the voice of Europe. And bring to me, to my service, to the External Action Service Headquarters what you feel, what you understand, what you see. Inform us. You are my eyes, my ears around the world.

I count on you, but the task is not easy, and certainly we can do it much better.

Thank you.

Link to the video: <https://audiovisual.ec.europa.eu/en/video/I-230995>

Christian Sewing's keynote at the Handelsblatt Banken Summit 2022

- Check against delivery -

Dear Mr Matthes, Ladies and Gentlemen,

I am delighted to be with you today at a time that is more challenging than anything I have experienced in more than 30 years of banking. While the Covid pandemic proved to be a temporary shock to the world economy, **Russia's war against Ukraine has destroyed a number of certainties on which we built our economic system over the past decades.**

- **The brakes have been applied to globalisation and,** in the face of major geopolitical tensions, it is unlikely to pick up its old momentum any time soon.
- As a result, **many seemingly perfect global value and supply chains have been disrupted.**
- **The workforce, which for a long time was thought to be available without limit, has become a bottleneck factor worldwide.**
- **At the same time, electricity and gas have become scarce and extremely expensive. Energy is set to stay an expensive commodity in Europe for some time. This represents a structural competitive drawback and it is a threat to our economy. In the long term, we will need to respond with structural solutions.**

These points are the most important reasons for soaring inflation **As a result, we will no longer be able to avert a recession in Germany.**

Yet we believe that our economy is resilient enough to cope well with this recession – provided the central banks act quickly and decisively now. Right now many people still have their savings to fall back on to pay the higher prices; many companies are still sufficiently financed. **But the longer inflation remains high, the greater the strain and the higher the potential for social conflict.**

Three lessons

This combination of short and longer-term challenges seems unique at this point. **And while it is essential we meet the short-term needs, we also have to explore what this means for our long-term ability to compete. The greatest complexity still lies ahead of us** when we begin to draw the real lessons of the past few years. In my view, there are three main lessons:

Firstly, we have seen how dangerous it is for us in Europe to become too dependent on individual countries or regions. **At the moment, the main focus is on energy and raw material imports from Russia – and rightly so.** We must do everything we can to ensure that our cars, our heating and our factories are not only able to run when an autocrat in the Kremlin is favourably disposed towards us. All efforts by politicians and companies to change this deserve unconditional support.

That is not enough, though. When it comes to dependencies, **we also have to face the awkward question of how to deal with China. Its increasing isolation and growing tensions, especially between China and the United States, pose a considerable risk for Germany.**

China is a cornerstone of our economy. About 8 percent of our exports go to China and 12 percent of our imports are from the country. More than a tenth of the sales of all DAX-listed companies are from China. At the latest during the pandemic it has become clear just how much our supply chains rely on China. **Reducing this dependency will require a change no less fundamental than decoupling from Russian energy.**

At the same time – **and this is my second lesson – we need to tackle the climate crisis with much more resolve than to date.** Climate change is already causing damage of gigantic proportions. In light of Covid and the war in Ukraine, the danger is that the topic will slip down the list of priorities. That would be the biggest mistake we could make, though.

Fighting the climate crisis is a generational task that will radically change the economy and society. Every company will have to face the issue – not just out of its responsibility to society, but to secure its own continued existence. Those who fail today to put sustainability firmly at the centre of their strategy will – in ten years – have trouble selling their products, finding employees or attracting investors. They will disappear from the market.

The third lesson, I believe, is that we have been under the illusion for the past 30 years that we could live forever in an ever more globalised world with no major conflicts and with steady growth. Francis Fukuyama has often been criticised for equating the end of the Cold War with the "end of history". But de facto we acted as if this thesis was correct; we have been acting as if the world was on its way to becoming one big village where everyone is interested in economic cooperation because, after all, everyone benefits from it. That has stopped being the case for some time now, though.

The truth is that 30 years of presumed calm will **now be followed by a period of heightened volatility with economic uncertainty, regular crises and geopolitical conflicts that are also likely to drag on for decades. Trouble spots are not cut off from the rest of the world; they impact other regions in a number of ways.** As such, we must come up with holistic solutions that take this degree of interplay into account. Dealing with this complexity will be a great challenge for us. **Good risk management is the order of the day.**

"We must not leave the playing field and with it the access to global capital markets largely to foreign banks. The past few months should have taught us this. In Germany, we must not allow ourselves to add a further dependency – access to finance – to our current dependencies on gas, raw materials and supply chains." Christian Sewing, CEO

National feat of strength

Let us not delude ourselves: we certainly have our work cut out for us if we are to accomplish these three tasks – reducing dependencies, dealing with permanently higher volatility and driving the historic transformation of our economy. We will only succeed through a concerted joint effort, with politics, business and society all working closely hand in hand. The financial sector must and can play a crucial role.

We need banks that are able to finance these mammoth tasks, while protecting their clients against risks and being reliable partners, accompanying clients worldwide.

And for this we need a domestic financial sector that stands on its own two feet and can assert itself against its global competitors. We must not leave the playing field and with it the access to global capital markets largely to foreign banks. The past few years should have taught us this. In Germany, we must not allow ourselves to add a further dependency – access to finance – to our current dependencies on gas, raw materials and supply chains.

We have the means to prevent this, but we still have much to do. As a financial sector, we have already achieved a lot: we are much more stable and resilient today than we were ten years ago. We are profitable. Our industry has foregone relatively little profit in the first half of the year and even managed to increase revenues. And the loan defaults that the industry faces in the coming months should remain manageable because banks have taken the necessary provisions.

Progress in the financial sector is far from sufficient

That is far from enough, though, if the German financial sector is to play a leading role in the long term. What we need is:

- For us banks to work harder at becoming even more efficient and focusing even more on clients, especially in digital services.
- We need reliable regulation that does not always create higher hurdles and tie up more capital than necessary – capital that is needed right now to finance the economy.
- And sooner or later we will also need consolidation, not nationally, but Europe-wide. Size counts in banking – and if we don't want to hand over the playing field to the Americans, Europe must create the right conditions for big banks. I can only repeat what I've said before: both the European banking union and the capital markets union are essential here.

