# Energy Tidbits

August 15, 2021

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## Supplemental Documents


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August 2021

# Short-Term Energy Outlook

## Forecast highlights

### *Global liquid fuels*

- The August *Short-Term Energy Outlook* (STEO) remains subject to heightened levels of uncertainty related to the ongoing recovery from the COVID-19 pandemic. U.S. economic activity continues to rise after reaching multiyear lows in the second quarter of 2020 (2Q20). U.S. gross domestic product (GDP) declined by 3.5% in 2020 from 2019 levels. This STEO assumes U.S. GDP will grow by 6.6% in 2021 and by 5.0% in 2022. The U.S. macroeconomic assumptions in this outlook are based on forecasts by IHS Markit. Our forecast assumes continuing economic growth and increasing mobility. Any developments that would cause deviations from these assumptions would likely cause energy consumption and prices to deviate from our forecast.

- Brent crude oil spot prices averaged $75 per barrel (b) in July, up $2/b from June and up $25/b from the end of 2020. Brent prices have been rising this year as result of steady draws on global oil inventories, which averaged 1.8 million barrels per day (b/d) during the first half of 2021 (1H21) and remained at almost 1.4 million b/d in July. We expect Brent prices will remain near current levels for the remainder of 2021, averaging $72/b from August through November. However, in 2022, we expect that continuing growth in production from OPEC+ and accelerating growth in U.S. tight oil production—along with other supply growth—will outpace decelerating growth in global oil consumption and contribute to Brent prices declining to an average of $66/b in 2022.

- We estimate that 98.8 million b/d of petroleum and liquid fuels were consumed globally in July, an increase of 6.0 million b/d from July 2020 but 3.4 million b/d less than in July 2019. We forecast that global consumption of petroleum and liquid fuels will average 97.6 million b/d for all of 2021, which is a 5.3 million b/d increase from 2020. We forecast that global consumption of petroleum and liquid fuels will increase by 3.6 million b/d in 2022 to average 101.2 million b/d.

- U.S. gasoline consumption averaged 8.6 million b/d in 1H21, up from 8.3 million b/d in 2H20 but below the 9.3 million b/d in 2H19. Our latest estimates show that gasoline consumption in May through July was higher than we had previously expected. Growth in employment and increasing mobility have led to rising gasoline consumption so far in 2021. In this STEO, forecast U.S. gasoline consumption averages 8.8 million b/d in 2021, up from 8.0 million b/d in 2020. We expect the trend of rising employment and mobility

to continue into next year, and as a result, we forecast gasoline consumption to average almost 9.0 million b/d in 2022. However, our assumption that a relatively high share of the workforce will continue working from home next year compared with before the pandemic keeps our forecast gasoline consumption below the 2019 level of 9.3 million b/d.

- U.S. regular gasoline retail prices averaged $3.14 per gallon (gal) in July, the highest monthly average price since October 2014. Recent gasoline price increases reflect rising crude oil prices and rising wholesale gasoline margins, amid relatively low gasoline inventories. We expect that prices will average $3.12/gal in August before falling to $2.82/gal, on average, in 4Q21. The expected drop in retail gasoline prices reflects our forecast that gasoline margins will decline from elevated levels, as is typical in the United States during the second half of the year.

- We forecast OPEC crude oil production will average 26.5 million b/d in 2021, up from 25.6 million b/d in 2020. OPEC crude oil production in the forecast rises from 25.0 million b/d in April to an average of 27.1 million b/d in 3Q21. Our expectation of rising OPEC production is primarily based on our assumption that OPEC will raise production through the end of 2021 in line with targets it announced on July 18. We expect OPEC crude oil production will rise to an average of 28.7 million b/d in 2022

- EIA's most recent monthly data show U.S. crude oil production was 11.2 million b/d in May. We expect production to be relatively flat through October before it starts rising in November and December and throughout 2022. Forecast U.S. crude oil production for 2022 averages 11.8 million b/d, up from 11.1 million b/d in 2021.

***Natural Gas***

- In July, the natural gas spot price at Henry Hub averaged $3.84 per million British thermal units (MMBtu), which is up from the June average of $3.26/MMBtu. We expect the Henry Hub spot price will average $3.71/MMBtu in 3Q21 and $3.42/MMBtu for all of 2021, which is up from the 2020 average of $2.03/MMBtu. Higher natural gas prices this year primarily reflect two factors: growth in liquefied natural gas (LNG) exports and rising domestic natural gas consumption for sectors other than electric power. In 2022, we expect the Henry Hub price will average $3.08/MMBtu amid rising U.S. natural gas production.

- We expect that U.S. consumption of natural gas will average 82.5 billion cubic feet per day (Bcf/d) in 2021, down 1.0% from 2020. U.S. natural gas consumption declines in the forecast, in part, because electric power generators switch to coal from natural gas as a result of rising natural gas prices. In 2021, we expect residential and commercial natural gas consumption combined will rise by 1.2 Bcf/d from 2020 and industrial consumption will rise by 0.2 Bcf/d from 2020. Rising natural gas consumption in sectors other than

the electric power results from expanding economic activity and colder winter temperatures in 2021 compared with 2020. We expect U.S. natural gas consumption will average 83.8 Bcf/d in 2022.

- We estimate that U.S. natural gas inventories ended July 2021 at almost 2.8 trillion cubic feet (Tcf), which is 6% lower than the five-year (2016–20) average for this time of year. More natural gas was withdrawn from storage during the winter of 2020–21 than the previous five-year average, largely as a result of the colder-than-average February temperatures that constrained natural gas production while it increased consumption. We forecast that inventories will end the 2021 injection season (end of October) at 3.6 Tcf, which would be 4% below the five-year average.

- We expect dry natural gas production will average 92.9 Bcf/d in the United States during 2H21—up from 91.4 Bcf/d in 1H21—and then rise to 94.9 Bcf/d in 2022, driven by natural gas and crude oil prices, which we expect to remain at levels that will support enough drilling to sustain production growth.

***Electricity, coal, renewables, and emissions***

- We forecast that U.S. retail sales of electricity will increase by 2.7% in 2021 after falling by 3.9% in 2020. The largest forecast increase in electricity consumption occurs in the industrial sector, driven by rising levels of economic output. We forecast U.S. retail sales of electricity to the industrial sector will grow by 5.3% this year. Retail sales of electricity to the commercial sector also grow in the forecast, but they grow at the slightly slower pace of 2.2% in 2021 because some workers will continue working from home instead of in office buildings. We forecast U.S. residential electricity sales will grow by 1.5% in 2021 as a result of colder temperatures in 1Q21 compared with 1Q20 and because of hot temperatures in June.

- We expect the share of electric power generation produced by natural gas in the United States will average 36% in 2021 and 37% in 2022, down from 39% in 2020. The forecast share for natural gas as a generation fuel declines in response to our expectation of a higher delivered natural gas price for electricity generators, which we forecast will average $4.46/MMBtu in 2021 compared with an average of $2.39/MMBtu in 2020. As a result of the higher expected natural gas prices, the forecast share of generation from coal rises from 20% in 2020 to 23% this year but falls to 21% next year. New additions of solar and wind generating capacity are offset somewhat by reduced generation from hydropower this year, resulting in the forecast share of all renewables in U.S. generation to average 20% in 2021, about the same as last year, before rising to nearly 23% in 2022. The nuclear share of U.S. electricity generation declines from 21% in 2020 to 20% in 2021 and to 19% in 2022 as a result of retiring capacity at some nuclear power plants.

- We forecast that planned additions to U.S. wind and solar generating capacity in 2021 and 2022 will increase electricity generation from those sources. We estimate that the U.S. electric power sector added 14.7 gigawatts (GW) of new wind capacity in 2020. We expect 17.6 GW of new wind capacity will come online in 2021 and 6.3 GW in 2022. Utility-scale solar capacity rose by an estimated 10.6 GW in 2020. Our forecast for added utility-scale solar capacity is 16.2 GW in 2021 and 16.6 GW for 2022. We expect significant solar capacity additions in Texas during the forecast period. In addition, about 5 GW of small-scale solar capacity (systems less than 1 megawatt) will come online each year during 2021–22 in the STEO forecast.

- Coal production in our forecast totals 607 million short tons (MMst) in 2021, an increase of 13% over 2020. We expect electric sector consumption of coal to be 33 MMst greater than supply in 2021, contributing to significant inventory draws. In 2022, we expect coal production to decline by 7 MMst (1%).

- We expect coal consumption for electricity generation to grow by 75 MMst (17%) in 2021 as a result of relatively high natural gas prices that make coal more competitive for dispatch in the electric power sector. Forecast electric power sector demand for coal then falls by 47 MMst (9%) in 2022. We expect demand for coal for other uses to rise by 5 MMst (13%) in 2021 and by 3 MMst (7%) in 2022. This increase is mostly for coking coal, which is used in steelmaking.

- We expect coal exports to total 90 MMst in 2021, a 21 MMst (30%) increase from 2020. In 2022, forecast coal exports rise an additional 16 MMst to 106 MMst. High global steel prices are driving these increases in coal exports, and trade tensions between China and Australia continue to support U.S. thermal coal exports.

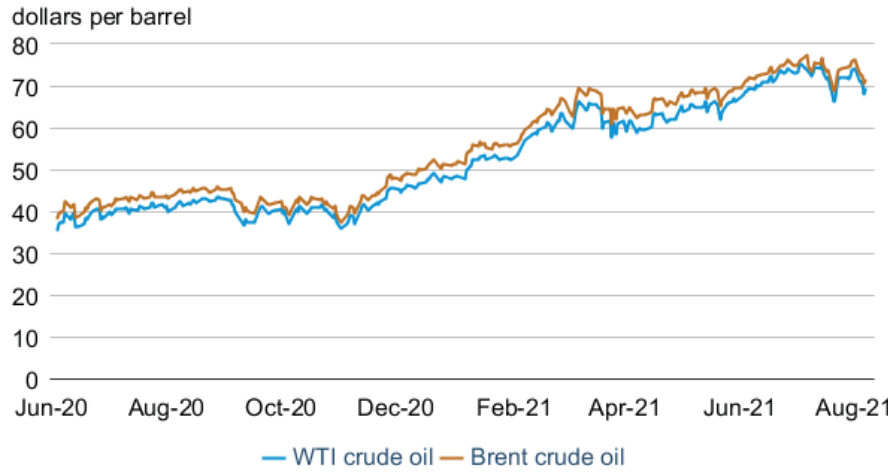
- We estimate that U.S. energy-related carbon dioxide ($CO_2$) emissions decreased by 11% in 2020 as a result of less energy consumption related to reduced economic activity and responses to COVID-19. For 2021, we forecast energy-related $CO_2$ emissions will increase about 7% from the 2020 level as economic activity increases and leads to rising energy use. We also expect energy-related $CO_2$ emissions to rise in 2022 but by a slower rate, 1%. We forecast that after declining by 19% in 2020, coal-related $CO_2$ emissions will rise by 17% in 2021 and then decrease by 7% in 2022. Short-term changes in energy-related $CO_2$ can be affected by temperature. A recent STEO supplement examines these dynamics.

# Petroleum and natural gas markets review

## Crude oil

***Prices:*** The front month futures price for Brent crude oil settled at $71.29 per barrel (b) on August 5, 2021, down $4.55/b from $75.84/b on July 1. The front-month futures price for West Texas Intermediate (WTI) crude oil for delivery at Cushing, Oklahoma, decreased by $6.14/b during the same period, settling at $69.09/b on August 5 **(Figure 1)**.

**Figure 1. Crude oil front-month futures prices**




Sources: Graph by EIA, based on CME Group and Intercontinental Exchange, compiled by Bloomberg L.P.
Note: WTI=West Texas Intermediate

After several months of steadily increasing crude oil prices, price volatility increased in July when members of OPEC+ concluded their ministerial meeting on July 5 without reaching an agreement on future production cuts and adjustments to baseline production levels. On Sunday, July 18, the OPEC+ members met again and announced they had reached an agreement after concluding another round of discussion. They decided to ease production cuts by 400,000 barrels per day (b/d) each month, beginning in August 2021. The agreement also included adjustments to the baseline crude production levels of some OPEC+ members, including Saudi Arabia, Russia, and the United Arab Emirates, to take effect in May 2022, though more specific details of the implementation have not been announced. Rising cases of the Delta variant of the COVID-19 virus present an additional downside price risk because of potentially lower demand for petroleum, which add to the volatility. Potential increases in crude oil supply, combined with the risk of lower demand contributed to lower prices in late July and early August, with prices decreasing to their monthly lows of $69/b for Brent and $66/b for WTI on July 19, the first trading day after the OPEC+ deal was announced, and a $5/b decrease compared with their closing price from the previous trading day.

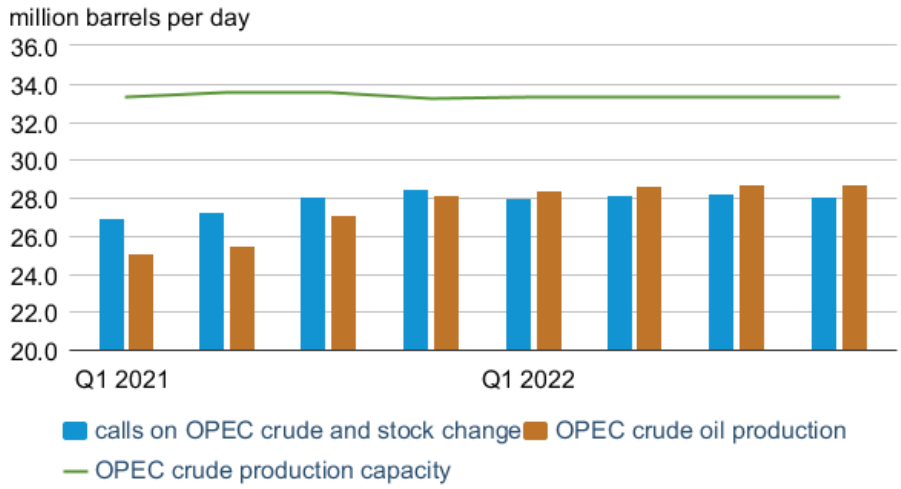
Our Brent crude oil price outlook for the 2021 average has increased to $68.71/b, $0.07/b (0.1%) lower than the July STEO, while the price forecast for 2022 is $0.60/b (0.9%) lower at

$66.04/b, based on concerns about future demand and lower crude oil prices in late July and early August. In our July STEO, we anticipated a larger increase in OPEC production levels than the organization announced, as well as some degree of new crude oil production in response to rising crude oil demand globally. In this month's STEO we have adjusted OPEC crude production in 2021 down by 300,000 b/d (0.9%) and production in 2022 up by 40,000 b/d (0.1%) in response to the final OPEC+ announcement, while global production has been reduced by 290,000 b/d (0.3% ) in 2021 and by 20,000 b/d (less than 0.1%) in 2022.

***Calls on OPEC and OPEC production:*** In the August STEO, we expect increased crude oil production by OPEC members is happening within the context of a broad trend of increasing global petroleum consumption. To estimate how much crude oil the global market will need from OPEC member states, we calculate the call on OPEC crude oil production by subtracting non-OPEC production of petroleum and other liquids and OPEC production of non-crude oil liquids from our forecast of global consumption of crude oil and other liquids. This metric assumes that petroleum production from non-OPEC countries is at its maximum level, leaving OPEC or available petroleum inventories to fill the gap between supply and demand. This metric does not account for spare production capacity from non-OPEC members of the OPEC+ agreement, most notably, Russia. Nonetheless, calls on OPEC can serve as one measure of whether OPEC crude oil production is less than or greater than global markets would otherwise demand. If calls on OPEC are greater than forecast OPEC crude oil production, it implies that the market will be short crude oil, and conversely, if calls on OPEC are less than expected OPEC crude oil production, it implies that the market will build crude oil inventories.

In the August STEO, we estimate that OPEC crude oil production will remain lower than calls on OPEC through the third quarter (3Q) and fourth quarter (4Q) of 2021 **(Figure 2)**. In 3Q21, we estimate calls on OPEC will exceed OPEC production by 1.0 million b/d, and this difference will drop to 0.3 million b/d in 4Q21. However, beginning in 1Q22, we forecast OPEC crude oil production will outpace calls on OPEC production, contributing to increased crude oil inventories and lower crude oil prices. OPEC+ leaders are expected to reconvene in December 2021, when we expect some adjustments to their curtailment plan. Any significant changes in future OPEC+ production decisions would present noteworthy uncertainty for our forecast.

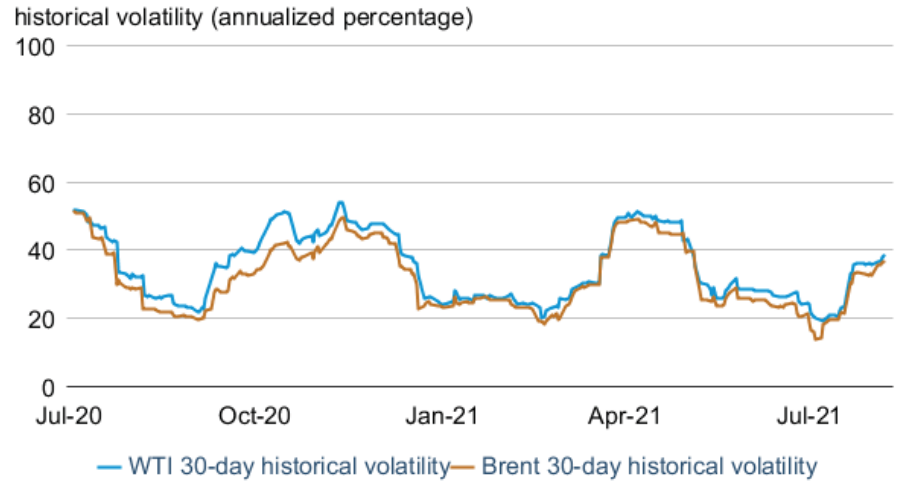
**Figure 2. STEO OPEC crude oil production**




Source: U.S. Energy Information Administration, Short-Term Energy Outlook
Note: Calls on OPEC = total world consumption minus non-OPEC supply and OPEC other liquids production

***Crude oil historical volatility:*** July's OPEC+ announcements and heightened uncertainty in the COVID-19 outlook with rising cases of new viral variants have likely contributed to heightened uncertainty and price volatility. The 30-day historical volatility for WTI crude oil futures prices rose above 30% on July 19, and volatility for Brent crude oil followed suit the following day, on July 20. Both benchmarks had historical volatility less than 30% throughout June and most of May **(Figure 3)**. As of August 5, WTI 30-day historical volatility was 38%, and Brent 30-day historical volatility was 36%, up 18 percentage points and 23 percentage points, respectively, compared with the beginning of July. The increasing volatility coincides with the substantial drop in crude oil prices on July 19, before they returned to the previous week's levels by the end of the week. The drop in crude oil prices on August 2 contributed to additional volatility, as the rolling 30-day historical volatility for Brent crude oil moved higher than 35% and WTI increased to higher than 36% (its highest level since early May, 2021). So far, volatility remains below its 2021 peak in early April, when it was just over 51% for WTI and just under 49% for Brent. Volatility in early April was lower than the high volatility in early November 2020, at just under 54% for WTI and just over 49% for Brent.

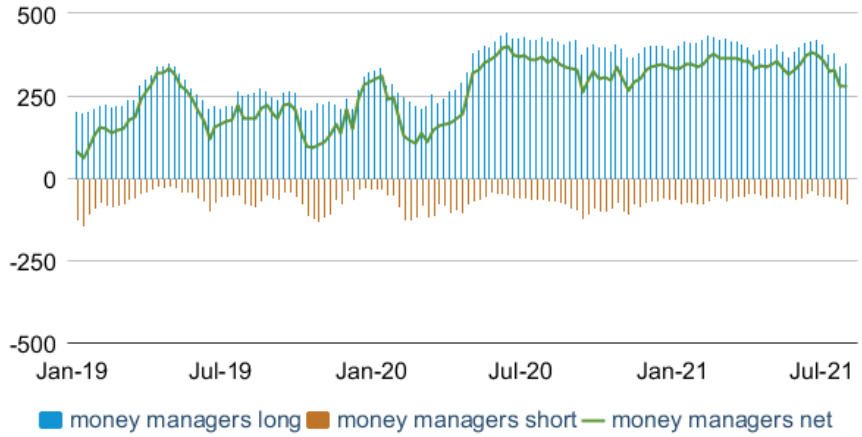
**Figure 3. Crude oil historical volatility**




Graph by EIA, based on data from Bloomberg L.P.

***Money Manager open interest in WTI futures:*** Some of the factors that contributed to price declines in late July may also be affecting long positions held by Money Managers, particularly the risk of lower demand as a result of increases in COVID-19 cases. On July 20, 2021, open interest long positions held by Money Managers in the WTI futures contract decreased to 344,000 contracts, their lowest level since April 2020 **(Figure 4)**. 2020 and 2021 have seen a greater-than-average volume of Money Managers' long positions, according to the weekly Commitments of Traders report from the Commodity Futures Trading Commission (CFTC). Although open interest long positions held by Money Managers have been generally declining since late June, they remain elevated compared with contract open interest prior to the onset of the COVID-19 pandemic. For comparison, the average number of long positions during 2019 was 256,000. The recent decrease in long positions was matched by an increase in short positions to 76,000 contracts, the largest volume of short positions since February 2, 2021. Increased short positions and lower long positions both contributed to a decrease in net long open interest, which totaled 278,000 contracts on July 27, down from 383,000 contracts at the previous month's high on June 21.

**Figure 4. Money Manager open interest in WTI futures contracts**

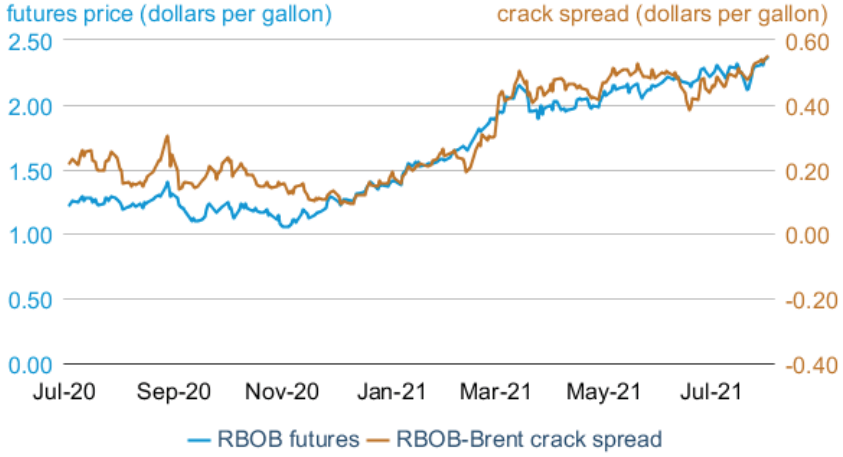



Graph by EIA, based on data from the CFTC Commitments of Traders Report

## Petroleum products

***Gasoline prices:*** The front-month futures price of RBOB (the petroleum component of gasoline used in many parts of the country) settled at $2.29 per gallon (gal) on August 5, up 3 cents/gal from July 1 **(Figure 5)**. The RBOB–Brent crack spread (the difference between the price of RBOB and the price of Brent crude oil) increased by 13 cents/gal to settle at 60 cents/gal during the same period. The crack spread on July 30 of 55 cents/gal was the highest July crack spread since July 31, 2015.

**Figure 4. Historical RBOB front-month futures prices and crack spreads**

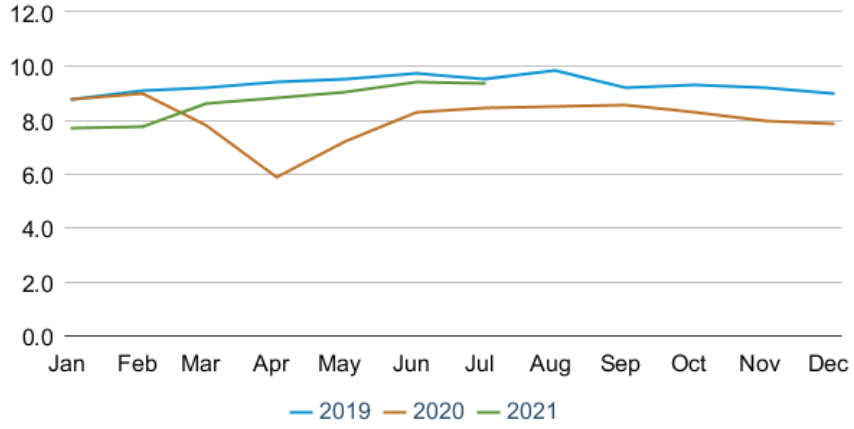



Source: Graph by EIA, based on data from CME Group, as compiled by Bloomberg L.P.
Note: RBOB is the petroleum component of gasoline used in many parts of the country.

July's high RBOB–Brent crack spread reflected increasing demand and decreasing inventories. We estimate U.S. gasoline consumption averaged 9.4 million barrels per day (b/d) in July, which is 0.9 million b/d (11%) higher than in July 2020, and only 0.2 million b/d (2%) lower than the

pre-COVID-19 July 2019 level. The increase in gasoline demand likely reflects typical seasonal factors such as increased summer driving demand, especially around the July 4th holiday weekend. For the week ending July 2, we reported in our *Weekly Petroleum Status Report* that gasoline product supplied was 10.0 million b/d, a record high in our data, which goes back to 1991. Product supplied is the volume of petroleum products delivered out of the primary supply chain, rather than the actual amount of gasoline consumed by end users that week. An individual week's amount of product supplied could be affected by a number of factors, such as the timing of when import or export cargoes clear customs. Nevertheless, this record product supplied level likely indicates that driving demand was high in late June and early July. Although gasoline consumption remains below 2019 levels, the July 2021 estimate is the closest gasoline consumption has been to its corresponding 2019 level so far in 2021 **(Figure 6)**. The relatively high consumption has contributed to gasoline stocks decreasing to 228.5 million barrels in July, the lowest July level since 2015. We forecast lower gasoline stocks between August and November, which will likely continue to support relatively high crack spreads.

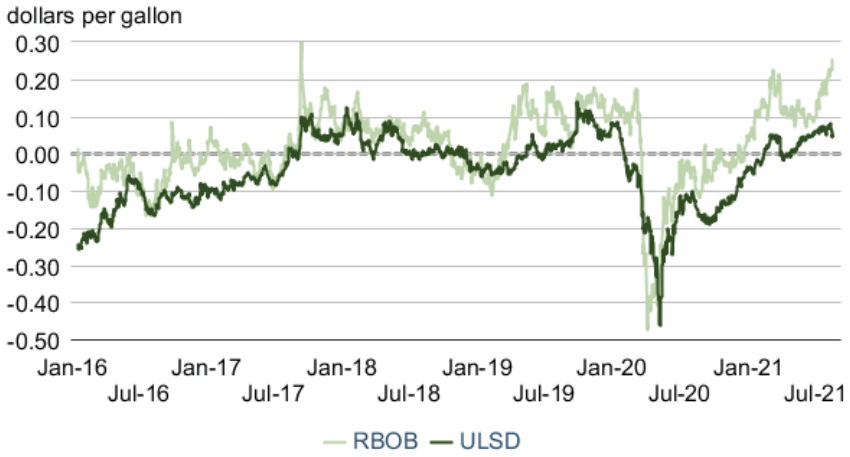
**Figure 6. U.S. gasoline consumption**




Source: U.S. Energy Information Administration, Short-Term Energy Outlook

***RBOB 1st to 13th contract spread:*** The RBOB 1st to 13th futures price spread settled at 25 cents/gal on August 5, the highest level of backwardation (when near-term contract prices are higher than farther-dated ones) since August 31, 2017, which was when Hurricane Harvey disrupted U.S. Gulf Coast refineries. The 1st to 13th futures price spread for ULSD has also been increasing but is not at multiyear highs like the RBOB spread **(Figure 7)**.

**Figure 7. Petroleum product front-month to 13th month futures price spread**

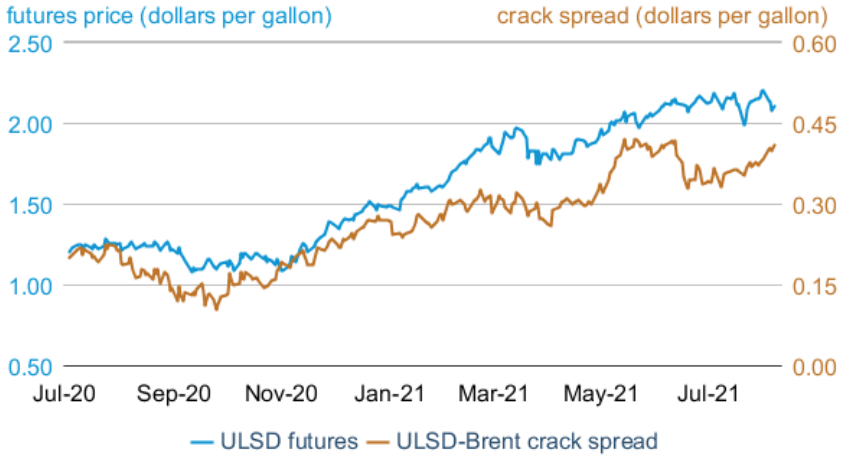



Source: Graph by EIA, based on data from CME Group, as compiled by Bloomberg L.P.
Note: RBOB=reformulated blendstock for oxygenate blending, ULSD=ultra-low sulfur diesel

Recent inventory draws for gasoline have contributed to the high 1st to 13th futures price spread. We estimate that gasoline inventories in July were 228.5 million barrels, which is the lowest they have been since October 2020 and is 4% lower than the five-year (2016–2020) average for the month of July. Expectations of continued strong gasoline demand through August and lower gasoline production in the fall are contributing to our expectations of low gasoline stocks in the short term. Distillate stocks are also lower than average, but they have been relatively flat in the summer and we expect them to increase in August in advance of growth in demand in the fall and winter, when diesel-powered agricultural equipment is used to harvest crops and the winter heating season begins. The futures price spread is likely lower for distillate than gasoline because distillate stocks are relatively flat, whereas gasoline stocks have been decreasing due to high summer demand.

***Ultra-low sulfur diesel prices:*** The front-month futures price for ultra-low sulfur diesel (ULSD) for delivery in New York Harbor settled at $2.11/gal on August 5, down 5 cent/gal from July 1 **(Figure 8)**. The ULSD–Brent crack spread (the difference between the price of ULSD and the price of Brent crude oil) increased 6 cents/gal, settling at 41 cents/gal during the same period.

**Figure 8. Historical ULSD front-month futures prices and crack spreads**



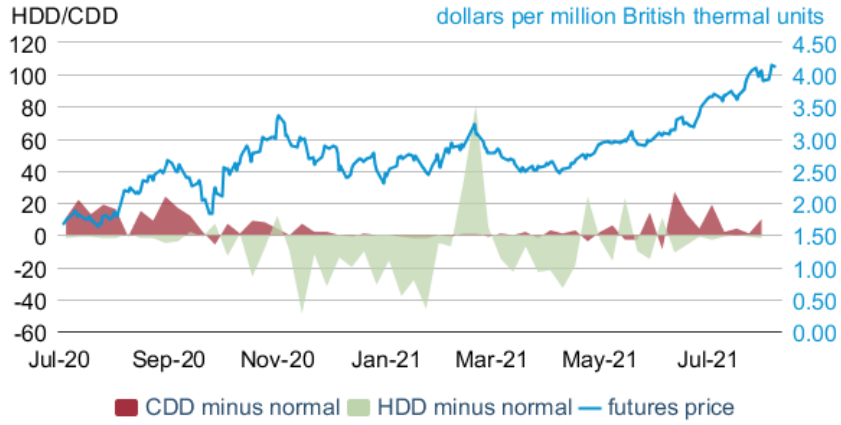

Source: Graph by EIA, based on data from CME Group, as compiled by Bloomberg L.P.
Note: ULSD=ultra-low sulfur diesel

Seasonally low production has not kept up with distillate demand and has likely helped sustain the above-average ULSD–Brent crack spread. We estimate distillate production was 4.8 million b/d in July, which would be the lowest for that month since 2012. In contrast, our distillate consumption estimate of 3.8 million b/d is 2% higher than the five-year average. Several months of seasonally low production and relatively average demand has led to low distillate stocks. We estimate distillate stocks of 138.9 million barrels in July, which is 7% lower than the five-year average.

## Natural Gas

***Prices:*** The front-month natural gas futures contract for delivery at the Henry Hub settled at $4.14 per million British thermal units (MMBtu) on August 5, 2021, which was up 48 cents/MMBtu from July 1, 2021 **(Figure 9)**. The average price for front-month natural gas futures contracts in July was $3.82/MMBtu, the highest July average since 2014.

**Figure 9. Natural gas front-month futures prices and actual minus historical average HDD and CDD**



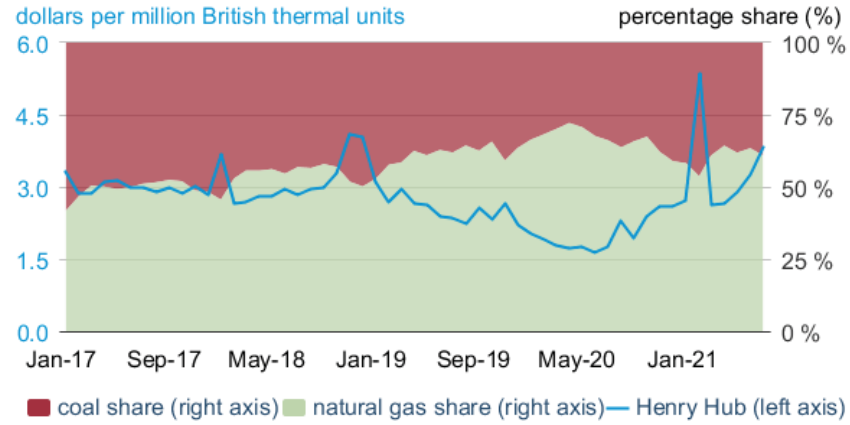

Sources: Graph by EIA, based on data from CME Group and NOAA, as compiled by Bloomberg L.P.
Note: HDD=heating degree days, CDD=cooling degree days.

Henry Hub natural gas futures prices increased in July as cooling demand increased, especially in the western United States. We estimate that U.S. consumption of natural gas in July increased by 3.9 billion cubic feet per day (Bcf/d) from June to 75.8 Bcf/d, driven by an increase in consumption in the electric power sector. Cooling demand was particularly strong in the western United States (Pacific and Mountain regions) which had 684 cooling degree days in July, 9% more than the 10-year average. Regional prices in the West increased along with the demand increase. The price at PG&E Citygate in California increased 16% from June to July to $5.16/MMBtu, a 107% increase over the July 2020 price, according to data from Natural Gas Intelligence.

Natural gas exports (pipeline and LNG) also increased in July from 17.8 Bcf/d in June to 18.2 Bcf/d in July. At the same time, dry production of natural gas declined slightly from 92.7 Bcf/d in June to 92.5 Bcf/d in July, prompting an increase in the Henry Hub price. The 17.9% increase in the Henry Hub price from June to July is the largest month-on-month percentage change for June to July since 2012, when the price increased 20.3%.

***Natural gas consumption amid high prices:*** The relative share of fossil-fuel electricity generation from natural gas was greater than coal in the eastern United States (United States excluding the Pacific and Mountain regions) in July despite relatively high natural gas prices **(Figure 10)**. Typically, higher natural gas prices will prompt gas-to-coal switching for electricity generation. For example, in February–September 2018, when the Henry Hub price was less than $3.00/MMBtu, natural gas made up an average of 56% of the share of fossil-fuel generation. In November and December of the same year, when the price increased to more than $4.00/MMBtu, the natural gas share of fossil-fuel generation decreased to 51%.

**Figure 10. Shares of thermal electricity generation in the eastern United States and Henry Hub spot price**




Source: U.S. Energy Information Administration, Short-Term Energy Outlook
Note: Eastern United States is the United States minus the Pacific and Mountain regions.

In the first half of 2020, natural gas made up a 69% share of fossil-fuel generation and Henry Hub prices averaged $1.81/MMBtu. For the same period in 2021, natural gas made up a 60% share of fossil fuel generation, and Henry Hub prices averaged $3.25/MMBtu. Since March 2021, the Henry Hub price has steadily increased, approaching $4.00/MMBtu, yet the natural gas share of fossil-fuel generation has remained higher than 60%. Except for the February price spike as a result of extremely cold weather, July Henry Hub prices were at their highest this year. Natural gas made up a 61% share of fossil-fuel generation and coal made up 39%. This difference is partially because of a longer-term trend of decreasing capacity for coal-fired electricity generation and increasing natural gas-fired capacity. Capacity for coal-fired electricity generation has decreased every year since 2011, and natural gas-fired capacity has increased every year since at least 2009.

## Notable forecast changes

- We expect OPEC crude oil production to average 27.6 million barrels per day (b/d) in the second half of 2021 (2H21), about 0.6 million b/d lower compared with our previous forecast. Our forecast of lower OPEC crude oil production reflects the July 18 OPEC+ announcement that calls for participating countries to collectively increase supply by 0.4 million b/d per month from August to December 2021, a production increase that is lower than we previously anticipated. Forecast OPEC crude oil production in 2022 is about 0the same as our July forecast, with higher-than-expected output in the second half of the year offsetting lower forecast production in 1Q22, which is consistent with higher OPEC production baselines that were also announced on July 18.

- In our August STEO, we revised down our 2022 jet fuel consumption forecast by 80,000 b/d to 1.6 million b/d. The lower jet fuel forecast reflects a lower GDP forecast by IHS Markit. It also reflects our assumption that increases in jet fuel consumption will occur more slowly than we has previously forecast. The largest downward revision is for 2H22, when we forecast jet fuel consumption will average 1.7 million b/d, down from 1.8 million b/d in the July forecast.

- We forecast Henry Hub spot prices will average $3.59 per million British thermal unit (MMBtu) in 2H21, an increase of 40 cents/MMBtu from last month's STEO. High demand for electricity generation because of record-high temperatures in June led to strong consumption of natural gas in the electric power sector, supporting higher prices into July and August. We expect Henry Hub spot prices to decline over the forecast period as temperatures return closer to historical averages, U.S. dry natural gas production increases, and growth in liquefied natural gas export growth slows.

- We have updated our modeling of electricity generation to better account for regional emissions restrictions and fuel contracts. These changes have the general effect of limiting future growth in coal-fired generation. As a result, the impact on forecast coal-fired generation in 2021 from our increased forecast for natural gas prices is generally offset by the effect of the new model constraints that limit growth in coal-fired generation. Thus, our forecast for U.S. coal and natural gas generation are relatively unchanged from last STEO.

- We corrected calculations for several of the industrial production indexes in tables 9a and 9b. Most of the changes were minor. For more information on these corrections please contact us.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - August 2021

| | 2020 | | | | 2021 | | | | 2022 | | | | Year | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | 2020 | 2021 | 2022 |
| **Supply (million barrels per day) (a)** | | | | | | | | | | | | | | | |
| OECD | **33.00** | **29.28** | **29.95** | **30.66** | **30.16** | **30.95** | *31.56* | *31.93* | *32.17* | *32.47* | *32.84* | *33.36* | **30.72** | *31.16* | *32.71* |
| U.S. (50 States) | **20.28** | **17.44** | **18.29** | **18.28** | **17.62** | **19.03** | *19.00* | *19.11* | *19.35* | *19.78* | *20.23* | *20.53* | **18.57** | *18.69* | *19.98* |
| Canada | **5.64** | **4.91** | **4.94** | **5.55** | **5.63** | **5.41** | *5.63* | *5.78* | *5.81* | *5.78* | *5.81* | *5.83* | **5.26** | *5.61* | *5.81* |
| Mexico | **2.00** | **1.94** | **1.91** | **1.90** | **1.93** | **1.95** | *1.93* | *1.89* | *1.84* | *1.80* | *1.77* | *1.73* | **1.94** | *1.92* | *1.78* |
| Other OECD | **5.08** | **4.99** | **4.81** | **4.93** | **4.98** | **4.56** | *5.00* | *5.15* | *5.17* | *5.11* | *5.03* | *5.26* | **4.95** | *4.92* | *5.14* |
| Non-OECD | **67.68** | **63.02** | **61.06** | **62.09** | **62.56** | **63.96** | *66.47* | *67.82* | *67.96* | *68.96* | *69.73* | *69.64* | **63.45** | *65.22* | *69.08* |
| OPEC | **33.50** | **30.72** | **28.65** | **30.00** | **30.37** | **30.78** | *32.46* | *33.59* | *34.03* | *34.11* | *34.28* | *34.32* | **30.71** | *31.81* | *34.18* |
| Crude Oil Portion | **28.28** | **25.65** | **23.63** | **24.88** | **25.08** | **25.51** | *27.10* | *28.16* | *28.43* | *28.65* | *28.76* | *28.76* | **25.60** | *26.47* | *28.65* |
| Other Liquids (b) | **5.22** | **5.07** | **5.02** | **5.12** | **5.29** | **5.28** | *5.36* | *5.43* | *5.59* | *5.47* | *5.52* | *5.56* | **5.11** | *5.34* | *5.53* |
| Eurasia | **14.73** | **13.18** | **12.72** | **13.13** | **13.38** | **13.63** | *13.79* | *14.23* | *14.45* | *14.66* | *14.77* | *14.97* | **13.44** | *13.76* | *14.71* |
| China | **4.96** | **4.91** | **4.95** | **4.90** | **5.05** | **5.09** | *5.01* | *5.06* | *5.05* | *5.08* | *5.08* | *5.13* | **4.93** | *5.05* | *5.08* |
| Other Non-OECD | **14.49** | **14.21** | **14.74** | **14.06** | **13.77** | **14.47** | *15.21* | *14.94* | *14.43* | *15.11* | *15.60* | *15.23* | **14.37** | *14.60* | *15.10* |
| Total World Supply | **100.69** | **92.30** | **91.01** | **92.75** | **92.72** | **94.92** | *98.03* | *99.75* | *100.12* | *101.43* | *102.57* | *103.00* | **94.17** | *96.38* | *101.79* |
| Non-OPEC Supply | **67.19** | **61.58** | **62.36** | **62.75** | **62.35** | **64.14** | *65.57* | *66.15* | *66.10* | *67.32* | *68.29* | *68.69* | **63.46** | *64.57* | *67.61* |
| **Consumption (million barrels per day) (c)** | | | | | | | | | | | | | | | |
| OECD | **45.26** | **37.39** | **42.12** | **42.79** | **42.24** | **43.89** | *45.51* | *45.99* | *45.47* | *45.39* | *46.34* | *46.43* | **41.89** | *44.42* | *45.91* |
| U.S. (50 States) | **19.33** | **16.08** | **18.36** | **18.71** | **18.45** | **20.02** | *20.18* | *20.12* | *19.88* | *20.55* | *20.93* | *20.85* | **18.12** | *19.70* | *20.56* |
| U.S. Territories | **0.17** | **0.15** | **0.16** | **0.17** | **0.20** | **0.18** | *0.18* | *0.20* | *0.20* | *0.18* | *0.19* | *0.20* | **0.16** | *0.19* | *0.19* |
| Canada | **2.33** | **1.88** | **2.16** | **2.05** | **2.03** | **2.06** | *2.29* | *2.31* | *2.27* | *2.23* | *2.33* | *2.31* | **2.10** | *2.17* | *2.28* |
| Europe | **13.33** | **11.00** | **12.87** | **12.50** | **11.88** | **12.72** | *13.75* | *13.59* | *13.19* | *13.33* | *13.67* | *13.35* | **12.43** | *12.99* | *13.39* |
| Japan | **3.69** | **2.89** | **3.03** | **3.50** | **3.69** | **2.96** | *3.04* | *3.42* | *3.63* | *2.96* | *3.05* | *3.36* | **3.27** | *3.27* | *3.25* |
| Other OECD | **6.41** | **5.41** | **5.55** | **5.87** | **5.99** | **5.95** | *6.07* | *6.36* | *6.29* | *6.14* | *6.18* | *6.35* | **5.81** | *6.09* | *6.24* |
| Non-OECD | **50.33** | **47.44** | **51.21** | **52.59** | **52.36** | **52.82** | *53.55* | *54.07* | *54.20* | *55.54* | *55.71* | *55.86* | **50.40** | *53.21* | *55.34* |
| Eurasia | **4.86** | **4.48** | **5.28** | **5.17** | **4.91** | **4.99** | *5.39* | *5.24* | *5.04* | *5.13* | *5.53* | *5.39* | **4.95** | *5.14* | *5.27* |
| Europe | **0.71** | **0.69** | **0.71** | **0.72** | **0.73** | **0.73** | *0.74* | *0.75* | *0.74* | *0.75* | *0.76* | *0.76* | **0.71** | *0.74* | *0.75* |
| China | **13.89** | **14.08** | **14.65** | **15.11** | **15.26** | **15.46** | *15.17* | *15.39* | *15.81* | *16.06* | *15.77* | *16.05* | **14.43** | *15.32* | *15.92* |
| Other Asia | **13.35** | **11.63** | **12.59** | **13.61** | **13.79** | **13.38** | *13.30* | *13.99* | *14.39* | *14.60* | *14.20* | *14.63* | **12.80** | *13.62* | *14.45* |
| Other Non-OECD | **17.53** | **16.55** | **17.98** | **17.99** | **17.67** | **18.26** | *18.94* | *18.70* | *18.23* | *19.01* | *19.45* | *19.04* | **17.51** | *18.40* | *18.93* |
| Total World Consumption | **95.59** | **84.84** | **93.33** | **95.38** | **94.60** | **96.71** | *99.06* | *100.06* | *99.67* | *100.93* | *102.06* | *102.29* | **92.30** | *97.63* | *101.25* |
| **Total Crude Oil and Other Liquids Inventory Net Withdrawals (million barrels per day)** | | | | | | | | | | | | | | | |
| U.S. (50 States) | **-0.43** | **-1.68** | **0.49** | **0.89** | **0.48** | **0.49** | *-0.15* | *0.46* | *0.01* | *-0.57* | *0.03* | *0.42* | **-0.18** | *0.32* | *-0.02* |
| Other OECD | **-0.51** | **-1.16** | **0.04** | **0.69** | **0.76** | **0.16** | *0.38* | *-0.05* | *-0.15* | *0.02* | *-0.17* | *-0.36* | **-0.23** | *0.31* | *-0.16* |
| Other Stock Draws and Balance | **-4.17** | **-4.62** | **1.80** | **1.06** | **0.64** | **1.15** | *0.80* | *-0.10* | *-0.32* | *0.05* | *-0.37* | *-0.78* | **-1.47** | *0.62* | *-0.36* |
| Total Stock Draw | **-5.10** | **-7.46** | **2.32** | **2.63** | **1.87** | **1.80** | *1.03* | *0.31* | *-0.45* | *-0.50* | *-0.51* | *-0.71* | **-1.88** | *1.25* | *-0.55* |
| **End-of-period Commercial Crude Oil and Other Liquids Inventories (million barrels)** | | | | | | | | | | | | | | | |
| U.S. Commercial Inventory | **1,321** | **1,453** | **1,422** | **1,344** | **1,302** | **1,274** | *1,287* | *1,250* | *1,253* | *1,309* | *1,309* | *1,279* | **1,344** | *1,250* | *1,279* |
| OECD Commercial Inventory | **2,964** | **3,201** | **3,167** | **3,026** | **2,916** | **2,873** | *2,852* | *2,819* | *2,835* | *2,889* | *2,904* | *2,908* | **3,026** | *2,819* | *2,908* |

(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 August 5, 2021.

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 - August 2021

| | 2020 | | | | 2021 | | | | 2022 | | | | Year | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | 2020 | 2021 | 2022 |
| **Supply (million barrels per day)** | | | | | | | | | | | | | | | |
| Crude Oil Supply | | | | | | | | | | | | | | | |
| Domestic Production (a) | **12.81** | **10.67** | **10.79** | **10.87** | **10.69** | **11.22** | *11.26* | *11.30* | *11.46* | *11.62* | *11.86* | *12.11* | **11.28** | *11.12* | *11.77* |
| Alaska | **0.48** | **0.41** | **0.44** | **0.46** | **0.46** | **0.43** | *0.40* | *0.44* | *0.43* | *0.41* | *0.39* | *0.43* | **0.45** | *0.43* | *0.42* |
| Federal Gulf of Mexico (b) | **1.99** | **1.66** | **1.43** | **1.50** | **1.80** | **1.78** | *1.76* | *1.73* | *1.76* | *1.73* | *1.74* | *1.77* | **1.64** | *1.77* | *1.75* |
| Lower 48 States (excl GOM) | **10.35** | **8.60** | **8.92** | **8.91** | **8.44** | **9.00** | *9.09* | *9.14* | *9.27* | *9.48* | *9.73* | *9.92* | **9.19** | *8.92* | *9.60* |
| Crude Oil Net Imports (c) | **2.90** | **3.08** | **2.31** | **2.51** | **2.87** | **2.91** | *3.98* | *3.65* | *3.68* | *4.70* | *4.86* | *3.77* | **2.70** | *3.35* | *4.25* |
| SPR Net Withdrawals | **0.00** | **-0.23** | **0.15** | **0.04** | **0.00** | **0.18** | *0.00* | *0.05* | *0.05* | *0.05* | *0.03* | *0.11* | **-0.01** | *0.06* | *0.06* |
| Commercial Inventory Net Withdrawals | **-0.55** | **-0.54** | **0.38** | **0.13** | **-0.18** | **0.62** | *0.11* | *-0.06* | *-0.30* | *-0.02* | *0.27* | *-0.02* | **-0.14** | *0.12* | *-0.01* |
| Crude Oil Adjustment (d) | **0.61** | **0.18** | **0.39** | **0.34** | **0.43** | **0.72** | *0.34* | *0.16* | *0.22* | *0.22* | *0.23* | *0.16* | **0.38** | *0.41* | *0.21* |
| Total Crude Oil Input to Refineries | **15.77** | **13.16** | **14.03** | **13.90** | **13.81** | **15.65** | *15.68* | *15.10* | *15.11* | *16.57* | *17.25* | *16.13* | **14.21** | *15.06* | *16.27* |
| Other Supply | | | | | | | | | | | | | | | |
| Refinery Processing Gain | **1.02** | **0.82** | **0.94** | **0.92** | **0.84** | **1.03** | *1.07* | *1.04* | *1.06* | *1.09* | *1.15* | *1.13* | **0.92** | *1.00* | *1.11* |
| Natural Gas Plant Liquids Production | **5.12** | **4.96** | **5.33** | **5.23** | **4.86** | **5.44** | *5.35* | *5.46* | *5.56* | *5.73* | *5.86* | *5.93* | **5.16** | *5.28* | *5.77* |
| Renewables and Oxygenate Production (e) | **1.11** | **0.80** | **1.03** | **1.07** | **1.03** | **1.13** | *1.12* | *1.09* | *1.08* | *1.12* | *1.14* | *1.14* | **1.01** | *1.09* | *1.12* |
| Fuel Ethanol Production | **1.02** | **0.70** | **0.92** | **0.97** | **0.90** | **1.00** | *1.01* | *0.98* | *0.98* | *1.02* | *1.03* | *1.02* | **0.91** | *0.97* | *1.01* |
| Petroleum Products Adjustment (f) | **0.22** | **0.19** | **0.20** | **0.19** | **0.19** | **0.21** | *0.21* | *0.21* | *0.20* | *0.22* | *0.22* | *0.22* | **0.20** | *0.21* | *0.22* |
| Product Net Imports (c) | **-4.03** | **-2.94** | **-3.12** | **-3.32** | **-2.94** | **-3.12** | *-2.99* | *-3.26* | *-3.38* | *-3.58* | *-4.42* | *-4.04* | **-3.35** | *-3.08* | *-3.86* |
| Hydrocarbon Gas Liquids | **-1.99** | **-1.86** | **-1.86** | **-2.03** | **-2.02** | **-2.24** | *-2.23* | *-2.10* | *-2.13* | *-2.22* | *-2.34* | *-2.21* | **-1.94** | *-2.15* | *-2.23* |
| Unfinished Oils | **0.31** | **0.25** | **0.34** | **0.19** | **0.14** | **0.32** | *0.39* | *0.29* | *0.20* | *0.25* | *0.30* | *0.20* | **0.27** | *0.29* | *0.24* |
| Other HC/Oxygenates | **-0.10** | **-0.05** | **-0.04** | **-0.04** | **-0.08** | **-0.05** | *-0.07* | *-0.09* | *-0.10* | *-0.08* | *-0.08* | *-0.09* | **-0.06** | *-0.07* | *-0.09* |
| Motor Gasoline Blend Comp. | **0.39** | **0.36** | **0.48** | **0.43** | **0.55** | **0.73** | *0.54* | *0.16* | *0.53* | *0.76* | *0.42* | *0.22* | **0.42** | *0.49* | *0.48* |
| Finished Motor Gasoline | **-0.72** | **-0.40** | **-0.58** | **-0.78** | **-0.66** | **-0.61** | *-0.41* | *-0.60* | *-0.83* | *-0.60* | *-0.68* | *-0.70* | **-0.62** | *-0.57* | *-0.70* |
| Jet Fuel | **-0.07** | **0.09** | **0.12** | **0.07** | **0.03** | **0.10** | *0.09* | *0.11* | *-0.03* | *-0.02* | *0.03* | *0.10* | **0.05** | *0.08* | *0.02* |
| Distillate Fuel Oil | **-1.19** | **-0.86** | **-1.15** | **-0.74** | **-0.49** | **-0.91** | *-0.81* | *-0.48* | *-0.52* | *-0.97* | *-1.32* | *-1.01* | **-0.98** | *-0.67* | *-0.96* |
| Residual Fuel Oil | **-0.02** | **0.02** | **0.05** | **0.05** | **0.08** | **0.04** | *0.01* | *0.06* | *-0.02* | *-0.07* | *-0.06* | *0.04* | **0.02** | *0.05* | *-0.03* |
| Other Oils (g) | **-0.65** | **-0.49** | **-0.49** | **-0.48** | **-0.49** | **-0.49** | *-0.51* | *-0.60* | *-0.49* | *-0.63* | *-0.69* | *-0.58* | **-0.52** | *-0.52* | *-0.60* |
| Product Inventory Net Withdrawals | **0.12** | **-0.91** | **-0.04** | **0.71** | **0.66** | **-0.31** | *-0.26* | *0.47* | *0.26* | *-0.60* | *-0.27* | *0.34* | **-0.03** | *0.14* | *-0.07* |
| Total Supply | **19.33** | **16.08** | **18.36** | **18.71** | **18.45** | **20.02** | *20.18* | *20.12* | *19.88* | *20.55* | *20.93* | *20.85* | **18.12** | *19.70* | *20.56* |
| **Consumption (million barrels per day)** | | | | | | | | | | | | | | | |
| Hydrocarbon Gas Liquids | **3.31** | **2.83** | **2.95** | **3.70** | **3.40** | **3.22** | *2.99* | *3.62* | *3.81* | *3.33* | *3.34* | *3.87* | **3.20** | *3.31* | *3.58* |
| Unfinished Oils | **0.14** | **0.11** | **0.01** | **0.03** | **0.05** | **0.07** | *0.01* | *0.00* | *0.00* | *0.00* | *0.00* | *0.00* | **0.07** | *0.03* | *0.00* |
| Motor Gasoline | **8.49** | **7.11** | **8.50** | **8.02** | **8.00** | **9.10** | *9.25* | *8.73* | *8.37* | *9.25* | *9.34* | *8.87* | **8.03** | *8.78* | *8.96* |
| Fuel Ethanol blended into Motor Gasoline | **0.85** | **0.72** | **0.87** | **0.84** | **0.82** | **0.95** | *0.93* | *0.89* | *0.85* | *0.94* | *0.95* | *0.92* | **0.82** | *0.90* | *0.92* |
| Jet Fuel | **1.56** | **0.69** | **0.97** | **1.09** | **1.13** | **1.34** | *1.53* | *1.52* | *1.48* | *1.60* | *1.71* | *1.71* | **1.08** | *1.38* | *1.63* |
| Distillate Fuel Oil | **3.97** | **3.51** | **3.70** | **3.92** | **3.97** | **3.96** | *3.97* | *4.18* | *4.24* | *4.17* | *4.13* | *4.25* | **3.78** | *4.02* | *4.20* |
| Residual Fuel Oil | **0.17** | **0.15** | **0.32** | **0.23** | **0.26** | **0.23** | *0.29* | *0.24* | *0.23* | *0.21* | *0.26* | *0.26* | **0.22** | *0.26* | *0.24* |
| Other Oils (g) | **1.68** | **1.68** | **1.91** | **1.71** | **1.63** | **2.09** | *2.15* | *1.82* | *1.75* | *1.99* | *2.15* | *1.89* | **1.75** | *1.93* | *1.95* |
| Total Consumption | **19.33** | **16.08** | **18.36** | **18.71** | **18.45** | **20.02** | *20.18* | *20.12* | *19.88* | *20.55* | *20.93* | *20.85* | **18.12** | *19.70* | *20.56* |
| **Total Petroleum and Other Liquids Net Imports** | **-1.13** | **0.14** | **-0.81** | **-0.81** | **-0.07** | **-0.22** | *0.99* | *0.39* | *0.29* | *1.12* | *0.44* | *-0.27* | **-0.65** | *0.27* | *0.39* |
| **End-of-period Inventories (million barrels)** | | | | | | | | | | | | | | | |
| Commercial Inventory | | | | | | | | | | | | | | | |
| Crude Oil (excluding SPR) | **482.5** | **531.9** | **497.3** | **485.3** | **501.9** | **445.5** | *435.3* | *440.9* | *467.5* | *469.1* | *443.8* | *445.8* | **485.3** | *440.9* | *445.8* |
| Hydrocarbon Gas Liquids | **180.8** | **233.9** | **299.1** | **229.2** | **168.6** | **201.5** | *240.2* | *192.8* | *152.6* | *202.3* | *243.4* | *201.9* | **229.2** | *192.8* | *201.9* |
| Unfinished Oils | **100.1** | **91.9** | **81.4** | **78.2** | **93.3** | **90.7** | *90.5* | *83.1* | *93.1* | *90.7* | *90.0* | *83.2* | **78.2** | *83.1* | *83.2* |
| Other HC/Oxygenates | **33.6** | **26.2** | **25.2** | **29.9** | **29.1** | **26.8** | *28.2* | *28.4* | *30.5* | *29.3* | *29.0* | *29.3* | **29.9** | *28.4* | *29.3* |
| Total Motor Gasoline | **260.8** | **253.3** | **226.5** | **243.2** | **237.6** | **235.5** | *226.1* | *234.2* | *241.7* | *246.4* | *233.3* | *249.4* | **243.2** | *234.2* | *249.4* |
| Finished Motor Gasoline | **22.6** | **23.5** | **22.4** | **25.3** | **20.3** | **20.5** | *22.2* | *24.4* | *24.1* | *23.9* | *23.1* | *26.2* | **25.3** | *24.4* | *26.2* |
| Motor Gasoline Blend Comp. | **238.3** | **229.8** | **204.1** | **217.9** | **217.4** | **215.0** | *203.9* | *209.8* | *217.6* | *222.5* | *210.3* | *223.2* | **217.9** | *209.8* | *223.2* |
| Jet Fuel | **39.9** | **41.5** | **40.1** | **38.6** | **39.0** | **45.1** | *44.1* | *40.8* | *40.2* | *40.9* | *43.2* | *40.1* | **38.6** | *40.8* | *40.1* |
| Distillate Fuel Oil | **126.7** | **175.4** | **171.7** | **160.4** | **145.5** | **138.7** | *140.1* | *142.4* | *131.7* | *136.2* | *142.9* | *144.1* | **160.4** | *142.4* | *144.1* |
| Residual Fuel Oil | **34.4** | **39.6** | **32.1** | **30.2** | **30.9** | **31.6** | *29.3* | *31.2* | *31.2* | *32.1* | *30.4* | *31.8* | **30.2** | *31.2* | *31.8* |
| Other Oils (g) | **62.0** | **59.2** | **48.6** | **49.3** | **55.8** | **58.5** | *53.6* | *55.7* | *64.4* | *62.0* | *52.6* | *53.9* | **49.3** | *55.7* | *53.9* |
| Total Commercial Inventory | **1320.8** | **1452.8** | **1422.0** | **1344.3** | **1301.7** | **1273.8** | *1287.5* | *1249.7* | *1252.9* | *1308.9* | *1308.6* | *1279.4* | **1344.3** | *1249.7* | *1279.4* |
| Crude Oil in SPR | **635.0** | **656.0** | **642.2** | **638.1** | **637.8** | **621.3** | *621.3* | *617.0* | *612.8* | *608.5* | *605.8* | *596.1* | **638.1** | *617.0* | *596.1* |

(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) For net imports and inventories “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; for consumption “Other Oils” also includes renewable fuels except fuel ethanol.

- = no data available

SPR: Strategic Petroleum Reserve

HC: Hydrocarbons

Notes: EIA completed modeling and analysis for this report on August 5, 2021.

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: *Petroleum Supply Monthly* , DOE/EIA-0109; *Petroleum Supply Annual* , DOE/EIA-0340/2; and *Weekly Petroleum Status Report* , DOE/EIA-0208.

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

**Forecasts:** EIA Short-Term Integrated Forecasting System.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - August 2021

| | 2020 | | | | 2021 | | | | 2022 | | | | Year | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | 2020 | 2021 | 2022 |
| **Supply (billion cubic feet per day)** | | | | | | | | | | | | | | | |
| Total Marketed Production | **102.27** | **96.83** | **97.55** | **98.70** | **97.31** | **100.36** | *100.53* | *101.00* | *101.26* | *102.14* | *103.61* | *104.65* | **98.83** | *99.81* | *102.92* |
| Alaska | **0.96** | **0.88** | **0.88** | **0.98** | **1.02** | **0.90** | *0.74* | *0.88* | *0.92* | *0.81* | *0.73* | *0.87* | **0.92** | *0.88* | *0.83* |
| Federal GOM (a) | **2.72** | **2.22** | **1.72** | **1.73** | **2.27** | **2.23** | *2.19* | *2.09* | *2.09* | *2.01* | *1.90* | *1.87* | **2.09** | *2.19* | *1.97* |
| Lower 48 States (excl GOM) | **98.58** | **93.74** | **94.95** | **95.99** | **94.03** | **97.23** | *97.61* | *98.03* | *98.25* | *99.32* | *100.98* | *101.91* | **95.81** | *96.74* | *100.12* |
| Total Dry Gas Production | **94.79** | **89.68** | **89.83** | **91.15** | **90.29** | **92.49** | *92.67* | *93.11* | *93.34* | *94.15* | *95.51* | *96.47* | **91.35** | *92.15* | *94.88* |
| LNG Gross Imports | **0.24** | **0.12** | **0.09** | **0.09** | **0.15** | **0.08** | *0.18* | *0.20* | *0.32* | *0.18* | *0.18* | *0.20* | **0.13** | *0.15* | *0.22* |
| LNG Gross Exports | **7.92** | **5.52** | **3.91** | **8.78** | **9.27** | **9.84** | *8.99* | *9.83* | *10.47* | *9.73* | *9.41* | *11.00* | **6.53** | *9.48* | *10.15* |
| Pipeline Gross Imports | **7.60** | **6.08** | **6.39** | **7.27** | **8.68** | **6.67** | *6.71* | *6.84* | *7.38* | *6.36* | *6.38* | *6.71* | **6.84** | *7.22* | *6.71* |
| Pipeline Gross Exports | **8.15** | **7.17** | **8.09** | **8.21** | **8.31** | **8.50** | *9.27* | *9.47* | *9.31* | *8.65* | *9.37* | *9.37* | **7.91** | *8.89* | *9.18* |
| Supplemental Gaseous Fuels | **0.19** | **0.17** | **0.15** | **0.18** | **0.18** | **0.15** | *0.17* | *0.17* | *0.17* | *0.17* | *0.18* | *0.18* | **0.17** | *0.17* | *0.17* |
| Net Inventory Withdrawals | **12.74** | **-12.24** | **-7.68** | **5.36** | **17.19** | **-8.67** | *-7.83* | *4.89* | *16.51* | *-10.64* | *-8.90* | *4.82* | **-0.46** | *1.34* | *0.39* |
| Total Supply | **99.50** | **71.12** | **76.78** | **87.06** | **98.90** | **72.38** | *73.65* | *85.89* | *97.95* | *71.85* | *74.56* | *88.00* | **83.61** | *82.65* | *83.04* |
| Balancing Item (b) | **-0.19** | **-0.28** | **0.05** | **-0.98** | **0.27** | **-0.96** | *-0.50* | *0.43* | *0.48* | *0.73* | *1.11* | *0.66* | **-0.35** | *-0.19* | *0.75* |
| Total Primary Supply | **99.31** | **70.84** | **76.83** | **86.08** | **99.17** | **71.43** | *73.15* | *86.33* | *98.42* | *72.58* | *75.67* | *88.66* | **83.25** | *82.46* | *83.78* |
| **Consumption (billion cubic feet per day)** | | | | | | | | | | | | | | | |
| Residential | **22.83** | **8.20** | **3.82** | **16.00** | **25.59** | **7.36** | *3.66* | *16.83* | *25.08* | *7.96* | *3.61* | *16.88* | **12.70** | *13.31* | *13.33* |
| Commercial | **13.93** | **5.82** | **4.36** | **10.31** | **14.81** | **6.23** | *4.75* | *10.93* | *14.91* | *6.25* | *4.70* | *10.84* | **8.60** | *9.16* | *9.15* |
| Industrial | **24.65** | **20.62** | **21.15** | **23.83** | **24.05** | **21.67** | *21.21* | *24.27* | *24.61* | *22.08* | *21.52* | *23.96* | **22.56** | *22.80* | *23.04* |
| Electric Power (c) | **29.55** | **29.05** | **40.10** | **28.19** | **26.65** | **28.78** | *36.08* | *26.40* | *25.51* | *28.76* | *38.13* | *28.80* | **31.74** | *29.49* | *30.33* |
| Lease and Plant Fuel | **5.17** | **4.90** | **4.93** | **4.99** | **4.92** | **5.07** | *5.08* | *5.11* | *5.12* | *5.16* | *5.24* | *5.29* | **5.00** | *5.05* | *5.20* |
| Pipeline and Distribution Use | **3.02** | **2.15** | **2.33** | **2.61** | **3.01** | **2.17** | *2.22* | *2.65* | *3.04* | *2.21* | *2.30* | *2.72* | **2.53** | *2.51* | *2.57* |
| Vehicle Use | **0.16** | **0.10** | **0.13** | **0.13** | **0.14** | **0.15** | *0.15* | *0.15* | *0.16* | *0.16* | *0.16* | *0.16* | **0.13** | *0.15* | *0.16* |
| Total Consumption | **99.31** | **70.84** | **76.83** | **86.08** | **99.17** | **71.43** | *73.15* | *86.33* | *98.42* | *72.58* | *75.67* | *88.66* | **83.25** | *82.46* | *83.78* |
| **End-of-period Inventories (billion cubic feet)** | | | | | | | | | | | | | | | |
| Working Gas Inventory | **2,029** | **3,133** | **3,840** | **3,341** | **1,801** | **2,595** | *3,315* | *2,865* | *1,379* | *2,347* | *3,166* | *2,722* | **3,341** | *2,865* | *2,722* |
| East Region (d) | **385** | **655** | **890** | **763** | **313** | **519** | *815* | *649* | *148* | *419* | *672* | *472* | **763** | *649* | *472* |
| Midwest Region (d) | **471** | **747** | **1,053** | **918** | **395** | **634** | *971* | *809* | *250* | *512* | *879* | *745* | **918** | *809* | *745* |
| South Central Region (d) | **857** | **1,221** | **1,313** | **1,155** | **760** | **995** | *1,038* | *990* | *684* | *938* | *1,023* | *956* | **1,155** | *990* | *956* |
| Mountain Region (d) | **92** | **177** | **235** | **195** | **113** | **176** | *196* | *153* | *99* | *153* | *221* | *203* | **195** | *153* | *203* |
| Pacific Region (d) | **200** | **308** | **318** | **282** | **197** | **245** | *267* | *236* | *170* | *297* | *342* | *318* | **282** | *236* | *318* |
| Alaska | **23** | **25** | **31** | **28** | **23** | **26** | *28* | *28* | *28* | *28* | *28* | *28* | **28** | *28* | *28* |

(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 August 5, 2021.

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

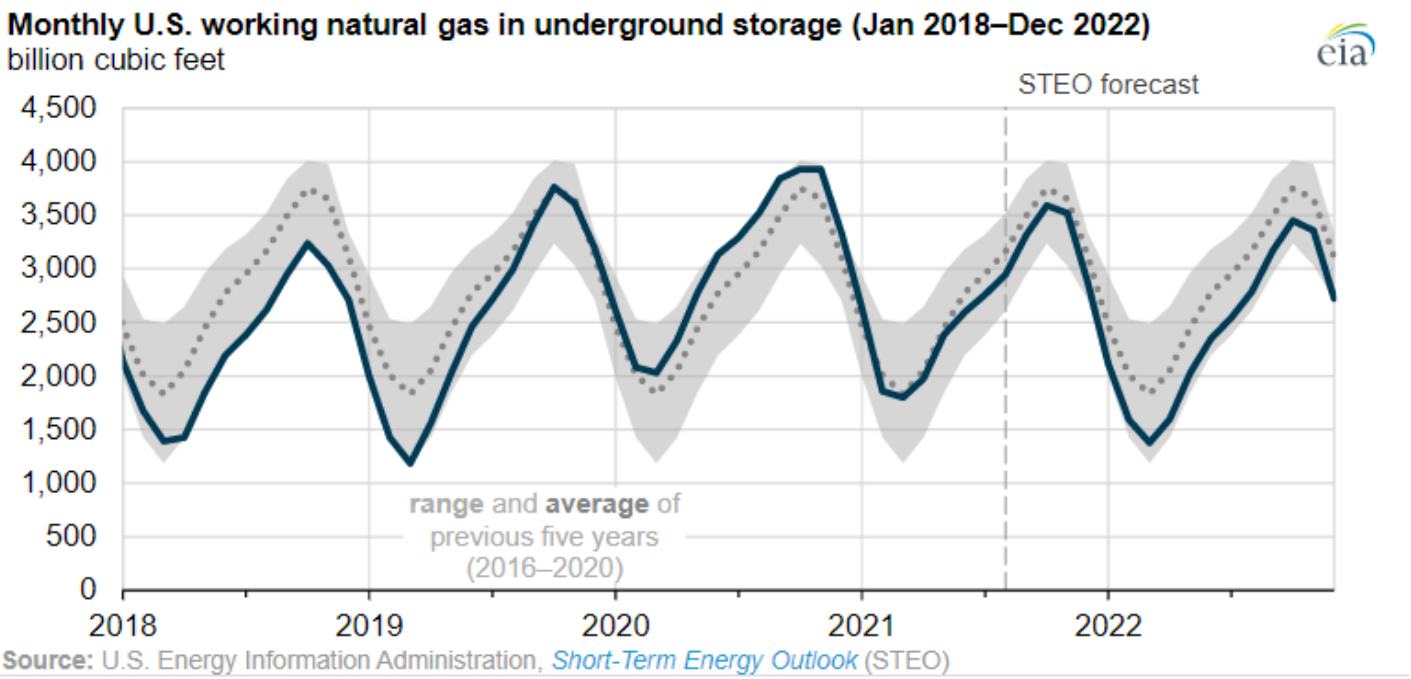
**Historical data**: Latest data available from Energy Information Administration databases supporting the following reports: *Natural Gas Monthly* , DOE/EIA-0130; and *Electric Power Monthly* , Minor discrepancies with published historical data are due to independent rounding.

**Forecasts:** EIA Short-Term Integrated Forecasting System.

https://www.eia.gov/todayinenergy/detail.php?id=49096

AUGUST 11, 2021

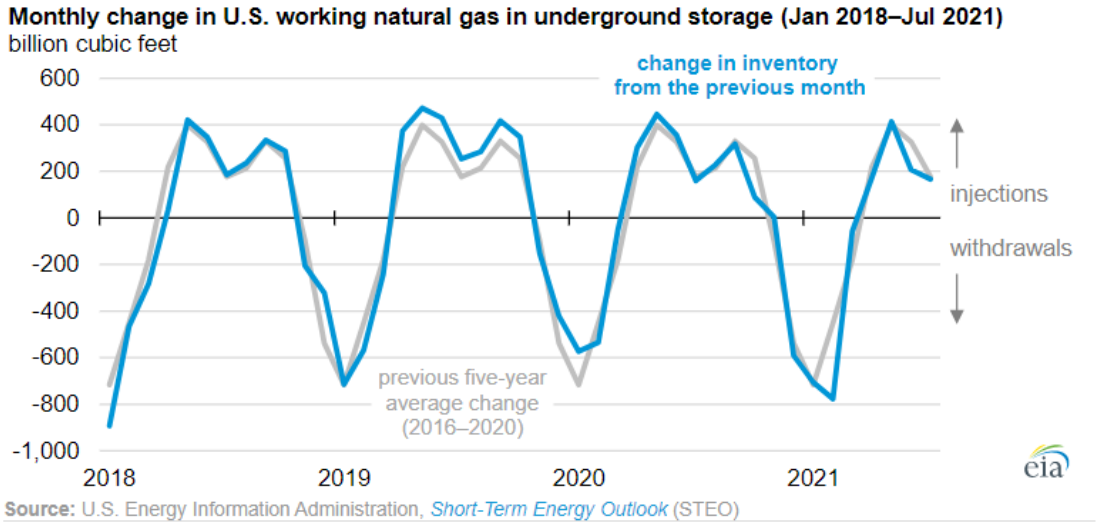
# EIA expects U.S. natural gas inventories to enter winter heating season below average




In our August 2021 *Short-Term Energy Outlook* (STEO), we forecast U.S. inventories of natural gas will reach 3,592 billion cubic feet (Bcf) by November 1, the beginning of the winter heating season. This amount is 159 Bcf below its previous five-year average (2016–2020). Above-average withdrawals of natural gas from storage in the 2020–2021 winter heating season and below-average injections into storage this summer contributed to our forecast of below-average inventories of natural gas, along with relatively flat dry natural gas production and high natural gas exports.

U.S. production of dry natural gas has remained relatively flat, averaging 91.5 billion cubic feet per day (Bcf/d) so far in 2021 (January–July), 0.4 Bcf/d below the same period in 2020. Production in January 2021 and July 2021 both averaged 92.5 Bcf/d. Production of natural gas declined in February 2021 by more than 6.5 Bcf/d because of extremely cold weather and well freeze-offs, but it increased to 92.0 Bcf/d the next month.

U.S. exports of liquefied natural gas (LNG) have reached record-high levels so far in 2021 due to newly added LNG export capacity and increases in international natural gas and LNG prices. In 2020, U.S. LNG exports averaged 6.5 Bcf/d during a time of low global natural gas demand following the onset of the COVID-19 pandemic. In contrast, U.S. LNG exports have averaged 9.4 Bcf/d so far this year, and we forecast that LNG exports will average 9.5 Bcf/d for the year as a whole. Pipeline exports of natural gas have also increased in 2021 compared with 2020. U.S. pipeline exports of natural gas have averaged 8.5 Bcf/d so far in 2021, compared with 7.9 Bcf/d in 2020. We forecast that U.S. pipeline exports of natural gas will average 8.8 Bcf/d for all of 2021.




**Source:** U.S. Energy Information Administration, *Short-Term Energy Outlook* (STEO)

The high level of U.S. exports in 2021 combined with the relatively flat production has contributed to below-average injections of natural gas to storage this summer as we head into the winter heating season. So far this injection season (April 1–October 31), U.S. inventories of natural gas have grown by 960 Bcf, 14% less than the five-year average inventory build from April to July. In June 2021, the hottest June on record for the United States, natural gas inventories grew by 207 Bcf, 120 Bcf less than the five-year average inventory build for June. In May and June, U.S. consumption of natural gas increased 4.2 Bcf/d, or 6.2%, because of higher electric power sector consumption in response to the hot weather.

**Principal contributors:** Tim Hess, Corrina Ricker

**Tags:** storage, natural gas, STEO (Short-Term Energy Outlook), inventories/stocks

https://www.reuters.com/world/americas/exclusive-perus-new-govt-eyes-natural-gas-hydroelectric-sectors-public-companies-2021-08-08/?taid=610ff2a33233bc00010b6c4e&utm_campaign=trueAnthem:+Trending+Content&utm_medium=trueAnthem&utm_source=twitter

August 8, 20215:08 AM MDTLast Updated a day ago

## Americas

# EXCLUSIVE Peru's new govt eyes natural gas, hydroelectric sectors for public companies

Marco AquinoMarcelo Rochabrun

6 minute read

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Peru's Prime Minister Guido Bellido speaks during an interview with Reuters in Lima, Peru, August 7, 2021. REUTERS/Angela Ponce

LIMA, Aug 8 (Reuters) - Peru's new Prime Minister Guido Bellido told Reuters on Saturday that the state plans to participate in key industries, including natural gas and new hydroelectric projects, under a new leftist administration.

Bellido, the top aide to newly inaugurated President Pedro Castillo, said the government will also seek to create new public companies, a shift for the Andean nation which in recent decades has focused on divesting its state-controlled corporations.

Castillo, a former elementary school teacher, and Bellido are now poised to tilt Peru sharply to the left if they can surmount the significant hurdle of getting greenlit by the opposition-led Congress.

They have also established a committee to keep inflation in check, Bellido said, and shore up the waning strength of the local sol currency, which is at a historic low against the dollar largely due to higher political risk, analysts say.

Peru's more moderate Economy Minister Pedro Francke will be in charge of the committee, he said, adding - "We need to stop the dollar's rise" against the local Sol currency.

Francke initially balked at serving under the newly elected party's more hardline prime minister, sparking a last-minute impasse minutes before he was supposed to be sworn into the cabinet. Bellido said that Francke would be expected to consult with the rest of the cabinet.

"Everything is a dialogue, nobody can have an island, the economy is not an island," he said.

Bellido, who is also a congressman for his native Cuzco region, was little-known in Lima political circles before Castillo, won the presidency this June, campaigning with the Marxist-Leninist party Free Peru.

Unlike Castillo, Bellido is a longtime member of Free Peru and defines himself as a socialist.

His other priorities, he said, include ensuring that industries seek warmer relations with the communities they operate in and invest in environment protection.

In a wide-ranging interview from Lima's ornamental government palace, Bellido said he has little concern for potential challenges from Congress, and said Castillo will not be impeached, unlike his predecessor Martin Vizcarra.

Castillo is Peru's fifth president in five years due to continued political turmoil. He has yet to give any interviews since taking office.

"It is a lesson that a peasant is now the president of the republic, it is a cultural lesson," Bellido said, referring to Castillo's background growing up in an impoverished hamlet in rural Peru.

STRATEGIC SECTORS

During Castillo's presidential campaign, he accused private enterprise of "plundering" the nation's wealth and said he would seek to nationalize natural gas, gold, silver, uranium, copper and lithium mining projects.

He later played down those comments, saying private investment would be respected.

Bellido, however, said in the interview that the state will indeed have a degree of participation in key industries.

"Our feeling is that strategic sectors need to be in the hands of the government," he said.

"In my opinion, natural gas is a strategic resource and needs to have government participation (as well) as new hydroelectric projects of large size," he added, specifying that the mining sector of the world's No. 2 copper producer would ultimately be left in the control of private enterprise.

Bellido's intent to have the government participate in natural gas could have significant implications for the Camisea consortium, the largest fuel producer in Peru. The consortium is led by Argentina's Pluspetrol (PLUSPC.UL), with smaller stakes held by South Korean conglomerate SK Group (096770.KS), Hunt Oil and Repsol SA. (REP.MC)
That natural gas is then liquefied by a separate consortium, called Peru LNG (PELNG.UL), which includes Royal Dutch Shell (RDSa.L), Japan's Marubeni Corp (8002.T), SK and Hunt.

ENVIRONMENTAL RESPONSIBILITIES

Bellido was born in the Andean region of Cuzco and speaks the indigenous language Quechua, unlike most former prime ministers who were raised in Spanish-speaking Lima.

Castillo, who has promised to prioritize marginalized Peruvians from remote regions, has been quick to dispatch Bellido to help mediate a mining conflict near his home region. Chinese miner MMG LTD (1208.HK) operates the Las Bambas mine, 1,100 km (700 miles) southeast of the capital Lima and one of the largest copper deposits in Peru.

Residents of the area recently blocked a key road that MMG uses to transport copper to a coastal port. They complain so many trucks cross a poorly-maintained dirt road that their agricultural fields spoil covered in mineral dust.

Following Bellido's visit, residents agreed to halt their protest for 60 days in search for a more permanent solution.

"In seeking high profitability, (miners) have cast aside their environmental responsibilities," Bellido said of the dispute.

While he acknowledged that Peru is a "mining country," he said that under the new administration, corporations would need to invest more in improving relations with local communities. But he stressed that the Castillo administration will seek to forge agreements rather than foment confrontation with miners.

"We need to have dialogue, build consensus, we won't impose anything here," he said.

Reporting by Marco Aquino and Marcelo Rochabrun; Editing by Aislinn Laing and Aurora Ellis
Our Standards: The Thomson Reuters Trust Principles.

https://lngprime.com/africa/algerias-sonatrach-resumes-skikda-lng-production/26272/

# Algeria’s Sonatrach resumes Skikda LNG production

By**LNG Prime Staff**

August 6, 2021

 Skikda LNG (Image: KBR)

**Algerian state energy firm Sonatrach said it has restarted its Skikda LNG export plant following a technical issue at the facility.**

Sonatrach said in a statement the facility resumed production on July 30 after a 45-day-long closure.

During the closure, Sonatrach has completed repair works on a gas turbine and maintenance planned for 2022, it said.

The firm previously said the shutdown was caused by “a sudden failure of a gas turbine control mechanism.”

Sonatrach added that the shutdown did not affect LNG deliveries to its customers as it provided the fuel from its three other units located at the Arzew facility.

To remind, the firm said last year it had to repair and replace some damaged parts on one of the 14 gas turbines at Skikda’s 4 mtpa LNG train. The incident with the turbine occurred after a maintenance shutdown.

The company said then replacing the entire turbine would have resulted in delaying the restart for more than 16 months.

Algeria became the world’s first LNG producer in 1964 when Sonatrach’s Arzew facility came online.

According to GIIGNL data, Algeria has currently about 25.3 mtpa operational LNG export capacity at Arzew and Skikda.

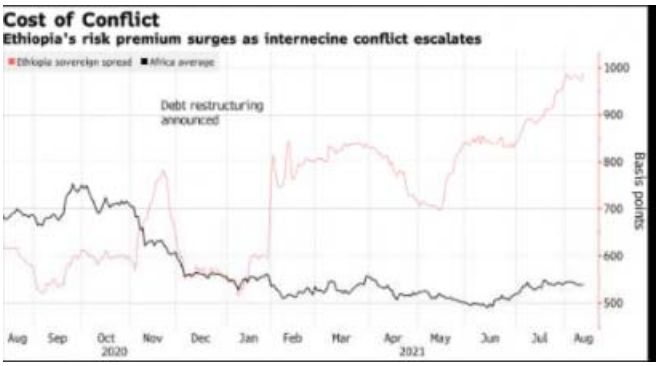
Algeria exported only 10.58 million tonnes during last year sending the fuel mainly to Turkey, France, and Italy, the data shows.

Bloomberg @TheTerminal
Next Africa: What Does Rwanda Stand to Gain in Mozambique?
2021-08-13 10:51:36.740 GMT

By Antony Sguazzin
(Bloomberg) -- Welcome to Next Africa, a weekly newsletter of where the continent stands now — and where it's going next.
The retaking of a key Mozambican port this week by a force involving troops from Rwanda may signal a turning point in the battle against a four-year Islamist militant insurgency.
It also upended regional geopolitics.
Mozambique is a member of the Southern African Development Community, yet President Filipe Nyusi dragged his feet in inviting troops from some of his nation's staunchest traditional allies, such as Zimbabwe and South Africa. It meanwhile let in Rwanda, and by the time SADC's troops arrived, the port of Mocimboa da Praia had been recaptured.
"It speaks to a lack of congruity in SADC," said Douglas Mason, an associate at Eunomix, a political risk consultancy. Rwanda's deployment is "quite unparalleled."
South Africa is Mozambique's biggest trade partner and Zimbabwe has a long military history with it. In the 1970s, Mozambique harbored the liberation army of former Zimbabwean President Robert Mugabe, whose troops in the 1980s and 1990s helped quell a rebellion by Mozambican rebel group Renamo.
But this time Mozambique's ruling Frelimo party only reluctantly accepted their help even as the Islamists brought TotalEnergies' $20 billion gas project to a halt and beheaded locals.
A multi-nation force would bring scrutiny to the affected region, Cabo Delgado, which is riven with ruling party patronage. Rwanda is less likely to look too closely, Mason said. "It's no accident that Rwanda got there first," he said.
It's unclear what Rwanda gains from its deployment.
Still, Cassien Ntamuhanga, a fugitive accused of plotting against the government in Kigali who had applied for asylum in Mozambique was taken into custody on May 23. Ntamuhanga's whereabouts are not publicly known since then. Human Rights Watch cited unidentified people saying he was seized on Inhaca Island by uniformed Mozambican security service agents.
While there are other Rwandan fugitives in Mozambique, neither government has commented on whether there will be cooperation on returning them to the east African country.News & Opinion
Zambia Votes | Zambians are awaiting results from Thursday's general election, in which incumbent President Edgar Lungu is seeking to beat main opposition leader, Hakainde Hichilema, to retain power. The government restricted access to WhatsApp, Facebook and other social media platforms, while voters in record numbers waited for as long as 10 hours to cast ballots. The final result is expected within three days after balloting closed.

Fintech Deals | Mobility startup Moove has raised $23 million to provide financing to Uber drivers to buy cars across sub-Saharan Africa. Moove, co-located in Uber offices in Lagos, Johannesburg and Accra, plans to launch in Cape Town and Durban by September. Meanwhile, Bank Zero in South Africa has opened for business, with a mobile app that offers accounts for retail and business customers, including in the informal sector. Somalia has set up a national payments system as part of plans to develop the financial industry following decades of political and economic instability.