The above points are not new, but they are becoming more urgent. We are actually very well equipped so there is no reason to talk ourselves down. We are operating in an economy that has shown enormous resilience and that will also navigate the upcoming recession – because corporate balance sheets are strong, and debt is low by international standards. This economy has great potential as long as we focus now on aligning ourselves for the long term and on how to minimise the threat of de-industrialisation: with less regulation, more courage and more pragmatism, this attitude is incredibly important.

And that goes for banks, too. We have proven banks can be part of the solution. We can do much more, though. Before the financial crisis of 2007, just 15 years ago, Europe's banks were more profitable than their competitors in the US. Since then, the Americans have unrelentingly left us behind. We could, of course, agonise over this. Instead, we should rather see it as an incentive to buck the trend. The dominance of American banks is no law of nature.

At Deutsche Bank, we are convinced that the way to achieve this is by being a strong partner to our clients. They need a bank that supports them in all kinds of environments, in all markets and all over the world. This is what we emphasised when we formulated our Global Hausbank aspiration. We have radically transformed our business since 2019 and strategically repositioned ourselves in line with this aspiration.

We are convinced that this strategy will be especially effective in volatile times – because now is the moment when advice and expertise are highly sought after.

And this does not apply to us alone. Despite all the differences between the banks in Germany, we have one thing in common: we were there for our clients during the pandemic, we were there for our clients when Russia invaded Ukraine and we continue to be there – in these volatile times that urgently call for sustainable transformation. We have regained a great deal of trust. Let us work together to create the conditions for renewed dynamic growth across our entire economy.



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October 5, 2022

Mr. Laurence D. Fink
CEO
BlackRock, Inc.
55 East 52nd Street
New York, NY 10055

Dear Mr. Fink:

I write today on behalf of the hardworking citizens of the great state of Louisiana. Thank you for the opportunity to visit with members of your team at the National Association of State Treasurers (NAST) conference. While I appreciate the meeting and look forward to further discussion, I found that the statements your representatives made contradicted most of the public messaging I have read in your annual letters to CEOs or heard you say in the media.

Your blatantly anti-fossil fuel policies would destroy Louisiana's economy.

Therefore, Louisiana Treasury will liquidate all BlackRock investments by the end of 2022. To date we have divested \$560 million. We are strategically divesting over a period of time so state money is not lost to the detriment of our citizens. Once complete, this divestment will reflect \$794 million no longer entangled in BlackRock money market funds, mutual funds or exchange-traded funds (ETFs) holdings.

This divestment is necessary to protect Louisiana from actions and policies that would actively seek to hamstring our fossil fuel sector. In my opinion, your support of ESG investing is inconsistent with the best economic interests and values of Louisiana. I cannot support an institution that would deny our state the benefit of one of its most robust assets. Simply put, we cannot be party to the crippling of our own economy.

In addition, according to my legal counsel, Environmental, Social and Governance (ESG) investing is contrary to Louisiana law on fiduciary duties, which requires a sole focus on financial returns for the beneficiaries of state funds. Focusing on ESG's political and social goals

or placing those goals above the duty to enhance investors' returns is unacceptable under Louisiana law. A letter signed by 19 state attorneys general sent to you recently emphasized this same point.

I fully realize, as your representatives noted during our recent meeting, that BlackRock currently invests in oil and gas companies. Nonetheless, your consistent public messaging has made very clear what BlackRock is demanding from fossil fuel company CEOs and every other company they invest in.

BlackRock has been a champion for ESG investing. Your [2021 letter](#) to CEOs clearly specified that BlackRock's goal is an economy "that emits no more carbon dioxide than it removes from the atmosphere by 2050," which you acknowledge will require "a transformation of the entire economy." You call for a "transformation" of our entire economy that will not be made through a democratic process. Instead you talked about how, "[b]ehaviors are going to have to change and this is one thing we are asking companies. You have to force behaviors. And at Blackrock, we are forcing behaviors." So much for democracy.

You have admitted that your ESG agenda of forcing behaviors will not increase investor returns. Your [2022 letter](#) to CEOs stated plainly that "We need to be honest about the fact that green products often come at a higher cost." High cost/low return environmental policies will reduce a company's profits...and investors' returns.

BlackRock applies this model to its ESG products, exploiting investor's social conscience to extract higher fees. A [recent study](#) of U.S. fund fees referred to investors in so-called sustainable funds paying "greeniums" compared to conventional funds.

Then there is the matter of returns. Recently Blackrock set a record for "the largest amount of money lost by a single firm over a six-month period" having "lost \$1.7 trillion of clients' money," associated with ESG accounts, according to a July 20, 2022 [Bloomberg](#) article titled "BlackRock Is Breaking the Wrong Kind of Records." Such huge losses would seem to indicate that BlackRock is either not focused on investor returns or that its ESG investment strategy is flawed. Neither bodes well for investors.

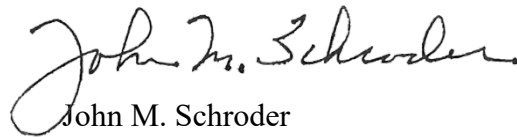
Under Louisiana law, investors' returns take precedence.

I'm convinced that ESG investing is more than bad business; it's a threat to our founding principles: democracy, economic freedom, and individual liberty. It threatens our democracy, bypasses the ballot box and allows large investment firms to push political agendas. It threatens our economic freedom because these firms use their massive shareholdings to compel CEOs to put political motivations above a company's profits and investors' returns. Finally, it threatens our personal liberty because these firms are using our money to push their agendas contrary to the best interests of the people whose money they are using! There is a difference between offering an ESG investment option for those investors so inclined, and using other peoples' non-ESG investments to promote ESG shareholder initiatives.

As State Treasurer, I oversee \$64.8 billion in cash flow and \$16 billion in trust funds on behalf of the citizens of Louisiana. I refuse to invest a penny of our state's funds with a company that would take food off tables, money out of pockets and jobs away from hardworking Louisianans. My top priority is the monetary best interests of Louisiana's citizens and the funds I am responsible for investing on their behalf. This requires responsible, financially-sound decision making.

The investment firms we utilize must practice that same fiduciary duty to make their clients' financial success their paramount priority rather than political and social agendas embodied in ESG investing. Period.

Sincerely,

A handwritten signature in black ink, reading "John M. Schroder". The signature is fluid and cursive, with the first letters of each word being capitalized and prominent.

John M. Schroder
State Treasurer

JMS/ec

SAF

Dan Tsubouchi @Energy_Tidbits · 4h

Anti-West or common sense to avoid energy crisis? Xi: China "will advance initiatives to reach peak carbon emissions in a well-planned and phased way, in line with the principle of getting the new before discarding the old".
Thx @danmurtaugh @luzdingyu. #OOTT #NatGas #Coal

China's Xi Jinping says climate change is a 'major threat' to the world's future
2022-10-26 10:45:26 (UTC+8)

By Bloomberg News
Bloomberg — President Xi Jinping has promised a slow and steady end to the growth of planet-warming emissions in China, with energy security taking top priority as the country contends with a flagging economy and turmoil on global fuel markets. In a two-hour speech to kick off the weeklong Communist Party Congress, Xi said that progress would govern China's efforts to peak and eventually reduce carbon emissions. The cautious wording comes after a spike of high-profile power shortages in recent years, and as global energy costs have soared after Russia's invasion of Ukraine upended trade flows. The speech made China's path to decarbonization clear: it won't stop burning fossil fuels until it's confident that clean energy can reliably replace them.

"We will work actively and prudently toward the goal of reaching peak carbon emissions and carbon neutrality," Xi said in his address.

China's leaders have vowed to reach peak emissions by 2025 and carbon neutrality by 2060, but the government has been slow to follow through on its promises. China is the world's largest emitter of greenhouse gases, and it accelerated climate actions two years ago when he vowed to reach carbon neutrality by 2060 after peaking emissions before 2030. The announcement sparked a massive surge in investment in clean energy by local governments and state-owned firms.

Read how Xi's Green Dream has been tested by a weak economy and global unity.

But last year, Xi's began to return to China's mandate. Fuel of oil after a summer triggered widespread power outages to factories, slowing economic growth. The country vowed to increase mining capacity, and production has risen to record levels this year, leaving storage sites well stocked and reducing imports.

China will also expand exploration and development of oil and gas resources, and increase reserves and production as part of the measures to ensure energy security, according to a congress work report released after Xi's speech.

China invests more than any other country in clean energy, and is on pace to shatter its record for new solar installations this year. But it hasn't been able to offset the growth in energy demand, forcing it to burn more coal and setting a record for consumption last year that is likely to be repeated in 2022. It made clear that fossil fuels and renewables will have to work in tandem.

Xi also vowed that China would be actively involved in the global response to climate change. His government was criticized after it broke off climate negotiations with the US in August after House Speaker Nancy Pelosi's visit to the contested island of Taiwan.

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To view this story in Bloomberg click here:
<https://www.bloomberg.com/news/articles/2022-10-26/xi-jinping-says-climate-change-is-a-major-threat-to-the-worlds-future>



SAF

Dan Tsubouchi @Energy_Tidbits · 13h

full mask on in china party congress during xi speech. xi has been soaking for over 30 min and no signs of an end to his speech



SAF Dan Tsubouchi @Energy_Tidbits · 15h ***
#Bakken. "we're at a record number of [ND] producing wells (in Aug) but not record [oil] production" says ND's Helms. He expects an increase in Sept. Jul/Aug were below June. Not a good sign if Sept/Oct don't get back to June levels. Thx @bistrib. #OOTT

bismarcktribune.com/news/state-and...

0: North Dakota Oil Production By Month

	2017	2018	2019	2020	2021	2021/2020	2022	2022/2021
	981,380	1,179,564	1,403,808	1,430,511	1,147,377	-19.8%	1,088,613	-6.9%
	1,034,248	1,175,316	1,335,591	1,451,681	1,083,554	-25.4%	1,089,091	-0.5%
	1,025,690	1,162,134	1,391,760	1,430,107	1,108,906	-22.5%	1,122,640	2.1%
	1,050,476	1,225,391	1,392,485	1,221,019	1,123,166	-8.0%	900,597	-18.6%
	1,040,995	1,246,355	1,394,648	859,362	1,128,042	31.3%	1,059,060	-7.1%
	1,032,873	1,227,320	1,425,230	893,591	1,133,498	26.8%	1,096,783	-4.5%
	1,048,099	1,269,290	1,445,934	1,042,081	1,076,594	3.3%	1,072,632	-3.2%
	1,089,318	1,292,505	1,480,475	1,165,371	1,107,359	-5.0%	1,073,378	-5.3%
	1,107,345	1,359,282	1,443,980	1,223,107	1,114,020	-8.9%		
	1,183,810	1,392,369	1,517,936	1,231,048	1,111,910	-9.7%		
	1,194,920	1,375,803	1,519,037	1,227,138	1,158,622	-5.6%		
	1,182,836	1,402,741	1,476,777	1,191,429	1,144,999	-3.9%		

DIC, NDPA

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https://twitter.com/Energy_Tidbits/status/1581475388487655425/photo/1

SAF Dan Tsubouchi @Energy_Tidbits · 23h ***
#Vortexa crude **#Oil** floating storage at 10/14 est 88.90 mmb, +2.40 mmb WoW vs upwardly revised 10/07 of 86.50 mmb. Positive **#Oil** indicator, other than 09/23 week, floating storage is +/- 85 mmb. Thx @Vortexa @business. #OOTT