National Service | Fighting in northern Ethiopia may intensify after Prime Minister Abiy Ahmed urged citizens to join the army, which may add to the misery caused by nine months of civil war between the federal government and dissidents in the Tigray region. About 300,000 people face “emergency levels of hunger” in the Amhara and Afar states, where Tigrayan forces began an offensive after regaining most of their territory from government troops. Meanwhile, the premium demanded on Ethiopia’s 2024 Eurobonds instead of U.S. Treasuries has climbed to 987 basis points, the highest in Africa after Zambia.




Assets Transfer | Zimbabwe is pressing ahead with a plan to combine its mining assets under a private-public enterprise, even as evidence mounts that the project could be linked to a tycoon sanctioned by the U.S. and U.K. Previously unreported documents show that weeks after Kudakwashe Tagwirei was sanctioned by the U.S., his Mauritius-based Sotic International began plans to shift its assets to a newly-created Zimbabwean holding company called Ziwa Resources.

Virus Update | Kenya will require all government workers to receive at least one dose of the Covid-19 vaccine before Aug. 23 or face disciplinary action. Some staff members have opted not to get inoculated so they can continue working from home, which is hurting service delivery, according to the nation’s public service head, Joseph Kinyua. Guinea’s government plans to impose a similar directive -- requiring state workers and visitors to present a health pass before accessing public offices.Past & Prologue

Data Watch

* South African business confidence fell to a nine-month low in July, after a week of deadly riots, looting and arson cost the economy about $3.4 billion in lost output and imperiled at least

150,000 jobs.
* Ghana's inflation rate rose to 9% in July from 7.8% in June. Consumer inflation quickened more than forecast after food, housing and transport prices surged.
* Nedbank's headline earnings for the six months through June increased by 148% to about $357.3 million, but remained 24% below its first-half performance in 2019.

Safaricom's shares climbed to an unprecedented 43 shillings on Tuesday in a rally that analysts think overvalued Kenya's biggest company.

Coming Up
* August 16 Nigeria inflation for July
* August 17 Rwanda interest-rate decision, Southern African leaders meeting on Covid-19
* August 18 South Africa inflation for July, retail sales for June, Namibia interest-rate decision
* August 19 Botswana interest-rate decision
* August 20 Bloomberg's August economic surveys for South Africa, Nigeria, Kenya, Ghana, Angola, Uganda, Zambia, Mozambique, Rwanda and Botswana; Kenyan court to deliver judgement on constitutional amendment push

Last Word
Qatar National Bank asked a U.S. court to order Eritrea to pay nearly $300 million of debt after the Horn of Africa nation refused to participate in lawsuits. The Doha-based bank's request came after Eritrea failed to respond to claims seeking to enforce a 2019 U.K. ruling. The quarrel centers on $200 million that QNB said Eritrea borrowed from it in 2009 and 2010, but defaulted on. QNB alleges that President Isaias Afwerki's government went to drastic lengths to avoid being served with key documents. Officials at the Eritrean embassy in London locked one of the bank's lawyers in the building until he agreed to leave without delivering documents, while another representative was "assaulted," according to QNB's filings. On one occasion, "the receptionist physically knocked the documents out of a process server's hands and threw them on the pavement outside the embassy's front door," the complaint said. A British judge eventually allowed the bank to send paperwork by email or post.

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https://blinks.bloomberg.com/news/stories/QXRY60T0AFB9

Troops Eject Rebels Who Besieged Total's Mozambique LNG Project
2021-08-09 10:00:50.723 GMT

By Matthew Hill and Borges Nhamire
(Bloomberg) -- Troops from Mozambique and Rwanda retook a port town at the heart of a four-year insurgency that led to the suspension of a $20 billion project by TotalEnergies SE.
Soldiers from the two countries retook Mocimboa da Praia, which insurgents with ties to Islamic State have held for a year, the RwandaDefence Force said in Twitter post on Sunday.
The Mozambican defense ministry later confirmed the development, saying operations continued to consolidate their control in the area. The conflict in the region has left more than 3,200 people dead and displaced another 800,000.
Rwanda Defence Force
@RwandaMoD
JUST IN: The port city of Mocímboa da Praia, a major stronghold of the insurgency for more than two years has been captured by Rwandan and Mozambican security forces. The city also holds the District Headquarters and Airport.
END
Sent via Twitter Web App.
View original tweet.
Regaining control of the town is a major victory for the Rwandan soldiers and police who helped spearheaded a counter-offensive at the request of Mozambique President Filipe Nyusi over the last month. Lasting peace and stability in the area may convince TotalEnergies to resume work on its mega liquefied natural gas project, about 60 kilometers (37 miles) north of Mocimboa da Praia.
"It's necessary to wait and see the frequency of new attacks and where they will occur," Calton Cadeado, a researcher at Joaquim Chissano University in Maputo, said by phone. "If these are far from the area of resource exploitation, then we can say that the conquest is consolidated and LNG projects can resume with relative safety."
More than 100 of the IS-linked fighters had in March used Mocimboa da Praia as a base to launch a deadly raid on the nearby town of Palma, adjacent to the LNG project in Mozambique's northern Cabo Delgado province. That prompted TotalEnergies to evacuate employees and suspend work for what it said would probably be at least a year.
READ: Mozambique Forces Surround Insurgent-Controlled Town, Lusa Says
Rwanda Defence Force
@RwandaMoD
PHOTOS
Sent via Twitter Web App.
View original tweet.
Mozambique and Rwanda recaptured Mocimboa da Praia even before troops from the 16-member Southern African Development Community joined combat operations. Botswana President

Mokgweetsi Masisi is scheduled to officially mark the start of the SADC mission to Mozambique on Monday in Pemba, the provincial capital of Cabo Delgado. Rwanda isn't a member of SADC.

Read: Why Insurgency Places Mozambique's Gas Riches at Risk: QuickTake

The war is far from over. The insurgents abandoned Mocimboa da Praia without resisting, Kigali-based news website The New Times reported on Monday, citing Rwanda's Brigadier General Pascal Muhizi. The rebels had reorganized and fled to hide in small pockets in the region, the news website reported.

"The militant group will likely shift towards guerrilla warfare tactics to reduce the imbalance," said Alexandre Raymakers, an Africa-focused analyst at Verisk Maplecroft. "We expect attacks on rural hamlets and military patrols to rise in the next three months. Momentum will only be truly maintained once rural areas have been secured by governmentm."

TotalEnergies, which bought an operating stake in the project for $3.9 billion in 2019, was targeting to start exporting the super-chilled fuel by the end of 2024. The first phase of the project is designed to produce over 13 million tons of LNG a year.

TotalEnergies didn't immediately respond to an emailed request for comment on Monday.

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https://blinks.bloomberg.com/news/stories/QXKC6YT1UM0Y

https://www.business-standard.com/article/companies/petronet-lng-reports-consolidated-profit-of-rs-670-06-cr-for-june-quarter-121081401076_1.html

# Petronet LNG reports consolidated profit of Rs 670.06 cr for June quarter

**The company is betting on plateauing domestic production and possible LNG demand from tyhe transport segment**

**Topics**

Petronet LNG stock | Petronet LNG

Twesh Mishra | New Delhi Last Updated at August 14, 2021 13:07 IST

Petronet LNG reported a consolidated profit of Rs 670.06 crore for Q1FY22. This is 34 per cent higher than the Rs 499.79 crore reported in the corresponding period last year.

The consolidated total revenue during the period under review stood at Rs 8,666.47 crore, up from Rs 4,951.95 crore in the same period of Q1FY21.

Petronet LNG's earnings have moved in tandem with the opening up of the economy, and gas demand recovery, as Coronavirus (Covid-19) restrictions have eased.

Spot LNG prices had reached record high levels during January 2021 touching $32.50 per million British thermal units (mBtu). The prices have tempered since, but are back to around $16 per mBtu for deliveries bound for India.

Commenting on the impact on LNG demand as prices move, Akshay Kumar Singh, MD and CEO of Petronet LNG said, "The major impact of price hike is seen in the power sector. There is not much impact where LNG is replacing liquid fuel. In the power sector, LNG competes with solar, wind, thermal. That is where the stress and price sensitivity comes. A large amount of LNG is being used in the fertiliser sector (where demand is constant)."

Responding to a query on whether higher domestic demand hampers prospects for Petronet LNG, a company predominantly into regasifiying and importing natural gas, Singh said, "The increased domestic gas production is not going to sustain for a long period. New deepwater gas that is coming onstream will last for six to seven years. LNG demand is going to grow."

"Another new area is the utility of LNG in the transport sector. We foresee diesel being replaced with LNG for long distance transport trucks," Singh added.

Elaborating on the outlook for LNG as a transport fuel, he said, "We will need at least 3000 LNG stations in the country to offset 10 per cent diesel demand (this comes to around 9 million tonnes per annum)."

Petronet LNG plans to set up 1,000 LNG stations and to sell 4 million tonnes of LNG to the transport sector.

Singh said that the infrastructure for this exercise is being developed. “We have set up 4 LNG truck loading facilities at Dahej and one at Kochi. We are planning to expand LNG loading facilities from 4 to 30 at Dahej.”

Commenting on the branding and setting up mechanism of LNG retailing outlets that Petronet LNG is planning, Singh said, “We are working out different models – Company-owned-Company-Operated (COCO) or sharing stations with existing oil marketing companies.”

Singh also said that LNG will always remain a cheaper fuel than LNG. He assessed that in the long-term, LNG price will be around $10 per mBtu.

He said that Petronet LNG is working on a mechanism to make running LNG trucks even more lucrative. “We are working out a formula where retrofitted diesel trucks that run LNG can recover costs in two years or less from the savings they accrue,” Singh said.

https://www.reuters.com/world/india/some-indian-buyers-cutting-imports-costly-spot-lng-petronet-2021-08-14/
August 14, 20213:18 AM MDTLast Updated a day ago

India

## Some Indian buyers cutting imports of costly spot LNG - Petronet

By Nidhi Verma

2 minute read

NEW DELHI, Aug 14 (Reuters) - India's biggest gas importer Petronet LNG (PLNG.NS) said on Saturday said some of its customers have deferred imports of spot liquefied natural gas (LNG) due to high prices, which have made supplies under long-term deals more attractive.

"Some people are tapering purchases and rescheduling cargoes," A.K. Singh, managing director of Petronet LNG said at a news conference.

High spot LNG prices are not sustainable and India will 'definitely' sign long term deals, he said.

Petronet has a deal to buy 7.5 million tonnes per year (mtpa) of LNG from Qatar and 1.44 mtpa from Exxon's Gorgon project in Australia.

Asian spot LNG prices are hovering at about $16 per million British thermal units, while supplies under long-term deals are costing about $10/mmBtu, he said.

He said the Indian power sector reduces LNG intakes if prices rise about $10/mmBtu.

India aims to raise the share of natural gas in its energy mix to 15% by 2030 from the current 6.2% to cut its carbon footprint. The country also plans to use of hydrogen in some sectors.

Singh said in the short-run hydrogen use will not impact LNG demand.

"Today, the cost of hydrogen production is very high and also transportation and distribution is a challenge. .it is an emerging fuel whereas LNG is an established fuel," he said.

India has allowed use of the super cooled gas in transportation to cut the use of diesel.

Singh, whose company aims to set up 1,000 LNG dispensing stations in 4-5 years, hoped India would be able to emulate China's model, where its vast truck fleet is migrating to LNG from diesel.

Reporting by Nidhi Verma; Editing by Kim Coghill
Our Standards: The Thomson Reuters Trust Principles.

https://www.thehindubusinessline.com/companies/petronet-lng-q1-net-profit-up-5-per-cent-sequentially/article35908225.ece

## Petronet LNG Q1 net profit up 5 per cent sequentially

Our Bureau New Delhi | Updated on August 14, 2021

**Total revenue for the quarter under review grew 13.7 per cent to ₹ 8,667 crore from ₹ 7,625 crore in the previous March quarter**

Petronet LNG has reported a 5 per cent sequential increase in consolidated net profit for the quarter ended June 30 at ₹670 crore compared to net profit of ₹638 crore in the previous quarter ended March 30.

On a year-on-year basis, net profit for the quarter under review grew 34 per cent from ₹500 crore recorded in the June quarter last fiscal.

Total revenue for the quarter under review grew 13.7 per cent to ₹8,667 crore from ₹7,625 crore in the previous quarter. In the corresponding quarter last fiscal, the company had recorded a revenue of ₹4,952 crore.

On a standalone basis, net profit for the first quarter this fiscal came in at ₹636 crore, higher than ₹623 crore in the March quarter. In the first quarter last fiscal, the company had recorded a standalone profit of ₹520 crore, filings made by Petronet with the stock exchanges showed.

Akshay Kumar Singh, Managing Director & CEO, Petronet LNG, told newspersons that the overall Liquefied Natural Gas (LNG) volume processed by the company during the quarter under review was 209 trillion british thermal units (TBTU) against 190 TBTU in the corresponding quarter last fiscal and 218 TBTU in the March quarter.

Singh said that international LNG prices, which was hovering around $4-5 per Metric Million British Thermal Unit (MMBTU) in the first quarter last fiscal, has now shot up to around $14-16 per MMBTU. There has been substantial price increase in international prices which are to some extent affecting export cargo. “We don’t foresee any impact of this on our cargo operations as we have long term contracts. Our business was severely impacted by Covid second wave. In spite of that, the impact, on the volume handled by us was very minimal when compared to the fourth quarter of last fiscal. We handled only three cargo less in the first quarter at Dahej. Our capacity utilisation has been 86 per cent. But high international prices are still a worrying factor for the country,” he said.

**Possibility of growth**

Although there has been an increase in gas production in the recent past, Singh felt this trend will not be sustained for a long period.

“LNG demand is going to grow much faster than what has happened in the past. We see huge potential for LNG use in transportation sector and we are working hard to increase the use of the LNG in transport sector and replace diesel,” he said.

Singh also said that Petronet LNG does not consider hydrogen a threat to LNG for the next five years. He said hydrogen is only an emerging fuel while LNG is already an established fuel. He noted that all fuels will have their share in the fuel pie in the country. “Our assessment is that LNG is going to remain as preferred transport fuel for long time in our country,” he said.

Published on August 14, 2021

https://www.thehindubusinessline.com/companies/lngs-share-of-indian-gas-demand-to-rise-to-70-by-2030-petronet-ceo/article34845886.ece

# LNG's share of Indian gas demand to rise to 70% by 2030: Petronet CEO

Reuters NEW DELHI | Updated on June 18, 2021

Replacing about 30% of the country's crude oil imports with LNG would save $10 billion at current global oil price of $74/barrel, he said

The share of liquefied natural gas (LNG) in India's gas consumption could rise to 70% from the current 50% in 10 years, and new import terminals are needed, the chief executive of the country's top gas importer said.

Prime Minister Narendra Modi has set a target to raise the share of natural gas in the country's energy mix to 15% by 2030 from the current 6.3% to cut its carbon footprint.

To meet that target India's gas consumption needs to rise to 640 million standard cubic metres a day (mmscmd) from the current 155 mmscmd, AK Singh, chief executive of Petronet LNG, said at ET Energy Leadership summit.

Huge invesments by Indian cos

Indian companies are investing billions of dollars to strengthen gas infrastructure, including laying 15,000-kilometer pipelines to supply cleaner fuel to households and industries. India currently has 17,000 kms of gas pipeline network.

Also, LNG projects of 19 million tonnes per annum (mtpa) capacity are under construction and plans are afoot to increase use of LNG in trucks and buses.

"With limited increase in domestic gas supply LNG will play a major role in catering to this incremental demand and share of LNG in natural gas consumption is likely to increase from the present 55% to 70% in coming 9-10 years," Singh said.

Petronet operates two LNG terminals in India accounting for about 53% of the nation's existing 42.5 mtpa import capacity.

Singh said India needed to increase its LNG import capacity to 155 mtpa "considering 80% utilisation" to boost use of the cleaner fuel.

India imports about 85% of its oil needs. He said replacing about 30% of the country's crude oil imports with LNG would save $10 billion at current global oil price of $74/barrel.

Published on June 18, 2021

# Finally, Some Visibility That India Is Moving Towards Its Target For Natural Gas To Be 15% Of Its Energy Mix By 2030

Posted: Wednesday October 23, 2019. 3:45pm MT

It's taking longer than expected, but we are finally getting visibility that India is investing significantly towards its goal to have natural gas be 15% of its energy mix by 2030. Earlier in Oct, India Oil Minister Dharmendra Pradhan said that there are $60 billion of natural gas infrastructure and LNG import terminals that are "under execution". He said "*I am not talking about potential investment. This number relates to the project that are under execution".* Natural gas consumption in India is only now back to 2011 levels at 5.6 bcf/d and represents only 6.2% of its energy mix. If India hits its 15% target of its energy mix by 2030, it would add natural gas demand, on average, of >1.5 bcf/d per year. At the same time India's domestic natural gas production peaked in 2010 at 4.6 bcf/d, but has been flat from 2014 thru 2018 at ~2.7 bcf/d, which means the big winner will be LNG. The most important factor driving this expectation for natural gas consumption growth is likely price. Asian LNG landed prices are down about 50% YoY and, more significantly, the expectation is for future Asian LNG prices to be at lower levels than prior cycles. India, by itself, may not be a LNG global game changer, but it is another positive support for why we believe LNG markets will rebalance sooner than expected ie. in 2022/2023. We see mid term Asian LNG landed prices lower than prior cycles in a rebalanced market (ie. +/- $8), which means that low capital costs will be critical for future LNG projects. We believe that BC's LNG key potential projects (LNG Canada Phase 2 and Chevron Kitimat LNG) can compete in this price environment as they have the potential for brownfield capital costs if they move to a continuous construction cycle following in lockstep to LNG Canada Phase 1, much like Cheniere does for its LNG projects in the Gulf Coast.

India has a pollution crisis. We don't think it is unfair to say India has a pollution crisis. In every pollution ranking, India has several cities among the most polluted cities. The 2018 World Air Quality Report (AirVisual) list of the World's Most Polluted Cities 2018 has 20 of the world's 25 most polluted cities being in India. India has all of the top 25 most polluted cities other than #3 Faisalabad (Pakistan), #7 Hotan (China), #10 Lahore (Pakistan), #17 Dhaka (Bangladesh), and #19 Kashgar (China). Like us, many people have been to Beijing on business and believe Beijing's reputation as a very polluted city is deserved. But to put in perspective, Beijing's ranking isn't even close to the 15 most polluted cities in China, let alone the world. Beijing's score on their scale is 50.9 vs the other Chinese cities #7in the world, Hotan at 116.0, and #19 Kashgar at 95.7, and the world's most polluted city #1 Gurugram (India) at 135.8 .

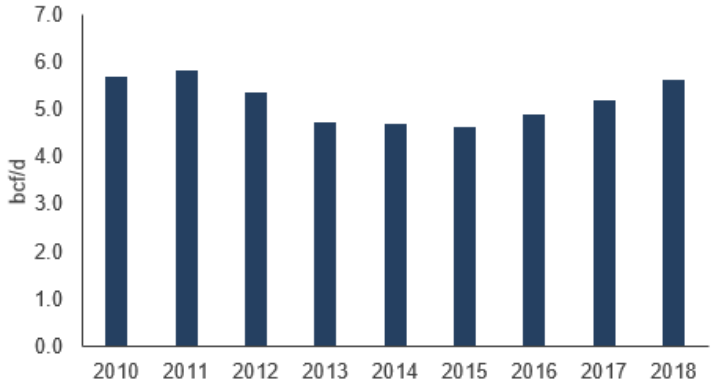
**World's Most Polluted Cities 2018**

| Rank | City | Country | Rank | City | Country |
|---|---|---|---|---|---|
| 1 | Gurugram | India | 14 | Varanasi | India |
| 2 | Ghaziabad | India | 15 | Moradabad | India |
| 3 | Faisalabad | Pakistan | 16 | Agra | India |
| 4 | Faridabad | India | 17 | Dhaka | Bangladesh |
| 5 | Bhiwadi | India | 18 | Gaya | India |
| 6 | Noida | India | 19 | Kashgar | China |
| 7 | Patna | India | 20 | Jind | India |
| 8 | Hotan | China | 21 | Kanpur | India |
| 9 | Lucknow | India | 22 | Singrauli | India |
| 10 | Lahore | Pakistan | 23 | Kolkata | India |
| 11 | Delhi | India | 24 | Pali | India |
| 12 | Jodhpur | India | 25 | Rohtak | India |
| 13 | Muzaffarpur | India | 26 | Mandi Gobindgarh | India |

Source: Airvisual

India natural gas consumption is only now back to 2011 levels. For the past couple years, we have been highlighting that the growth in India's natural gas consumption (and linked LNG imports) has been very low due to the slow buildout of domestic natural gas infrastructure and LNG import facilities. BP data shows India's natural gas consumption was 5.6 bcf/d in 2018, and this compares to its peak of 5.8 bcf/d in 2011. To put in perspective, China's natural gas consumption in 2011 was 13.1 bcf/d and reached 27.4 bcf/d in 2018.

**India's Natural Gas Consumption (bcf/d)**




Source: BP

Perhaps the best reason why there is better visibility – LNG prices are expected lower than prior cycles. A key reason for this lack of growth has been the price of LNG relative to coal. Our June 17, 2018 Energy Tidbits [LINK] highlighted comments from the Q&A from BP's Chief Economist speech "*Energy in 2017: two steps forward, one step back*" on this relative cost concept. We then wrote on the BP Chief Economist comments from an India company on why there isn't more natural gas and why coal is still going up. He said that the Indian executive said it was because the cost of natural gas was significantly more expensive than domestic coal and that the push in India is to get more power to more poorer people, but if natural gas is significantly higher, it can't be done, they have to rely on coal. What has happened since the BP Chief Economist June 2018 comment is that Asian LNG prices are down 50% and the expectation going forward is that future LNG prices are not expected to be at prior cycle highs. But the other question is what does it mean for LNG prices. There is an increasing supply of reasonable priced LNG around the world, whether it from Qatar, Papua New Guinea, the Gulf of Mexico and even Canada. And each of these areas has anchor projects to support future brownfield development. Couple that with increasing linkage of LNG prices away from oil indexed contracts, we believe this means that a balanced LNG market going forward is going is not going to see sustained high Asian LNG prices from prior cycles, but around more costs related more to lower LNG supply basins ie. LNG prices around mid to long term +/- $8 landed Asian LNG prices, and not the prior $10 - $12 range. As the BP Chief Economist highlights, price is a huge issue for India and it is likely that the expectation for lower LNG prices than prior cycles is the most important reason to push India to increased natural gas consumption.

**Japan/Korea Marker (JKM) LNG Price**


Source: Bloomberg

India is now getting serious about increasing natural gas consumption, has $60b of projects under execution. We follow the key India news as part of our weekly news scan for our Energy Tidbits memos and there is no question that the India government and its people realize they have to deal with this increasing pollution problem. And perhaps most of all, India is now taking specific, significant action to set the stage for increasing natural gas consumption and LNG imports. Earlier in Oct, Japan Times picked up a Reuters story "*India investing $60 billion on gas grid to link up nation by 2024*" [LINK]. The story notes "*India, one of the world's largest consumers of oil and coal, is investing $60 billion to build a national gas grid and import terminals by 2024 in a bid to cut its carbon emissions, the oil minister said on Sunday. India has struggled to boost its use of gas, which produces less greenhouse gas emissions than coal and oil, because many industries and towns are not linked to the gas pipeline network. Gas consumption growth was running at 11 percent in 2010 but growth slid to just 2.5 percent in the financial year 2018/19*." The most significant part of this story is that this is $60 billion of projects under execution, not planned or potential projects. The story quotes Oil Minister Dharmendra Pradhan "*I am not talking about potential investment. This number relates to the project that are under execution*". The critical natural gas infrastructure requirement is a domestic natural gas pipeline network to deliver gas throughout India. The India Ministry of Petroleum & Natural Gas Oct 3, 2019 release [LINK] said "*On the issue of moving towards the gas economy, Shri Pradhan said that over 16,000 km of gas pipeline has been built and an additional 11,000 km is under construction. With the tenth bid round for City Gas Distribution completed, it will cover over 400 districts and will extend coverage to 70 percent of our population".* Progress is being made. Plus LNG regasification projects continue to be completed. Below is our updated table of India LNG projects that are estimated to come on stream in 2019 and 2020. We haven't included the projects beyond 2020, but there are several planned projects already on the books.

**India Current/Planned LNG Regasification Projects Est. In Service In 2019/2020**

| | State | Coast | Operator | Capacity (mtpa) | Capacity (bcf/d) | Expected Timelines |
|---|---|---|---|---|---|---|
| **Existing Terminals** | | | | | | |
| Dahej | Gujarat | West | Petronet LNG | 10.00 | 1.32 | Operating |
| Dahej Phase 2 | Gujarat | West | Petronet LNG | 5.00 | 0.66 | Operating |
| Hazira | Gujarat | West | Shell | 5.00 | 0.66 | Operating |
| Dabhol RGPPL | Maharashtra | West | GAIL & NTPC JV | 5.00 | 0.66 | Operating |
| Kochi | Kerela | West | Petronet LNG | 5.00 | 0.66 | Operating |
| Ennore Phase 1 | Tamil Nadu | East | IOCL | 5.00 | 0.66 | Operating |
| *Total Existing* | | | | **35.00** | **4.61** | |
| **Upcoming Terminals** | | | | | | |
| Mundra | Gujarat | West | Adani & GSPC | 5.00 | 0.66 | 2019 |
| Jaigarh | Maharashtra | West | H-Energy Gateway Pvt. Limited | 4.00 | 0.53 | 2019 |
| Dahej Phase 3 | Gujarat | West | PLL | 2.50 | 0.33 | 2019 |
| Mundra | Gujarat | West | Adani | 5.00 | 0.66 | 2020 |
| Digha FSRU | Odisha | East | H-Energy | 4.00 | 0.53 | 2020 |
| Ennore Phase 2 | Tamil Nadu | East | IOCL | 1.75 | 0.23 | 2020 |
| Jafrabad | Gujarat | West | Swan Energy | 5.00 | 0.66 | 2020 |
| *Total Upcoming* | | | | **27.25** | **3.59** | |

Source: Bloomberg, Company Reports, Street Reports

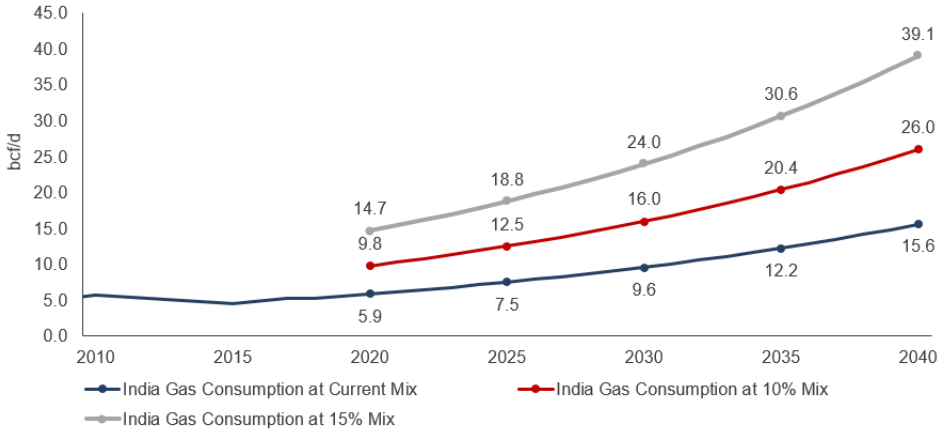
It reminds us of when China got really serious about natural gas in 2018. We should be clear that we do not consider India anywhere near as significant to global LNG markets as China. But conceptually, India getting serious about increasing natural gas consumption reminds us of what we were seeing in China in 2016/2017. India is probably more like China in 2016 as opposed to the summer of 2017, when it seemed clear that China was on the cusp of a major push in natural gas consumption and LNG would be the winner in 2018. India's impact should start to play out by year end 2020 as opposed to this winter. We first outlined the China LNG thesis in our Sept 20, 2017 blog "*China's Plan To Increase Natural Gas To 10% Of Its Energy Mix Is A Global Game Changer Including For BC LNG*" [LINK]. Our Sept 20, 2017 blog wrote "*The news flow from China this summer on its increasing fight and urgency to fight pollution supports China's plan to increase natural gas to 10% of its energy mix in 2020 and 15% of its energy mix in 2030. This is a game changer to global natural gas markets and, by itself, can bring LNG to undersupply 2 to 3 years earlier than expected. China's natural gas consumption increased by ~15% per year from 2005 thru 2016 and ~1.5 bcf/d per year vs China's 8.5%*

*growth rate in energy in total. Yet natural gas only got to 5.9% of China's energy mix. If China is to hit 10% by 2020, it will need to increase natural gas consumption by 4 to 5 bcf/d per year. Assuming China continues to grow its domestic natural gas production by 0.6 bcf/d per year (its growth rate for last five years), China will need to import an additional ~3.5 to ~4.5 bcf/d per year. This is "per year"! And if so, we believe BC LNG will be back and there is a higher probability than ever before for a Shell FID on its BC LNG project in 2018."* As it turned out, Shell did FID its LNG Canada project on Oct 1, 2018.

Natural gas is only 6.2% of India's energy mix vs its target of 15% in 2030. India, similar to China, has a target to have natural gas to be 15% of its total energy mix by 2030. This is not a new target, rather it has been in place and we first highlighted India's 15% target of its energy mix in our Nov 23, 2018 blog "*"India's Natural Gas Consumption Would Be Up ~1.3 Bcf/D Per Year If Its To Reach Its Target Of 15% Of Its Energy Mix By 2030*" [LINK] At that time, we noted some specific steps that were happening in 2019 and 2020 to put them on that long term plan. The impact to get to 15% of energy mix is significant to world LNG markets. This is a big increase from natural gas being 6.2% of India's energy mix in 2018. To put in perspective, in 2018, natural gas was 30.5% of US energy mix, 21.9% of Japan's energy mix, 16.0% of South Korea's energy mix, and 7.4% of China's energy. Note, China is up from 6.6% in 2017.

Hitting 15% of its energy mix would increase India's natural gas consumption by >1.5 bcf/d per year. We projected how much India's natural gas consumption would increase if it can hit its target of 15% of total energy mix in 2030. BP data shows India's natural gas consumption in 2018 was 5.6 bcf/d and natural gas was only 6.2% of total energy mix. BP also estimates India's total energy consumption grew at a rate of 5.2% per year for the 2007 – 2017 period, but energy consumption growth increased to +7.9% in 2018 YoY vs 2017 But if we only assume a 5% growth in total energy mix to 2030, then if natural gas is 15% of India's energy mix, it would be 18.8 bcf/d in 2025 and 24.0 bcf/d in 2030 ie. growth of +13.2 bcf/d to 2025 and +18.4 bcf/d to 2030. India's domestic natural gas production peaked in 2010 at 4.6 bcf/d, but has been flat from 2014 thru 2018 at +/- 2.7 bcf/d. We expect there to be some increased focus to at least return India to modest domestic natural gas production. But, until then, any growth in natural gas consumption will be met with LNG. Our model forecasts of >1.5 bcf/d per year, on average, in consumption is the equivalent of 2.5 Cheniere LNG trains per year.

**India's Projected Natural Gas Consumption @15% Of Energy Mix (bcf/d)**

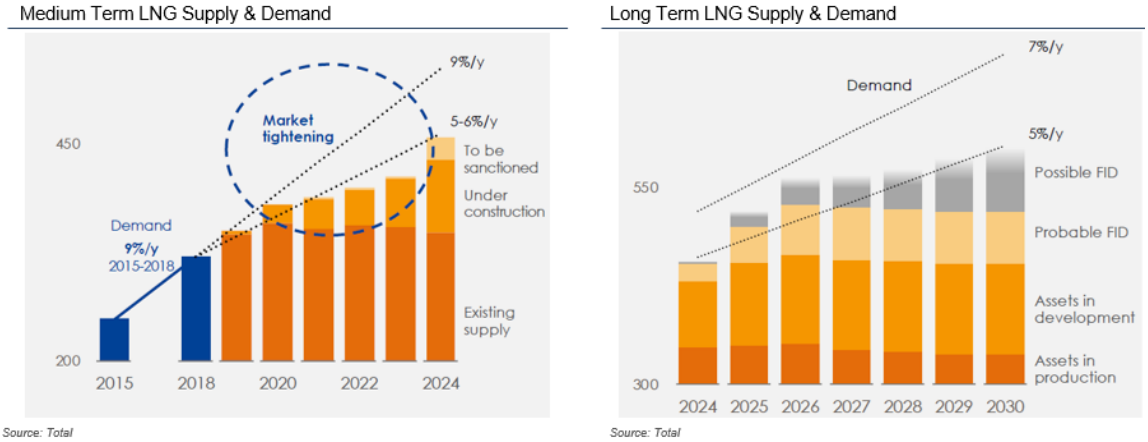



Source: BP, SAF

India may not be a LNG global game changer by itself like China, but does support the call that LNG markets rebalance sooner than expected. We had our SAF Group 2020 Energy Market Outlook on Monday Oct 7. A replay of the call and the supporting slide presentation are available on our website at [LINK]. Two of our key off consensus calls were on LNG including our view LNG market would balance earlier than expected ie. 2022/2023. We noted that we agree with markets that LNG will be oversupplied thru 2021, but where we disagree is that we see LNG markets balancing in 2022 or 2023. Our presentation reminded that LNG supply capacity needs to be in excess of demand to provide for turnarounds and

allowance such that suppliers can deliver contract volumes. We also expect the required over capacity of supply is increasing as contract mix shifts away from historical oil indexed take or pay contracts with destination clauses to an increase share of portfolio contracts. There is no firm number, but we believe the required excess supply capacity relative to demand has increased from approx. 5% to 10% to +/-15% ie. LNG markets are effectively balanced when LNG supply capacity is >10% of demand. As a result, we believe that LNG markets rebalance in 2022/2023, a view which is similar to Total's Sept 25, 2019 Investor Day [LINK] (see below graphs). We should note that our view of balanced LNG markets doesn't mean a return to $12 or more Asian landed LNG prices, rather, we see the emergence of anchor LNG projects in areas with brownfield expansion potential means that a planning case for mid term Asian LNG price is in the $8 range. Our outlook presentation also includes our view that BC's LNG key potential projects (LNG Canada Phase 2 and Chevron Kitimat LNG) can compete in this price environment as they have the potential for brownfield capital costs if they move to a continuous construction cycle following in lockstep to LNG Canada Phase 1, much like Cheniere does for its LNG projects in the Gulf Coast. Our outlook call did not specifically work in the India Energy Minister's comment on in execution projects, but, if anything, it provides us with more confidence for the call for LNG markets to rebalance in 2022/2023.

**Total's Medium And Long Term LNG Supply & Demand**




Source: Total Sept 25, 2019 Investor Day

NORTH Dakota | Mineral Resources
Be Legendary.

*Release Date: 8/13/2021*
*Director Lynn Helms*

**Director's Cut**
**June 2021 Production**

## Oil Production

**May** 34,969,308 barrels = 1,128,042 barrels/day (final)

**June** 33,845,554 barrels = 1,128,185 barrels/day (all-time high 1,519,037 BOPD Nov 2019)

1,086,980 barrels/day or 96% from Bakken and Three Forks
41,205 barrels/day or 4% from legacy pools

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

## Crude Price[1] ($/barrel)

| | North Dakota Light Sweet | WTI | ND Market estimate |
|---|---|---|---|
| **May** | 58.28 | 65.06 | 59.69 |
| **June** | 63.62 | 71.35 | 65.47 |
| **July** | 58.50 | 72.43 | 68.61 estimate |
| **Today** | 62.25 | 69.09 | 65.67 estimate |
| All-time high (6/2008) | $125.62 | $134.02 | $126.75 |

**Revised Revenue Forecast** **= $50.00**

## Gas Production & Capture

**May Production** 92,429,354 MCF = 2,981,592 MCF/day
Gas Captured: 92% 85,110,228 MCF = 2,745,491 MCF/day

**June Production** 89,477,475 MCF = 2,982,583 MCF/day (all-time high 3,145,172 MCFD Nov 2019)
Gas Captured: 92% 85,095,332 MCF = 2,742,097 MCF/day (all-time high 2,899,998 MCFD Mar 2020)

## Rig Count

| | |
|---|---|
| **May** | 19 |
| **June** | 20 |
| **July** | 23 |
| **Today** | 22 (all-time high was 218 on 5/29/2012) |
| Federal Surface | 0 |
| *All-time high* | *218 (5/29/2012)* |

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

## Wells

| | May | June | July | Revised Revenue Forecast |
|---|---|---|---|---|
| **Permitted** | 46 drilling<br>0 seismic | 75 drilling<br>0 seismic | 40 drilling<br>0 seismic<br>(All-time high was 370 – Oct. 2012) | - |
| **Completed** | 41 (Final) | 47 (Revised) | 53 (Preliminary) | **30→40→50→60** |
| **Inactive**[2] | 2,348 | 1,839 | - | - |
| **Waiting on Completion**[3] | 677 | 680 | - | - |
| **Producing** | 16,623 | 16,825 (Preliminary)<br>(NEW all-time high 16,825 in June 2021)<br>*14,589 (87%) from unconventional Bakken – Three Forks*<br>*2,236 (13%) from legacy conventional pools* | - | - |

## Fort Berthold Reservation Activity

| | Total | Fee Land | Trust Land |
|---|---|---|---|
| Oil Production (barrels/day) | 257,937 | 106,981 | 150,956 |
| Drilling Rigs | 3 | 1 | 2 |
| Active Wells | 2,572 | 642 | 1,930 |
| Waiting on completion | 64 | | |
| Approved Drilling Permits | 226 | 29 | 197 |
| Potential Future Wells | 3,980 | 1,122 | 2,858 |

## Drilling and Completions Activity & Crude Oil Markets

The drilling rig count was stable in the mid 50's second half of 2019 through May 2020. Drilling rig count fell 65% from January 2020 to May 2021 and is slowly increasing.

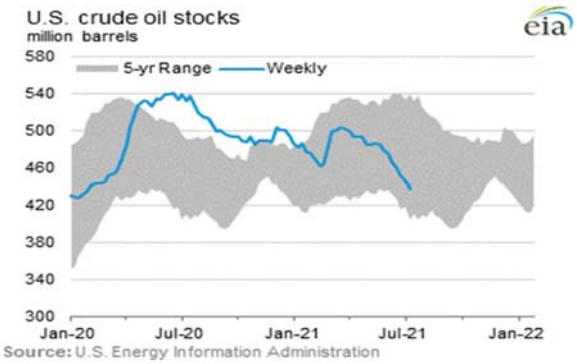
The number of well completions has been low and volatile since April 2020 as the number of active completion crews dropped from 25 to 1 then increased to 6 in June 2021 and to 10 this week.

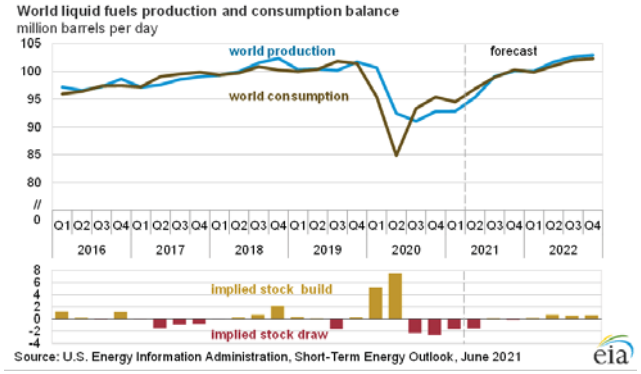
OPEC+ reached a deal Sunday to phase out 5.8 million barrels per day of oil production cuts by September 2022 as prices of the commodity hit their highest levels in more than two years. Coordinated increases in oil supply from the group, known as OPEC+, will begin in August. Overall production will increase by 400,000 barrels per day on a monthly basis from that point onward.

The International Energy Agency estimates a 1.5 million barrel per day shortfall for the second half of this year, indicating a tight market despite the gradual OPEC supply boost. EIA now estimated that supply and demand are balanced with demand returning to 2019 levels until second quarter 2022.

[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 through March 2022.

Drilling activity is slowly increasing. Operators continue to maintain a permit inventory of approximately 12 months.

## Gas Capture

US natural gas storage is now 7% below the five-year average. Crude oil inventories are below normal in the US, but world storage is above the five-year average.

The price of natural gas delivered to Northern Border at Watford City increased to $23.42/MCF February 17, 2021 and has returned to a significantly higher than normal level of $3.80/MCF today. This results in a current oil to gas price ratio of 17 to 1. The state wide gas flared volume from May to June increased 4,385 MCFD to 240,487 MCF per day, and the percent flared increased to 8.1% while Bakken capture percentage decreased to 92%.

The historical high flared percent was 36% in 09/2011.

Gas Capture Details:

| | |
|---|---|
| Statewide……. | 92% |
| Statewide Bakken…….. | 92% |
| Non-FBIR Bakken…….. | 93% |
| FBIR Bakken…….. | 89% |
| Trust FBIR Bakken... | 90% |
| Fee FBIR…… | 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

Seismic activity has stopped.

| Active Surveys | Recording | NDIC Reclamation Projects | Remediating | Suspended | Permitted |
|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 4 | 0 |

## Agency Updates

**BIA** has published a new final rule to update the process for obtaining rights of way on Indian land. The rule was published 11/19/15 and became effective 12/21/15. The final rule can be found at https://www.federalregister.gov/articles/2015/11/19/2015-28548/rights-of-way-on-indian-land. On 3/11/16, the Western Energy Alliance filed a complaint and motion for a temporary restraining order and/or a preliminary injunction. On 04/19/16, the US District court for the District of North Dakota issued an order denying the motion for a preliminary injunction. The new valuation requirements were resulting in increased delays so BIA provided a waiver that expires 04/05/2020. On 03/09/2020 the NDIC submitted comments supporting an extension of that waiver through 04/05/2021 to allow infrastructure development to continue while BIA develops and implements the new process. NDIC comments can be found at http://www.nd.gov/ndic/ic-press/Sweeney%20letter%20200309.pdf

**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 ($% 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.

The U.S. Interior Department announced 3/9/21 it will launch its review of the federal oil and gas leasing program on 3/25/21, a key step that will determine whether the Biden administration will permanently halt new leases on federal land and water. The review will kick off with a public forum on oil and gas leasing on federal land and water, with participants representing industry, environmental conservation and justice groups, labor and others, and commence an online comment period. This input would inform an interim report to be released in early summer outlining next steps and recommendations on the future of the program and what can be done to reform how leases are managed, how much revenue should go to taxpayers and other issues.

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 requests the court:
Compel the Federal Defendants to hold quarterly lease sales.

https://www.willistonherald.com/news/oil_and_energy/north-dakota-oil-production-goes-from-flat-to-flatter-as-industry-struggles-to-bring-workers/article_aef94030-fc84-11eb-bd8f-03ef939a87d4.html

# North Dakota Oil production goes from flat to flatter as industry struggles to bring workers back

- By Renée Jean rjean@willistonherald.com
- Aug 13, 2021 Updated 2 hrs ago

North Dakota Department of Mineral Resources Director Lynn Helms talks about North Dakota Oil production on Friday, Aug. 13.

North Dakota went from flat to flatter for its June production numbers, but kept its No. 2 spot as the nation's second-largest oil producer, according to the state's latest production figures.

North Dakota crude oil production increased by a mere 143 barrels per day to 1.128,185 million barrels per day, while gas production increased slightly more, by 991 cubic feet per day, to 2.982 billion.

That was less of an increase than May, but still left North Dakota ahead of New Mexico production by around 86,000 barrels per day, North Dakota Department of Mineral Resources Director Lynn Helms said.

"It is very much a neck-and-neck race," the state's top oil and gas regulator said. "And they continue to field three times as many drilling rigs as North Dakota does. So I'm not sure, maybe it's just the time lag that has us still in second place and we'll see when the July numbers come out. That's looking like it could be the month where New Mexico passes us and puts us into third place."

There are good indications, however, that production could begin to tick up for North Dakota, Helms added.

"I think I would have to characterize the Bakken at this point as a sleeping giant," he said. "You know, the COVID pandemic kind of put the industry to sleep, and it is struggling somewhat to wake up."

Among reasons Helms believes production is set to take off are the number of DUC available DUC wells and completions that are just high enough to keep production steady. Meanwhile, industry is hiring as many workers as possible for workover crews to keep what's producing going. There's also a record 16,825 wells producing right now, Helms said. Some of the top 10 are also telling Helms that more hydraulic crews are coming.

"We met with one of our top 10 producers, and they are adding a frack crew in September and another frack crew before the end of the year," Helms said.

Helms added that the mother company of the Bakken company he's talking about has about 5,000 acres in Arkansas that are on the market.

“That might clue you in to who it is,” he said. “They’ve indicated that the majority of the cash from that is going to go into their West Africa and Permian basin operations, but some of it may end up here in the Bakken. They still like the Bakken pretty well.”

That company plans to begin work on its capital budget, which includes drilling rigs, sometime between October and December.

“So around year-end we should hear from that very large corporation what their plans are for next year,” Helms said.

North Dakota has around 10 frack crews right now, Helms said, and based on his conversations with industry, he believes the state's numbers are “inching” their way to the 20 that would be needed boost production above 1.5 million barrels per day.

On Friday, Aug. 13, there were 23 rigs listed as running. Helms said he's been told by companies in the top 10 that they plan to add three rigs by year-end, which would bring that number to at least 25.

“Again, it seems like a sleeping giant. We have the potential to get back to and above 1.5 million barrels a day. We have the potential of getting 6 or 7 billion cubic feet of natural gas production and export and processing a day,” Helms said. “But the pandemic put our service companies and our operators to sleep and they’re being very disciplined about really ramping up activity. They’re paying down debt. They’re buying back stock. They’re paying back investors on the private capital side. And it looks like what they’ve been telling us that we’re not going to see significant rig count increases until next year is really coming to pass.”

Gas capture, meanwhile, has lost a percentage point statewide and is at 92 percent. Just 1 percent more than the minimum required. That shows the continuing need for more gas infrastructure, Helms said.

# MONTHLY UPDATE

## JUNE 2021 PRODUCTION & TRANSPORTATION

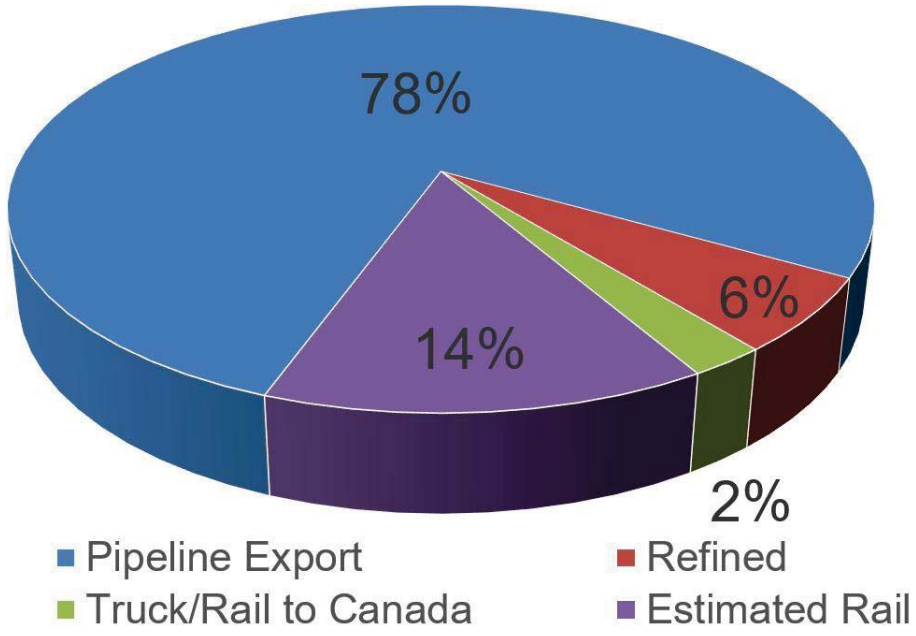
### North Dakota Oil Production

| Month | Monthly Total, BBL | Average, BOPD |
|---|---|---|
| May 2021 - Final | 34,969,308 | 1,128,042 |
| June 2021 - Prelim. | 33,845,554 | 1,128,185 |

### North Dakota Natural Gas Production

| Month | Monthly Total, MCF | Average, MCFD |
|---|---|---|
| May 2021 - Final | 92,429,354 | 2,981,592 |
| June 2021 - Prelim. | 89,477,475 | 2,982,583 |

***Estimated Williston Basin Oil Transportation, June 2021***




## CURRENT DRILLING ACTIVITY:

**NORTH DAKOTA[1]**

22 Rigs

**EASTERN MONTANA[2]**

2 Rigs

**SOUTH DAKOTA[2]**

0 Rigs

**SOURCE (AUG. 13, 2021):**

1. ND Oil & Gas Division
2. Baker Hughes

## PRICES:

Crude (WTI): $68.36

Crude (Brent): $70.55

NYMEX Gas: $3.88

**SOURCE: BLOOMBERG (AUGUST 13, 2021)**

## GAS STATS*

**92% CAPTURED & SOLD**

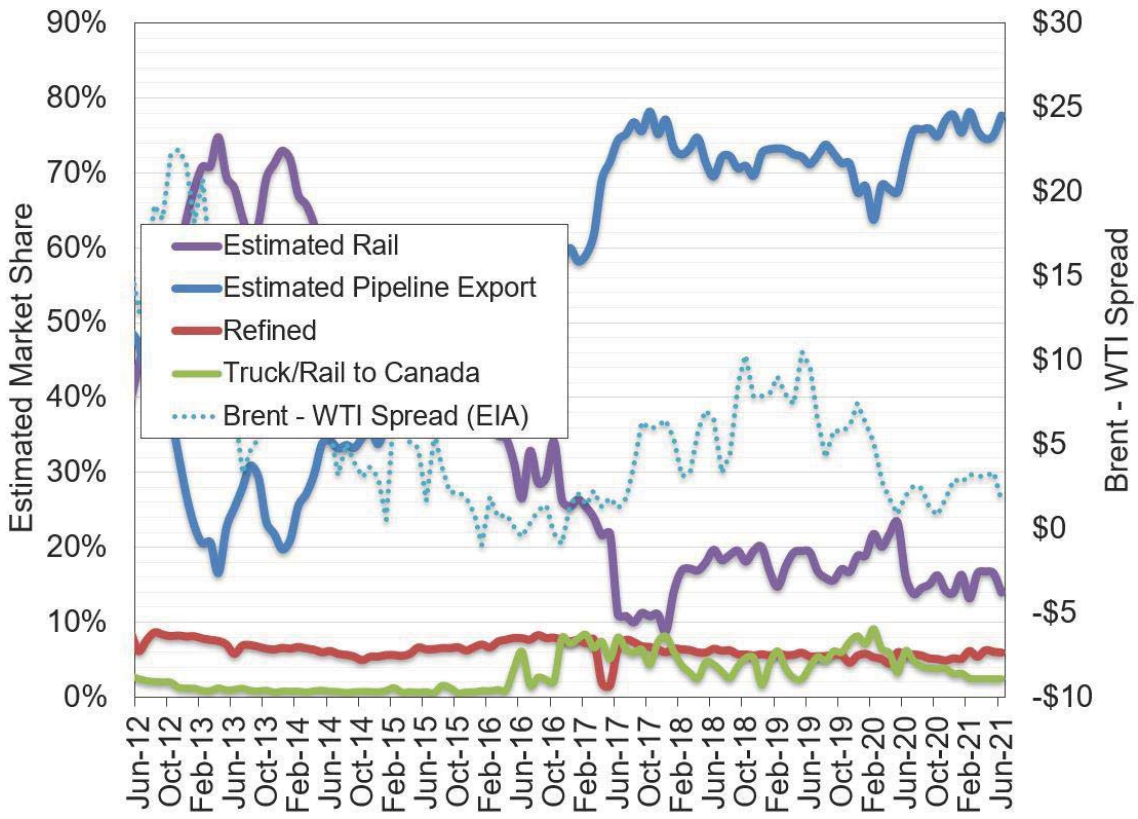
**6% FLARED DUE TO CHALLENGES OR CONSTRAINTS ON EXISTING GATHERING SYSTEMS**

**2% FLARED FROM WELL WITH ZERO SALES**

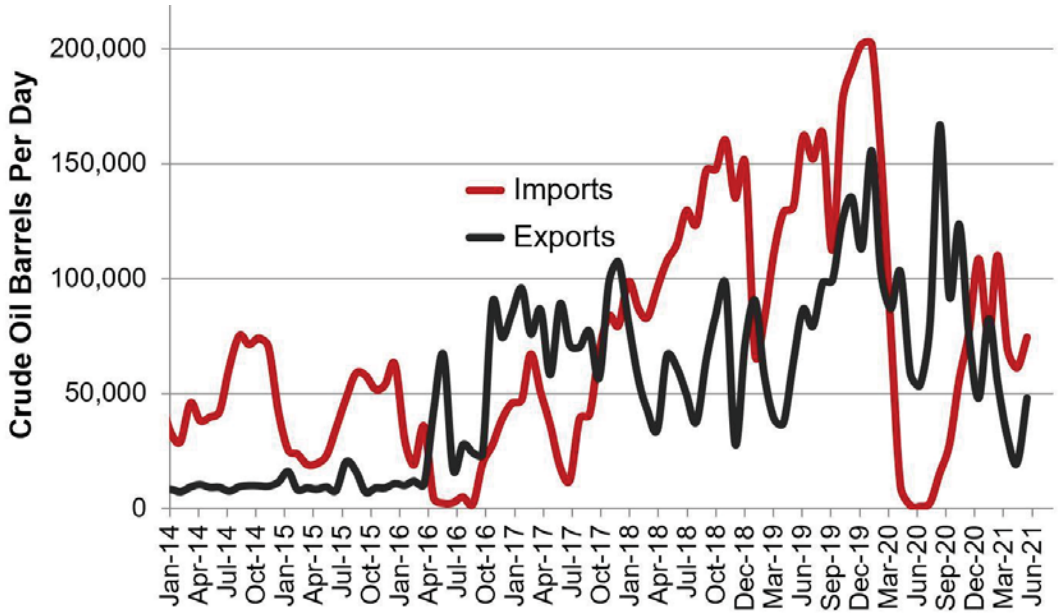
***JUNE 2021 NON-CONF DATA***

## *Estimated North Dakota Rail Export Volumes*


## *Estimated Williston Basin Oil Transportation*

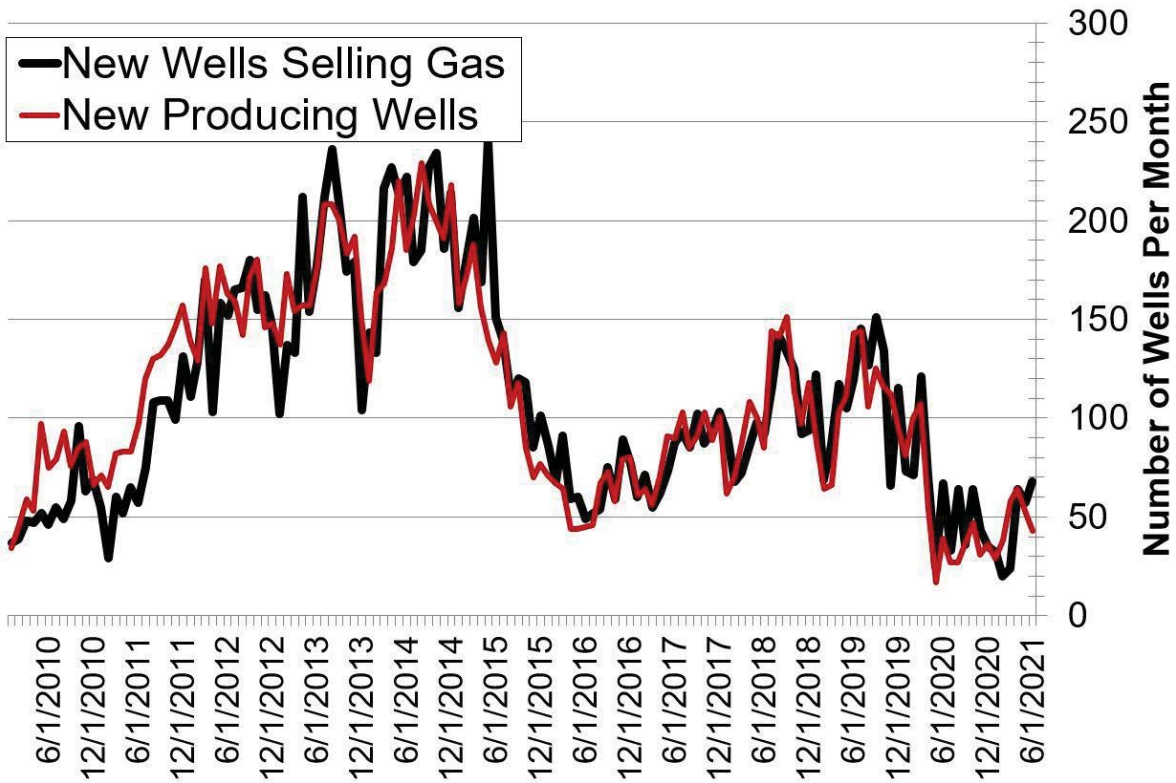


## *Williston Basin Truck/Rail Imports and Exports with Canada*




*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*

2020

| MONTH | ND | EASTERN MT* | SD | TOTAL |
|---|---|---|---|---|
| **January** | 1,431,679 | 57,460 | 3,091 | 1,492,230 |
| **February** | 1,507,069 | 55,425 | 3,070 | 1,565,563 |
| **March** | 1,435,200 | 57,718 | 2,946 | 1,495,864 |
| **April** | 1,225,476 | 49,054 | 2,610 | 1,277,140 |
| **May** | 862,254 | 37,066 | 2,466 | 901,786 |
| **June** | 895,208 | 42,853 | 2,680 | 940,742 |
| **July** | 1,043,089 | 48,415 | 3,435 | 1,094,939 |
| **August** | 1,166,242 | 46,925 | 2,807 | 1,215,973 |
| **September** | 1,224,008 | 47,128 | 2,837 | 1,273,973 |
| **October** | 1,244,056 | 46,505 | 2,749 | 1,293,310 |
| **November** | 1,226,409 | 45,121 | 2,798 | 1,274,327 |
| **December** | 1,191,429 | 44,499 | 2,827 | 1,238,755 |

2021

| MONTH | ND | EASTERN MT* | SD | TOTAL |
|---|---|---|---|---|
| **January** | 1,147,464 | 50,140 | 2,874 | 1,200,477 |
| **February** | 1,083,716 | 47,956 | 2,829 | 1,134,501 |
| **March** | 1,108,918 | 49,257 | 2,744 | 1,160,919 |
| **April** | 1,123,166 | 48,178 | 2,644 | 1,173,988 |
| **May** | 1,128,042 | 46,424 | 2,640 | 1,177,106 |
| **June** | 1,128,185 | | | |
| **July** | | | | |
| **August** | | | | |
| **September** | | | | |
| **October** | | | | |
| **November** | | | | |
| **December** | | | | |

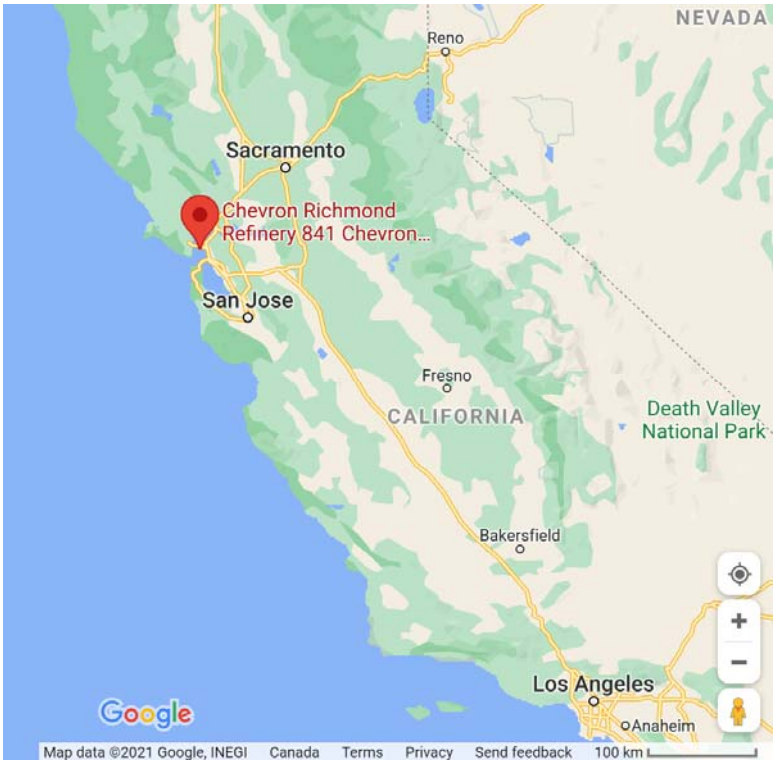
** Eastern Montana production composed of the following Counties: Carter, Daniels, Dawson, Fallon, McCone, Powder River, Prairie, Richland, Roosevelt, Sheridan, Valley, Wibaux*

https://richmond.chevron.com/our-businesses/the-refining-process

# the refining process

Refineries play an important role in keeping the world on the move. Oil refineries take crude oil and refine it into products that we use every day.
The Richmond Refinery takes crude oil and other feedstocks and refines it into gasoline, diesel, jet fuel, fuel oil and lubricating base oils. On average, the Richmond Refinery processes about 250,000 barrels of crude oil. All of the crude oil we process arrives at our refinery via ship and is unloaded at our Richmond Long Wharf.
Refining crude oil into transportation fuels and other products is a complex process involving many steps. The key steps include:

- Separation: Crude oil is separated into different parts based on the size of the molecules.
- Treatment: Using hydrogen and catalyst, natural impurities are removed from crude oil to meet California's emissions standards, which are the toughest in the nation.
- Cracking: Large molecules of crude oil are broken into smaller molecules that make up different transportation fuels.




Source: Google Maps

https://twitter.com/ChevronRichmond/status/1425236358281453568


Thread from local news

https://twitter.com/TedrickG/status/1426549894773309443


**Ted Goldberg** @TedrickG · 8h

Replying to @TedrickG

The report doesn't specify what kind of equipment - or what part of the refinery it was in. But because of that 'perceived high pressure reading' the facility had to send gases to its flare for some 30 minutes.

1 1

**Ted Goldberg** @TedrickG · 8h

The report says the refinery released 738 pounds of sulfur dioxide. Chevron says it took air readings downwind of the refinery and in the nearby community and 'no detectable readings were noted on atmospheric testing equipment in any of the tested locations.'

1 2

**Ted Goldberg** @TedrickG · 8h

Officials with @CoCoHealth say they also conducted air monitoring in the community during the flaring and 'the results of those readings did not indicate there was a public health concern.'

1 1 1

**Ted Goldberg** @TedrickG · 8h

Chevron says it's investigating the cause of the malfunction. The head of the country's hazardous materials program says the agency has asked for a 30 day report.

1

**Ted Goldberg** @TedrickG · 5h

Here's Chevron's fact sheet on flaring:
richmond.chevron.com/-/media/richmo...
And, info from the air district on how it monitors flaring: baaqmd.gov/about-air-qual...

1

https://www.reuters.com/world/americas/venezuelan-government-opposition-talks-open-mexico-city-2021-08-13/

August 13, 20217:50 PM MDTLast Updated a day ago

# Americas

## Venezuelan government and opposition talks open in Mexico City

By Diego Oré and Sharay Angulo

2 minute read


1/5

Gerardo Blyde Perez, head of the opposition delegation of Venezuela, Dag Nylander, Representative of Norway government and Jorge Rodriguez, President of the National Assembly of Venezuela, sign the Memorandum of Understanding of Venezuela in the framework of the negotiation and dialogue process, during a meeting to seek consensus on how to overcome the economic and social crises gripping Venezuela, in Mexico City, Mexico August 13, 2021. REUTERS/Edgard Garrido

Read More

MEXICO CITY, Aug 13 (Reuters) - Representatives of the Venezuelan government and the opposition began a round of talks on Friday in Mexico City aimed at overcoming Venezuela's acute political and economic crisis, which has caused millions to flee the Latin American nation.

Unlike previous negotiation efforts, the talks will include more than a dozen countries, among them the Netherlands, Russia, Bolivia, Turkey and Norway, which will act as the facilitator.

At the National Museum of Anthropology, the parties agreed to a memorandum of understanding containing the road map that will guide the dialogue process.

For the talks to advance to a potential agreement, Venezuelan President Nicolas Maduro demands that sanctions imposed by the United States and Europe on officials and institutions be lifted. Venezuela says the sanctions are responsible for the OPEC member's economic crisis.

For its part, the opposition coalition calls to allow humanitarian aid, including vaccines against COVID-19, to enter into Venezuela; the release of dozens of supporters whom it considers "political prisoners;" and guarantees it will be allowed to participate in regional elections in November.

"We already know what we do not agree on. ... The job now is to find points of confluence to guarantee the future and the happiness of the people of Venezuela," Jorge Rodriguez, president of Venezuela's parliament, said at the beginning of the talks.

The return to the negotiating table represents a turnaround for the opposition, which in the past accused Maduro of using dialogue to buy time and defuse international pressure. The Venezuelan government abandoned the 2019 dialogue, which took place in Barbados and Norway, after the United States tightened sanctions.

"Today we are beginning the second stage of a negotiation process that we know will be complex, which will surely have very difficult moments," said Gerardo Blyde, chair of the Venezuelan opposition delegation.

"Between these two sidewalks where each party supports narratives that seem diametrically opposed is a street full of hopeless and suffering citizens, our people," he added.

U.S. President Joe Biden has not relaxed sanctions against the financial and oil sectors of Venezuela since taking office in January and has maintained support for opposition leader Juan Guaido, who declared himself interim president in January 2019 after claiming there was fraud in Maduro's 2018 re-election.

"We are willing to review sanctions policies on the basis of significant progress in the negotiation. But that is what we need to see: significant progress," U.S. State Department spokesman Ned Price said on Thursday.

The Venezuelan crisis has generated a massive exodus that the Organization of American States recently estimated would reach 7 million people by 2022, the largest in the world, exceeding the likes of Syria.

Reporting by Diego Ore and Sharay Angulo in Mexico City; Additional reporting by Deisy Buitrago in Caracas; Writing by Laura Gottesdiener; Editing by Grant McCool and Leslie Adler
Our Standards: The Thomson Reuters Trust Principles.

https://www.rystadenergy.com/newsevents/news/press-releases/russias-oil-supply-set-to-break-covid-19-chains-rise-to-a-new-record-in-july-2022-and-peak-in-2023/

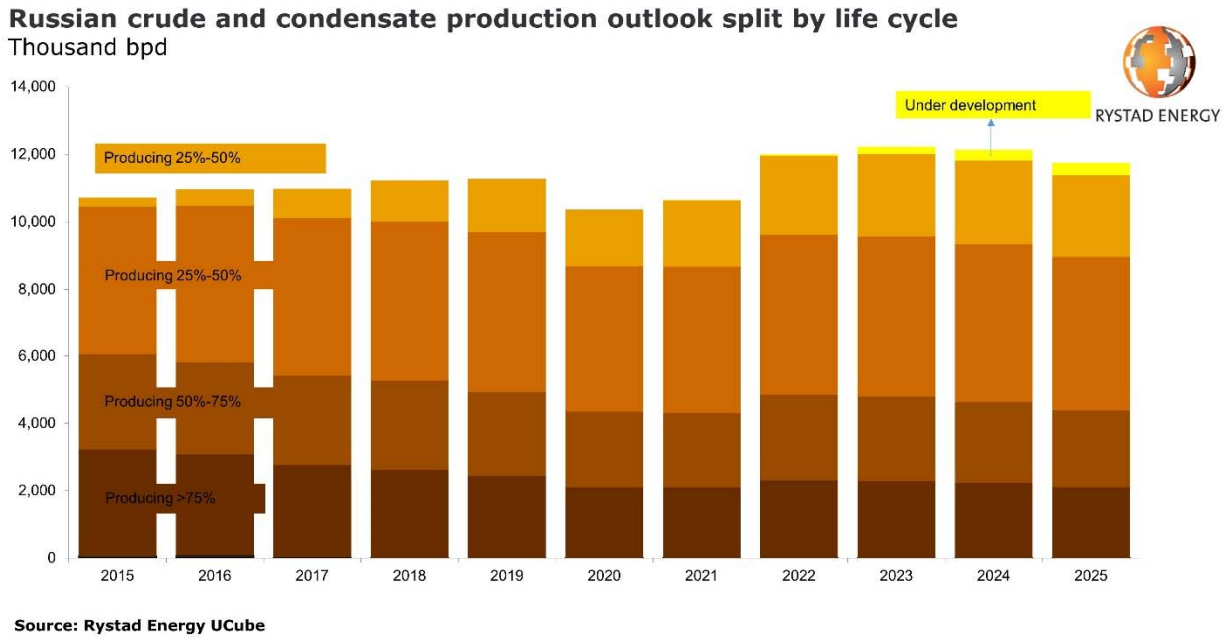
# Russia's oil supply set to break Covid-19 chains, rise to a new record in July 2022 and peak in 2023

August 13, 2021
**Share**

The OPEC+ coalition's recent agreement to steadily raise oil production is paving the way for Russia to slowly shrug off Covid-19 curtailments. The country is on track to set a new monthly crude and condensate output record of 11.6 million barrels per day (bpd) already in July 2022, a Rystad Energy analysis reveals. Russia's oil machine will then accelerate further to a peak of almost 12.2 million bpd in mid-2023.
Russia's current monthly oil and condensate production record was set in December 2018 with 11.5 million bpd. Rystad Energy's projections point to 2023 as a peak year also at an annual production level, expected at 12.16 million bpd. The country's short- and medium-term production growth will be driven by Rosneft and Gazpromneft's greenfield projects.

Russia is also expected to set new records for crude oil alone. Its existing monthly record of 10.7 million bpd from April 2020 will be matched by May 2022. Crude production will keep rising to a peak of 11.3 million bpd in mid-2023, before starting to decline.

"Russian production will rise from relatively new fields – fields with early production and producing fields with 25% to 50% depletion rates. Operators will not be able to increase production from mature fields, as it will be difficult and expensive to bring back online wells that were shut to comply with OPEC+ output cuts," says Daria Melnik, senior analyst at Rystad Energy.




Learn more in Rystad Energy's UCube.

After negotiations failed in early July, the OPEC+ group reached an agreement in mid-July to raise output by 400,000 bpd each month, starting from August 2021 to the end of 2022. The baseline production level for Russia has been revised to 11.5 million bpd, an increase of 500,000 bpd from the previous reference production. It should be noted that the country's crude oil production has never surpassed the 11 million bpd mark.

Rosneft alone will be contribute more than half of Russia's spare capacity. The company's greenfield projects will add around 250,000 bpd by 2022 and about 380,000 bpd by 2025. The operator is pressing ahead with its greenfield development plans and is on track with key oil projects.

Gazpromneft will be the second-largest contributor to Russia's liquids production growth in 2022, with greenfield projects as the driving force. By 2025, about 40% of Gazpromneft-operated production will come from early producing fields and projects that are currently under development, with the share in total output of the latter reaching 7%.

Other Russian operators – including Lukoil, Surgutneftegas and smaller players such as Bashneft and Russneft – have less diversified portfolios than Rosneft and Gazpromneft, with a low portion of greenfield projects. They are therefore not expected to contribute much to countrywide liquids production growth.

In Rystad Energy's base case, liquids production from smaller operators will bounce back to pre-Covid levels after the full phase-out of OPEC+ production cuts. Output will not exceed these levels as these companies have few greenfield developments in their portfolios.

For more analysis, insights and reports, clients and non-clients can apply for access to Rystad Energy's Free Solutions and get a taste of our data and analytics universe.

*Advisory: This press release has been updated to include minor adjustments to the headline and some of the numbers in the first three paragraphs, which were erroneous in the previous version due to a rounding error*

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Google Translate of TASS Russian story “В Минэнерго сообщили, что рентабельными в России являются только 36% запасов нефти” https://tass.ru/ekonomika/10559021

27 JAN, 04:40

# The Ministry of Energy said that only 36% of oil reserves in Russia are profitable

Deputy head of the department Pavel Sorokin noted that the development of deep horizons of Western Siberia will require investments comparable to the cost of drilling in the Arctic

MOSCOW, January 27. / TASS /. Only 36% of 30 billion tons of oil reserves in Russia are profitable, which is associated with the deterioration of development conditions and a drop in the quality of reserves, writes the Deputy Minister of Energy of the Russian Federation Pavel Sorokin in an article for the Energy Policy magazine.

"According to the data of the inventory of the economics of field development, carried out on behalf of the Russian government, out of 30 billion tons of recoverable oil reserves in Russia, only 36% is profitable in the current macroeconomic conditions. This is due to the deterioration of development opportunities: an increase in water cut, the need to permeability and compartmentalization of reservoirs, withdrawal into marginal zones and strata with small thicknesses, and so on, "Sorokin explained.

"All this not only increases the cost of production, but also increases the risks of not confirming the planned development indicators due to the complexity of modeling processes and errors during drilling, for example, the exit from the productive formation during horizontal drilling. As a result, for some assets, the actual profitability of drilling may differ significantly from plans, and reserves are not confirmed, "the deputy minister stressed.

According to him, the quality of reproduction of the resource base is also deteriorating. The average size of new field discoveries in 2015-2019 amounted to 9-14 million tons (excluding several large ones on the shelf and the Payakhskoye field). The increase in reserves in recent years is provided by additional exploration in the operating regions of production, as well as by revaluation of reserves. Basically, in traditional regions, the growth is due to the search for missed deposits or drilling into deep horizons. At the same time, the technological complexity of geological exploration increases significantly.

"It is important to understand that the omission of promising formations when using traditional methods of data interpretation is associated with their small size and complexity. Therefore, it is necessary to apply completely new technologies for exploration and modeling of assets," Sorokin said.

Thus, the question of the future of the Russian oil industry is associated with advanced technological development and increased efficiency. "Only this will allow maintaining the position of one of the lowest producers in terms of cost on the world oil supply curve," the deputy minister sums up.

Investments in the further development of Western Siberia

The development of the deep horizons of Western Siberia will require investments comparable to the costs of drilling in the Arctic, which are traditionally very high, Sorokin also noted.

"The development of deep horizons requires increased investment. For example, for the pre-Jurassic complex of Western Siberia, capital expenditures for exploratory drilling are comparable to the Arctic - from 500 million rubles or more per well. In terms of major discoveries, the most promising region is the Arctic and the shelf. Here Several major discoveries have already been made in recent years - Neptune, Triton, Payakha with total reserves of more than 1.3 billion tons of oil However, these basins are poorly studied and, given the high cost of exploratory drilling, it is necessary to use completely new modeling technologies for effective localization hydrocarbon deposits, "Sorokin noted.

“Thus, the question of the future of the Russian oil industry is associated with advanced technological development and efficiency gains. Only this will allow us to maintain the position of one of the lowest producers in terms of cost on the world oil supply curve,” the deputy minister added.

According to him, the oil and gas industry is currently facing a number of problems that reduce its competitiveness in the world market.

A common problem is the gradual depletion of reserves in developed fields and a drop in oil production in traditional oil-producing regions. The highest rates are observed in the key oil-producing region of Russia - Western Siberia, where production has decreased by 10% over the past ten years - to 288 million tons, Sorokin concludes.

TASS English Posted Story https://tass.com/economy/1249505
27 JAN, 04:26

## Only 36% of oil reserves profitable in Russia, energy minister says

This is related to worsening of development opportunities, according to the minister

MOSCOW, January 27. /TASS/. Just 36% of 30 bln tonnes of oil reserves are profitable, Deputy Energy Minister of Russia Pavel Sorokin wrote in his article for the Energy Policy magazine.

"According to data of fields' development economics inventory completed on the instruction of the Russian government, just 36% out of 30 bln tonnes of recoverable reserves of Russian oil are profitable in current macroeconomic environment. This is related to worsening of development opportunities: growing water cut, the need to build costly wells of complex design, low permeability and compartmentalization of reservoirs, the move to marginal areas and beds with low thickness, and so on," the official said.

"All that does not merely increase the lifting costs but also moves upward risks of failure to confirm target development figures because of the complexity of processes modeling and drilling errors, for example, leaving the pay bed in horizontal drilling. The result is the actual profitability of drilling may considerably differ from plans for certain assets and reserves will not be confirmed," Sorokin said.

# Oil Market Highlights

## Crude Oil Price Movements

Crude oil spot prices rose in July, m-o-m, as physical market fundamentals and declining oil inventories continued to support oil prices. The OPEC Reference Basket (ORB) averaged $73.53/b in July, representing an increase of $1.64, or 2.3%, m-o-m, the highest level since October 2018. Year-to-date, the ORB was up $25.43, or 63.8%, compared with the same period last year, to average $65.27/b. Crude oil futures prices also extended gains in July, buoyed by the outlook for strong oil market fundamentals. The ICE Brent front month increased by 88¢, or 1.2%, m-o-m to average $74.29/b in July, while NYMEX WTI gained $1.08, or 1.5%, m-o-m to average $72.43/b. Consequently, the Brent/WTI futures spread narrowed further in July by 20¢ to $1.86/b, its narrowest since October 2020. The market structure of all three major oil benchmarks remained in steep backwardation in July, as the oil market outlook remained robust and the market rebalancing process continued, amid a further decline in OECD oil stocks. However, hedge funds and other money managers sharply reduced their net long positions in July, particularly in WTI, after a selloff was seen in US equity markets and concerns heightened about the rapid spread of the Delta variant.

## World Economy

Global economic growth forecasts for both 2021 and 2022 were revised up by 0.1 pp, and hence growth for 2021 now stands at 5.6%, while growth in 2022 is now expected at 4.2%. However, the forecast for global growth continues to be impacted by uncertainties, including the spread of COVID-19 variants and the pace of the vaccine rollout worldwide. In addition, sovereign debt levels in many regions, together with inflationary pressures and central bank responses, remain key factors that require close monitoring. After lower-than-expected 2Q21 GDP growth, US economic growth for 2021 is revised down to 6.1% from 6.4% previously, while growth for 2022 is revised up to 4.1% from 3.6%. Euro-zone economic growth in 2021 is revised up to 4.7% from 4.1%, while growth for 2022 is revised up to 3.8% from 3%. Japan's economic growth forecast remains at 2.8% for 2021, followed by growth of 2.0% in 2022. Meanwhile, China's economic growth forecast for 2022 is revised down to 6% from 6.3%, following growth of 8.5% in 2021, unchanged from the previous month's assessment. India's 2021 growth forecast is revised down to 9.3%, followed by growth of 6.8% in 2022. Brazil's growth forecast for 2021 is revised up to 4.2% from 3.2%, followed by growth of 2.5% in 2022. Russia's forecast for both 2021 and 2022 is revised up by 0.2 pp to stand at 3.2% and 2.5%, respectively.

## World Oil Demand

World oil demand growth expectations for 2021 remained unchanged from the previous month's assessment. This is despite the above slight upward revision to economic growth, as the upwardly revised increment of the economic recovery is projected to be mainly in non-oil-intensive sectors. Oil demand is still estimated to increase by around 6.0 mb/d to average 96.6 mb/d. However, some revisions were taken into account in 1Q21 due to slower-than-anticipated demand in OECD Americas, offset by better-than-expected data from non-OECD countries in 2Q21. For 2022, world oil demand is still projected to increase by 3.3 mb/d y-o-y, unchanged from last month's assessment. Total world oil demand is projected to surpass the 100 mb/d threshold in 2H22 and reach 99.9 mb/d on average for the whole of 2022. Economic activities are still projected to gain traction, supported by massive stimulus packages. Additionally, the COVID-19 pandemic is anticipated to be controlled by vaccination programmes and improved treatment, resulting in a further recovery in economic activity and a steady rise in oil demand in both the OECD and non-OECD.

## World Oil Supply

Non-OPEC liquids supply growth forecasts in 2021 and 2022 have been revised up by 0.27 mb/d and 0.84 mb/d, respectively. These revisions are mainly due to the incorporation of the latest production adjustment decision of the non-OPEC countries participating in the Declaration of Cooperation (DoC), which are now considered, following the successful conclusion of the 19th OPEC and non-OPEC Ministerial Meeting on 18 July 2021. In addition, supply from the US and Canada is also subject to revisions this month. Non-OPEC liquids are now expected to grow by 1.1 mb/d in 2021 to average 64.0 mb/d. The main drivers for 2021 supply growth are anticipated to be Canada, Russia, China, the US, Norway and Brazil, with the US now expected to see y-o-y growth of 0.12 mb/d. For 2022, liquids supply is now expected to grow by 2.9 mb/d following new incremental production adjustments by the DoC's non-OPEC members, led by Russia with 1.0 mb/d. The US, with y-o-y growth of 0.8 mb/d, together with Brazil, Norway, Canada and Guyana, will be the other key drivers.

OPEC NGLs are forecast to grow by 0.1 mb/d y-o-y in both 2021 and 2022 to average 5.2 mb/d and 5.3 mb/d, respectively. OPEC crude oil production in July increased by 0.64 mb/d m-o-m, to average 26.66 mb/d, according to available secondary sources.

## Product Markets and Refining Operations

Global refinery margins trended upwards in July, supported by seasonal strength in transport fuels, with robust performance registered at the top of the barrel. In the US, a counter-seasonal decline in refinery utilization rates and subsequent downward pressure on product inventories lifted product markets. In Europe, refining margins benefitted from a reduction in utilization rates within the region registered in late June, as well as a tighter balance in major product markets due to limited product arrivals. This took place amid sustained road transport fuel consumption linked to softer mobility restrictions. Meanwhile, healthy regional fuel consumption levels in Asia, as well as robust petrochemical feedstock demand led to gains for clean products.

## Tanker Market

Market developments in the month of July provided little momentum to the languishing tanker market, with dirty freight rates remaining at subdued levels. While the demand for tankers is expected to pick up in 2H21, reducing some of the excess in tonnage availability amid increased scrapping, the rapid spread of the Delta variant has added some uncertainty regarding demand for products and crude, potentially pushing the tanker market recovery further into 2022.

## Crude and Refined Products Trade

US crude imports were broadly flat in July at near 18-month highs, averaging 6.5 mb/d, while crude exports dropped back to 2.7 mb/d, amid reduced flows to India. Japan's crude imports plunged almost 20% m-o-m in June to average 1.9 mb/d, undermined by renewed lockdown measures and reduced expectations for a boost in consumption due to the Olympic Games in Tokyo. Meanwhile, China's crude imports rose m-o-m in June, but remained at lower levels, averaging 9.8 mb/d, as government efforts to rein-in teapot refineries and crackdown on import quotas and tax irregularities dampened inflows. China's crude imports are expected to be capped close to current levels over the coming months as refiners continue to destock within increased government oversight. India's crude imports fell further in June, reaching an eight-month low of 3.9 mb/d, affected by refinery maintenance and ongoing Delta variant impacts. In contrast, India's product imports rebounded by 20% m-o-m to average 0.9 mb/d, led by a strong jump in LPG and naphtha inflows, as economic activity returned.

## Commercial Stock Movements

Preliminary data for June sees total OECD commercial oil stocks down by 23.0 mb m-o-m. At 2,922 mb, inventories are 289.4 mb lower than the same month a year ago, 90.4 mb lower than the latest five-year average and 25.2 mb below the 2015–2019 average. Within components, crude stocks fell by 38.3 mb m-o-m and product stocks were up by 15.3 mb. At 1,416 mb, OECD crude stocks stood 96.2 mb below the latest five-year average and 70.5 mb below the 2015–2019 average. Measuring 1,507 mb, OECD product stocks exhibited a gain of 5.8 mb above the latest five-year average, and were 45.3 mb above the 2015–2019 average. In terms of days of forward cover, OECD commercial stocks fell m-o-m by 0.9 days in June to stand at 63.6 days. This is 12.4 days below June 2020 levels, 1.0 day below the latest five-year average, but 2.0 days above the 2015–2019 average.

## Balance of Supply and Demand

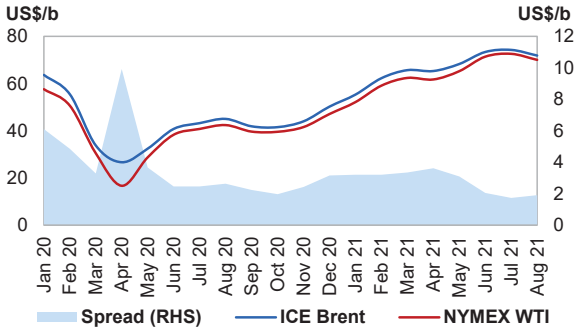
Demand for OPEC crude in 2021 was revised down by 0.2 mb/d from the previous month assessment to stand at 27.4 mb/d, around 4.7 mb/d higher than in 2020. Demand for OPEC crude in 2022 was revised down by 1.1 mb/d from the previous month's assessment to stand at 27.6 mb/d, around 0.2 mb/d higher than in 2021.

# Feature Article

## Crude and product price movements

The global oil market has seen a significant improvement in its fundamentals this year, translating into lower crude oil price volatility compared with 2020. The pick-up in oil demand, coupled with a large drop in oil inventories and reduced uncertainty in the market, has caused crude and oil product prices to rebound strongly, surpassing levels reached before the onset of the COVID-19 pandemic. The ICE Brent and NYMEX WTI futures contracts rose steadily over the past several months, up by $24.1 and $25.4, or 48% and 54%, respectively, between December 2020 and July 2021. Oil prices were supported by much improved economic conditions, with firm equity markets and large economic stimulus packages, as well as a gradual rise in oil demand and the anticipation of a further recovery amid optimism about accelerated vaccination rollouts in most major economies. Market confidence has also improved as OPEC and participating non-OPEC countries in the Declaration of Cooperation (DoC) maintained strong conformity levels in their voluntary production adjustments. However, the most current resurgence of new COVID-19 variants in several regions has impacted oil prices in recent days.