Vortexa Crude Oil Floating Storage Estimate Posted Oct 15 at 9am MT



Source: Bloomberg, Vortexa

Posted Oct 15, 9am MT					Oct 8, noon MT					Oct 1, 1pm MT				
FZWWFST VTXA Indx					FZWWFST VTXA Indx					FZWWFST VTXA Indx				
ID	3D	1M	6M	YTD	ID	3D	1M	6M	YTD	ID	3D	1M	6M	YTD
FZWWFST VTXA Indx					FZWWFST VTXA Indx					FZWWFST VTXA Indx				
Date	Last Px				Date	Last Px				Date	Last Px			
Fr 10/14/2022	88903				Fr 10/07/2022	80058				Fr 09/30/2022	91246			
Fr 10/07/2022	86499				Fr 09/30/2022	91626				Fr 09/23/2022	107.516k			
Fr 09/30/2022	88038				Fr 09/23/2022	108.283k				Fr 09/16/2022	93751			
Fr 09/23/2022	105.145k				Fr 09/16/2022	88888				Fr 09/09/2022	93139			
Fr 09/16/2022	87340				Fr 09/09/2022	96788				Fr 09/02/2022	86098			
Fr 09/09/2022	84573				Fr 09/02/2022	81871				Fr 08/26/2022	83843			
Fr 09/02/2022	78835				Fr 08/26/2022	94858				Fr 08/19/2022	107.837k			
Fr 08/26/2022	82138				Fr 08/19/2022	101.811k				Fr 08/12/2022	111.844k			
Fr 08/19/2022	99524				Fr 08/12/2022	106.383k				Fr 08/05/2022	90967			
Fr 08/12/2022	105.208k				Fr 08/05/2022	85899				Fr 07/29/2022	91221			
Fr 08/05/2022	84107				Fr 07/29/2022	87982				Fr 07/22/2022	86950			

Source: Bloomberg, Vortexa

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SAF GROUP

Dan Tsubouchi @Energy_Tidbits · Oct 15

...

German storage 95% full. But @Klaus_Mueller tells @vanessadezem "In purely quantitative terms, gas volumes in the storage facilities are enough for about two cold winter months", need to increase #NatGas imports, stable Norway supplies, & consumption must fall by >20% #OOTT

BN 10/14 07:19 *GERMAN REGULATOR: JUST FULL GAS STORAGE 'NOT ENOUGH' FOR WINTER
BN 10/14 07:19 *GERMAN REGULATOR SAYS GAS STOCKPILES MUST BE 40% FULL IN FEB.

German Regulator: Near-Full Gas Storage 'Not Enough' for Winter
2022-10-14 07:38:37.396 GMT

By Vanessa Dezem

(Bloomberg) -- The fact that Germany's natural-gas storage sites are 95% full -- more than two weeks ahead of schedule -- will help during the winter, but stocks alone "are not enough," said Klaus Mueller, president of the Federal Network Agency, the country's energy regulator known as BNetzA.

* "In purely quantitative terms, gas volumes in the storage facilities are enough for about two cold winter months," he said in an e-mailed statement

* In order to avoid a gas emergency in winter, Germany needs to increase gas imports, supplies in neighboring countries must also remain stable, and consumption must fall by at least 20%, Mueller said

* "On February 1, the storage level should still be at least 40%. Firstly, because it can still get very cold in February and March, and secondly because the storage facilities must also be refilled for the winter of 2023-2024," he said

* "That can be more difficult given the lack of Russian gas then"

* MORE: Germany Reaches 95% Gas Storage Target Ahead of Schedule

* MORE: German Gas to Last Less Than 3 Months If Russia Cuts Supply

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Brian Wingfield

To view this story in Bloomberg click here:

<https://blinks.bloomberg.com/news/stories/RJQF3BDWLJ6B>



↻ 5

♡ 9



SAF GROUP

Dan Tsubouchi @Energy_Tidbits · Oct 15

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Don't think it's an olive branch from #MBS to #Biden as a KSA step to de-escalate. Rather more Saudi Arabia reminding the world they do try to help others. #MBS & #Zelenskyy call today, KSA made offered an additional \$400 million in humanitarian aid. #OOTT spa.gov.sa/viewfullstory...



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♡ 3



Dan Tsubouchi @Energy_Tidbits · Oct 14

...

Positive 🇨🇦 #NatGas. Liberals must want to be seen as being onside when #LNGCanada FIDs 1.8 bcf/d Phase 2? @cafreeland "We will always be looking at economically viable LNG projects." LNG \$ outlook way higher since 📢 02/21 tweet #Shell IRR 14-18% for its pre-FID projects. #OOTT

https://www.reuters.com/markets/commodities/canada-would-back-economically-viable-new-lng-terminals-energy-transition-2022-10-14/?utm_source=share&utm_medium=twitter&utm_campaign=social&utm_content=twitter&utm_source=twitter
October 14, 2022 12:39 PM MDT Last Updated 5 hours ago

Canada would back "economically viable" new LNG terminals -freeland

By Steve Scherer



Canada's Finance Minister Chrystia Freeland looks on during a news conference before delivering the 2022-23 budget, in Ottawa, Ontario, Canada, April 7, 2022. REUTERS/Bear Gable/Photo
OTTAWA, Oct 14 (Reuters) - Canada will look at supporting more liquefied natural gas (LNG) terminals as long as they are economically feasible because they are needed to keep the world from burning coal again amid the current energy crunch, Finance Minister Chrystia Freeland said on Friday.

LNG "is an important transition fuel," Freeland told reporters in Washington at the end of annual IMF and World Bank meetings. "We will always be looking at economically viable LNG projects."

German Chancellor Olaf Scholz visited in August, looking for Canada - the world's fifth largest producer of natural gas - to play a "major role" in filling the shortfall brought on by Russia's invasion of Ukraine, but went home with no promises.

When Scholz was in Canada, Prime Minister Justin Trudeau said "there has never been a strong business case" for LNG on the country's east coast.