**Graph 1: Transatlantic spread between Brent and WTI**



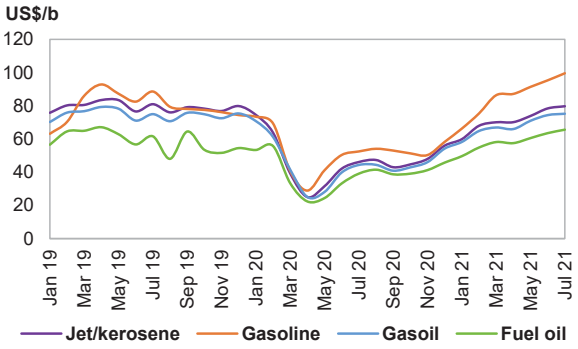

*Note: Aug 21 = Month-to-date.*
*Sources: ICE, CME Group and Thomson Reuters.*

In terms of market structure, the backwardation of major crude benchmarks had strengthened since early 2021, mirroring stronger market fundamentals. The ICE Brent and NYMEX WTI M1-M3 spread both widened again in July to a backwardation of about $1.5/b, on expectations of a market deficit in 2H21.

The transatlantic spread between ICE Brent and NYMEX WTI tightened in 2Q21 and continued to narrow in July, to settle at $1.86/b. WTI futures performed better than ICE Brent, as the rebalancing process in the US accelerated, amid robust oil demand and strong economic growth in that country, slow growth in oil supply and a large decline in crude stocks.

On the product side, fuel prices showed a substantial recovery this year in response to stronger crude prices. Moreover, the lifting of restrictions and subsequent improvement in fuel consumption levels helped ease the product surplus seen in 2020. In addition, the seasonal uptick in personal transport mobility activity in summer provided further support.

**Graph 2: Refined product prices in the USGC**




*Sources: Argus and OPEC.*

At the top of the barrel, gasoline production in the US in 1H21 was affected by the arctic freeze, the Colonial pipeline shutdown, spring floods and the turnaround season. As a result, US gasoline supplies suffered a considerable contraction, which led to sharp downward pressure on inventory levels and pushed gasoline prices to skyrocket back to pre-COVID levels (***Graph 2***). This gasoline shortage in the US opened up export opportunities and helped gasoline prices, to a more limited extent, in other regions as well. At the middle of the barrel, global gasoil prices remained sustained, supported by healthy economic activity, although jet/kerosene prices in Asia and in Europe lagged, due to the weak recovery in international and business air travel. High sulphur fuel oil (HSFO) prices in all regions rose, although volume availability surged in the US and Asia amid weak demand. In July, stronger LNG prices, robust power demand and hot weather all point to a boost in HSFO consumption and crack spreads.

Looking forward, refined product prices in 2H21 are likely to continue benefiting from a seasonal strength in transport fuels, although current high refinery run rates could dampen some of the upside in the immediate near term. Moreover, changes in crude prices, as well as a potential decline in fuel output over the peak autumn maintenance season, particularly around September, could lead to additional product price volatility. Meanwhile, unplanned outages, especially weather-related supply disruptions due to a forecast heavy hurricane season in the US, and concerns over possible renewed lockdowns, may also add to the volatility. Amid this precarious outlook, the vigilance and determined efforts by the countries participating in the DoC will remain ever more important in striving to maintain a stable and balanced market.

# World Oil Demand

World oil demand growth in 2021 remains unchanged from last month's report. This is despite the upward revision to GDP growth, as the rising economic recovery is projected to take place mainly in non-oil-intensive sectors. Total global oil demand is estimated to increase by around 6.0 mb/d to 96.6 mb/d. However, some revisions were taken into account in 1Q21 due to slower-than-anticipated demand in OECD Americas and offset by better-than-expected data from non-OECD countries in 2Q21.

In the OECD, oil demand is expected to increase by 2.6 mb/d, around 0.1 mb/d lower than last month's estimation, and reach 44.6 mb/d. Weaker-than-anticipated demand for gasoline due to mobility limitations in 1Q21 affected overall demand negatively. Similarly, a slower recovery in a number of countries in OECD Asia Pacific due to COVID-19 containment measures reduced demand for transportation fuels. In the non-OECD, oil demand is expected to increase by 3.4 mb/d, some 0.1 mb/d higher than last month's report, to reach 51.9 mb/d. Better-than-expected 2Q21 data from the Middle East and Africa supported by recovery in industrial fuels encouraged this upward revision. On the other hand, sluggish mobility data in India necessitated some downward revision to 2Q21 figures, slightly counterbalancing the upward revisions in the other regions.

In 2022, world oil demand is projected to increase by 3.3 mb/d y-o-y, also unchanged from last month's expectations, as the upward revision to 2022 GDP is assumed to take place mostly in non-oil intensive sectors. Total world oil demand is projected to surpass 100 mb/d in 2H22 and reach 99.9 mb/d on average for 2022. Economic growth is forecast to pick up on the back of massive stimulus packages. Additionally, the COVID-19 pandemic is anticipated to be under control, supported by vaccination programmes and improved treatment, allowing for steadily rising oil demand in both the OECD and non-OECD.

In the OECD, oil demand for next year is estimated to increase by 1.5 mb/d, led by OECD Americas, while OECD Europe and Asia Pacific are projected to rise but remain below 2019 consumption levels. Gasoline, diesel and light distillates are expected to lead oil demand growth in 2022 as miles travelled gradually recover, the industrial sector picks up steam, and amid the ramping up and commissioning of ethane crackers. In the non-OECD, oil demand is anticipated to grow by 1.8 mb/d, led by China, Other Asia and India. However, demand in China and India are projected to outstrip pre-COVID-19 levels, supported by a healthy rise in demand for transportation and industrial fuels. Demand in Other Asia, Latin America and the Middle East is anticipated to be strong, especially in Other Asia, supported by increases in mobility and progressing industrial sector.

**Table 4 - 1: World oil demand in 2021*, mb/d**

| | | | | | | | Change 2021/20 | |
|---|---|---|---|---|---|---|---|---|
| **World oil demand** | **2020** | **1Q21** | **2Q21** | **3Q21** | **4Q21** | **2021** | **Growth** | **%** |
| **Americas** | 22.56 | 22.89 | 24.73 | 24.84 | 24.75 | 24.31 | 1.75 | 7.77 |
| *of which US* | *18.44* | *18.79* | *20.11* | *20.34* | *20.45* | *19.93* | *1.49* | *8.06* |
| **Europe** | 12.43 | 11.89 | 12.72 | 13.61 | 13.70 | 12.99 | 0.56 | 4.51 |
| **Asia Pacific** | 7.07 | 7.61 | 7.07 | 7.16 | 7.51 | 7.34 | 0.27 | 3.81 |
| **Total OECD** | **42.06** | **42.38** | **44.52** | **45.61** | **45.97** | **44.64** | **2.58** | **6.14** |
| **China** | 13.19 | 12.95 | 14.27 | 14.93 | 15.05 | 14.30 | 1.11 | 8.43 |
| **India** | 4.51 | 4.94 | 4.42 | 4.91 | 5.61 | 4.97 | 0.46 | 10.27 |
| **Other Asia** | 8.13 | 8.36 | 8.98 | 8.54 | 8.59 | 8.62 | 0.49 | 5.99 |
| **Latin America** | 6.01 | 6.15 | 6.16 | 6.46 | 6.40 | 6.29 | 0.28 | 4.68 |
| **Middle East** | 7.55 | 7.95 | 7.77 | 8.24 | 7.97 | 7.99 | 0.44 | 5.84 |
| **Africa** | 4.08 | 4.39 | 4.06 | 4.16 | 4.48 | 4.27 | 0.19 | 4.64 |
| **Russia** | 3.37 | 3.57 | 3.42 | 3.57 | 3.74 | 3.57 | 0.21 | 6.14 |
| **Other Eurasia** | 1.07 | 1.18 | 1.24 | 1.14 | 1.28 | 1.21 | 0.14 | 12.59 |
| **Other Europe** | 0.65 | 0.73 | 0.67 | 0.68 | 0.74 | 0.70 | 0.06 | 8.89 |
| **Total Non-OECD** | **48.56** | **50.23** | **50.99** | **52.62** | **53.85** | **51.93** | **3.37** | **6.94** |
| **Total World** | **90.62** | **92.61** | **95.51** | **98.23** | **99.82** | **96.57** | **5.95** | **6.57** |
| **Previous Estimate** | 90.62 | 92.81 | 95.31 | 98.23 | 99.82 | 96.58 | 5.96 | 6.57 |
| **Revision** | 0.00 | -0.20 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

*Note: * 2021 = Forecast. Totals may not add up due to independent rounding. Source: OPEC.*

**Table 4 - 2: World oil demand in 2022*, mb/d**

| World oil demand | 2021 | 1Q22 | 2Q22 | 3Q22 | 4Q22 | 2022 | Change 2022/21 Growth | Change 2022/21 % |
|---|---|---|---|---|---|---|---|---|
| Americas | 24.31 | 24.12 | 25.64 | 25.72 | 25.55 | 25.27 | 0.95 | 3.93 |
| *of which US* | *19.93* | *19.85* | *20.89* | *21.11* | *21.17* | *20.76* | *0.83* | *4.17* |
| Europe | 12.99 | 12.38 | 13.14 | 14.01 | 14.03 | 13.40 | 0.41 | 3.17 |
| Asia Pacific | 7.34 | 7.85 | 7.26 | 7.29 | 7.62 | 7.51 | 0.17 | 2.28 |
| **Total OECD** | **44.64** | **44.36** | **46.03** | **47.02** | **47.21** | **46.17** | **1.53** | **3.43** |
| China | 14.30 | 13.50 | 14.75 | 15.32 | 15.44 | 14.76 | 0.45 | 3.16 |
| India | 4.97 | 5.28 | 4.65 | 5.14 | 5.88 | 5.24 | 0.27 | 5.35 |
| Other Asia | 8.62 | 8.78 | 9.29 | 8.82 | 8.86 | 8.94 | 0.32 | 3.71 |
| Latin America | 6.29 | 6.39 | 6.34 | 6.61 | 6.56 | 6.48 | 0.18 | 2.89 |
| Middle East | 7.99 | 8.29 | 8.01 | 8.49 | 8.20 | 8.25 | 0.26 | 3.31 |
| Africa | 4.27 | 4.57 | 4.19 | 4.28 | 4.61 | 4.41 | 0.14 | 3.27 |
| Russia | 3.57 | 3.67 | 3.47 | 3.62 | 3.79 | 3.64 | 0.07 | 1.83 |
| Other Eurasia | 1.21 | 1.25 | 1.28 | 1.17 | 1.32 | 1.25 | 0.05 | 3.72 |
| Other Europe | 0.70 | 0.75 | 0.68 | 0.69 | 0.76 | 0.72 | 0.02 | 2.34 |
| **Total Non-OECD** | **51.93** | **52.48** | **52.67** | **54.15** | **55.41** | **53.68** | **1.75** | **3.37** |
| **Total World** | **96.57** | **96.83** | **98.71** | **101.17** | **102.62** | **99.86** | **3.28** | **3.40** |
| Previous Estimate | 96.58 | 97.03 | 98.52 | 101.17 | 102.62 | 99.86 | 3.28 | 3.40 |
| Revision | 0.00 | -0.20 | 0.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

*Note: * 2021-2022 = Forecast. Totals may not add up due to independent rounding. Source: OPEC.*

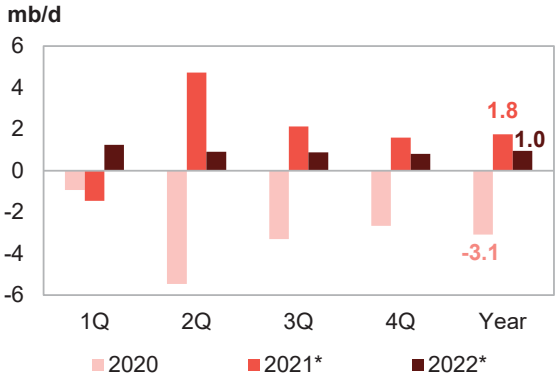
# OECD

# OECD Americas

## Update on the latest developments

The latest available oil demand data in **OECD Americas** implies an increase of 3.4 mb/d y-o-y in **May**, following an increase of 5.3 mb/d y-o-y in April. More than 65% of this increase stems from a rebound in demand for road transportation fuels, particularly gasoline, while jet fuel demand continued to rise and grew by 0.8 mb/d y-o-y, yet remained approximately 30% lower than pre-COVID-19 levels. Gasoline demand posted substantial gains of 2.2 mb/d y-o-y for the third month in a row and in line with a rebound in travel following a historic drop in May 2020. Demand for transportation fuels, as well as total petroleum product demand, remained below May 2019 levels by almost 2.0 mb/d. On top of the low May 2020 baseline, all countries in the region posted solid gains as demand rebounded the most in the US, followed by Canada, Mexico and Chile.

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




*Note: * 2021-2022 = Forecast. Source: OPEC.*

The latest available **US** monthly data for **May** implies US oil demand rose by approximately 4.0 mb/d y-o-y, making up 93% of the losses incurred during the historic drop in May 2020, but remained almost 1.4 mb/d lower than May 2019. Gasoline and jet kerosene requirements contributed the most to the increase, with gasoline gaining 1.9 mb/d y-o-y and jet/kerosene rising by 0.7 mb/d y-o-y in May 2021. Both fuels fell sharply in May 2020, by 2.3 mb/d and 1.2 mb/d y-o-y, respectively. According to the Federal Highway Administration (FHA), vehicle miles of travel in the US increased by 28.7% y-o-y in May this year after rising by 54.9% y-o-y in April. In May 2020, the indicator fell by more than 25% y-o-y. Light vehicle retail sales, as reported by Autodata and Haver Analytics, were at 17.2 million units according to seasonally adjusted annual rates (SAAR), compared with 18.8 million units in April. Historical figures show total sales of 12.1 million units in May 2020 and 17.4 million units in April 2019. Industrial production, a leading indicator for industrial fuel demand, rose by 16.2% y-o-y in May after increasing by 17.6% y-o-y in April. The indicator remained flat in May 2019, according to Federal Reserve Board data. Diesel demand was higher by 0.3 mb/d y-o-y in May 2021 following

an increase of 0.5 mb/d in April. Preliminary data for June, based on weekly input, indicates the continuation of a recovery in transportation fuel performance, with both gasoline and jet kerosene increasing by more than 1.6 mb/d y-o-y collectively. Diesel is foreseen to increase by 0.4 mb/d y-o-y in June 2021.

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

| By product | May 20 | May 21 | Change May 21/May 20 Growth | % |
|---|---|---|---|---|
| LPG | 2.75 | 3.24 | 0.49 | 17.9 |
| Naphtha | 0.16 | 0.21 | 0.05 | 33.8 |
| Gasoline | 7.19 | 9.14 | 1.95 | 27.1 |
| Jet/kerosene | 0.60 | 1.32 | 0.72 | 121.3 |
| Diesel | 3.53 | 3.87 | 0.34 | 9.7 |
| Fuel oil | 0.08 | 0.26 | 0.18 | 219.8 |
| Other products | 2.09 | 2.34 | 0.25 | 12.2 |
| **Total** | **16.39** | **20.38** | **3.99** | **24.3** |

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

## Near-term expectations

Careful optimism dominates the short-term future demand in the region. The vaccination rollout and the overall management of the COVID-19 pandemic underlie the optimism, together with massive stimulus programmes, high household savings, improvements in employment rates and a reduction or complete withdrawal of COVID-19 measures. These factors support a positive outlook for oil demand during the **2H21**. At the same time, the outlook could remain challenged by COVID-19 developments, particularly during the emergence of colder weather in the 4Q21, and the appearance of new variants and possible government countermeasures. Transportation fuel demand correlates strongly with the overall economy and in particular with unemployment rates and fuel retail prices. While 3Q21 appears to be promising in terms of travel activities, risks from the impact of COVID-19 on consumer behaviour, as well as the effectiveness of vaccination programmes, are to be monitored closely going forward.

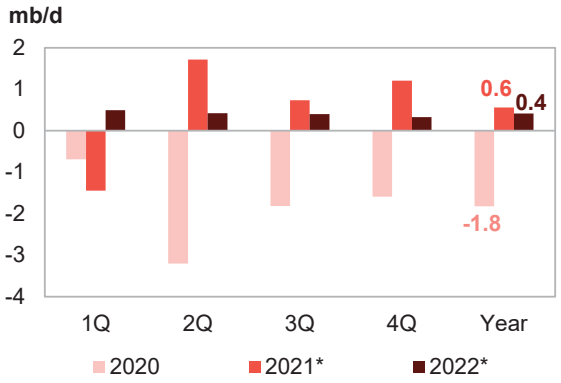
In **2022**, OECD Americas oil demand is forecasted to increase by around 1.0 mb/d y-o-y with US oil demand accounting for more than 0.8 mb/d y-o-y. Forecasted demand growth is supported by solid economic performance. The petrochemical and transportation sectors will require more oil during 2022. Gasoline demand will be backed by improved employment rates and increases in vehicle sales, despite the continuous penetration of alternative fuel vehicles. Expansion in the petrochemical industry and consequently healthy petrochemical margins will provide support to light distillates in 2022. On the other hand, challenges remain, such as reduced business travel, a continuation in fuel substitution programmes, and fuel efficiency gains.

# OECD Europe

## Update on the latest developments

**OECD Europe** oil demand rose by a strong 1.8 mb/d y-o-y in **May**, following an increase of more than 1.9 mb/d y-o-y in April. Demand for most petroleum product categories posted large y-o-y gains, as a result of the low historical baseline and the removal of restrictions in almost all countries in the region amid increasing vaccination rates and falling COVID-19 infection cases. The strongest gains were for gasoline, diesel, jet/kerosene and light distillates. Demand for naphtha remained higher y-o-y, and recorded healthy growth of more than 0.1 mb/d, since the 4Q20. The regions' petrochemical industry has experienced a rebound during the COVID-19 pandemic, in line with sharply increasing usage of sanitary plastics. Demand for transportation fuels returned with diesel, gasoline and jet/kerosene registering solid gains amid huge travel demand demand following an 18-month slowdown. Lower numbers of COVID-19 cases, in combination with substantial improvements in vaccine rollouts, led governments to remove strict containment measures and policies that hindered business and leisure travel.

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




*Note: * 2021-2022 = Forecast. Source: OPEC.*

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

| By product | May 20 | May 21 | Change May 21/May 20 Growth | % |
|---|---|---|---|---|
| LPG | 0.33 | 0.45 | 0.12 | 35.4 |
| Naphtha | 0.51 | 0.54 | 0.03 | 6.7 |
| Gasoline | 0.75 | 1.09 | 0.34 | 44.9 |
| Jet/kerosene | 0.26 | 0.33 | 0.07 | 26.3 |
| Diesel | 2.65 | 2.80 | 0.15 | 5.8 |
| Fuel oil | 0.14 | 0.19 | 0.06 | 41.2 |
| Other products | 0.39 | 0.48 | 0.09 | 23.9 |
| **Total** | **5.02** | **5.88** | **0.86** | **17.1** |

*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.*

Demand in the **UK** grew the most, by 0.5 mb/d, followed by **Italy**, 0.3 mb/d, and **France**, 0.2 mb/d, y-o-y. In **Germany**, as many COVID-19 measures remained in place during May 2021, oil demand fell by almost 0.2 mb/d y-o-y. Substantial oil demand gains were also observed in all other regional countries, coupled with decreasing stringency indexes. Travelling across borders and within the region became less restrictive both on the road as well as in the air, sharply increasing leisure activities. The industrial production index, which excludes construction, rose sharply as compared to the same month in 2020, as reported by Eurostat and Haver Analytics. New passenger car registrations rose almost 53% y-o-y, following a huge 264% y-o-y increase in April. Unemployment rates fell m-o-m, yet rose y-o-y.

### Near-term expectations

The outlook for **2021** remains resilient, despite COVID-19-related containment efforts during the first four months of the year and as challenges in vaccination rollouts inevitably implied the re-introduction of stringent measures. However, vaccination rates have improved rapidly and warmer weather has favoured efforts to control the pandemic. These developments and the improved coordination among the region's countries support careful optimism in the region's 2021 oil demand outlook, resulting from growing economic activity and a successful COVID-19 containment effort. The current outlook assumes that herd immunity will most likely be achieved during 4Q21. Fuel efficiency gains, reduced international travel, teleworking enhancements and limitations in petroleum product demand will partly remain and cap oil demand going forward.

In **2022**, OECD Europe oil demand is expected to rise by around 0.4 mb/d. Developments in the economy, along with containment of COVID-19, are the main assumptions for OECD Europe oil demand growth in 2022. These are supported by improvements in mobility as well as positive developments in the industrial and construction sectors. Downside risks are mostly related to the appearance of resilient COVID-19 variants, economic uncertainty, high debt levels and budgetary constraints, as well as stringent policies capping oil usage. OECD Europe oil demand will remain therefore below 2019 levels.

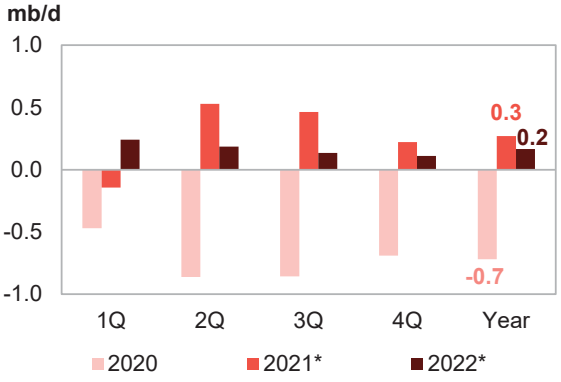
## OECD Asia Pacific

### Update on the latest developments

**OECD Asia Pacific** oil demand continued to improve and grew by 0.3 mb/d y-o-y in **May**, through this was less than the corresponding increase recorded in April at 0.6 mb/d. Gains were largely attributed to rising light distillate requirements in South Korea and Japan, as well as gasoline and diesel demand in Australia, South Korea and Japan.

With the COVID-19 pandemic relatively under control in some countries of the region, oil demand recovery seems likely to continue in 3Q21. Oil demand has gained an additional push to the upside due to the 2020 Summer Olympics in Japan despite the lack of spectators. Demand for light distillates in the Asia Pacific in May grew by more than 0.1 mb/d, y-o-y, after increasing by roughly the same volumes in April.

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




*Note: * 2021-2022 = Forecast. Source: OPEC.*

Transportation fuel demand rose by 0.1 mb/d y-o-y in May, following April's gains of 0.2 mb/d y-o-y. Oil demand in **Japan** grew by 0.2 mb/d y-o-y, while **South Korea**'s oil demand fell by almost 0.1 mb/d y-o-y. Preliminary data from by Japan's Ministry of Economy, Trade and Industry (METI) indicates a y-o-y increase of 0.1 mb/d in June 2021.

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

| | | | Change Jun 21/Jun 20 | |
|---|---|---|---|---|
| By product | Jun 20 | Jun 21 | Growth | % |
| LPG | 0.26 | 0.32 | 0.05 | 20.3 |
| Naphtha | 0.61 | 0.64 | 0.03 | 4.8 |
| Gasoline | 0.78 | 0.76 | -0.01 | -1.8 |
| Jet/kerosene | 0.17 | 0.20 | 0.03 | 18.3 |
| Diesel | 0.68 | 0.70 | 0.02 | 3.4 |
| Fuel oil | 0.19 | 0.20 | 0.01 | 6.1 |
| Other products | 0.17 | 0.12 | -0.05 | -29.3 |
| **Total** | **2.86** | **2.95** | **0.09** | **3.0** |

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

## Near-term expectations

Efficient containment measures in South Korea seemed to have curbed a further increase in COVID-19 cases. Consequently, transportation fuel demand going further into **2021** is expected to recover, as are requirements for industrial fuels and petrochemical feedstock. Overall demand in 2021 is projected to rebound in the region, mainly in 2H21, on the back of a recovery in economic activities. Petrochemical feedstock consumption remains one of the main contributors to oil demand growth in 2021 while jet/kerosene demand is projected to continue lagging 2019 levels as international business and leisure travel are anticipated to remain under pressure.

In **2022**, OECD Asia Pacific oil demand is expected to increase by 0.2 mb/d, under assumptions of expanding GDP and low impact from COVID-19-related challenges on transportation fuel demand. Herd immunity is anticipated to reach desired targets in 2022 amid vaccination efforts. Gasoline will be the petroleum product category to increase the most, followed by industrial diesel, as well as light distillate petrochemical feedstock.

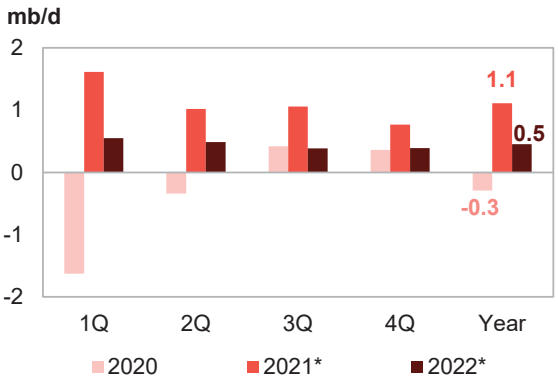
# Non-OECD

# China

## Update on the latest developments

**China's oil demand** data for **June** shows growth of more than 0.4 mb/d y-o-y compared to around 1.0 mb/d y-o-y in May. Gasoline and jet fuel grew the most, adding around 0.6 mb/d y-o-y in May, showing a continuation of the solid performance of the previous months. LPG also posted respectable gains on the back of higher utilization rates for PDH (propane dehydrogenation) plants and lower maintenance activities. Gasoline demand increased by around 0.5 mb/d y-o-y following an increase of around 0.6 mb/d y-o-y in May on higher driving during the Dragon Boat Festival holidays and despite falling motor vehicle sales.

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




*Note: * 2021-2022 = Forecast. Source: OPEC.*

According to the China Passenger Car Association (CPCA), vehicle sales fell by 14.0% y-o-y in June following a drop of around 3.0% y-o-y in May. Jet fuel demand also posted gains of 0.1 mb/d y-o-y following an increase in air travel volume. Diesel fell by around 0.3 mb/d y-o-y in June after dropping by 0.1 mb/d y-o-y in May. Slower industrial sector demand and a falling manufacturing PMI contributed to this drop. The IHS Markit

manufacturing PMI fell for a third consecutive month to its lowest level since February and was at 51.3 in June, from 52.0 in May.

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

| By product | Jun 20 | Jun 21 | Change Jun 21/Jun 20 Growth | % |
|---|---|---|---|---|
| LPG | 2.02 | 2.18 | 0.15 | 7.6 |
| Naphtha | 1.38 | 1.43 | 0.05 | 3.4 |
| Gasoline | 3.10 | 3.60 | 0.50 | 16.1 |
| Jet/kerosene | 0.54 | 0.64 | 0.10 | 18.4 |
| Diesel | 3.59 | 3.36 | -0.23 | -6.4 |
| Fuel oil | 0.77 | 0.75 | -0.02 | -2.6 |
| Other products | 1.67 | 1.54 | -0.13 | -7.8 |
| **Total** | **13.07** | **13.49** | **0.42** | **3.2** |

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

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

## Near-term expectations

Going forward, oil demand is expected to grow solidly in **2021**, mainly driven by steady economic activity and a low baseline. Economic sectors are expected to show healthy performance for the remainder of the current year, led by the transportation, petrochemical and industrial sectors. Gasoline demand is projected to continue growing but might face some challenges amid sluggish vehicle sales and slower mobility due to the lack of national breaks. Diesel consumption is projected to grow in the reminder of the year on the back of steady improvements in the industrial, construction and agricultural sectors. LPG and naphtha will record positive gains going forward due to healthy petrochemical margins and recent capacity development.

In **2022**, China's oil demand is expected to rise by 0.5 mb/d with total demand to surpass 2019 levels on the basis of economic growth forecasts. Oil demand for the transportation and industrial sectors is expected to grow, buoyed by a firm increase in mobility, rising passenger car sales and a healthy industrial sector. Gasoline is anticipated to rise the most then diesel. Petrochemical end-use consumption is similarly estimated to support demand for light distillates.

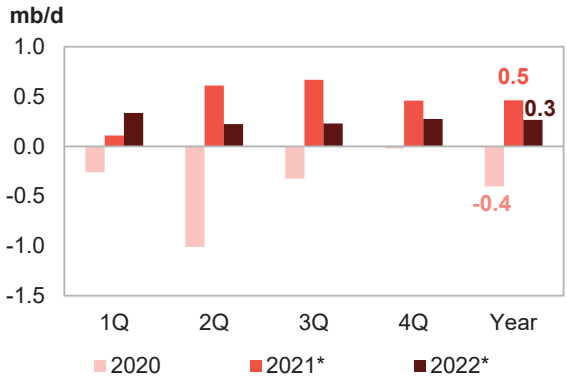
# India

## Update on the latest developments

**India's oil demand** increased marginally in **June**, with data showing a rise of around 0.1 mb/d y-o-y after marginally dropping in May due to the prevalence of the COVID-19 Delta variant.

Oil demand declined by 0.2 mb/d when compared to June 2019, largely resulting from weaknesses in diesel and transportation fuels. The performance of products was mixed in June, with LPG and gasoline consumption rising y-o-y while demand for jet/kerosene and fuel oil was flat. Demand for diesel and naphtha declined when compared to the same period in 2020. LPG was supported by an increase in home cooking demand on the back on of stay-home policies due to the increase in COVID-19 cases, while demand for gasoline was supported by a distorted base line and increased m-o-m mobility.

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




*Note: * 2021-2022 = Forecast. Source: OPEC.*

According to Google maps and Apple's mobility index, mobility picked up pace in June and reached 71% of pre-pandemic levels, compared with 52% during the month of May. Looking at diesel, slower construction and trucking activities together with a drop in India's manufacturing PMI, which fell into the contraction zone for the first time since July 2020, weighed on diesel demand in June. Diesel demand was marginally lower in June compared with some growth in May, although consumption remained largely below pre-COVID-19 levels by around 0.3 mb/d compared to June 2019. Jet/kerosene demand continued to be impacted by fewer international flights, thus reducing jet fuel demand, as well as the substitution with LPG for kerosene in the

residential sector. Jet/kerosene increased only marginally in June despite the significant decline in the baseline and when compared to June 2019, jet/kerosene demand was lower by more than 0.1 mb/d.

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

| By product | Jun 20 | Jun 21 | Change Jun 21/Jun 20 Growth | % |
|---|---|---|---|---|
| LPG | 0.87 | 0.95 | 0.08 | 8.9 |
| Naphtha | 0.36 | 0.35 | -0.01 | -3.1 |
| Gasoline | 0.75 | 0.79 | 0.04 | 4.8 |
| Jet/kerosene | 0.10 | 0.11 | 0.00 | 2.9 |
| Diesel | 1.62 | 1.59 | -0.03 | -1.8 |
| Fuel oil | 0.25 | 0.25 | 0.00 | 1.1 |
| Other products | 0.28 | 0.26 | -0.02 | -5.5 |
| **Total** | **4.24** | **4.30** | **0.06** | **1.5** |

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

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

## Near-term expectations

Going forward, economic activity is projected to continue to recover in **2H21** and as such demand for petroleum products is expected to improve. However, uncertainty remains high mainly due to the COVID-19 pandemic and the pace of vaccination efforts across the country. Additionally, high retail prices add to the uncertainties going forward. Oil consumption is projected to pick up pace over the short term, supported by the low baseline and uptick in diesel demand in a number of sectors, including construction and agriculture. The recovery in transportation fuels is anticipated to depend on pandemic developments and the government's countermeasures. Together with the 2020 baseline decline, oil demand is projected to show healthy growth in 2021. Demand for transportation fuel will lead product demand, followed by middle distillates with most of the gains appearing in 2H21.

In **2022**, similar to last month's expectations, oil demand is anticipated to increase by around 0.3 mb/d with total volumes expected to exceed pre-pandemic levels on an annualized basis. COVID-19 containment measures are projected be aided by the acceleration in vaccination efforts, natural immunity and better treatments for COVID-19. The economic outlook remains as highlighted last month, showing an increase in GDP of around 6.8%. From the products side, gasoline is projected to lead oil demand growth in 2022, supported by increasing mobility, a pickup in two-wheeler sales compared to the current year, and overall economic developments. Diesel is assumed to be supported by healthy industrial, construction and agricultural activities in 2022.

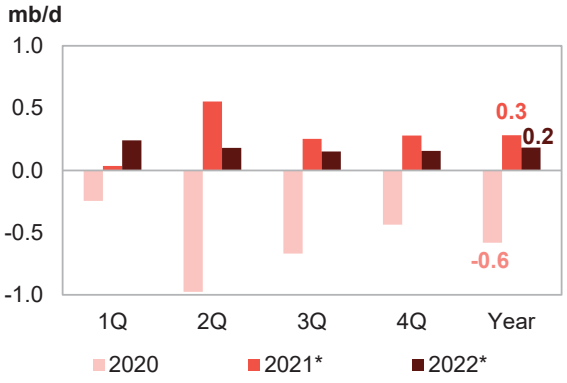
# Latin America

## Update on the latest developments

**May**'s oil demand in **Latin America** increased by around 0.5 mb/d y-o-y, compared to an increase of 0.7 mb/d in April.

Demand remained lower by nearly 0.3 mb/d compared with pre-COVID-19 levels in May 2019. Most of the petroleum product increases occurred in Brazil followed by Argentina, rising by around 0.3 mb/d and 0.1 mb/d y-o-y, respectively. Diesel and gasoline grew the most in the region with diesel even exceeding May 2019 levels, supported by a pickup in industrial activities, increased trucking movement as well as the low baseline of May 2020.

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




*Note: * 2021-2022 = Forecast. Source: OPEC.*

Improvements in industrial activity are illustrated in the Brazilian PMI, which reflected improvements in economic activity in the region's largest economy. The IHS Markit Brazil manufacturing PMI was in the expansion zone at 53.7 in May compared with 52.3 in April. The index surged further in June, lending support to manufacturing activity and industrial fuels data in June.

**Table 4 - 8: Brazil's oil demand*, mb/d**

| By product | Jun 20 | Jun 21 | Change Jun 21/Jun 20 Growth | % |
|---|---|---|---|---|
| LPG | 0.24 | 0.25 | 0.01 | 2.2 |
| Naphtha | 0.15 | 0.14 | 0.00 | -2.0 |
| Gasoline | 0.57 | 0.67 | 0.10 | 17.4 |
| Jet/kerosene | 0.03 | 0.06 | 0.03 | 122.8 |
| Diesel | 0.98 | 1.07 | 0.09 | 8.9 |
| Fuel oil | 0.08 | 0.12 | 0.04 | 59.1 |
| Other products | 0.37 | 0.36 | -0.01 | -3.3 |
| **Total** | **2.42** | **2.67** | **0.25** | **10.5** |

*Note: * = Inland deliveries. Totals may not add up due to independent rounding.*

*Sources: JODI, Agencia Nacional do Petroleo, Gas Natural e Biocombustiveis and OPEC.*

Positive developments in the transportation sector in Latin America supported fuel consumption, particularly gasoline, which increased by around 0.2 mb/d y-o-y in May following similar growth in April. However, gasoline demand was 0.1 mb/d lower than May 2019. The mobility indicator showed a respectable rise in May at 90% when compared to pre-COVID-19 levels. That is higher than the 83% recoded in April. On the other hand, the aviation sector in Latin America remained around 50% below pre-crisis levels, thus weighing on jet fuel recovery. Jet fuel demand increased marginally in May following a small increase in April.

## Near-term expectations

Positive PMI data for Brazil and further improvements in mobility support encouraging prospects for oil demand in June. Going forward, the oil demand forecast for **2H21** remains supported by the low baseline and positive economic outlook. However, risks remain linked to COVID-19 and the subsequent containment measures. Latin America's 2021 oil demand outlook remains the same as last month's MOMR, with no major revisions in 2021 or 2022 oil demand projections. Risks appear to be slightly tilted to the downside in light of developments on the COVID-19 front and vaccinations efforts. On the other hand, further positive economic developments resulting from fiscal stimulus programmes is anticipated to offset many of the negative risks.

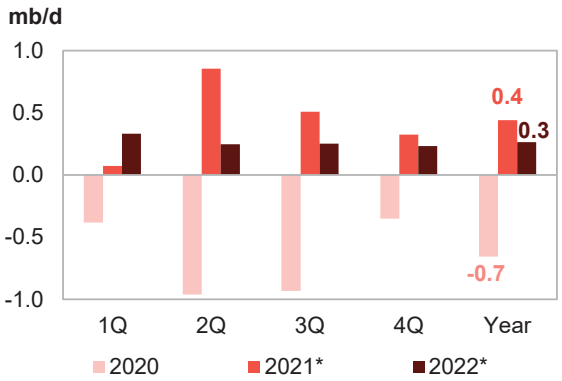
In **2022**, Latin America's oil demand is anticipated to rise by 0.2 mb/d but will still be below 2019 levels. The rise in oil demand will be largely linked to positive economic outlook, which will support industrial fuel demand led by diesel. The outlook for growth sees Brazil taking the lead, followed by Argentina. In terms of fuel, transportation fuels are expected to grow the most in 2022, supported by the continued recovery in the transportation sector as containment measures for COVID-19 are relaxed and as the overall economy gains momentum. Moreover, construction and industrial fuels are also anticipated to gain pace in 2022.

# Middle East

## Update on the latest developments

Following strong oil demand growth in April, **Middle East** oil demand posted gains of 1.1 mb/d y-o-y in **May**, making up all the losses incurred in May 2020 and were on par with pre-COVID-19 levels. Transportation fuel led the recovery and posted solid y-o-y gains, but remained below pre-COVID-19 levels. Heavy distillates performed steadily both y-o-y and also when compared to pre-COVID-19 levels. Fuel oil and the "other product' category, which also includes crude oil for power generation, increased by nearly 0.1 mb/d y-o-y and were more than 0.2 mb/d above May 2019. Those gains were concentrated in Saudi Arabia, where demand increased by 0.3 mb/d y-o-y, followed by Kuwait, the United Arab Emirates (UAE) and Iraq, which saw y-o-y increases of around 0.2 mb/d each.

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




*Note: * 2021-2022 = Forecast. Source: OPEC.*

In June, oil demand in **Saudi Arabia** continued to increase compared to the same last year, adding 0.2 mb/d to average 2.3 mb/d, supported by gasoline, which increased by 0.1 mb/d y-o-y. While diesel and fuel oil decreased y-o-y by 0.01 mb/d and 0.03 mb/d, respectively. The industrial production index, as reported by the General Authority for Statistics and Haver Analytics, rose to 110.2 in June (reference 2010=100) from 106.3 in May.

**Table 4 - 9: Saudi Arabia's oil demand, mb/d**

| By product | Jun 20 | Jun 21 | Change Growth | Jun 21/Jun 20 % |
|---|---|---|---|---|
| **LPG** | 0.04 | 0.04 | 0.00 | 6.0 |
| **Gasoline** | 0.42 | 0.48 | 0.06 | 15.0 |
| **Jet/kerosene** | 0.03 | 0.05 | 0.01 | 45.3 |
| **Diesel** | 0.54 | 0.52 | -0.01 | -2.7 |
| **Fuel oil** | 0.57 | 0.55 | -0.03 | -4.5 |
| **Other products** | 0.55 | 0.67 | 0.11 | 20.7 |
| **Total** | **2.16** | **2.32** | **0.16** | **7.6** |

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

*Sources: JODI and OPEC.*

## Near-term expectations

Going forward, oil demand is anticipated to continue to recover and show steady gains during **2H21**. This will depend to a certain degree on further developments in COVID-19 containment measures, which are assumed to be very limited and any risks of increases in COVID-19 cases are muted and well controlled due to the high vaccination rate in certain region. The continued improvement in mobility supported by the summer driving season and holiday trips are projected to support the gasoline recovery process in 3Q21 with a limited contribution from the Hajj season in Saudi Arabia. The resumption of international flights in most countries in the region is assumed to support jet fuel demand through the end of 2021, but jet fuel demand is projected to remain well below pre-COVID-19 levels.

In **2022**, oil demand in the Middle East is projected to increase by 0.3 mb/d, supported by the steady economic outlook. Transportation fuel, led by gasoline and on road diesel, as well as light distillates for petrochemical usage and construction fuels are projected to lead oil demand growth in 2022. Saudi Arabia is expected to lead the oil demand increase in the region due to steady economic expectations, controlled COVID-19 cases and its healthy petrochemical sector.

# World Oil Supply

Non-OPEC liquids supply growth in 2021 (including processing gains) was revised up by 0.27 mb/d from the previous assessment. The revisions are mainly due to the incorporation of the latest production adjustment decisions of the non-OPEC countries participating in the DoC, which have now been considered, following the successful conclusion of the 19th OPEC and non-OPEC Ministerial Meeting on 18 July 2021. Annual growth is now forecast at 1.1 mb/d y-o-y, to reach 64.0 mb/d, but still far from the highest level of non-OPEC supply of 66.9 mb/d in 1Q20 – before the oil market turmoil due to the COVID-19 outbreak. In the US, operators have remained highly disciplined in 2020-2021. Nevertheless, rig count continue to rise, more wells are being fracked and more frac crews are deployed, as firms are again flush with free cash flow. The US liquids supply forecast has been revised up by 65 tb/d, owing to higher-than-anticipated production in April and May of 2Q21, and is forecast to grow by 0.12 mb/d y-o-y. Moreover, top European energy companies signalled confidence in a lasting recovery from the pandemic by drawing on higher oil prices to boost shareholder returns and reassure investors as they roll out risky climate strategies. The 2021 oil supply forecast primarily sees growth in Canada, Russia, China, the US, Norway and Brazil, while output is projected to decline in the UK, Colombia, Indonesia and Egypt.

The non-OPEC supply forecast for 2022 has been revised up by 0.84 mb/d, also reflecting the latest DoC production adjustment decision, and is now expected to grow by 2.9 mb/d to average 66.9 mb/d (including a recovery of 0.11 mb/d in processing gains). Including the expected growth of OPEC NGLs, liquids supply is forecast to grow by 3.1 mb/d. The main drivers of liquids supply growth are Russia (1.0 mb/d) and the US (0.78 mb/d), followed by Brazil, Norway, Canada, Kazakhstan, Guyana and other countries in the DoC. Nevertheless, uncertainty regarding the financial and operational aspects of US production remains high.

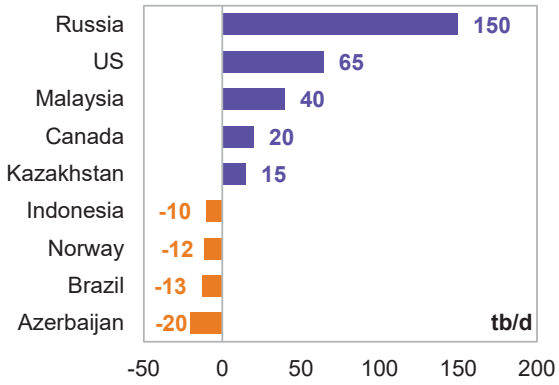
OPEC NGLs and non-conventional liquids production in 2021 is estimated to grow by 0.12 mb/d to average 5.17 mb/d. For 2022, it is forecast to grow by 0.13 mb/d to average 5.29 mb/d. OPEC-13 crude oil production in July increased by 0.64 mb/d m-o-m to average 26.66 mb/d, according to secondary sources.

Preliminary non-OPEC liquids production in July, including OPEC NGLs, is estimated to have increased by 0.33 mb/d m-o-m to average 69.0 mb/d, up by 2.45 mb/d y-o-y. As a result, preliminary data indicates that global oil supply increased by 0.97 mb/d m-o-m to average 95.69 mb/d, up by 5.79 mb/d y-o-y.

**Non-OPEC liquids production growth in 2021** was revised up by 273 tb/d, owing to the revisions in annual supply growth of DoC participating countries, following the incorporation of the decision of the 19th OPEC and non-OPEC Ministerial Meeting on 18 July, as well as revisions to historical production in the US and Qatar. Forecast supply of the non-OPEC-10 group was revised up by 0.21 mb/d, and is now expected to grow by 0.3 mb/d y-o-y to average 17.5 mb/d.

Moreover, the supply forecast in 2Q21 was revised up by 150 tb/d, led by the US at 160 tb/d and Canada at 81 tb/d, which partially offset downward revisions mainly in Brazil, Norway and Australia. On an annual basis, Russia, the US and Malaysia had the main upward revisions.

**Graph 5 - 1: Revisions to annual supply change forecast in 2021*, August MOMR/July MOMR**



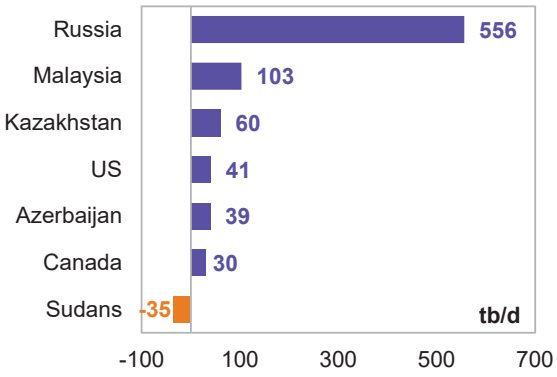

*Note: * 2021 = Forecast. Source: OPEC.*

**Non-OPEC liquids production growth in 2022** was also revised up by 844 tb/d, again mainly due to the incorporation of the decision of the 19th OPEC and non-OPEC Ministerial Meeting on 18 July.

Forecast supply of the non-OPEC-10 group in 2022 was revised up by 0.77 mb/d, and is now expected to grow by 1.4 mb/d y-o-y to average 18.8 mb/d.

Moreover, reassessment of the supply forecast of the US, Canada and Mexico led to an upward revision of their supply in 2022.

**Graph 5 - 2: Revisions to annual supply change forecast in 2022*, August MOMR/July MOMR**

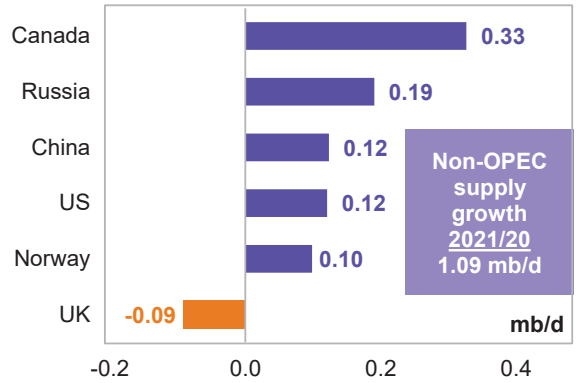



*Note: * 2022 = Forecast. Source: OPEC.*

## Key drivers of growth and decline

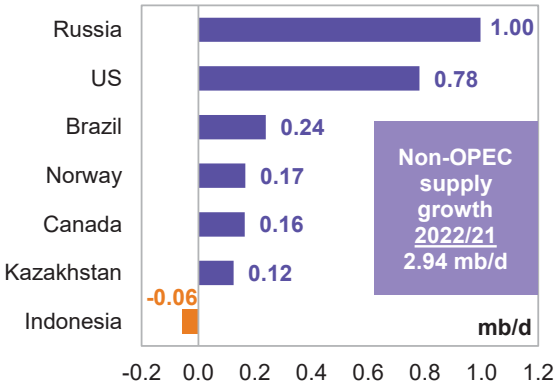
The **key drivers of non-OPEC liquids supply growth in 2021** are projected to be Canada, Russia, China, the US, Norway, Brazil, Guyana, Qatar, Oman, Kazakhstan and Ecuador. Oil production is expected to decline mainly in the UK, Indonesia, Colombia and Egypt.

**Graph 5 - 3: Annual liquids production changes for selected countries in 2021***




*Note: * 2021 = Forecast. Source: OPEC.*

**Graph 5 - 4: Annual liquids production changes for selected countries in 2022***




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

For **2022**, the key drivers of non-OPEC supply growth are forecast to be Russia, the US, Brazil, Norway, Canada, Kazakhstan, Guyana, Malaysia and Azerbaijan, Oman, India, China, Qatar, the UK, Other OECD Europe, Australia, and Latin America others, while oil production will decline mainly in Indonesia, Egypt, and Thailand.

# Non-OPEC liquids production in 2021 and 2022

**Table 5 - 1: Non-OPEC liquids production in 2021*, mb/d**

| Non-OPEC liquids production | 2020 | 1Q21 | 2Q21 | 3Q21 | 4Q21 | 2021 | Change 2021/20 Growth | Change 2021/20 % |
|---|---|---|---|---|---|---|---|---|
| Americas | 24.68 | 24.10 | 25.08 | 25.55 | 25.86 | 25.15 | 0.47 | 1.90 |
| *of which US* | *17.59* | *16.63* | *17.82* | *18.09* | *18.29* | *17.71* | *0.12* | *0.69* |
| Europe | 3.90 | 3.95 | 3.61 | 4.03 | 4.10 | 3.92 | 0.02 | 0.59 |
| Asia Pacific | 0.53 | 0.51 | 0.51 | 0.55 | 0.55 | 0.53 | 0.00 | -0.22 |
| **Total OECD** | **29.12** | **28.56** | **29.20** | **30.13** | **30.51** | **29.61** | **0.49** | **1.68** |
| China | 4.12 | 4.25 | 4.28 | 4.23 | 4.20 | 4.24 | 0.12 | 2.99 |
| India | 0.77 | 0.76 | 0.75 | 0.75 | 0.74 | 0.75 | -0.01 | -1.78 |
| Other Asia | 2.51 | 2.51 | 2.44 | 2.53 | 2.56 | 2.51 | 0.00 | 0.16 |
| Latin America | 6.04 | 5.94 | 5.98 | 6.30 | 6.50 | 6.18 | 0.14 | 2.31 |
| Middle East | 3.18 | 3.19 | 3.21 | 3.24 | 3.28 | 3.23 | 0.06 | 1.73 |
| Africa | 1.41 | 1.38 | 1.37 | 1.34 | 1.33 | 1.35 | -0.06 | -4.30 |
| Russia | 10.59 | 10.47 | 10.74 | 10.80 | 11.11 | 10.78 | 0.19 | 1.80 |
| Other Eurasia | 2.91 | 2.96 | 2.89 | 2.95 | 3.01 | 2.95 | 0.04 | 1.28 |
| Other Europe | 0.11 | 0.11 | 0.11 | 0.10 | 0.10 | 0.11 | -0.01 | -6.58 |
| **Total Non-OECD** | **31.64** | **31.57** | **31.77** | **32.25** | **32.84** | **32.11** | **0.47** | **1.48** |
| **Total Non-OPEC production** | 60.76 | 60.13 | 60.97 | 62.38 | 63.35 | 61.72 | 0.96 | 1.58 |
| **Processing gains** | 2.15 | 2.28 | 2.28 | 2.28 | 2.28 | 2.28 | 0.13 | 6.03 |
| **Total Non-OPEC liquids production** | **62.91** | **62.41** | **63.25** | **64.66** | **65.63** | **64.00** | **1.09** | **1.73** |
| **Previous estimate** | 62.94 | 62.38 | 63.10 | 64.49 | 65.01 | 63.76 | 0.81 | 1.29 |
| **Revision** | -0.03 | 0.02 | 0.15 | 0.16 | 0.62 | 0.24 | 0.27 | 0.43 |

*Note: * 2021 = Forecast. Totals may not add up due to independent rounding. Source: OPEC.*

**Table 5 - 2: Non-OPEC liquids production in 2022*, mb/d**

| Non-OPEC liquids production | 2021 | 1Q22 | 2Q22 | 3Q22 | 4Q22 | 2022 | Change 2022/21 Growth | Change 2022/21 % |
|---|---|---|---|---|---|---|---|---|
| Americas | 25.15 | 25.88 | 26.00 | 26.09 | 26.50 | 26.12 | 0.97 | 3.85 |
| *of which US* | *17.71* | *18.23* | *18.56* | *18.42* | *18.76* | *18.49* | *0.78* | *4.41* |
| Europe | 3.92 | 4.12 | 4.01 | 4.07 | 4.39 | 4.15 | 0.23 | 5.81 |
| Asia Pacific | 0.53 | 0.57 | 0.57 | 0.56 | 0.56 | 0.57 | 0.03 | 6.50 |
| **Total OECD** | **29.61** | **30.57** | **30.58** | **30.73** | **31.46** | **30.84** | **1.23** | **4.16** |
| China | 4.24 | 4.24 | 4.24 | 4.28 | 4.36 | 4.28 | 0.04 | 1.02 |
| India | 0.75 | 0.77 | 0.79 | 0.82 | 0.84 | 0.81 | 0.05 | 6.90 |
| Other Asia | 2.51 | 2.56 | 2.51 | 2.48 | 2.46 | 2.50 | -0.01 | -0.41 |
| Latin America | 6.18 | 6.54 | 6.48 | 6.42 | 6.63 | 6.52 | 0.33 | 5.41 |
| Middle East | 3.23 | 3.31 | 3.32 | 3.33 | 3.33 | 3.32 | 0.09 | 2.80 |
| Africa | 1.35 | 1.30 | 1.28 | 1.25 | 1.22 | 1.26 | -0.09 | -6.69 |
| Russia | 10.78 | 11.51 | 11.83 | 11.88 | 11.88 | 11.78 | 1.00 | 9.24 |
| Other Eurasia | 2.95 | 3.09 | 3.11 | 3.15 | 3.22 | 3.14 | 0.19 | 6.44 |
| Other Europe | 0.11 | 0.10 | 0.10 | 0.10 | 0.09 | 0.10 | -0.01 | -7.35 |
| **Total Non-OECD** | **32.11** | **33.42** | **33.65** | **33.71** | **34.04** | **33.71** | **1.60** | **4.98** |
| **Total Non-OPEC production** | 61.72 | 64.00 | 64.24 | 64.44 | 65.50 | 64.55 | 2.83 | 4.59 |
| **Processing gains** | 2.28 | 2.39 | 2.39 | 2.39 | 2.39 | 2.39 | 0.11 | 4.91 |
| **Total Non-OPEC liquids production** | **64.00** | **66.39** | **66.63** | **66.83** | **67.89** | **66.94** | **2.94** | **4.60** |
| **Previous estimate** | 63.76 | 65.37 | 65.35 | 65.67 | 67.00 | 65.85 | 2.10 | 3.29 |
| **Revision** | 0.24 | 1.02 | 1.28 | 1.16 | 0.89 | 1.09 | 0.84 | 1.31 |

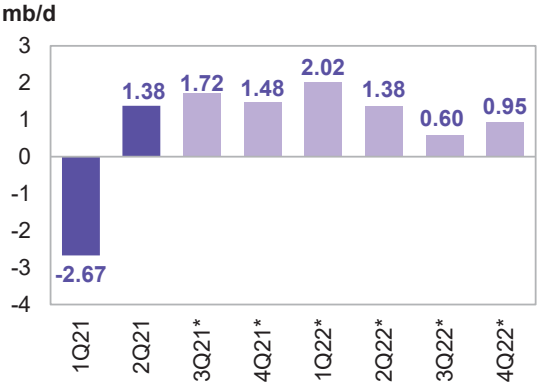
*Note: * 2021-2022 = Forecast. Totals may not add up due to independent rounding. Source: OPEC.*

# OECD

**OECD liquids production in 2021** is forecast to increase by 0.49 mb/d to average 29.61 mb/d, revised up by 76 tb/d m-o-m owing to an upward revision of 89 tb/d in the production forecast for OECD Americas, which is now projected to grow by 0.47 mb/d to average 25.15 mb/d. OECD Europe was revised down by 6 tb/d m-o-m and is now forecast to grow by 0.02 mb/d, with an average supply of 3.92 mb/d. Oil production in OECD Asia Pacific was revised down by 7 tb/d m-o-m and is now forecast to remain flat y-o-y at 0.53 mb/d.

For **2022**, oil production in the OECD is likely to grow by 1.23 mb/d to average 30.84 mb/d, with growth from OECD Americas of 0.97 mb/d to average 26.12 mb/d. Oil production in OECD Europe and OECD Asia Pacific is anticipated to grow respectively by 0.23 mb/d and 0.03 mb/d y-o-y to average 4.15 mb/d and 0.57 mb/d.

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




*Note: * 3Q21-4Q22 = Forecast. Source: OPEC.*

# OECD Americas

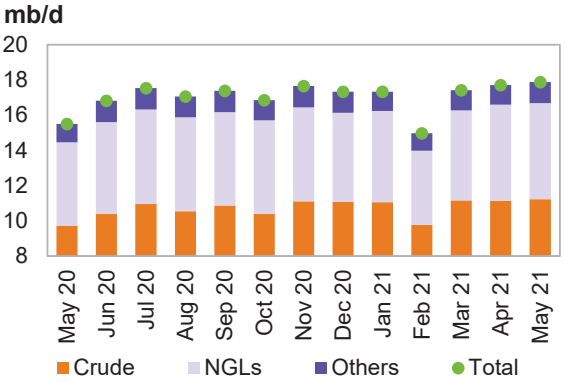
## US

**US liquids production in May 2021** was up by 0.18 mb/d m-o-m to average 17.89 mb/d, higher by 2.4 mb/d compared with May 2020, when US oil production suffered a drastic drop due to shut-in wells.

Crude oil production increased in May 2021 by 80 tb/d m-o-m to average 11.23 mb/d, up by 1.52 mb/d y-o-y. Meanwhile, production of non-conventional liquids (mainly ethanol) increased by 81 tb/d m-o-m to average 1.2 mb/d, according to the Department of Energy (DOE), and NGLs were up by 18 tb/d, to average 5.46 mb/d.

The production of crude oil, including field condensates, increased on the US Gulf Coast and in the Midwest in May m-o-m, while production in the other three PADDs decreased.

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




*Source: OPEC.*

**Crude oil output on the US Gulf Coast** grew by 55 tb/d to 7.91 mb/d in May, despite a 22 tb/d production decline in Texas, which was offset by higher output in New Mexico and the Gulf of Mexico (GoM) of 49 tb/d and 29 tb/d, respectively. Oil output from the GoM inched up to 1.79 mb/d, showing a recovery of 230 tb/d from May 2020.

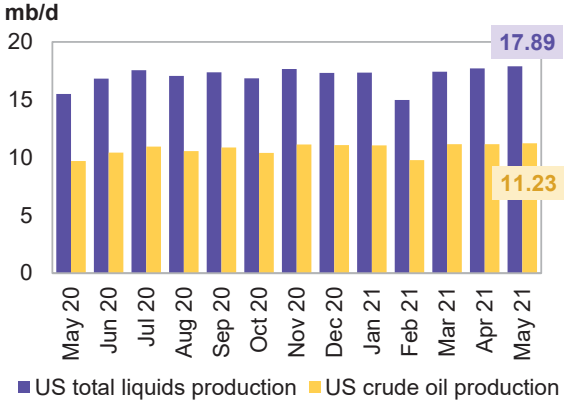
In the US Midwest, production in North Dakota increased for three consecutive months, up by 26 tb/d, while output in Oklahoma remained flat at 400 tb/d in May. Output in Colorado's Niobrara shale inched up by a slight 3 tb/d to average 0.41 mb/d following a 34 tb/d jump in April. On the West Coast, production in Alaska declined for the sixth consecutive month by 3 tb/d m-o-m to average 0.44 mb/d.

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

| State | Apr 21 | May 21 | Change May 21/Apr 21 |
|---|---|---|---|
| Oklahoma | 400 | 400 | *0* |
| Colorado | 405 | 408 | *3* |
| Alaska | 446 | 443 | *-3* |
| North Dakota | 1,035 | 1,061 | *26* |
| New Mexico | 1,173 | 1,222 | *49* |
| Gulf of Mexico (GoM) | 1,762 | 1,791 | *29* |
| Texas | 4,763 | 4,741 | *-22* |
| **Total** | **11,151** | **11,231** | ***80*** |

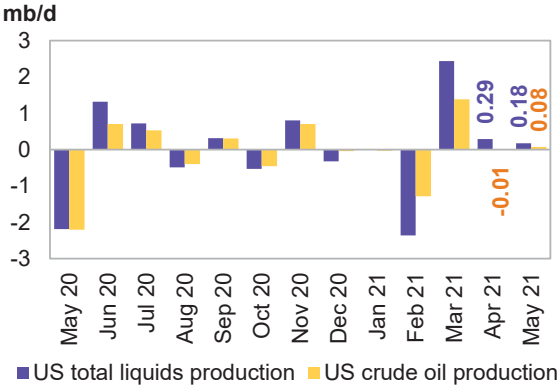
*Sources: EIA and OPEC.*

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




*Sources: EIA and OPEC.*

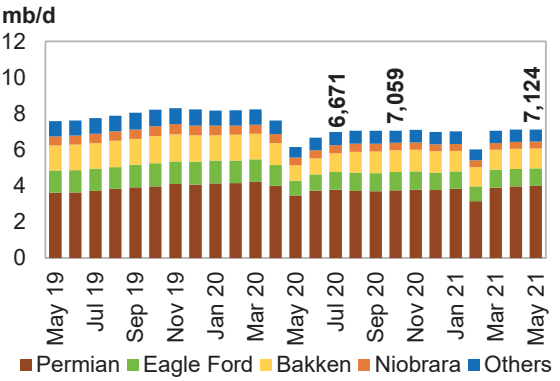
**Graph 5 - 8: US monthly crude oil and total liquids supply, m-o-m changes**




*Sources: EIA and OPEC.*

**US tight crude output in May** increased by only 2 tb/d m-o-m to average 7.12 mb/d, 967 tb/d higher than in the same month a year earlier, according to Energy Information Administration (EIA) estimates. The only m-o-m increase from shale and tight formations through horizontal wells came from the Permian, rising by 37 tb/d to average 4.0 mb/d. This came mainly from the section located in New Mexico – Wolfcamp – which added 21 tb/d m-o-m, and the rest came from Spraberry and Bonespring. In the Williston Basin, production in Bakken shale declined by 6 tb/d, m-o-m to average 1.1 mb/d. Tight crude output at Eagle Ford and Niobrara-Codell in Colorado and Wyoming declined by 15 tb/d and 6 tb/d, respectively, to average 0.96 mb/d and 0.39 mb/d.

**Graph 5 - 9: US tight crude output breakdown**

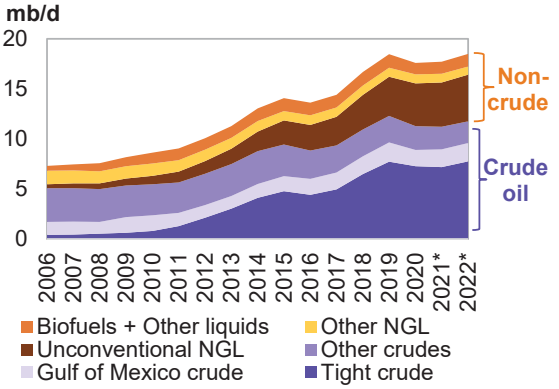



*Sources: EIA, Rystad Energy and OPEC.*

The **US liquids production growth forecast for 2021** was revised up by 65 tb/d, mainly due to the higher-than-expected recovery in crude oil and biofuels in 2Q21 so far, and now is forecast to grow by 0.12 mb/d y-o-y to average 17.71 mb/d. Nevertheless, this is still 0.76 mb/d below the average supply seen in 2019.

US liquids production in **2022**, excluding processing gains, is anticipated to grow by 0.78 mb/d y-o-y to average 18.49 mb/d. This is almost the same level of average liquids supply in 2019, assuming the current pace of drilling and well completion in oil fields up to 3Q22, with possible higher spending in the prolific Permian Basin, Eagle Ford and Bakken shale sites. Operational activities in 4Q22 are likely to improve compared to the first three quarters.

**Graph 5 - 10: US liquids supply developments by component, including forecast for 2021 and 2022**




*Note: * 2021-2022 = Forecast. Source: OPEC.*

It is worth noting that the EIA has revised up its historical oil supply in 2019 by 41 tb/d, but revised down the supply data for 2020 by 31 tb/d. Hence, US liquids supply growth in 2019 and 2020 is now revised to 1.78 mb/d and -0.87 mb/d, respectively.

**US crude oil production in 2021** is expected to decline by 0.07 mb/d to average 11.21 mb/d. However, output in the GoM is expected to grow by 0.11 mb/d to average 1.77 mb/d, revised down by 0.04 mb/d m-o-m due to possible production outages during the hurricane season in 3Q21. Recent forecasts by the National Oceanic and Atmospheric Administration (NOAA) see a 60% chance of another active Atlantic hurricane season in 2021. At the same time, US tight crude and conventional crude oil is forecast to see a contraction of 0.08 mb/d and 0.12 mb/d to average 7.20 mb/d and 2.24 mb/d, respectively.

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

| US liquids | 2020 | Change 2020/19 | 2021* | Change 2021/20 | 2022* | Change 2022/21 |
|---|---|---|---|---|---|---|
| Tight crude | 7.27 | -0.47 | 7.20 | -0.08 | 7.76 | 0.56 |
| Gulf of Mexico crude | 1.64 | -0.25 | 1.77 | 0.11 | 1.84 | 0.07 |
| Conventional crude oil | 2.37 | -0.28 | 2.24 | -0.12 | 2.17 | -0.07 |
| Total crude | 11.28 | -1.01 | 11.21 | -0.07 | 11.77 | 0.56 |
| Unconventional NGLs | 4.26 | 0.33 | 4.45 | 0.19 | 4.65 | 0.20 |
| Conventional NGLs | 0.90 | 0.00 | 0.86 | -0.05 | 0.81 | -0.05 |
| Total NGLs | 5.16 | 0.34 | 5.30 | 0.14 | 5.46 | 0.15 |
| Biofuels + Other liquids | 1.15 | -0.20 | 1.20 | 0.05 | 1.27 | 0.07 |
| **US total supply** | **17.59** | **-0.87** | **17.71** | **0.12** | **18.49** | **0.78** |

*Note: * 2021-2022 = Forecast. Sources: EIA, OPEC and Rystad Energy.*

For the next year, crude oil production is forecast to grow by 0.56 mb/d. Indeed, tight crude production alone is forecast to grow by 0.56 mb/d to average 11.77 mb/d, while output in the GoM is expected to be fully offset by a drop in conventional crude production. Five projects, including Argos (Mad Dog Phase 2) with expected peak production of 120 tb/d, Power Nap, Manuel, Samurai and Khaleesi are projected to produce a total of around 45 tb/d in 2022, the first year of production. The US crude oil production exit rate in 2022 is expected to be not less than 12.1 mb/d.

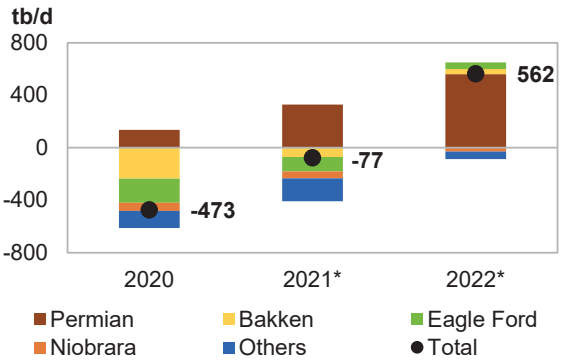
In contrast, **US NGLs production** is expected to grow by a slight 0.14 mb/d in 2021 compared with the remarkable growth of 0.34 mb/d in 2020, to average 5.3 mb/d. NGLs production, mainly from unconventional sources (around 85%), is forecast to grow to 5.46 mb/d in 2022, with the expectation of ethane rejection in gas plants remaining at almost the same level as in 2021.

**US biofuels and other non-conventional liquids** production is forecast to recover by 0.05 mb/d in 2021 to average 1.20 mb/d and see further recovery in 2022, rising by 0.07 mb/d to average 1.27 mb/d.

Regarding oil transportation, the disputed Keystone XL pipeline from Canada to Nebraska was cancelled after the Biden administration revoked the previous administration's approval. Other pipelines designed to bring Canadian and/or tight oil from the Bakken in North Dakota south to refining hubs, notably including the Line 3 and Dakota Access pipelines, also remain uncertain.

**US tight crude production in 2021 and 2022** is expected to show continuous y-o-y growth in the Permian Basin to average 4.18 mb/d and 4.74 mb/d, respectively. Bakken shale production fell by 0.23 mb/d in 2020 and is expected to contract by 70 tb/d in 2021, while for 2022, output is expected to grow by 40 tb/d to average 1.15 mb/d. Eagle Ford in New Mexico is also a prolific shale region that is expected to decline this year, but will grow next year by 50 tb/d to average 0.99 mb/d. Production in other shale plays is not expected to grow in 2021 or 2022, given current drilling and completion activities. US tight crude saw a contraction of 473 tb/d in 2020 and is expected to see a y-o-y decline of 77 tb/d this year, but is forecast to grow by 0.56 mb/d in 2022 to average 7.76 mb/d.

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



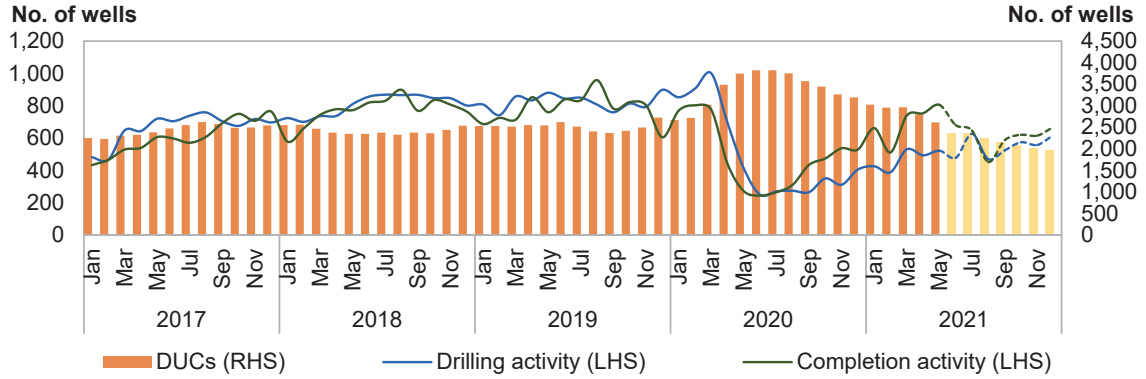

*Note: * 2021-2022 = Forecast.*
*Sources: EIA, Rystad Energy and OPEC.*

## Relationship between drilling & completion activities and DUCs

Drilling activity has increased modestly and the US oil rig count rose by 180 rigs y-o-y to 385 in the last week of July, of which 124 were added in the Permian Basin to total 243, and the rest were added in other key regions. Completions experienced stronger growth, which led to a further drawdown in the drilled but uncompleted (DUC) inventory since June 2020. Unconventional horizontal completion activity in the US onshore increased by 11% in 2Q21 q-o-q, up by 81% y-o-y. Completed lateral footage trends in horizontal wells in 2Q21 also show an increase of 14% q-o-q, which is higher by 84% y-o-y. In May, US tight oil production increased in the Permian by 37 tb/d, while production in other shale plays declined, which led to flat output of 7.12 mb/d compared with April. Given the current drilling activity trend, it is expected that the DUCs inventories will decline by year's end. As a result, shale operators will need to finish another 617 uncompleted wells to

compensate for the base decline and move forward with mild growth, according to a Rystad Energy analysis in July 2021.

**Graph 5 - 12: Horizontal drilling and completion activities in tight oil wells vs. cumulative DUC inventories**



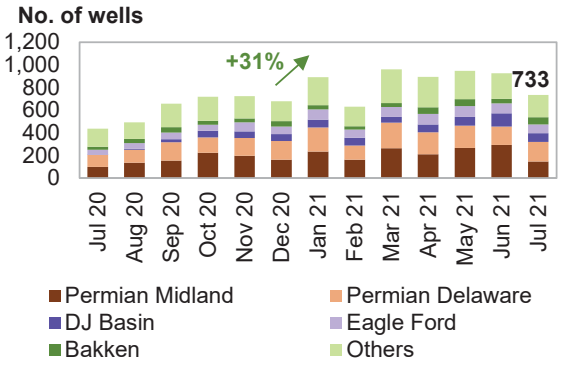

*Note: Jul 21 - Dec 21 = Forecast. Sources: Rystad Energy and OPEC.*

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

Regarding identified **US oil and gas fracking operations** by region, Rystad Energy reported that following 947 fracked wells in May and 926 wells in June, 733 wells started fracking in July. This preliminary number is based almost exclusively on analysis of high-frequency satellite data.

The number of frac starts in January reached 891, a jump of 31% from December. The total then plunged by 29% in February as freezing weather conditions halted operations across much of Texas and parts of New Mexico. March saw a 52% m-o-m surge with 961 frac jobs, the highest level since the same month a year earlier (before wells shut-ins) at 965 starts.

**Graph 5 - 13: Fracked wells count per month**



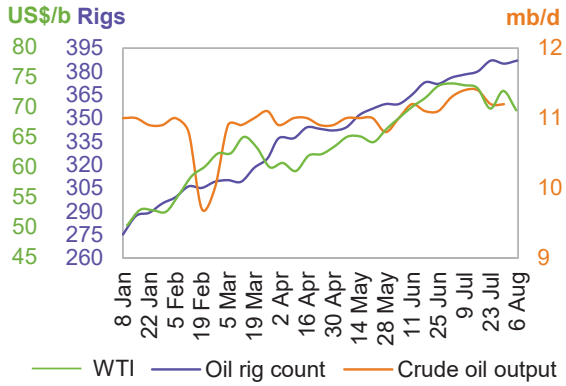

*Note: July 2021 = Preliminary data.*
*Sources: Rystad Energy Shale Well Cube and OPEC.*

Total **US active drilling rigs** rose by three units w-o-w to 491 rigs, according to the Baker Hughes' weekly survey on 6 August. This includes 476 active onshore rigs, 14 offshore rigs and one rig in inland waters.

The **US oil rig count** decreased by 19 units since the last MOMR, to 387 rigs in the week ending 6 August, higher by 176 rigs y-o-y.

The **gas rig count** reached 103 rigs, higher by 2 units m-o-m and up by 69 units compared with a year ago. Rigs targeting oil in the Permian Basin rose by 122 units y-o-y to 243 rigs. The total rig count is 99% higher than this time last year and up more than 100% since falling to a record low of 244 rigs in August 2020.

**Graph 5 - 14: US weekly rig count vs US crude oil output and WTI price**

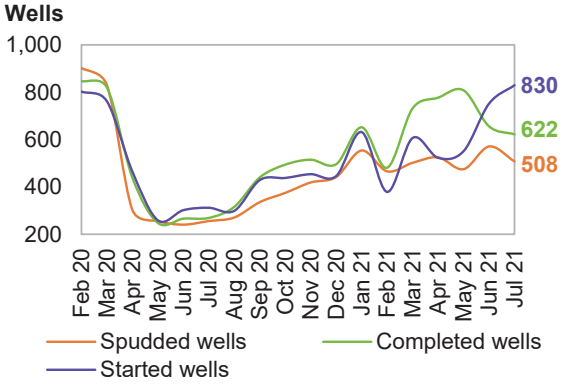



*Sources: Baker Hughes, EIA and OPEC.*

With regard to **drilling and completion (D&C) activities for spudded, completed and started wells** in all US shale plays, 508 horizontal wells were spudded in July, almost double the number in June 2020.

In July, preliminary data indicates a lower number of completed wells at 622, but a higher number of started wells at 830. In the first seven months of the year, while the total number of spudded wells was 3,601, completed wells rose by 1,127 units to 4,728 wells. This can be explained by withdrawals of DUCs from inventories. Rystad Energy also reported that 4,724 wells had started production in the same period.

**Graph 5 - 15: Spudded, completed and started wells in US shale plays**



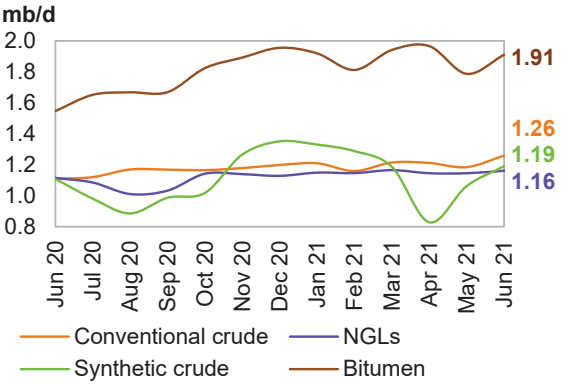

*Sources: Rystad Energy and OPEC.*

## Canada

**Canada's liquids production in June** rose by 0.34 mb/d m-o-m to 5.56 mb/d following maintenance operations in April and May. This was less than the planned curtailed levels assumed in the forecast. In June, all production components increased m-o-m. Crude bitumen and synthetic crude increased respectively by 123 tb/d and 128 tb/d, to average 1.91 mb/d and 1.19 mb/d.

At the same time, conventional crude and NGLs increased by 74 tb/d and 16 tb/d, respectively, to average 1.26 mb/d and 1.16 mb/d. Hence, the forecast was revised up by 81 tb/d for 2Q21, leading to an overall upward revision of 20 tb/d in Canadian liquids output in 2021. This is now expected to grow by 0.33 mb/d y-o-y, which would make Canada the leader in non-OPEC supply growth for the current year.

**Graph 5 - 16: Canada's monthly liquids production development by type**

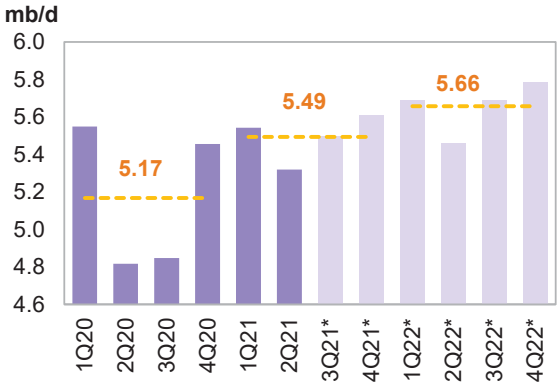



*Sources: National Energy Board and OPEC.*

According to the Alberta Energy Regulator (AER), out of 3.59 mb/d of total liquids production in the province, 3.1 mb/d was oil sands including upgraded and non-upgraded crude. The rest consisted of 346 tb/d of conventional crude (light to heavy), around 73 tb/d of extra (ultra) heavy, and 74 tb/d of condensate in June 2021.

For **2022**, Canadian production is forecast to increase at slower pace compared with the current year, rising by 164 tb/d to average 5.66 mb/d.

**Graph 5 - 17: Canada's quarterly liquids production and forecast**

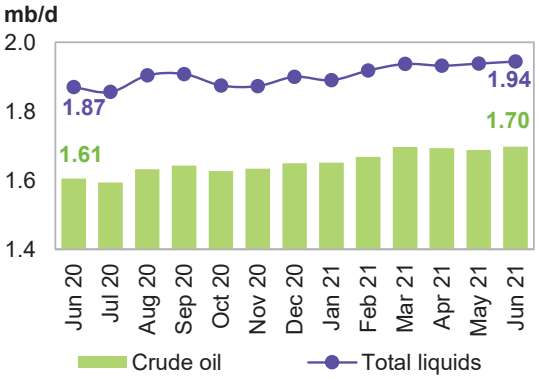



*Note: * 3Q21-4Q22 = Forecast. Source: OPEC.*

## Mexico

**Mexico's liquids output in 2Q21** averaged 1.94 mb/d, up by 0.02 mb/d q-o-q and higher by 0.03 mb/d y-o-y. The improvement indicates that Mexican production from new projects such as Ichalkil-Pokoch and Hokchi – as well as production ramp-ups from Integral Ek-Balam, Ixtal-Manik, Crudo Ligero Marino, Litoral De Tabasco, Chalabi and Mulach – could offset the severe natural decline in mature fields. In June, liquids output remained unchanged at 1.94 mb/d, despite increased crude oil output of 10 tb/d m-o-m to an average 1.7 mb/d.

**Graph 5 - 18: Mexico's monthly liquids and crude production development**




*Sources: PEMEX and OPEC.*

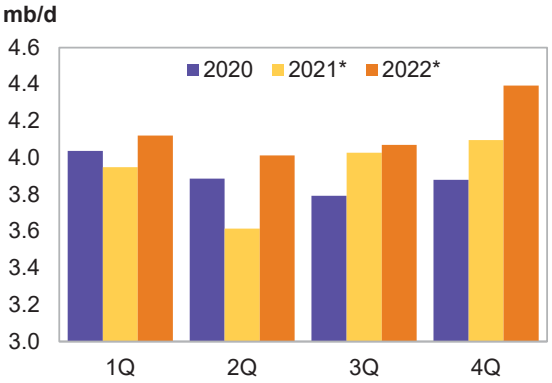
For **2021**, liquids production in Mexico is forecast to grow by 0.02 mb/d to average 1.94 mb/d. For **2022**, national oil company Pemex is scheduled to bring on stream a string of smaller developments, but is suffering some delays resulting from pandemic-related financial and operational hurdles. Nevertheless, by ramping up crude production from the new projects into the next year as well as the new start-ups of another two new projects, Amoca FFD (Miamte) and Mizton FFD, liquids production is forecast to grow by another 0.02 mb/d to average 1.96 mb/d.

## OECD Europe

**OECD Europe's liquids production in 2021** is revised down by 0.01 mb/d from the last assessment. Output is now projected to grow by only 0.02 mb/d to average 3.92 mb/d, due to a contraction in UK output of 0.09 mb/d and a slowdown in Norway's production growth compared with remarkable growth of 0.26 mb/d in 2020. Oil production in Denmark will see a slight decline of 0.01 mb/d, while other OECD Europe will see growth of 0.02 mb/d. The early summer turnaround at the Troll and the Forties pipeline systems resulted in a seasonally large drop in North Sea volumes in May and June, with production averaging 2.83 mb/d in 2Q21, lower by 0.37 mb/d q-o-q, almost the same level of 2Q20.

For **2022**, production is expected to grow by 0.23 mb/d and surge to 4.15 mb/d, through continued production ramp-ups in Norway and the UK.

**Graph 5 - 19: OECD Europe quarterly liquids production and forecast**



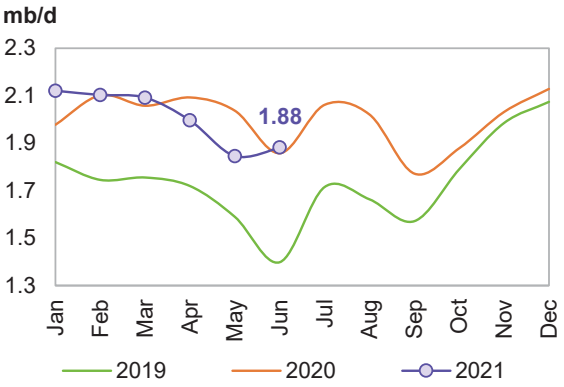

*Note: * 2021-2022 = Forecast. Source: OPEC.*

## Norway

**Norwegian crude production in June** grew by 12 tb/d m-o-m to 1.67 mb/d, up by 131 tb/d y-o-y. Production of NGLs and condensate also rose by 24 tb/d m-o-m to average 0.21 mb/d. As a result, total liquids increased by 0.04 mb/d m-o-m to average 1.88 mb/d, and output is projected return in July to April levels, before seasonal maintenance.

According to the Norwegian Petroleum Directorate (NPD), during 1H21, 94 development wells were drilled across the Norwegian shelf, up from 86 for the same period in 2020. Plenty of projects are expected to start up in 2022, with potentially 50 projects facing investment decisions by the end of 2022, with estimated total investments of around NOK380 billion ($42.8 billion).

**Graph 5 - 20: Norway's monthly liquids production development**




*Sources: NPD and OPEC.*

For **2021**, Norway's growth forecast has been revised down by 12 tb/d m-o-m due to lower output in 2Q21. Production is now expected to average 2.10 mb/d, with growth of 0.10 mb/d y-o-y. However, production from Johan Sverdrup phase-1, Equinor's flagship 2.7 billion barrel project, where capacity reached 535 tb/d in May following upgrades to water injection facilities, is expected to remain steady by the end of the year. Moreover, production is expected to reach 53 tb/d at a new project for 2021, Martin Linge. Production from the Yme field is also expected to come on stream during 2H21.

For **2022**, Norwegian liquids production is expected to grow by 0.17 mb/d to average 2.27 mb/d, through start-ups of new offshore projects such as Nova, Hod (redevelopment), Njord Future, Bauge and Fenja-phase 1 is anticipated. Moreover, Johan Sverdrup phase-2 is expected to come on stream in late 2022, and will lift Norwegian crude oil production to more than 2 mb/d. It is worth noting that Norway's tax incentives initiated last year in response to the pandemic have led to increased investment in oil and gas projects.

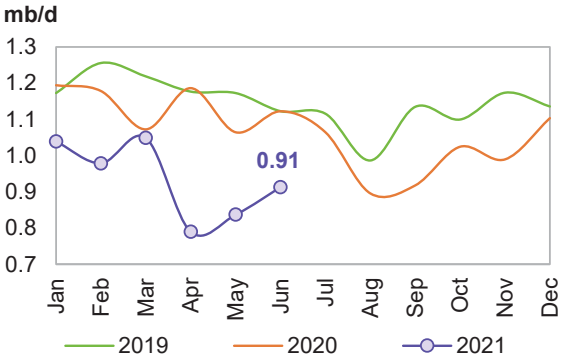
## UK

**UK liquids production in June** was up by 0.07 mb/d m-o-m to average 0.91 mb/d. Crude oil output rose by 73 tb/d to average 0.83 mb/d, but was 0.16 mb/d lower y-o-y. NGLs output was almost flat at 0.07 mb/d m-o-m, and lower by 38 tb/d y-o-y.

Average liquids output in 2Q21 was 0.85 mb/d, indicating a decline of 0.17 mb/d q-o-q, due to the relatively high levels of maintenance. The oil production decline was even deeper, with output down by 23%, or 226 tb/d, from a year ago, to average 0.76 mb/d in 2Q21, mainly due to the three-week shutdown of the major (300 tb/d) Forties Pipeline System.

For **2021**, UK oil production is forecast to contract by 0.09 mb/d to average 0.98 mb/d, due to several outages on top of maintenance during 1H21.

**Graph 5 - 21: UK monthly liquids production development**



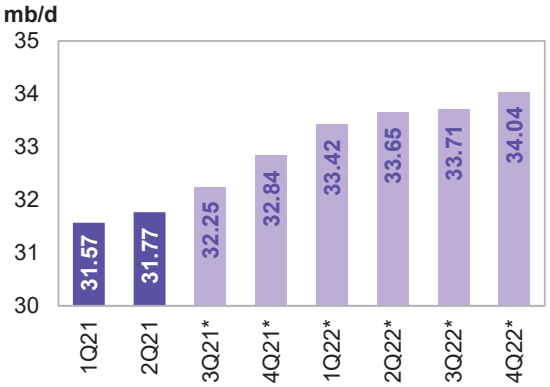

*Sources: Department of Energy & Climate Change and OPEC.*

For **2022**, UK liquids production is forecast to grow by 0.03 mb/d to average 1.01 mb/d following two consecutive years of decline. Production ramp-ups will take place in some small fields and the Penguins oil field (Redevelop) and Buzzard Phase 2 (20/06-3), each with a peak capacity of 30 tb/d, are due to start up.