On Friday, Freeland appeared to leave the door open to the possibility, as has Natural Resources Minister Jonathan Wilkinson, saying that she had heard finance ministers in Washington this week say they were having to burn more coal because of the soaring cost of LNG.

"I want to burn less coal," one minister said quite movingly," Freeland said, but cannot because "LNG is too expensive right now."

Two east coast projects being discussed are Repsol's (REP.MC) intake facility in New Brunswick, which could be retrofitted for exports, and Pteridax Energy's (PEA.TO) proposed Goldboro LNG facility in Nova Scotia. Separately, Freeland indicated that Canada would need to spend far more to compete to become the "best and fastest" at creating green-transition industries after the U.S. passage of the Inflation Reduction Act.

When asked if Canada was increasing its incentives to scale up green technologies in order to match the United States, she responded: "It is something we are very, very focused on."

"We need to act even more energetically and aggressively than we have hitherto," she said. "We need to find ways to attract even more private capital."

Reporting by Steve Scherer, with additional reporting by Julie Gordon Editing by Chris Reese and Margareta Choy

SAF -- Dan Tsubouchi @Energy_Tidbits · Feb 21



Was #Shell showcasing #LNGCanada or just highlighting its positives today? @Shell expects average IRR of 14-18% for its pre-FID projects, which includes #LNGCanada Phase 2. #LNGCanada "is set to deliver the lowest carbon intensity in the entire ...



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Dan Tsubouchi @Energy_Tidbits · Oct 14

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Dan Tsubouchi @Energy_Tidbits · Oct 14

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<http://www3.pemex.com:6015/Logistica/v4/meteorologia/>

1. General Synopses 1/4/92/2012 8:00:00

[illegible]

<http://www3.pemex.com:6015/Logistica/v4/meteorologia/>

Asignación de Operaciones en el Grupo de Monedas	Operaciones de Inversión	Operaciones Corrientes	Operaciones Monetarias
INTEREST, TRADING	Operando	?	?
TRADING, VEB	Operando	?	?
INTEREST, VEB	Operando	?	?
TRADING, VEB	Superando Operaciones	440000 / Noel	
JOJO ROGAL, T&B	Superando Operaciones	132200 / Noel	
EL DEL CARMEN, CAMP	San Operar	131800 / Noel	
PPD, YOUNG K&M ALIAS (PTE)	San Operar	131800 / Noel	
PLAT, GUYO ALIAS	San Operar	131800 / Noel	
ALIAS DE PLATINUMUS	San Operar	131800 / Noel	
DETRAPAL, CAMP	Superando Operaciones	132200 / Noel	
ERNA, CAMP	Superando Operaciones	132200 / Noel	



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SAF SAF

Dan Tsubouchi @Energy_Tidbits · Oct 14

...

Is it wrong to expect mgmt to have the respect/guts for employees to do layoffs in person? #BeyondMeat asked employees to work from home Thurs, restricted access to documents, & then mgmt set up individual calls to inform if they were keeping their jobs. Thx @deenashanker



Deena Shanker @deenashanker · Oct 13

SCOOP: More layoffs happening at Beyond Meat

[bloomberg.com/news/articles/...](https://www.bloomberg.com/news/articles/...)

[Show this thread](#)



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SAF SAF

Dan Tsubouchi @Energy_Tidbits · Oct 14

...

Near term negative to #Oil. Increasing #Covid cases in China leading to some restrictions. Hard to see Xi risk a broad reopening as was expected at national congress starting Oct 16 with Chinese new year just over 3 mths away? #OOTT



[cnbcindonesia.com](https://www.cnbcindonesia.com)

Covid-19 di China Meledak Lagi, Sejumlah Kota Lockdown!
Kasus Covid-19 mulai kembali merebak di beberapa kota di China.
Bahkan, jumlah kasus ini melampaui rekor tiga bulan sebelumnya.



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SAF SAF

Dan Tsubouchi @Energy_Tidbits · Oct 13

...

"There's not a lot of deep energy expertise in the administration . .There's a point of view that you find quite visible in the administration that we can move from system A to system B very quickly and easily. And it's not that simple" see 🗨️ for more blunt \$CVX CEO views. #OOTT



Derek Brower @derek_brower · Oct 13

My interview with Mike Wirth, who voiced aloud what many other oil executives say in private.

Agree with him or not, he didn't really hold back.

Chevron chief blames western governments for energy crunch
[ft.com/content/83d93b...](https://www.ft.com/content/83d93b...)



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13



Dan Tsubouchi @Energy_Tidbits · Oct 13

Hmm! Is @melaniejoly teasing #LNGCanada 1.8 bcfd Phase 2 FID is coming? "We will become a major supplier of key [#LNG] energy for them, starting in 2025," "There is a lot of interest for all of us to go even further." Thx @withfilesfrom. #OOTT #NatGas

<https://www.cbcnews.ca/energy/article/2022/10/13/melanie-joly-pushes-lng-ties-japan-south-korea-amid-north-korea-missiles>

Mélanie Joly pushes LNG ties in Japan and South Korea, amid North Korea missiles

By Dylan Robertson, The Canadian Press — The Canadian Press — Oct 13, 2022



OTTAWA — Foreign Affairs Minister Mélanie Joly says Canada is set to become a major energy supplier for Japan and South Korea.

On a visit to both countries this week, Joly said she found a growing appetite for liquefied natural gas from Canada beyond a looming megaproject.

A major export terminal is set to open in 2025 in Kitimat, B.C., with Japanese and Korean companies holding a 20 per cent stake.

"We will become a major supplier of key energy for them, starting in 2025," Joly said in a Thursday interview from Seoul.

"There is a lot of interest for all of us to go even further."

Joly said these types of projects will help Canada shore up energy security in the region, where China and Russia have been growing increasingly assertive.

"Japan and Korea were already very close to Canada, but it is now in Canada's interest more than ever, that they be best of friends," she said.

"We know that there's a lot of instability in the world, and when that's the case, Canada reaches out to the world to create more stability."