# Non-OECD

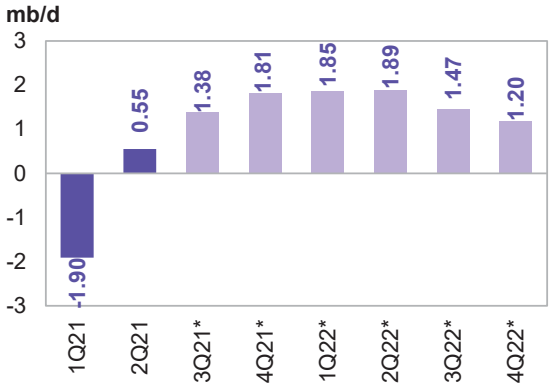
**Non-OECD liquids production for 2021** was revised up by 0.2 mb/d this month, on the back of the new incremental production adjustments for countries participating in the DoC, and is now forecast to grow by 0.47 mb/d to average 32.11 mb/d. The key driver will be Russia, with y-o-y forecast growth of 0.19 mb/d to average 10.78 mb/d, followed by Latin America, which is expected to see growth of 0.14 mb/d to average 6.18 mb/d.

**Graph 5 - 22: Non-OECD quarterly liquids production and forecast**




*Note: * 3Q21-4Q22 = Forecast. Source: OPEC.*

**Graph 5 - 23: Non-OECD quarterly liquids supply, y-o-y changes**




*Note: * 3Q21-4Q22 = Forecast. Source: OPEC.*

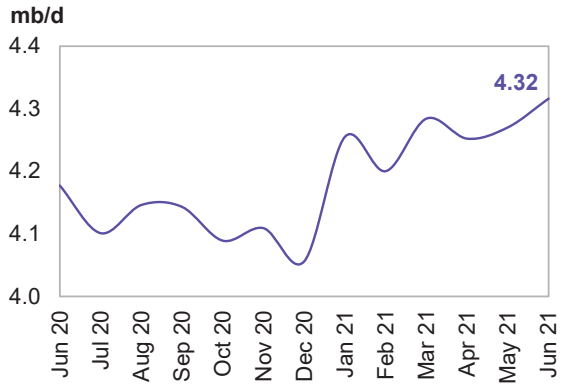
Production in China is expected to grow by 0.12 mb/d to average 4.24 mb/d. Oil production is forecast to increase in the Middle East by 0.06 mb/d to average 3.23 mb/d, while production is expected to decline in Africa by 0.06 mb/d, to average 1.35 mb/d. Other Asia is projected to remain flat at 2.51 mb/d in 2021. Oil production in Other Eurasia is projected to return to positive territory, with minor growth of 0.04 mb/d to average 2.95 mb/d, while Other Europe is anticipated to decline by 0.01 mb/d to average 0.11 mb/d in 2021.

For **2022**, liquids production in non-OECD countries is forecast to grow by 1.60 mb/d to average 33.71 mb/d. The key drivers will again be Russia with growth of 1.0 mb/d to average 11.78 mb/d, followed by Latin America with 0.33 mb/d, Other Eurasia at 0.19 mb/d and the Middle East at 0.09 mb/d. China and India are expected to grow by 0.04 mb/d and 0.05 mb/d, respectively.

# China

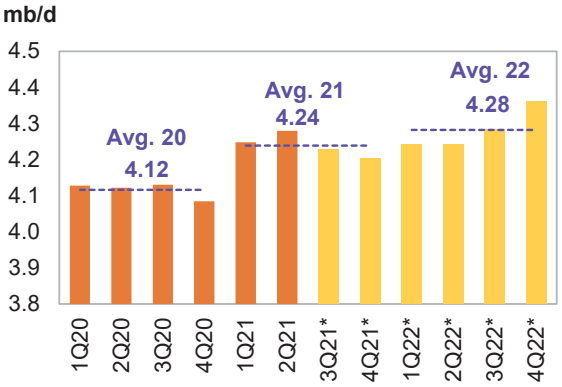
China's **liquids production** in **June** was up by 0.05 mb/d m-o-m to average 4.32 mb/d, higher by 0.14 mb/d y-o-y, according to official data. Crude oil output in June increased by 46 tb/d to average 4.06 mb/d, up by more than 100 tb/d y-o-y. Overall production in 1Q21 and 2Q21 increased by 0.12 mb/d and 0.16 mb/d y-o-y, respectively, indicating that Chinese companies have increased their investment following the planned strategy for raising domestic oil production.

**Graph 5 - 24: China's monthly liquids production development**




*Sources: CNPC and OPEC.*

**Graph 5 - 25: China's quarterly liquids production and forecast**




*Note: * 3Q21-4Q22 = Forecast. Sources: CNPC and OPEC.*

For **2021**, China's liquids supply is projected to see growth of 0.12 mb/d to average 4.24 mb/d. According to a list of new projects for the current year, three (namely Liuhua 16-2, Luda 21-2 and Caofeidian 6-4, all offshore) should start production in 2021.

For **2022**, y-o-y growth of 0.04 mb/d is anticipated to average 4.28 m/d. For the next year, two other offshore projects of CNNOC Ltd – Wushi 17-2, with peak capacity of 24 tb/d, and Lufeng 14-4/14-8, with 23 tb/d at peak capacity – are planned to come on stream.

# Latin America

**Latin America's total liquids supply in June** remained unchanged m-o-m to average 5.97 mb/d. Oil output increases in Colombia and Guyana were offset by a decline in Brazilian production. Liquids output was down by 0.12 mb/d y-o-y.

For **2021**, liquids production has been revised down by 11 tb/d m-o-m and is projected to grow by 0.14 mb/d y-o-y to average 6.18 mb/d. Oil production in Brazil, Guyana, Ecuador, Argentina and Peru is forecast to increase, while declines are expected in Colombia and other countries in the region.

Production in Ecuador is projected to recover from outages experienced in 2020 and grow by 0.03 mb/d to average 0.52 mb/d.

Following a national strike and protests across Colombia, crude oil production was affected through May and June that led to a lower production in 2Q21 by 0.02 mb/d compared with 1Q21 to average 0.75 mb/d. Preliminary production data in July indicates that output has returned to the April level. Oil production is likely to decline in Colombia by 0.03 mb/d, which has been revised down by 0.05 mb/d m-o-m.

Oil production in the Liza Phase 1 in Guyana through the FPSO vessel Liza Destiny is currently about 120 tb/d, and is expected to average 0.12 mb/d in 2021, with y-o-y growth of 0.04 mb/d.

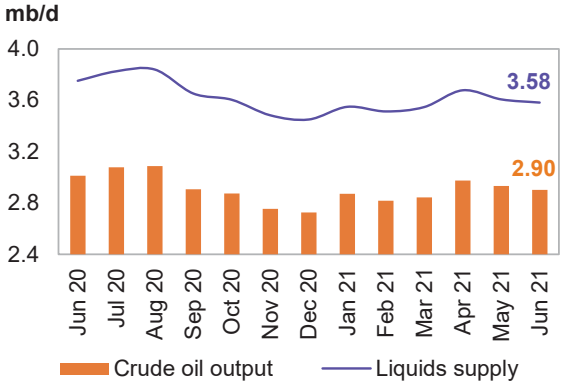
In Argentina, oil production is forecast to grow by 0.02 mb/d to average 0.68 mb/d. This should come mainly in the form of tight crude from Vaca Muerta, which is expected to grow by 29 tb/d in 2021 to average 137 tb/d. However, possible higher natural declines in mature fields may impact anticipated overall growth for the year.

For **2022**, Latin America's total liquids supply forecast is projected to grow by 0.33 mb/d y-o-y to average 6.52 mb/d. One of the key drivers is Brazil, with expected growth of 0.24 mb/d, including biofuels, to average 3.99 mb/d. Guyana would be the second country in the region experiencing growth next year, with output rising by 0.09 mb/d, through the start-up of Liza Phase 2, which remains on target for early 2022. The FPSO Liza Unity, with a production capacity of about 220 tb/d of oil, is expected to sail from Singapore to Guyana in late August 2021. Oil production in other countries in the region will decline or see only minor growth.

## Brazil

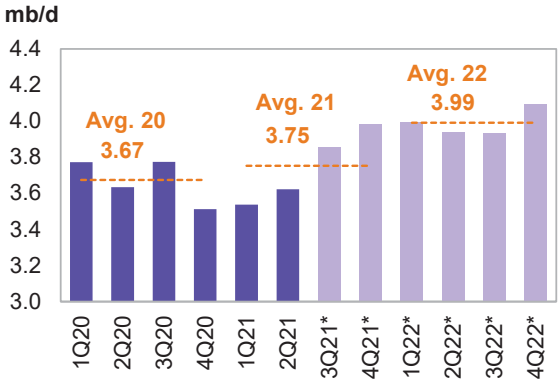
Following a decline of 0.04 mb/d in May m-o-m, **Brazil's crude oil output in June** fell by 0.03 mb/d m-o-m to average 2.90 mb/d on the back of outages at the Jubarte, Tartaruga Verde and Atlanta fields. Crude oil output averaged 2.89 mb/d in 1Q21, down 0.08 mb/d y-o-y. In June, total liquids production was pegged at an average of 3.58 mb/d, including biofuels and NGLs, down by 0.17 mb/d y-o-y.

**Graph 5 - 26: Brazil's monthly liquids production development by type**




*Sources: ANP, Petrobras and OPEC.*

**Graph 5 - 27: Brazil's quarterly liquids production and forecast**




*Note: * 3Q21-4Q22 = Forecast. Sources: ANP and OPEC.*

Brazilian liquids supply in **2021**, including biofuels, is forecast to grow by 0.08 mb/d y-o-y, to an average 3.75 mb/d. This performance is due to weaker-than-expected output in 1H21 as a result of stoppages and COVID-19-induced project delays that curtailed 130 tb/d of oil output. It is estimated that liquids output in July grew by 0.09 mb/d m-o-m to reach 3.67 mb/d as unplanned outages eased. According to the production ramp-ups in Búzios and Atapu, higher production of 0.34 mb/d, to an average of 3.9 mb/d, is anticipated in 2H21. Moreover, the start-up of the 0.18 mb/d FPSO Carioca in Sépia field (formerly Northeast Tupi), which is located in the Santos Basin's pre-salt horizon, is expected in August.

For **2022**, Brazil's liquids supply forecast, including biofuels, is set to increase by 0.24 mb/d y-o-y to average 3.99 mb/d. Crude oil production is expected to rise through two new project start-ups: Mero-1 (Guanabara), which was initially planned to start up in 2021; and Peregrino-Phase 2 . The second phase involves the Peregrino south-west area, which is not accessible by the existing A and B platforms. Its development plan involves increasing the number of production wells by the addition of a third fixed platform to the field, Peregrino C, which has already been installed. This will increase the project's productive life by at least 20 years and will add 250-300 million barrels in recoverable reserves, with the first oil expected in the first half of 2022, according to Equinor.

## Russia

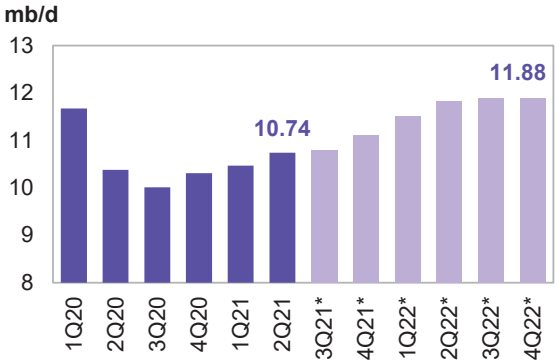
Preliminary data for **Russia's liquids production in July** shows an increase of 0.04 mb/d m-o-m to an average of 10.75 mb/d, higher by 1.1 mb/d y-o-y.

Total condensate and NGLs output from gas condensate fields was pegged at 1.21 mb/d in 1H21, up by 0.09 tb/d y-o-y, while crude oil production declined by 0.5 mb/d in 1H21, y-o-y to average 9.4 mb/d.

Annual liquids production in **2021** is forecast to increase by 0.19 mb/d y-o-y to average 10.78 mb/d, revised up by 0.15 mb/d in accordance with the new DoC production adjustments from August 2021 onwards.

For **2022**, and given the new production adjustments, Russia liquids output is expected to increase by 1.0 mb/d to average 11.78 mb/d, with 3Q22 and 4Q22 both expected to reach 11.88 mb/d.

**Graph 5 - 28: Russia's quarterly liquids production and forecast**




*Note: * 3Q21-4Q22 = Forecast.*
*Sources: Nefte Compass and OPEC.*

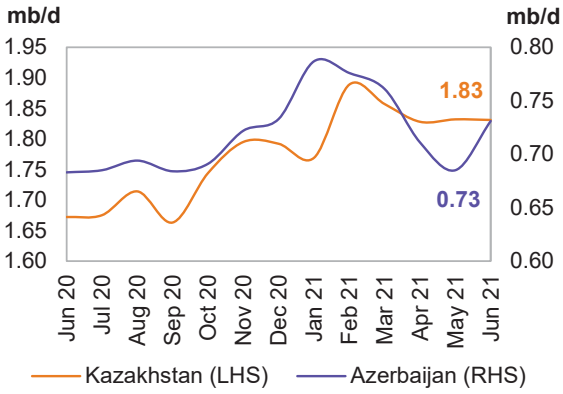
## Caspian

### Kazakhstan & Azerbaijan

Liquids production in **Kazakhstan** was flat in **June** at 1.83 mb/d, similar to April and May. NGLs output was up by the same rate to average 358 tb/d in June. The Kazakhstan liquids supply forecast, based on the new DoC production adjustments as of August, is revised up by 15 tb/d to grow by 0.03 mb/d and average 1.86 mb/d in 2021. In 2022, liquids supply was revised up by 60 tb/d, and is now forecast to grow by 0.12 mb/d to average 1.98 mb/d.

**Azerbaijan's** liquids production in **June** rose by 0.04 mb/d to average 0.73 mb/d, up by 0.05 mb/d y-o-y. NGLs production increased by 11 tb/d m-o-m to average 122 tb/d. Azerbaijan's NGLs output in 1H21 was up by 32 tb/d compared with 1H20 to average 154 tb/d. In the same period, crude oil output decreased by 0.05 mb/d to 0.59 mb/d.

**Graph 5 - 29: Caspian monthly liquids production development by selected country**




*Sources: Nefte Compass and OPEC.*

In **2021**, Azerbaijan's liquids supply is revised down by 20 tb/d, due to lower-than-expected NGLs output in 2H21, and is expected to show growth of 0.02 mb/d for the year to average 0.75 mb/d.

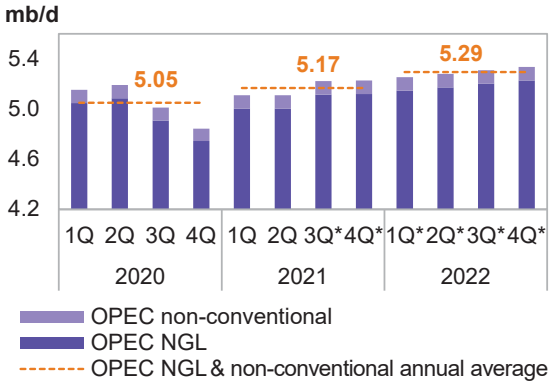
In **2022**, Azerbaijan's liquids supply forecast was revised up by 39 tb/d on the back of the incremental production adjustments in the recent DoC decision, and is projected grow by 0.07 mb/d to average 0.82 mb/d.

# OPEC NGLs and non-conventional oils

**OPEC NGLs and non-conventional liquids** are estimated to grow by 0.12 mb/d in **2021,** following a decline of 0.17 mb/d in 2020, to average 5.17 mb/d, revised down from last month's assessment by 24 tb/d.

The preliminary **2022** forecast indicates growth of 0.13 mb/d to average 5.29 mb/d. NGLs production is expected to grow by 0.13 mb/d to average 5.19 mb/d, while non-conventional liquids will remain unchanged at 0.11 mb/d.

**Graph 5 - 30: OPEC NGLs and non-conventional liquids quarterly production and forecast**




*Note: * 3Q21-4Q22 = Forecast. Source: OPEC.*

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

| OPEC NGL and non-coventional oils | 2020 | Change 20/19 | 2021 | Change 21/20 | 1Q22 | 2Q22 | 3Q22 | 4Q22 | 2022 | Change 22/21 |
|---|---|---|---|---|---|---|---|---|---|---|
| **OPEC NGL** | **4.94** | *-0.18* | **5.06** | *0.11* | 5.15 | 5.17 | 5.20 | 5.23 | **5.19** | *0.13* |
| **OPEC non-conventional** | **0.10** | *0.01* | **0.11** | *0.00* | 0.11 | 0.11 | 0.11 | 0.11 | **0.11** | *0.00* |
| **Total** | **5.05** | ***-0.17*** | **5.17** | ***0.12*** | **5.25** | **5.28** | **5.31** | **5.33** | **5.29** | ***0.13*** |

*Note: 2021-2022 = Forecast. Source: OPEC.*

# OPEC crude oil production

According to secondary sources, total **OPEC-13 crude oil production** averaged 26.66 mb/d in July 2021, higher by 0.64 mb/d m-o-m. Crude oil output increased mainly in Saudi Arabia, Iraq and Nigeria, while production decreased primarily in Angola and Venezuela.

**Table 5 - 6: OPEC crude oil production based on *secondary sources*, tb/d**

| Secondary sources | 2019 | 2020 | 4Q20 | 1Q21 | 2Q21 | May 21 | Jun 21 | Jul 21 | Change Jul/Jun |
|---|---|---|---|---|---|---|---|---|---|
| Algeria | 1,022 | 897 | 857 | 870 | 887 | 887 | 904 | 910 | *6* |
| Angola | 1,401 | 1,248 | 1,164 | 1,135 | 1,112 | 1,084 | 1,115 | 1,078 | *-38* |
| Congo | 324 | 288 | 273 | 271 | 264 | 260 | 265 | 263 | *-3* |
| Equatorial Guinea | 117 | 115 | 112 | 107 | 111 | 109 | 110 | 103 | *-8* |
| Gabon | 208 | 195 | 191 | 185 | 182 | 178 | 173 | 178 | *5* |
| IR Iran | 2,356 | 1,988 | 2,003 | 2,214 | 2,443 | 2,437 | 2,470 | 2,485 | *15* |
| Iraq | 4,678 | 4,049 | 3,817 | 3,881 | 3,939 | 3,948 | 3,921 | 3,978 | *56* |
| Kuwait | 2,687 | 2,432 | 2,293 | 2,328 | 2,356 | 2,358 | 2,383 | 2,426 | *42* |
| Libya | 1,097 | 367 | 911 | 1,175 | 1,151 | 1,155 | 1,163 | 1,165 | *2* |
| Nigeria | 1,786 | 1,579 | 1,434 | 1,410 | 1,419 | 1,410 | 1,392 | 1,437 | *45* |
| Saudi Arabia | 9,794 | 9,182 | 8,962 | 8,445 | 8,503 | 8,481 | 8,906 | 9,403 | *497* |
| UAE | 3,094 | 2,802 | 2,515 | 2,610 | 2,644 | 2,640 | 2,681 | 2,723 | *42* |
| Venezuela | 796 | 500 | 408 | 517 | 509 | 509 | 537 | 512 | *-26* |
| **Total OPEC** | **29,361** | **25,642** | **24,940** | **25,148** | **25,520** | **25,454** | **26,020** | **26,657** | ***637*** |

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

**Table 5 - 7: OPEC crude oil production based on *direct communication*, tb/d**

| Direct communication | 2019 | 2020 | 4Q20 | 1Q21 | 2Q21 | May 21 | Jun 21 | Jul 21 | Change Jul/Jun |
|---|---|---|---|---|---|---|---|---|---|
| Algeria | 1,023 | 899 | 862 | 874 | 886 | 891 | 901 | 915 | *14* |
| Angola | 1,373 | 1,271 | 1,186 | 1,136 | 1,125 | 1,125 | 1,073 | 1,103 | *30* |
| Congo | 329 | 300 | 285 | 275 | 264 | 266 | 262 | 250 | *-13* |
| Equatorial Guinea | 110 | 114 | 106 | 104 | 99 | 99 | 100 | 100 | *-1* |
| Gabon | 218 | 207 | 178 | 183 | 179 | 171 | 183 | .. | .. |
| IR Iran | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Iraq | 4,576 | 3,997 | 3,796 | 3,846 | 3,890 | 3,879 | 3,862 | 3,886 | *24* |
| Kuwait | 2,678 | 2,438 | 2,293 | 2,327 | 2,355 | 2,355 | 2,384 | 2,423 | *39* |
| Libya | .. | 389 | 972 | 1,214 | 1,213 | 1,227 | 1,243 | 1,273 | *30* |
| Nigeria | 1,737 | 1,493 | 1,301 | 1,404 | 1,343 | 1,344 | 1,313 | 1,323 | *10* |
| Saudi Arabia | 9,808 | 9,213 | 8,975 | 8,473 | 8,535 | 8,544 | 8,928 | 9,474 | *547* |
| UAE | 3,058 | 2,779 | 2,501 | 2,610 | 2,645 | 2,641 | 2,681 | 2,722 | *41* |
| Venezuela | 1,013 | 569 | 463 | 533 | 556 | 582 | 633 | 614 | *-19* |
| **Total OPEC** | **..** | **..** | **..** | **..** | **..** | **..** | **..** | **..** | ***..*** |

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

# Commercial Stock Movements

Preliminary June data sees total OECD commercial oil stocks down by 23.0 mb m-o-m. At 2,922 mb, they were 289.4 mb lower than the same time one year ago, 90.4 mb lower than the latest five-year average and 25.2 mb below the 2015-2019 average. Within components, crude stocks fell by 38.3 mb m-o-m, while product stocks were up by 15.3 mb.

At 1,416 mb, OECD crude stocks stood 96.2 mb below the latest five-year average and 70.5 mb below the 2015–2019 average. At 1,507 mb, OECD product stocks exhibited a surplus of 5.8 mb above the latest five-year average, and were 45.3 mb above the 2015–2019 average.

In terms of days of forward cover, OECD commercial stocks fell m-o-m by 0.9 days in June to stand at 63.6 days. This is 12.4 days below June 2020 levels and 1.0 days below the latest five-year average, but 2.0 days above the 2015–2019 average.

Preliminary data for July shows that total US commercial oil stocks fell slightly m-o-m by 0.7 mb to stand at 1,268 mb. This is 183.3 mb, or 12.6%, lower than the same month a year ago, and 64.0 mb, or 4.8%, below the latest five-year average. Crude stocks fell by 6.3 mb, while product stocks rose by 5.5 mb, m-o-m.

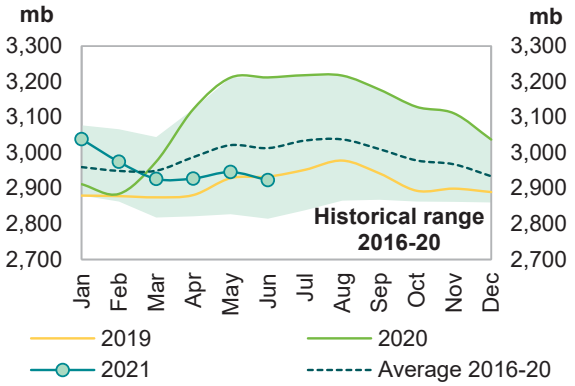
## OECD

Preliminary June data sees **total OECD commercial oil stocks** down by 23.0 mb m-o-m. At 2,922 mb, they were 289.4 mb lower than the same time one year ago and 90.4 mb lower than the latest five-year average.

Within the components, crude stocks fell by 38.3 mb m-o-m, while product stocks were up by 15.3 mb. Total commercial oil stocks in June fell in all three OECD regions.

OECD **commercial crude stocks** fell m-o-m in June by 38.3 mb to stand at 1,416 mb. This is 168.8 mb lower than the same time a year ago and 96.2 mb below the latest five-year average. Compared with the previous month, OECD Americas and OECD Asia Pacific registered stock draws of 31.1 mb and 5.0 mb, respectively, and OECD Europe saw a stock draw of 2.2 mb.

**Graph 9 - 1: OECD commercial oil stocks**




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

In contrast, **total product inventories** rose by 15.3 mb m-o-m in June to stand at 1,507 mb. This is 120.6 mb less than the same time a year ago, but 5.8 mb higher than the latest five-year average. Within the OECD, product stocks in OECD Americas rose by 22.5 mb, while OECD Europe and OECD Asia Pacific fell by 5.1 mb and 2.1 mb, m-o-m, respectively.

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

| OECD stocks | Jun 20 | Apr 21 | May 21 | Jun 21 | Change Jun 21/May 21 |
|---|---|---|---|---|---|
| Crude oil | 1,584 | 1,462 | 1,454 | 1,416 | *-38.3* |
| Products | 1,627 | 1,465 | 1,491 | 1,507 | *15.3* |
| **Total** | **3,212** | **2,927** | **2,945** | **2,922** | ***-23.0*** |
| **Days of forward cover** | **76.0** | **65.1** | **64.5** | **63.6** | ***-0.9*** |

*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 fell m-o-m by 0.9 days in June to stand at 63.6 days. This is 12.4 days below June 2020 levels, and 1.0 day below the latest five-year average. OECD Americas and OECD Asia Pacific were below the latest five-year average: the Americas by 1.2 days at 62.6 days and Asia Pacific by 4.5 days at 49.9 days. OECD Europe, however, showed a surplus of 1.2 days above the latest five-year average, at 72.4 days.

## OECD Americas

**OECD Americas total commercial stocks** fell m-o-m by 8.6 mb in June to settle at 1,563 mb. This is 150.7 mb less than the same month last year and 27.9 mb lower than the latest five-year average.

**Commercial crude oil stocks** in OECD Americas fell m-o-m by 31.1 mb in June to stand at 806 mb, which is 88.1 mb lower than in June 2020, and 25.4 mb less than the latest five-year average. The stock draw came on the back of higher crude runs in June.

In contrast, **total product stocks** in OECD Americas rose m-o-m by 22.5 mb in June to stand at 757 mb. This was 62.6 mb lower than the same month one year ago and 2.5 mb below the latest five-year average. Lower total consumption in the region was behind the stock build.

## OECD Europe

**OECD Europe total commercial stocks** fell m-o-m by 7.3 mb in June to settle at 1,002 mb. This is 96.8 mb less than the same month last year, and 12.3 mb below the latest five-year average.

OECD Europe's **commercial crude stocks** in June fell m-o-m by 2.2 mb to end the month at 423 mb, which is 44.1 mb lower than one year ago and 21.7 mb below the latest five-year average. The drop in crude oil inventories came despite lower m-o-m refinery throughputs in the EU-14 plus the UK and Norway, which decreased by around 160 tb/d to 8.99 mb/d in June.

OECD Europe's **commercial product stocks** also fell m-o-m by 5.1 mb to end June at 579 mb. This is 52.7 mb lower than a year ago, but 9.3 mb above the latest five-year average.

## OECD Asia Pacific

**OECD Asia Pacific's total commercial oil stocks** fell m-o-m by 7.1 mb in June to stand at 358 mb. This is 41.9 mb lower than a year ago, and 50.2 mb below the latest five-year average.

OECD Asia Pacific's **crude inventories** fell by 5.0 mb m-o-m to end June at 187 mb, which is 36.6 mb lower than one year ago, and 49.1 mb below the latest five-year average.

OECD Asia Pacific's **total product inventories** also fell, by 2.1 mb m-o-m, to end June at 171 mb. This is 5.3 mb lower than the same time a year ago, and 1.1 mb less than the latest five-year average.

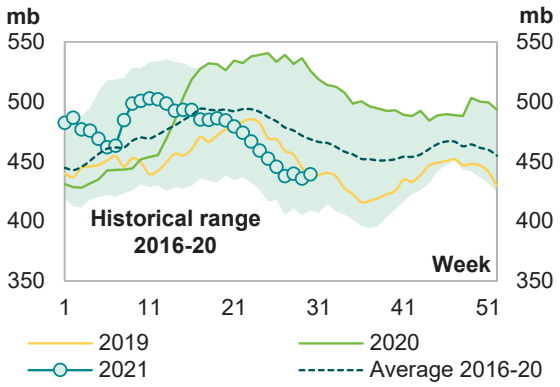
## US

Preliminary data for July showed that **total US commercial oil stocks** fell slightly m-o-m by 0.7 mb to stand at 1,268 mb. This is 183.3 mb, or 12.6%, lower than the same month a year ago and 64.0 mb, or 4.8%, below the latest five-year average. Crude stocks fell by 6.3 mb, while product stocks rose by 5.5 mb, m-o-m.

US **commercial crude stocks** in July fell m-o-m by 6.3 mb to stand at 439.2 mb. This is 80.1 mb, or 15.4%, lower than the same month last year, and 30.3 mb, or 6.4%, below the latest five-year average. The stock draw came on the back of lower crude imports.

In contrast, **total product stocks** in July rose m-o-m by 5.5 mb to stand at 828.4 mb. This is 103.3 mb, or 11.1%, below July 2020 levels, and 33.7 mb, or 3.9%, lower than the latest five-year average. The build was mainly driven by slightly lower consumption.

**Graph 9 - 2: US weekly commercial crude oil inventories**



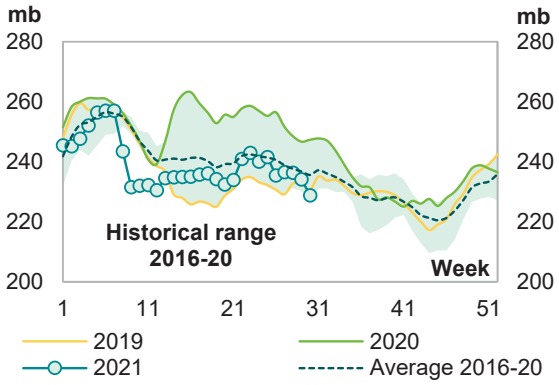

*Sources: EIA and OPEC.*

**Gasoline stocks** in July fell m-o-m by 6.6 mb to settle at 228.9 mb. This is 20.4 mb, or 8.2%, below the same month last year, and 9.7 mb, or 4.1%, lower than the latest five-year average. The monthly stock draw came mainly on the back of higher gasoline consumption.

**Jet fuel** also fell m-o-m by 1.8 mb, ending July at 43.3 mb. This is 2.3 mb, or 5.6%, higher than the same month last year, and 1.6 mb, or 4.0%, above the latest five-year average.

**Residual fuel oil stocks** fell m-o-m in July, decreasing by 2.5 mb. At 29.1 mb, this was 7.2 mb, or 19.8%, lower than a year ago, and 4.1 mb, or 12.3%, below the latest five-year average.

**Graph 9 - 3: US weekly gasoline inventories**




*Sources: EIA and OPEC.*

In contrast, **distillate stocks** rose m-o-m by 0.1 mb in July to stand at 138.7 mb. This is 38.8 mb, or 21.9%, lower than a year ago, and 11.3 mb, or 7.6%, lower than the latest five-year average. The build in distillate stocks can be attributed to higher distillate production.

**Table 9 - 2: US commercial petroleum stocks, mb**

| US stocks | Jul 20 | May 21 | Jun 21 | Jul 21 | Change Jul 21/Jun 21 |
|---|---|---|---|---|---|
| **Crude oil** | **519.3** | **476.6** | **445.5** | **439.2** | ***-6.3*** |
| **Gasoline** | 249.3 | 239.9 | 235.5 | 228.9 | *-6.6* |
| **Distillate fuel** | 177.6 | 140.0 | 138.7 | 138.7 | *0.1* |
| **Residual fuel oil** | 36.3 | 31.7 | 31.6 | 29.1 | *-2.5* |
| **Jet fuel** | 41.0 | 43.4 | 45.1 | 43.3 | *-1.8* |
| **Total products** | **931.7** | **817.1** | **822.9** | **828.4** | ***5.5*** |
| **Total** | **1,451.0** | **1,293.7** | **1,268.4** | **1,267.7** | ***-0.7*** |
| **SPR** | **656.1** | **627.6** | **621.3** | **621.3** | ***0.0*** |

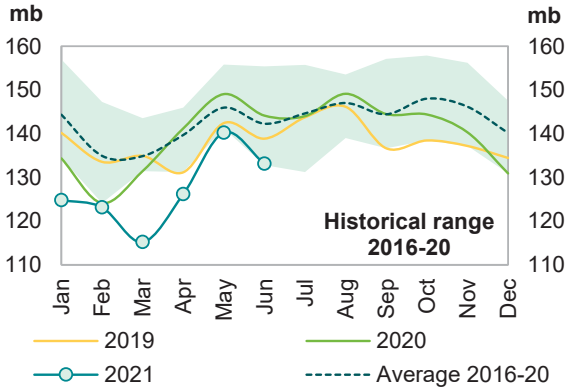
*Sources: EIA and OPEC.*

# Japan

In **Japan**, **total commercial oil stocks** in June fell m-o-m by 7.1 mb to settle at 133.2 mb. This is 11.0 mb, or 7.6%, lower than the same month last year, and 9.1 mb, or 6.4%, below the latest five-year average. Crude and products stocks fell m-o-m by 5.0 mb and 2.1 mb, respectively.

Japanese **commercial crude oil stocks** fell in June to stand at 70.6 mb. This is 12.9 mb, or 15.4%, below the same month a year ago, and 13.5 mb, or 16.1%, lower than the latest five-year average. The fall came on the back of lower crude imports, which declined by 478 tb/d, or 19.8%, m-o-m to stand at 1.94 mb/d. Lower crude throughput, which decreased by 29 tb/d, or 1.4%, to 2.11 mb/d limited a further drop in crude stocks.

**Graph 9 - 4: Japan's commercial oil stocks**




*Sources: METI and OPEC.*

Japan's **total product inventories** also fell m-o-m by 2.1 mb to end June at 62.6 mb. This is 1.9 mb, or 3.1%, higher than the same month last year, and 4.4 mb, or 7.6%, above the latest five-year average.

**Gasoline stocks** fell m-o-m by 0.5 mb to stand at 14.4 mb. This was 2.8 mb, or 24.4%, higher than a year ago, and 3.8 mb, or 35.3%, above the latest five-year average. Higher domestic gasoline sales, which rose by 3.4%, were behind the fall in gasoline stocks.

**Distillate stocks** also fell by 0.4 mb m-o-m to end June at 27.1 mb. This is 0.2 mb, or 0.8%, lower than the same month a year ago, but 1.7 mb, or 6.8%, above the latest five-year average. Within distillate components, **jet fuel and gasoil stocks** fell m-o-m by 1.6% and 6.9%, respectively, while kerosene stocks were up by 5.2%.

**Total residual fuel oil stocks** fell m-o-m by 1.0 mb in June to stand at 11.8 mb. This is 0.7 mb, or 5.4%, lower than the same month last year, and 1.2 mb, or 9.3%, below the latest five-year average. Within components, fuel oil A and fuel oil B.C stocks fell by 6.9% and 8.3%, respectively.

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

| Japan's stocks | Jun 20 | Apr 21 | May 21 | Jun 21 | Change Jun 21/May 21 |
|---|---|---|---|---|---|
| **Crude oil** | **83.5** | **66.6** | **75.6** | **70.6** | ***-5.0*** |
| **Gasoline** | 11.6 | 13.0 | 14.9 | 14.4 | *-0.5* |
| **Naphtha** | 9.4 | 9.8 | 9.5 | 9.3 | *-0.2* |
| **Middle distillates** | 27.3 | 24.6 | 27.5 | 27.1 | *-0.4* |
| **Residual fuel oil** | 12.4 | 12.2 | 12.8 | 11.8 | *-1.0* |
| **Total products** | **60.7** | **59.6** | **64.7** | **62.6** | ***-2.1*** |
| **Total**** | **144.2** | **126.2** | **140.3** | **133.2** | ***-7.1*** |

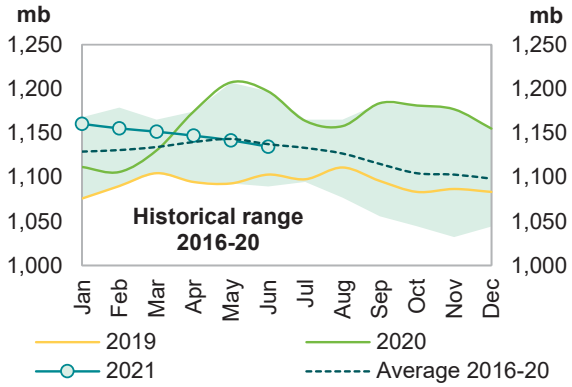
*Note: * At the end of the month. ** Includes crude oil and main products only.*
*Sources: METI and OPEC.*

# EU-14 plus UK and Norway

Preliminary data for June showed that **total European commercial oil stocks** fell m-o-m by 7.3 mb to stand at 1,134 mb. At this level, they were 62.6 mb, or 5.2%, below the same month a year ago, and 2.9 mb, or 0.3%, lower than the latest five-year average. Crude and product stocks went down by 2.2 mb, and 5.1 mb, respectively.

European **crude inventories** fell in June to stand at 468.3 mb. This is 35.7 mb, or 7.1%, lower than the same month a year ago and 26.9 mb, or 5.4%, lower the latest five-year average. The drop in crude oil inventories came despite lower m-o-m refinery throughputs in the EU-14 plus the UK and Norway, which decreased by around 160 tb/d to 8.99 mb/d in June.

**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 5.1 mb to end June at 666.1 mb. This is 26.9 mb, or 3.9%, lower than the same month a year ago, but 24.0 mb, or 3.7%, above the latest five-year average.

**Gasoline stocks** fell m-o-m by 1.4 mb in June to stand at 114.3 mb. This is 6.5 mb, or 5.4%, lower than the level registered the same time a year ago and 0.5 mb/d, or 0.4%, below the latest five-year average.

**Distillate stocks** also fell m-o-m by 3.8 mb in June to stand at 452.4 mb. This is 13.6 mb or 2.9% below the same month last year, but 22.3 mb, or 5.2%, above the latest five-year average.

**Naphtha stocks** fell by 1.1 mb m-o-m in June, ending the month at 30.5 mb. This is 1.5 mb, or 4.7%, below June 2020 levels, but 2.5 mb, or 8.8%, higher than the latest five-year average.

In contrast, **residual fuel stocks** rose m-o-m by 1.2 mb in June to 68.9 mb. This is 5.4 mb, or 7.2%, lower than the same month one year ago and 0.2 mb, or 0.3%, below the latest five-year average.

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

| EU stocks | Jun 20 | Apr 21 | May 21 | Jun 21 | Change Jun 21/May 21 |
|---|---|---|---|---|---|
| **Crude oil** | **504.0** | **471.1** | **470.5** | **468.3** | ***-2.2*** |
| **Gasoline** | 120.8 | 118.2 | 115.7 | 114.3 | *-1.4* |
| **Naphtha** | 32.0 | 30.9 | 31.6 | 30.5 | *-1.1* |
| **Middle distillates** | 466.0 | 457.0 | 456.2 | 452.4 | *-3.8* |
| **Fuel oils** | 74.3 | 69.8 | 67.7 | 68.9 | *1.2* |
| **Total products** | **693.0** | **675.8** | **671.2** | **666.1** | ***-5.1*** |
| **Total** | **1,197.0** | **1,146.9** | **1,141.7** | **1,134.4** | ***-7.3*** |

*Sources: Argus, Euroilstock and OPEC.*

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

## Singapore

In June, **total product stocks in Singapore** rose m-o-m by 0.6 mb to 50.5 mb. This is 3.4 mb, or 6.3%, lower than the same month a year ago.

**Light distillate stocks** fell m-o-m by 0.5 mb in June to stand at 12.8 mb. This is 2.3 mb, or 15.2%, lower than the same month one year ago.

**Residual fuel oil stocks** also fell by 0.9 mb, ending June at 23.9 mb, which is 1.4 mb, or 5.7%, lower than in June 2020.

In contrast, **middle distillate stocks** rose by 2.1 mb in June to stand at 13.8 mb. This is 0.3 mb, or 2.3%, higher than a year ago.

## ARA

**Total product stocks in ARA** fell for the fourth consecutive month in June and were down by 0.3 mb to 46.5 mb. This is 6.2 mb, or 11.7%, lower than the same month a year ago.

**Gasoline stocks** in June fell m-o-m by 1.4 mb to stand at 8.7 mb, which is 2.3 mb, or 20.7%, lower than the same month one year ago.

**Jet oil stocks** also fell m-o-m by 0.5 mb to end June at 8.6 mb. This is 1.2 mb, or 16.5%, higher than the level seen one year ago.

In contrast, **gasoil stocks** rose m-o-m by 0.7 mb in June to stand at 17.6 mb, which is 2.2 mb, or 11.2%, lower than in June 2020.

**Residual fuel stocks** also rose m-o-m by 1.0 mb to end June at 9.4 mb. This is 0.4 mb, or 4.4%, less than the level registered one year ago.

## Fujairah

During the week ending 26 July 2021, **total oil product stocks in Fujairah** fell by 0.81 mb w-o-w to stand at 20.95 mb, according to data from Fed Com and S&P Global Platts. At this level, total oil stocks were 4.77 mb lower than the same time a year ago. While light distillates witnessed a stock build w-o-w, middle and heavy distillate stocks showed a stock draw.

**Light distillate stocks** rose by 0.45 mb w-o-w to stand at 7.08 mb, which is 0.31 higher than the same period a year ago. In contrast, **middle distillate stocks** fell by 0.71 mb to stand at 2.66 mb, which is 1.73 mb lower than a year ago. **Heavy distillate stocks** also fell by 0.55 mb to stand at 11.21 mb, which is 3.35 mb lower than the same time last year.

# Balance of Supply and Demand

Demand for OPEC crude in 2021 was revised down by 0.2 b/d from the previous month's assessment to stand at 27.4 mb/d, around 4.7 mb/d higher than in 2020.

According to secondary sources, OPEC crude production averaged 25.1 mb/d in 1Q21, about 0.1 mb/d higher than demand for OPEC crude in the same period. In 2Q21, OPEC crude production averaged 25.5 mb/d, 1.6 mb/d lower than demand.

Demand for OPEC crude in 2022 was revised down by 1.1 mb/d from the previous month's assessment to stand at 27.6 mb/d, around 0.2 mb/d higher than in 2021.

## Balance of supply and demand in 2021

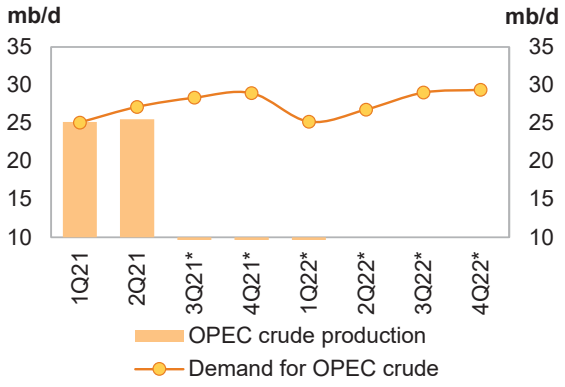
**Demand for OPEC crude in 2021** was revised down by 0.2 b/d from the previous month to stand at 27.4 mb/d, around 4.7 mb/d higher than in 2020.