Joly said a series of missiles that North Korea launched over Japan this month loomed large in her talks with local officials and the Canadian navy.

She visited HMCS Vancouver, which is undertaking exercises to monitor sanctions on North Korea "in view of their reckless actions," Joly said. That often means monitoring ships that stop near each other, to see whether goods or fuel are being transferred.

In September, the Vancouver sailed through the Taiwan Strait alongside a U.S. warship to demonstrate Canada's position that the area near mainland China counts as international waters.

Joly's visit also touched on existing work to make more Canadian critical minerals available for Asian firms building electric vehicles and parts.

In Tokyo, she co-launched formal talks aimed at having Canada and Japan share military intelligence.

Joly's weeklong visit wraps up Saturday. She said the intent is to build on close ties with allies ahead of an Indo-Pacific strategy that should outline Ottawa's approach to dealing with China.

"The goal right now is to lay the foundation for the strategy," she said.

Joly has previously said that a major summit the Chinese Communist Party is holding next week will help inform Canada's Indo-Pacific strategy, which she has promised to release by the end of this year.

Opposition parties have argued the strategy is long overdue, and business groups say they need Ottawa to clarify the regions and industries where it wants closer ties, and which countries Canada deems to be riskier.

This report by The Canadian Press was first published Oct. 13, 2022.

Dylan Robertson, The Canadian Press

SAF — Dan Tsubouchi @Energy_Tidbits · Sep 29



"We have substantially de-risked Phase 2 by building Phase 1" #LNGCanada CEO. Surely FID coming by #Shell Q3 release 10/27? See 📌 06/11 tweet, LNG Canada is a game changer for 🇨🇦 #NatGas, Phase 1 is >10% of AB/BC #NatGas, Phase 2 doubles that. Thx ...

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Dan Tsubouchi @Energy_Tidbits · Oct 13

For those not near their laptop, @EIAgov just released #Oil #Gasoline #Distillates inventory as of Oct 7. Table below compares EIA data vs @business expectations posted as of 5am MT, and vs @APIenergy yesterday. Prior to release, WTI was \$87.79. #OOTT

ir.eia.gov/wpsr/overview...

Oil Inventory Oct 7: EIA, Bloomberg Survey Expectations, API

(rels)	EIA	Expectations
	9.88	1.00
	2.02	-2.00
	-4.85	-2.00
	7.05	-3.00

commercial so builds in impact of 7.7 mmb draw from SPR for Oct 7. In the oil data, Cushing had a draw of 0.31 mmb for Oct 7 week. Bloomberg

y SAF Group <https://safgroup.ca/news-insights/>

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SAF

Dan Tsubouchi @Energy_Tidbits · Oct 13

Talking point for #Biden admin. @IEA on #OPEC+ sharply curtail #Oil supply "With unrelenting inflationary pressures and interest rate hikes taking their toll, higher oil prices may prove the tipping point for a global economy already on the brink of recession." #OOTT

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SAF

Dan Tsubouchi @Energy_Tidbits · Oct 13

Will #Biden's KSA attack help midterms, but lead to higher #Oil prices? KSA "Resolving economic challenges requires the establishment of a non-politicized constructive dialogue, and to wisely and rationally consider what serves the interests of all countries". #OOTT



SAF Dan Tsubouchi @Energy_Tidbits · Oct 12



Biden to @jaketapper. "Yes", time to rethink Saudi relationship, "there's going to be some consequences for what they've done with Russia". It's in Biden's court as, coincidentally, #OPEC went from monthly so next meeting isn't until after midterms? #OOTT ...



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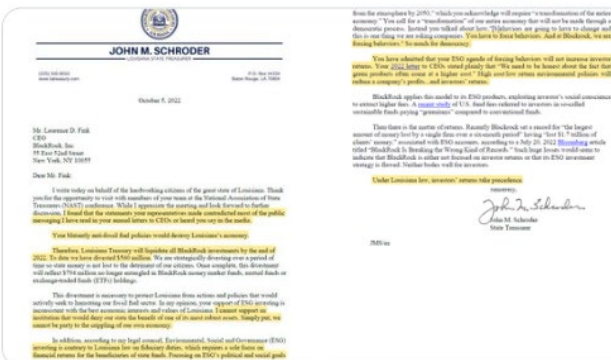
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SAF

Dan Tsubouchi @Energy_Tidbits · Oct 13

Wonder what they said? @LATreasury to #LarryFink on pulling LA \$ from \$BVI. post meeting #BlackRock reps, "I found that the statements your representative made contradicted most of the public messaging I have read in your annual letters to CEOs or heard you say in media". #OOTT



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Dan Tsubouchi @Energy_Tidbits · Oct 12

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Dan Tsubouchi @Energy_Tidbits · Oct 12



BIDEN ON BACKLASH OVER MEETING WITH SAUDI ARABIA

CNN

Biden "I am not going to get into what I would consider or what I have in mind, but there will be consequences"

— Dan Tsubouchi @Energy_Tidbits · Oct 7



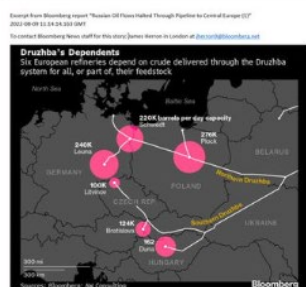
ICYMI. @gcaw asked #MBS whether Biden misunderstands something about him. "Simply, I do not care," he replied. Alienating the Saudi monarchy, he suggested, would harm Biden's position. "It's up to him to think about the interests of America." He gave ...

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SAF GROUP

Dan Tsubouchi @Energy_Tidbits · Oct 12

Hmmm! Druzhba [#Oil](#) pipeline leak in Poland. Given [#NordStream](#) sabotage, questions will be if this is another sabotage or a normal type leak on a ~60 yr old pipeline built in cold war Soviet bloc era. Regardless who or how, RUS oil and [#NatGas](#) infra is being hit. [#OOTT](#)



<https://www.pern.pl/2022/10/12/pern-weryfikuje-sytuacje-na-odcinku-zachodnim-na-ciagu-przyjam/>

PERN verifies the situation on the western section of the Druzhba pipeline

Released: 10/12/22

Late on Tuesday evening, PERN automation systems detected the unsealing of the Druzhba pipeline on one of the two strands of the western section of the pipeline – about 70 kilometers from Plock. It is the main line through which crude oil reaches Germany. At this point, the causes of the event are not known – the stamping in the damaged thread was immediately turned off. The second line of the oil pipeline works unchanged.

Other elements of PERN's infrastructure, including the Pomeranian section, which pumps crude oil arriving in Polish and then also to Germany, operates in standard mode.

The emergency services of PERN and the State Fire Service immediately went to the scene to assess the situation, secure the area and start rescue operations.

At this point, all PERN services (technical, operational, company fire brigade and environmental protection) take action in accordance with the algorithms provided for this type of situation.

The scene of the incident has been secured.

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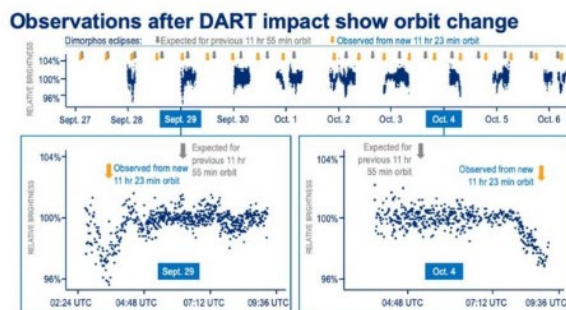
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♡ 11

SAF GROUP

Dan Tsubouchi @Energy_Tidbits · Oct 11

#DART worked! @NASA says observations after hitting the asteroid show knocked 32 min off the orbit time. congrats @NASA!



the data that offers insight into data the DART team used to determine the depth of Dronopros after impact. Specifically, small reductions in brightness due to eclipses of Dyonisos and Oureghnon. The new observations show the Dronopros eclipses occur at different times (green arrows) than that of the period we observed (gray arrows). The top timeline shows observations the DART team used to determine Dronopros' new orbital period, with two sets of that data (from Sept. 28, 2020, and Oct. 4, 2020) shown in red. The observed decreases in relative brightness for each night's dataset correspond to Dronopros eclipses from a new orbital period of 11 hours and 23 minutes – demonstrating that the eclipse timing differs from our pre-impact period of 11 hours and 55 minutes. Credit: NASA/Johns Hopkins APL/International Institute of the Academy of Sciences of the Czech Republic/Lowell Observatory/PIA Las Cumbres Observatorio/Las Campanas Observatorio/Astronomical Southern University/University of Edinburgh/The Open University/University of California at the Santa Cruz/Consorzio Nazionale Osservatorio/Universidad de Zaragoza/Universitat de València

SAP — Dan Tsubouchi @Energy_Tidbits · Sep 26

ICYMI, #NASA #DART impact right on target. Great pictures of asteroid. Kudos to @NASA DART team! [twitter.com/ATI_LLC/status...](https://twitter.com/ATI_LLC/status/1525111111111111111)

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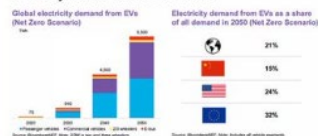
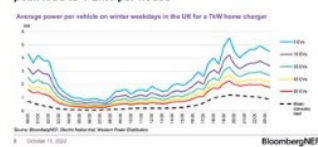
Dan Tsubouchi @Energy_Tidbits · Oct 11

No one can deny world is on a path for #EVs to replace #ICE, but also many challenges = slower pace, bumpy adoption & more expensive ride to get there. i.e. managing big increase in home #Electricity demand especially at peak hrs. Thx @BloombergNEF Ryan Fisher. #OOTT #NatGas

Excerpt BloombergNEF Ryan Fisher "EVs in an Evolving Electricity Industry" Oct 11, 2022

Executive summary

Passenger electric vehicles have surpassed 20% of total sales in China and Europe in recent quarters, and adoption is growing across the rest of the world too. By 2040, BloombergNEF expects there to be over 700 million EVs in the global fleet. While this bodes well for decarbonizing road transport, there are likely to be challenges ahead. Will electricity suppliers and grids be able to cope with demand? How will smart charging scale up? Has the current rise in electricity prices affected the industry? Will we be able to install the charging infrastructure required to sustain electric vehicle adoption? This talk was given at the BNEF Summit London on October 11, 2022.

EVs will grow to 21% of global electricity demand in a net-zero future**EVs significantly increase household electricity demand****Diversification of demand limits additional peak load to 1-2kW per house**

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SAF

Dan Tsubouchi @Energy_Tidbits · Oct 11

save yourself time if you are wondering how Saudi will respond to #Biden reevaluating the US/KSA relationship. see 🗨️ #MBS addressed this specific issue "Go for it!". positive for #Oil. OOTT

SAF — Dan Tsubouchi @Energy_Tidbits · Oct 7

ICYMI. @gcaw asked #MBS whether Biden misunderstands something about him. "Simply, I do not care," he replied. Alienating the Saudi monarchy, he suggested, would harm Biden's position. "It's up to him to think about the interests of America." He gave a shrug. "Go for it." #OOTT

Excerpt from

<https://www.theatlantic.com/magazine/archive/2022/04/mohammed-bin-salman-saudi-arabia-palace-interview/622822/>

April 2022 Issue

The Atlantic



ABSOLUTE POWER

Asked about the murder of Jamal Khashoggi, Mohammed bin Salman said, "If that's the way we did things, Khashoggi would not even be among the top 1,000 people on the list."

By Graeme Wood
Photographs by Lynsey Addario

We asked whether Biden misunderstands something about him. "Simply, I do not care," he replied. Alienating the Saudi monarchy, he suggested, would harm Biden's position. "It's up to him to think about the interests of America." He gave a shrug. "Go for it."



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SAF

Dan Tsubouchi @Energy_Tidbits · Oct 11

#Negative to #Oil. JPM Dimon "going to have volatile markets", no IPOs, etc, "Which is pretty typical, but it's still been orderly. I think it's possibly that you will see it disorderly in some time in the not too distant future." Thx @CNBCJulianna. #OOTT



cnbc.com

'This is serious': JPMorgan's Jamie Dimon warns U.S. likely to tip into r...
JPMorgan Chase CEO Jamie Dimon warned that a "very, very serious" mix of headwinds was likely to tip both the U.S. and global economy ...



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Dan Tsubouchi @Energy_Tidbits · Oct 10

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Will Dems pressure on MBS to fold on #OPEC oil cuts end up backfiring?
@SenatorMenendez US "must immediately freeze all aspects of our cooperation with KSA, including any arms sales & security cooperation...."
#OOTT

[/newsroom/press/chairman-menendez-statement-on-the-future-of-the-united-states-saudi-relationship](#)

SENATOR BOB MENENDEZ STATEMENT ON THE FUTURE OF THE UNITED STATES-SAUDI RELATIONSHIP
Senator Bob Menendez (D-N.J.), *Chairman of the Senate Foreign Relations Committee*, today issues a statement regarding the U.S.'s relationship with Saudi Arabia following the deadly attacks on cities across Ukraine on Monday.

"The brutal and depraved escalation against civilian infrastructure across Ukraine — including in Kyiv — has accelerated support for the people of Ukraine and to starve Russia's war machine.

"I speak out against the government of Saudi Arabia's recent decision to help underwrite Putin's war. There is no room to play both sides of this conflict — either you support the rest of the free world in trying to stop the country off of the map, or you support him. The Kingdom of Saudi Arabia chose the latter in a terrible decision.

"I call on the U.S. to immediately freeze all aspects of our cooperation with Saudi Arabia, including any arms sales and security cooperation, in order to defend U.S. personnel and interests. As Chairman of the Senate Foreign Relations Committee, I call on the Kingdom to reassess its position with respect to the war in Ukraine. Enough is enough."

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Dan Tsubouchi @Energy_Tidbits · Oct 10

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Peak #Oil demand sometime AFTER 2030. #Aramco CEO Nasser "we believe is that demand will continue to grow to 2030 and beyond." This & a lot more in the @energyintel posted full @Amena_Bakr interview. #OOTT

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energyintel.com
Aramco CEO: Energy Transition Lacks 'Constructiv...
Energy Intelligence speaks with Amin Nasser, CEO of Saudi Aramco, the world's number one oil ...

💬 1

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❤️ 13

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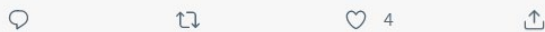
Dan Tsubouchi @Energy Tidbits · Oct 10

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Dan Tsubouchi @Energy_Tidbits · Oct 10

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Dan Tsubouchi @Energy_Tidbits · Oct 10

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Whodunit or is it operator asleep at the switch? Electricity interruption from Sweden to Poland reported as due to failure in transformer station where there was a low oil level. Hope it's that and not some unknown 3rd party problem with winter fast approaching. #NatGas #OOTT

https://www.rmf24.pl/fakty/polska/news-prad-ze-szwecji-nie-plynie-do-polski-awaria-stacji,nb6.6338401&crp_state=1

RADIO RMF24

About the Economic Nobel Prize

Electricity from Sweden does not flow to Polish. Station failure

Joanna Potocka, Chris Zasada

Today, October 10 (10:58 a.m.)

Updated: 50 minutes ago

As the RMF FM reporter learned, at night the transmission of electricity from Sweden to Poland was suspended. The failure was detected at a Swedish station on land. The Swedes argue that they will quickly deal with the problem. The Danish island of Bornholm was also struggling with a power failure today.

A spokesman for Svenska Kraftnät, the company responsible for the operation of the cable on the Swedish side, confirmed in an interview with RMF24 that the transmission of electricity does not work. The cable itself, which runs along the bottom of the Baltic Sea, has not been damaged. The failure occurred at the transformer station on the Swedish side.

It is not the cable that is without electricity. The failure is in the transformer station on the Swedish side where there was a low oil level. The oil is being replenished, we hope that the station will be working soon, we heard from Svenska Kraftnät.

The failure was detected at a Swedish station on land. The link was restored to service yesterday after a month's refurbishment. In the afternoon, it was flowing electricity imported to us from Sweden. At night, the transmission was interrupted.

The Swedish side convinces that it will quickly deal with the failure.

Bornholm without electricity

On Monday morning, the whole of Bornholm was also without electricity. Here, too, the problem with transmission from Sweden was indicated as the probable cause. In the afternoon, the failure was removed.

Explosions on Nord Stream damaged the cable?

The undersea power cable from Sweden became famous after the explosions of Nord Stream gas pipelines at the bottom of the Baltic Sea. The undersea link crosses the gas pipeline about 500 meters from where the explosion was detected.

Since mid-September, the electricity has not flowed through the link, because then the planned renovation began. Polskie Sieci Elektroenergetyczne assumed that the link would be restarted on October 9, but today unexpected problems appeared again.

The cable running along the bottom of the Baltic Sea from Karlshamn to Wierzbice near Słupsk was launched in 2000. It can conduct electricity of 600 MW at a voltage of 450 kV. A round-trip connection is possible. The direction is regulated by contracts. Electricity is sent to a country where energy is more expensive. Most often, Poland receives it from Sweden.

Two weeks ago, there were several leaks from the Nord Stream 1 and Nord Stream 2 gas pipelines. Authorities and services report that the damage is very large and must have occurred as a result of the explosion. In the following days, a fourth explosion occurred. Sabotage is suspected, but so far it is not known who may be behind it.

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Dan Tsubouchi @Energy_Tidbits · Oct 10

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must be a lot of these for breakfast today in 🇨🇦 - toasted turkey sandwich!



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