Both 1Q21 and 3Q21 were revised down by 0.2 mb/d, while 4Q21 was revised down by 0.6 mb/d compared with the previous assessment. The 2Q21 assessment remained unchanged.

When compared with the same quarters in 2020, demand for OPEC crude in 1Q21 and 2Q21 is estimated to be 3.7 mb/d and 10.0 mb/d higher, respectively. In 3Q21 and 4Q21, there is an expected rise of 3.4 mb/d and 1.8 mb/d, respectively, compared with the same quarters a year earlier.

According to secondary sources, OPEC crude production averaged 25.1 mb/d in 1Q21, about 0.1 mb/d above demand for OPEC crude in the same period. In 2Q21, OPEC crude production averaged 25.5 mb/d, 1.6 mb/d lower than demand.

**Graph 10 - 1: Balance of supply and demand, 2021–2022***




*Note: * 3Q21-4Q22 = Forecast. Source: OPEC.*

**Table 10 - 1: Supply/demand balance for 2021*, mb/d**

| | 2020 | 1Q21 | 2Q21 | 3Q21 | 4Q21 | 2021 | Change 2021/20 |
|---|---|---|---|---|---|---|---|
| **(a) World oil demand** | **90.62** | **92.61** | **95.51** | **98.23** | **99.82** | **96.57** | ***5.95*** |
| **Non-OPEC liquids production** | 62.91 | 62.41 | 63.25 | 64.66 | 65.63 | 64.00 | *1.09* |
| **OPEC NGL and non-conventionals** | 5.05 | 5.11 | 5.11 | 5.22 | 5.23 | 5.17 | *0.12* |
| **(b) Total non-OPEC liquids production and OPEC NGLs** | **67.96** | **67.51** | **68.36** | **69.88** | **70.86** | **69.16** | ***1.21*** |
| **Difference (a-b)** | **22.66** | **25.10** | **27.15** | **28.36** | **28.96** | **27.41** | ***4.75*** |
| **OPEC crude oil production** | **25.64** | **25.15** | **25.52** | | | | |
| **Balance** | **2.98** | **0.05** | **-1.63** | | | | |

*Note: * 2021 = Forecast. Totals may not add up due to independent rounding. Source: OPEC.*

https://www.iea.org/reports/oil-market-report-august-2021

# Oil Market Report - August 2021

Flagship report — August 2021

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### 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

- Global oil demand surged by 3.8 mb/d month-on-month in June, led by increased mobility in North America and Europe. However, demand growth abruptly reversed course in July and the outlook for the remainder of 2021 has been downgraded due to the worsening progression of the pandemic and revisions to historical data. Global oil demand is now seen rising 5.3 mb/d on average, to 96.2 mb/d in 2021, and by further 3.2 mb/d in 2022.
- World oil supply rose by 1.7 mb/d in July to 96.7 mb/d after Saudi Arabia ended its extra voluntary production cut and the North Sea recovered strongly after maintenance. Global output is poised to rise further in the coming months after OPEC+ agreed a new deal to unwind its remaining curbs. Following gains of 600 kb/d this year, supply from producers outside the alliance is expected to rise by 1.7 mb/d in 2022 with the US accounting for 60% of the growth.
- The recovery in global refinery activity slowed in July as new waves of Covid-19 cut into fuel demand while margins remained under pressure. Throughputs are expected to rise marginally in August before seasonal maintenance starts. Runs in 3Q21 were reduced on demand downgrades, narrowing the increase over 2Q21 levels to 2.5 mb/d. Global refinery runs are now forecast to rise by 3.7 mb/d to 77.9 mb/d in 2021 over year ago, still 3.7 mb/d below 2019 levels.
- OECD total industry stocks fell by a large 50.3 mb in June and stood at 2 882 mb, 131.2 mb lower than the 2016 2020 average and 66 mb below the pre-Covid 2015-19 average. The Chinese implied crude balance fell for a third consecutive month, by 35.5 mb or 1.2 mb/d in June. Preliminary July data for the US, Europe and Japan show that industry stocks rose by a combined 4.2 mb. Crude oil held in short term floating storage increased by 4.5 mb to 103.6 mb in July.
- The 2Q21 crude price rally lost steam in July on fears that new Covid-19 Delta cases and weaker economic indicators could slow the oil demand recovery just as more supply hit the market. Despite big swings, North Sea Dated still rose $2.03/bbl to

$74.99/bbl but fell to $70.73/bbl in early August. Backwardation only eased in August with the fall in prices.

## Tipping the scale

A new OPEC+ deal struck last month will go a long way to restore market balance. The immediate boost from OPEC+ is colliding with slower demand growth and higher output from outside the alliance, stamping out lingering suggestions of a near-term supply crunch or super cycle. Oil prices offer more evidence. A recent rally has lost steam on concerns that a surge in Covid-19 cases from the Delta variant could derail the recovery just as more barrels hit the market. Brent futures slumped from a high of $76.40/bbl in early July to around $70/bbl at the time of writing.

Global oil demand estimates have been revised lower since last month's Report, in part due to the inclusion of more complete historical annual statistics. Our forecast for global oil demand growth is largely unchanged, however, rising 5.3 mb/d in 2021 and a further 3.2 mb/d next year. Growth for the second half of 2021 has been downgraded more sharply, as new Covid-19 restrictions imposed in several major oil consuming countries, particularly in Asia, look set to reduce mobility and oil use.

Meanwhile, global oil supply is ramping up fast. In July, producers boosted output by 1.7 mb/d, as Saudi Arabia ended voluntary curbs and the North Sea bounced back from maintenance. Supply is expected to rise further after the producer bloc agreed a deal on 18 July that aims to raise production by 400 kb/d a month from August until the remaining cuts are phased out.

Global oil inventories have been falling sharply, and in June, OECD industry stocks plunged by a hefty 50 mb, or 1.7 mb/d, to stand 131 mb below the five-year average. Stock draws could persist for the remainder of the year assuming sanctions continue to shut in Iranian crude. Based on our current balances, OPEC+ looks set to pump about 200 kb/d below the call on its crude during the last quarter of 2021, compared with a deficit of up to 2 mb/d expected earlier.

But the scale could tilt back to surplus in 2022 if OPEC+ continues to undo its cuts and producers not taking part in the deal ramp up in response to higher prices. Following a modest increase of 600 kb/d on average in 2021, supply from outside the group is forecast to expand by 1.7 mb/d next year, of which the US will account for nearly 60%. OPEC+ can still pause, continue or even reverse its curbs as required by the market and it looks unlikely that the unwinding of cuts will continue on a linear trajectory in 2022.

It's not just the oil market that needs to be brought into balance. The world oil industry is struggling to find new business models to navigate the energy transition as outlined in the IEA's Net Zero by 2050 Roadmap while still meeting sustained oil demand. The recent UN Intergovernmental Panel on Climate Change (IPCC) report reconfirms the urgent need for greenhouse gas reductions. It is vital to tackle these challenges as swiftly as possible to ensure an orderly path to a carbon neutral world.

**IEA World Oil Supply and Demand Forecasts: Summary (Table)**
2021-08-12 08:00:00.9 GMT

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

| | 4Q 2022 | 3Q 2022 | 2Q 2022 | 1Q 2022 | 4Q 2021 | 3Q 2021 | 2Q 2021 | 1Q 2021 | 2022 | 2021 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Demand | | | | | | | | | |
| Total Demand | 100.2 | 100.1 | 98.8 | 98.0 | 98.9 | 97.4 | 94.9 | 93.4 | 99.3 | 96.2 |
| Total OECD | 46.1 | 46.5 | 45.7 | 45.3 | 46.0 | 45.8 | 43.8 | 42.3 | 45.9 | 44.5 |
| Americas | 25.1 | 25.5 | 25.0 | 24.4 | 25.0 | 25.2 | 24.2 | 22.8 | 25.0 | 24.3 |
| Europe | 13.2 | 13.6 | 13.3 | 13.0 | 13.2 | 13.4 | 12.6 | 11.9 | 13.3 | 12.8 |
| Asia Oceania | 7.9 | 7.4 | 7.3 | 7.9 | 7.8 | 7.2 | 7.0 | 7.7 | 7.6 | 7.4 |
| Non-OECD countries | 54.1 | 53.6 | 53.2 | 52.8 | 52.9 | 51.6 | 51.0 | 51.0 | 53.4 | 51.6 |
| FSU | 5.1 | 5.0 | 4.7 | 4.8 | 4.9 | 4.8 | 4.7 | 4.6 | 4.9 | 4.7 |
| Europe | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.7 | 0.7 | 0.8 | 0.8 |
| China | 15.7 | 15.5 | 15.6 | 15.1 | 15.3 | 14.8 | 15.1 | 14.5 | 15.5 | 14.9 |
| Other Asia | 14.3 | 13.7 | 14.1 | 14.3 | 14.0 | 13.0 | 13.0 | 13.6 | 14.1 | 13.4 |
| Americas | 6.2 | 6.2 | 6.1 | 5.9 | 6.0 | 6.0 | 5.9 | 5.8 | 6.1 | 5.9 |
| Middle East | 8.0 | 8.4 | 7.9 | 7.8 | 7.9 | 8.4 | 7.8 | 7.7 | 8.0 | 7.9 |
| Africa | 4.1 | 3.9 | 4.0 | 4.1 | 4.0 | 3.8 | 3.9 | 4.1 | 4.0 | 3.9 |
| | Supply | | | | | | | | | |
| Total Supply | n/a | n/a | n/a | n/a | n/a | n/a | 94.2 | 92.3 | n/a | n/a |
| Non-OPEC | 67.4 | 67.3 | 66.7 | 65.6 | 65.4 | 64.7 | 63.4 | 61.9 | 66.7 | 63.9 |
| Total OECD | 29.9 | 29.4 | 29.2 | 29.1 | 28.9 | 28.4 | 27.7 | 27.4 | 29.4 | 28.1 |
| Americas | 25.8 | 25.5 | 25.3 | 24.9 | 24.8 | 24.5 | 24.1 | 23.3 | 25.4 | 24.2 |
| Europe | 3.6 | 3.4 | 3.4 | 3.6 | 3.6 | 3.3 | 3.1 | 3.6 | 3.5 | 3.4 |
| Asia Oceania | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Non-OECD | 32.1 | 32.0 | 31.9 | 31.6 | 31.3 | 30.7 | 30.6 | 30.3 | 31.9 | 30.7 |
| FSU | 14.9 | 14.9 | 14.8 | 14.5 | 14.2 | 13.7 | 13.7 | 13.4 | 14.8 | 13.7 |
| Europe | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| China | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 |
| Other Asia | 2.8 | 2.8 | 2.8 | 2.9 | 2.9 | 2.9 | 2.9 | 3.0 | 2.8 | 2.9 |
| Americas | 5.7 | 5.6 | 5.5 | 5.5 | 5.6 | 5.5 | 5.3 | 5.3 | 5.6 | 5.4 |
| Middle East | 3.3 | 3.3 | 3.3 | 3.3 | 3.2 | 3.2 | 3.1 | 3.1 | 3.3 | 3.2 |
| Africa | 1.2 | 1.2 | 1.2 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.2 | 1.3 |
| Processing Gains | 2.4 | 2.4 | 2.4 | 2.4 | 2.3 | 2.3 | 2.2 | 2.1 | 2.4 | 2.3 |
| Total OPEC | n/a | n/a | n/a | n/a | n/a | n/a | 30.8 | 30.4 | n/a | n/a |
| Crude | n/a | n/a | n/a | n/a | n/a | n/a | 25.5 | 25.3 | n/a | n/a |
| Natural gas liquids NGLs | 5.5 | 5.5 | 5.5 | 5.5 | 5.3 | 5.3 | 5.3 | 5.2 | 5.5 | 5.3 |
| Call on OPEC crude and stock change * | 27.3 | 27.3 | 26.6 | 26.9 | 28.2 | 27.4 | 26.1 | 26.3 | 27.1 | 27.0 |

NOTE: Figures are in million of barrels per day. (*) equals total demand minus non-OPEC supply and OPEC natural gas liquids.
IEA changed the way it measures OPEC supply, adopting the industry-standard approach of counting most of Venezuela's Orinoco heavy oil as "crude oil."
SOURCE: International Energy Agency

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**IEA: July Crude Oil Production in OPEC Countries (Table)**
2021-08-12 08:00:00.11 GMT

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

| | July 2021 | June 2021 | July MoM |
|---|---|---|---|
| Total OPEC | 26.68 | 25.96 | 0.72 |
| Total OPEC10 | 22.45 | 21.75 | 0.70 |
| Algeria | 0.91 | 0.90 | 0.01 |
| Angola | 1.10 | 1.07 | 0.03 |
| Congo | 0.27 | 0.27 | 0.00 |
| Equatorial Guinea | 0.10 | 0.11 | -0.01 |
| Gabon | 0.18 | 0.18 | 0.00 |
| Iraq | 3.97 | 3.93 | 0.04 |
| Kuwait | 2.42 | 2.38 | 0.04 |
| Nigeria | 1.32 | 1.31 | 0.01 |
| Saudi Arabia | 9.46 | 8.92 | 0.54 |
| UAE | 2.72 | 2.68 | 0.04 |
| Iran | 2.50 | 2.45 | 0.05 |
| Libya | 1.18 | 1.17 | 0.01 |
| Venezuela | 0.55 | 0.59 | -0.04 |

NOTE: Figures are in million of barrels per day. Monthly level change calculated by Bloomberg.
OPEC10 excludes Iran, Libya and Venezuela.
SOURCE: International Energy Agency

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**IEA REPORT WRAP: Oil Demand Estimates Cut on Worsening Pandemic**
2021-08-12 08:35:11.330 GMT

By Stephen Voss
(Bloomberg) -- Summary including stories from IEA's monthly
Oil Market Report on Thursday:
* IEA cuts oil demand outlook on virus, sees new surplus in 2022
** Estimates for 2021, 2022 world demand both lowered
** Biggest change is 600k b/d reduction in 3Q21 estimate
** Downgrade due partly to "worsening of the pandemic"
** Demand growth seen at 5.3m b/d this yr, 3.2m b/d next

** Click here for summary of key IEA supply/demand forecasts
* OPEC output rose 720k b/d in July as Saudis opened the taps: IEA
** See full table of July OPEC production
** Crude supply from non-OPEC members of OPEC+ alliance was steady in July
* Compliance with pledged cutbacks in July:
** OPEC 116%; non-OPEC 99%; combined OPEC+ 110%
** Saudi Arabia 102%, Russia 95%
* Russia's July compliance with OPEC+ deal dips m/m to 95%
* Brent benchmark proposals could increase complexity
* OECD stockpiles fell to 66m bbl below OPEC+ target in June
* China's oil demand growth to slow in 3Q due to Covid
* OECD Europe oil demand set to surge in 3Q
* Oil supply jumps m/m on OPEC+ easing, non-OPEC work ending
* West African differentials drop after Asian buying weakens
* Global refinery runs seen capped in 3Q by Covid
* IEA Table: World supply/demand forecasts by quarter
* NOTE: OPEC's own monthly report will also be issued Thursday
* NOTE: The 23-nation OPEC+ alliance led by Saudi Arabia and Russia agreed in July to revive the rest of the production they halted during the pandemic in careful installments, of 400k b/d each month

--With assistance from Grant Smith, Julian Lee, Rachel Graham, Jack Wittels, Brian Wingfield, Bill Lehane, Mark Evans, Dina Khrennikova, Amanda Jordan, Sherry Su and John Deane.

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**IEA Cuts Oil Demand Outlook on Virus, Sees Surplus in 2022 (1)**
2021-08-12 11:14:20.63 GMT

By Grant Smith
(Bloomberg) -- The International Energy Agency cut forecasts for global oil demand "sharply" for the rest of this year as the resurgent pandemic hits major consumers, and predicted a new surplus in 2022.
It's a marked reversal for the Paris-based agency, which just a month ago was urging the OPEC+ alliance to open the taps

or risk a damaging spike in prices. The oil cartel heeded calls to hike supply, which is now arriving just as consumption slackens.

The analysis also jars with Wednesday's call from the U.S. -- the IEA's most influential member -- for the Organization of Petroleum Exporting Countries and its allies to ramp production up faster.

"The immediate boost from OPEC+ is colliding with slower demand growth and higher output from outside the alliance, stamping out lingering suggestions of a near-term supply crunch or super cycle," the IEA said in its monthly report.

Oil prices have retreated 6% this month as the contagious delta variant triggers renewed lockdowns in China and other key Asian consumers where vaccination rates are lagging. Brent futures are trading near $71 a barrel, having hit a two-year high near $78 in early July.

READ: Oil's Red-Hot Summer Fizzles Amid Virus Comeback

The "recent rally has lost steam on concerns that a surge in Covid-19 cases from the Delta variant could derail the recovery just as more barrels hit the market," the IEA said.

The 23-nation OPEC+ coalition led by Saudi Arabia and Russia agreed last month on a roadmap for restoring the rest of the oil supplies it shuttered when the pandemic emerged. The additional barrels are, however, starting to flow at an inauspicious moment.

Global oil demand "abruptly reversed course" last month, falling slightly after surging by 3.8 million barrels a day in June, the IEA said. The agency lowered estimates for consumption in the second half of the year by 550,000 barrels a day.

Still, the IEA projects that world fuel use will continue to increase as the global economic recovery gathers pace, reaching an average of 98.9 million barrels a day in the last three months of this year.

The recovery achieved so far is already having unwanted side-effects.

As U.S. motorists grapple with $3-a-gallon gasoline and fears over inflation, the Biden administration is insisting that OPEC+ accelerate its supply increases. "At a critical moment in the global recovery," OPEC's plans are "simply not enough," National Security Advisor Jake Sullivan said in a statement on Wednesday.

The Organization of Petroleum Exporting Countries appeared to push back a little against the U.S. request in its own monthly report, also published on Thursday, which said that the "precarious outlook" still requires "determined efforts" from its members and allied producers.

The IEA and OPEC both significantly bolstered forecasts for supplies outside of the cartel in 2022 as the U.S. and other producers recover from the pandemic slump in investment. Both

institutions boosted projections for non-OPEC output by 1.1 million barrels a day for next year.
As a result, OPEC is already producing the volume of crude needed in 2022, the IEA report showed. With output at 26.7 million barrels a day in July, proceeding with plans to restore more production will likely tip the market back into oversupply. "The scale could tilt back to surplus in 2022 if OPEC+ continues to undo its cuts and producers not taking part in the deal ramp up in response to higher prices," the agency said.

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**IEA World Oil Supply/Demand Key Forecasts**
2021-08-12 08:00:00.16 GMT

By Mark Evans
(Bloomberg) -- World oil demand 2022 fcast was revised to 99.3m b/d from 99.5m b/d in Paris-based Intl Energy Agency's latest monthly report.
* 2021 world demand was revised to 96.2 from 96.4m b/d
* Demand change in 2022 est. 3.3% y/y or 3.2m b/d
* Non-OPEC supply 2022 was revised to 66.7m b/d from 65.7m b/d
* Call on OPEC crude 2022 was revised to 27.1m b/d from 28.3m b/d
* Call on OPEC crude 2021 was revised to 27.0 m b/d from 27.2m b/d
** OPEC crude production in July rose by 720k b/d on the month to 26.68m b/d
* Detailed table: FIFW NSN QXPUGTDWX2PT <GO>
* NOTE: Fcasts based off IEA's table providing one decimal point

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**OPEC Output Rose 720k B/D in July as Saudis Opened the Taps: IEA**
2021-08-12 08:00:00.8 GMT

By Amanda Jordan
(Bloomberg) -- OPEC's crude production rose 720k b/d in July to 26.68m b/d, with Saudi Arabia accounting for three-quarters of the gain, the IEA said in its monthly report.
* Saudi Arabia pumped 9.46m b/d, up 540k b/d from June; that's the highest since April 2020 and just shy of its July quota
* Saudi Arabia's Middle East neighbors also raised supply
** Kuwaiti output climbed 40k b/d to 2.42m b/d
** UAE production increased to 2.72m b/d from 2.68m b/d
** Iraqi supply inched up to 3.97m b/d from 3.93m b/d
* Output from Iran, not subject to cuts, gained 50k b/d to 2.5m b/d
* In Africa, Nigeria and Angola struggled to approach their production targets
** Nigerian supply edged up to 1.32m b/d, but was below year-earlier levels
** In Angola, output rose from a 17-year low to reach 1.1m b/d, still 220k b/d below its quota
* Supply rose slightly in Algeria and held steady in Congo and Gabon
* In Libya, exempt from cuts, output inched up by 10k b/d to 1.18m b/d
* Venezuelan production fell 40k b/d to 550k b/d
* OPEC compliance with quotas was 116% in July

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**Proposals in Brent Benchmark Could Increase Complexity: IEA**
2021-08-12 08:00:00.6 GMT

By Sherry Su
(Bloomberg) -- Platts and ICE's proposals to include Johan Sverdrup and WTI Midland in Brent complex could "lead to significant changes and increasing complexity in Brent benchmark price formation in the coming years", IEA said in its monthly Oil Market Report.
* Johan Sverdrup is medium sour crude, with 0.8% sulfur and 28

degrees of API which is about 10 degrees lower than BFOET average
* The existing sulphur de-escalator would suffice to accommodate that, but the much higher density requires a substantial quality de-escalator, IEA said
** Platts suggests that without effective de-escalators for sulphur and gravity, Johan Sverdrup crude could transform Brent from a light sweet to a medium sour benchmark; also warns the potential risk from the dominant share of Equinor, according to IEA
* Platts' new proposal on WTI Midland would ensure FOB compatibility with Brent complex, but industry points to the complexity of deriving an FOB Houston value for North Sea delivery that would be compatible with the BFOE North Sea FOB grades, according to IEA
* READ: July 21, Platts and ICE Announce New Plan to Overhaul Brent Oil

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**OECD Stockpiles Fell to 66m Bbl Below OPEC+ Target in June: IEA**
2021-08-12 08:00:00.35 GMT

By Julian Lee
(Bloomberg) -- By the end of June, total OECD commercial stockpiles of crude and refined products stood at 2.88b bbl, 66m bbl below the pre-Covid 2015-19 average, the IEA says in its latest monthly report.
* NOTE: Returning OECD inventories to their 2015-19 average was identified as a target for OPEC+ output cuts by Saudi Energy Minister Prince Abdulaziz Bin Salman in January
* Total OECD industry oil stockpiles fell by 50.3m bbl in June, with crude inventories dropping more than normal and products drawing counter-seasonally
* Crude inventories fell by 34.3m bbl in June, "nearly double the usual decrease"
* Product inventories fell counter-seasonally by 18.3m bbl, when they typically build by 6.6m bbl
* "Preliminary data for July showed that industry stocks falling in the U.S .and Japan, while building in Europe"

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**China's Oil Demand Growth to Slow in 3Q Due to Covid, IEA Says**
2021-08-12 08:00:00.34 GMT

By Brian Wingfield
(Bloomberg) -- China's oil demand growth will slow significantly in the third quarter due to the current wave of Covid infections, the IEA said in its monthly Oil Market Report.
* Nation's oil demand is forecast to increase y/y by 270k b/d in 3Q vs more than 1m b/d in 2Q; the y/y comparison for 2Q is buoyed by weakness of that quarter last year, the IEA noted
* In India, oil demand growth is forecast to increase 310k b/d y/y in 2021, after economic activity and mobility rebounded in July
* Other estimates of pandemic's impact on demand in Asia in 3Q:
** Indonesia: could decline by 100k b/d q/q
** Thailand: to remain unchanged q/q
** Malaysia: could drop by almost 70k b/d vs 1Q
* Demand in OECD Asia Oceania is forecast to increase by 170k q/q in 3Q, "the smallest increase of all OECD regions"; it could then climb sharply in 4Q if "assuming Covid comes under control"

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**Oil Demand Set to Surge in OECD Europe in 3Q, IEA Says**
2021-08-12 08:00:00.32 GMT

By Jack Wittels
(Bloomberg) -- Demand for oil in OECD Europe is projected

to rise by 845k b/d q/q this quarter, the IEA said in its monthly oil market report.
* That's "the fastest pace of growth since 3Q 2020, during the initial recovery from the Covid-19 lockdowns"
** Demand expected to seasonally decline in 4Q by 170k b/d q/q
* In OECD Americas, IEA forecasts "continued rapid overall demand growth" q/q this quarter, of 950k b/d
* In OECD Asia Oceania, demand to rise by 170k b/d this quarter
** Demand should rise by 570k b/d q/q in 4Q, "assuming Covid comes under control"
* In non-OECD, oil demand forecast to increase by 620k b/d q/q in 3Q
** Also forecast to rise by 1.2m b/d q/q in 4Q, lifting demand above pre-pandemic levels by 400k b/d during that quarter

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**Oil Supply Jumps on OPEC+ Easing, Non-OPEC Work Ending: IEA**
2021-08-12 08:00:00.31 GMT

By Julian Lee
(Bloomberg) -- Global oil supply rose by 1.7m b/d in July compared with the previous month, with Saudi Arabia contributing almost one-third of the increase and non-OPEC supply bouncing back strongly after maintenance at several fields, the IEA said in its latest monthly report.
* Total OPEC+ crude production rose by 720k b/d m/m in July, led by an increase of 540k b/d from Saudi Arabia
* That compares with an increase in the group's production target of 840k b/d over the same period, after taking account of the ending of Saudi Arabia's additional unilateral output cut
* Several of the group's members, including Angola, Nigeria and Malaysia, "are pumping well below their targets due to technical issues and a lack of investment"
* Canadian production has made "a full recovery from heavy and protracted maintenance at oil-sands upgraders in April and May"
* Brazilian output rose by 130k b/d m/m in July after unplanned outages at fields in the Campos basin in June; first oil is expected from the Sepia field this month
* North Sea production from Norway and the U.K. jumped by 340k

b/d m/m in July, after June production was lower than expected from both countries
* World oil production has risen by 3.4m b/d since April

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**West African Differentials Drop After Asian Buying Weakens: IEA**
2021-08-12 08:00:00.26 GMT

By Bill Lehane
(Bloomberg) -- West African crude differentials slumped after Asian buyers were "mostly absent from the market in July, due to the wide Dubai discount to North Sea Dated and the strong backwardation," IEA says in monthly oil market report.
* Asian refiners cut back their purchases as "as price structures made West African barrels less competitive and as more competing barrels arrived in the region from Brazil and the U.S."
* Key grades had a small premium to North Sea Dated during July thanks to stronger European buying; but some crudes flipped to discounts in early August
* Differentials vs North Sea Dated as of early August:
** Nigeria's Forcados slumped to -22c/bbl vs North Sea Dated, having shed 21c/bbl to +38c/bbl in July
** Bonny Light fell to -24c/bbl, having eased by 3c/bbl to 31c/bbl in July
** Angola's Cabinda fell to 18c/bbl, having dropped by 7c to 34c/bbl in July

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**Covid Will Keep A Cap on Global Refinery Runs in 3Q, IEA Says**
2021-08-12 08:00:00.5 GMT

By Rachel Graham
(Bloomberg) -- Global refining runs will be lower in 3Q than previously forecast, the IEA said in its monthly Oil Market Report. The next jump in throughput will be in 2H 2022.
* “Due to higher crude prices as well as demand downgrades on rolling lockdowns and renewed mobility restrictions we lowered our forecast for 3Q21 runs”
** IEA forecasts global crude throughput at 79.3m b/d in 3Q, higher than 2Q
* Looking further ahead, the IEA expects runs to remain relatively flat from this quarter until 3Q 2022 when it expects “another strong growth spurt”
* Crude runs forecast at 77.9m b/d this year and 80.7m in 2022; next year’s forecast is higher than two months ago; see related story

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Saudi Aramco H1/21 Call Aug 9, 2021

Items in "*italics*" are from Bloomberg Transcripts

RE: Priority ranking of cash flow allocation opportunities.
A - Ziad al-Murshed (COO) "*No, thank you for the question. Like I said, this 5% to 15% is not a hard target for us. It's a good indicative target that is cross cycle. We make the decisions or our Board makes the decisions on the dividend based on the dividend policy that I outlined earlier. The sustaining capital, ordinary dividends, followed by growth, and then a combination of distribution and leveraging.*
*If I understand you correctly, you're asking about this force, the combination of additional distribution and deleveraging and where -- how do we make the decision, is it based on the 5% to 15% range? It's -- part of it is, one of the iterations that we have is the gearing ratio, but also we're looking at the different aspects of our financing strategy, maintaining flexibility, expanding our investor base, keeping healthy cash balances and a strong credit rating. I do want to highlight the importance of growth opportunities that we have, and it's very important when we're making these decisions to keep in mind the specific growth opportunities that Aramco has, that may not be available to other companies. So, we have to look at this decision a little bit differently, factoring not just a hard gearing number but just ballistic picture.*

RE: Going from 12 to 13 mmb/d capacity takes time.
Q "*And secondly, I was wondering if you could say a few things about, yeah, the increase in the MSE to 13. In principle the logic is relatively straightforward, do you have low emissions barrels and a lot of them at low cost and the rest of the world is not really investing all that much. But the history of those types of expectations, I can say from experience, I have to admit, has been mixed at best. And for the next two years, it doesn't look like the under investment is so obvious, the world still has a little spare capacity, the U.S. rig count is kind of coming back. What gives you longer dated confidence that the world indeed will need 13 million barrels a day of MSC from Aramco?"*

CEO Nasser replied *"Okay, thank you Martin, I will address the second question and allow Ziad to go through the first question. Now, with regard to the 13 million, yes, if you look at the next two years, and in terms of what MSC capacity of 12 million in markets and how much of that we will utilize, you might (inaudible). But don't forget, it will take you almost good number of years to bring that capacity to the market. A front engineering alone takes two years, we didn't do anything on the ground, that's front-end engineering approximately two years. When we do our plan, we look at the long-term. I always caution the international markets about what is coming ahead of us. When there is a need for additional capacity, it's not going to come easy. Any increments, it takes five to seven years at least, some increments they take eight and nine years to bring them to the market. So for us just front-end engineering, in the next two years you're looking at front-end engineer. Then you start the construction, then it will take a good number of years, five to seven years just to bring these facilities on stream. So it's a -- you have to plan for the long term, you need to put the investment and anticipate the growth that you will see in the future. Considering that you are the lowest cost producers and you have the lowest emissions so you have the biggest opportunity in terms of placing that in the markets".*

https://noc.ly/index.php/ar/new-2/7086-%D8%AA%D8%B3%D8%B1%D8%A8-%D8%A8%D8%AE%D8%B7-30-%D8%A8%D9%88%D8%B5%D8%A9-%D8%A7%D9%84%D8%B1%D8%A7%D8%A8%D8%B7-%D8%A8%D9%8A%D9%86-%D8%AD%D9%82%D9%84-%D8%AC%D8%A7%D9%84%D9%88-%D9%88%D8%A7%D9%84%D9%88%D8%A7%D8%AD%D8%A9-%D8%A8%D8%B4%D8%B1%D9%83%D8%A9-%D8%A7%D9%84%D9%88%D8%A7%D8%AD%D8%A9-%D9%84%D9%84%D9%86%D9%81%D8%B7

# Leakage in the 30-inch line linking the Gallo field and Al-Waha - Al-Waha Oil Company

**The National Oil Corporation reports that a leak occurred on Monday, August 09, 2021 at 10:30 pm, with a 30-inch line linking the Gallo field and Al-Waha at 28,300 km from the Gallo field towards Al-Waha.**

**The company will have to reduce the production of the Gallo field, the first and second stations, tonight, by a quantity ranging from 60 to 70 thousand barrels, until the leakage quantity is reduced, and it will be monitored until the morning, when the leak point will be maintained and dealt with.**

**While the Corporation appreciates the efforts of the workers to exert the necessary care and emergency maintenance to ensure the continuation of production, it affirms that it is in contact with the decision-making departments in the country and the Ministry of Oil and Gas and the Ministry of Finance will be briefed to provide support and provide the necessary budgets for the Corporation and its companies and to avoid everything that would disrupt the flow and continuity of production operations**

**God save Libya**

**0**

# China's Crude Imports Slip to Lowest Since May on Typhoon Halt

2021-08-09 03:29:52.439 GMT

By Bloomberg News

(Bloomberg) -- China's crude oil imports slipped last month after operations were halted at key ports on the east coast due to a typhoon.

The nation imported 41.24 million metric tons of crude in July, data released Saturday by the General Administration of Customs showed. That's equivalent to 9.75 million barrels a day, according to Bloomberg calculations, the lowest level since May. Daily shipments were 9.81 million barrels in June.

Typhoon In-Fa struck the coast toward the end of last month, forcing the major shipping harbor of Zhoushan -- where some of the nation's largest oil storage tanks and biggest refineries are located -- to halt operations at major berths. Ports such as Dongying in the province of Shandong, a hub for independent processors, also temporarily suspended work, local media reported.

China is now facing a Covid-19 resurgence, while crude purchases by private refiners in the spot market have slipped due to quota restraints as the industry comes under greater government scrutiny. Zhejiang Petroleum & Chemical Co., meanwhile, started maintenance work on its 201,000 barrel-a-day crude unit on Aug. 4, according to industry consultant SCI99.

Net oil-product exports in July fell to 2.11 million tons, the lowest level since September, government data showed. Refiners are eagerly awaiting a second batch of fuel export quotas, with PetroChina Co. exhausting its entire allocation as of June. Industry consultants expect overall quotas to be around 9.5 million tons, including 7.5 million tons for general trade.

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China State Refinery Run Rates Declined, SCI99 Says
2021-08-13 08:26:35.267 GMT

By Bloomberg Automation
(Bloomberg) -- Operating rates at most state refineries in China decreased over the two week period ended Aug. 13, according to data from Shandong-based industry researcher SCI99.
* Northeast China state-run refineries' operating rates +4.74 ppt to 75.51%.
* Northwest China -2.31 ppt to 67.54%
* North China -1.88 ppt to 68.03%
* East China -1.62 ppt to 80.58%
* South China -1.03 ppt to 81.95%
* Central China +0.44 ppt to 75.32%
* Southwest China unchanged at 77.59%

Operating rates at independent refineries in China's Shandong province -1.12 ppt to 66.98% as of the data on Aug. 13.
* Sinopec cut run to 5.2 million b/d, as of July 31.
* PetroChina cut run to 3.3 million b/d, as of July 31.
* See SCIG <GO>for full data series

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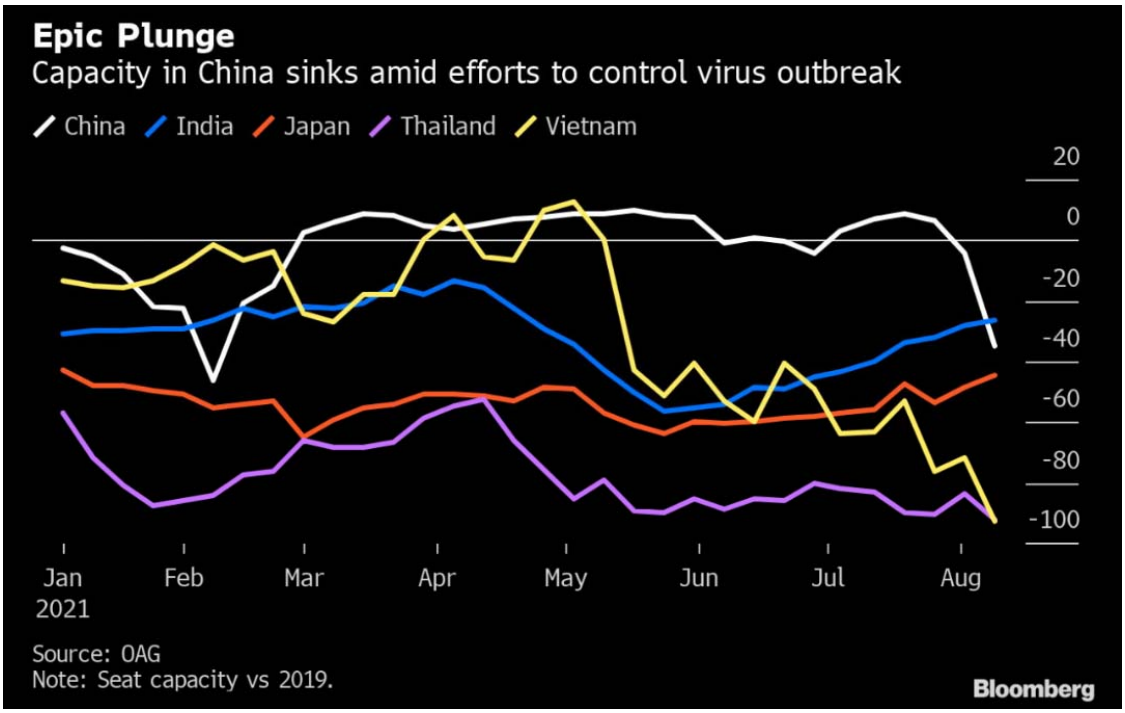
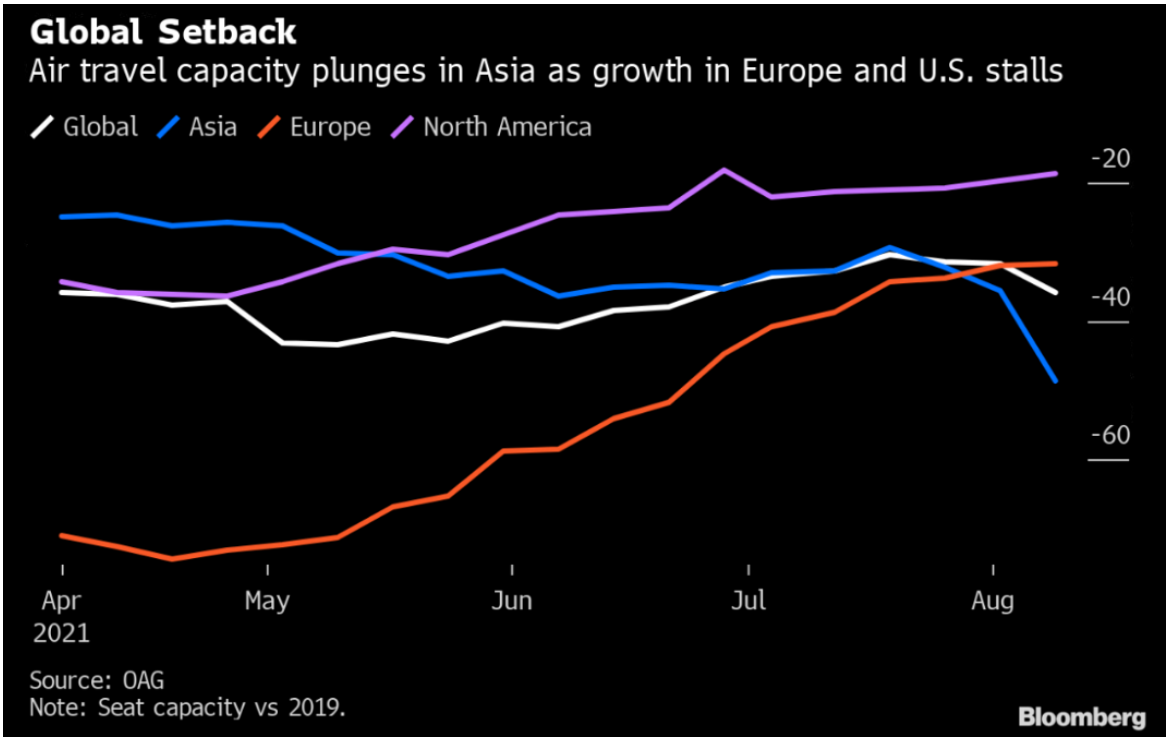
Chinese Air Travel Has Biggest Drop Since Start of Pandemic (2)
2021-08-09 15:23:04.451 GMT

By Siddharth Philip and Layan Odeh
(Bloomberg) -- The number of seats being offered by airline carriers in China dropped the most since early in the Covid-19 pandemic, as rising cases of the delta variant spurred fresh restrictions on movement.
Seat capacity plunged 32% in one week, hastening a decline in the country that began at the end of July, based on data from aviation specialist OAG. China's stumble sent global capacity on a weekly 6.5% slide, as travel comebacks also stagnated in Europe and North America.




The surge in Chinese cases has dealt a fresh blow to tourism on the mainland during the peak summer holiday. China, which at one point during the pandemic overtook the U.S. as the world's largest aviation market, is battling its broadest outbreak since the virus first emerged in the city of Wuhan in late 2019.
Read: Travel Rebound Hits an Air Pocket as Delta Variant Spreads
After starting in India, the delta variant spread to the U.K., interrupting its reopening plans, and is now putting recoveries in the U.S. and European Union at risk. Other Asian countries, such as Thailand and Vietnam, also continue to struggle with outbreaks.
Globally, airline capacity now stands at 64% of pre-pandemic levels, after a 4-point slide versus 2019 in a single week. The U.S. was little changed, as was Europe, following rapid gains in June and July.
"The data is beginning to point to a recovery being further

away than we had perhaps hoped a few weeks back," said John Grant, the chief analyst at OAG. "In the next few weeks, airlines will begin to look long and hard at their winter 2021/22 programs, and many of the data points would suggest that capacity will not be much better than last winter."




As in China, the U.S. recovery has mainly been driven by a surge in domestic travel.

Despite a partial reopening with Europe, the U.S. has plateaued for almost two months as airlines struggle to re-establish capacity following deep cuts earlier in the pandemic. Last week, budget airline Frontier Airlines Holdings Inc. raised fresh concerns when it attributed softness in its bookings to the delta variant.

"A proper recovery will only happen when restrictions are lifted and confidence is restored." said Anne Agnew Correa, the vice president of forecasting and modeling at MBA Aero in Arlington, Virginia. "Many airlines were able to benefit from confidence domestically this summer, but were still stifled by international restrictions."

Transatlantic travel could be further restricted. The European Union is weighing reintroducing travel restrictions for visitors from the U.S. next week as coronavirus case numbers rise again, Bloomberg News reported on Friday.

After rapidly scaling up through July, European capacity grew just 0.3% week on week. That may complicate efforts for carriers looking to raise funds. Virgin Atlantic Airways Ltd. is said to be considering a public offering in London as the company gears up its business for recovery from the pandemic, while Deutsche Lufthansa AG is looking to raise cash to repay its 9 billion-euro state bailout package.

"The reopening remainsmulti-speed, with intra-EU travel

recovering faster than international, and leisure travel before business travel," said Alex Irving, an analyst at Bernstein.
While major European airlines, should have enough liquidity for the recovery, a delay in the reopening of trans-Atlantic travel "would lead to a longer period of depressed earnings for the network airlines," he said.
Read: EU Expected to Discuss Reimposing Travel Curbs on U.S.

Zero Tolerance

China's latest resurgence, which began in the eastern city of Nanjing, has spread across more than half the country's provinces and spurred tighter curbs on movement. Capacity in the country is now at its lowest compared with 2019 since the week of Feb. 8, when China was battling an outbreak at the start of the Lunar New Year holiday.
Air travel came back quickly after that bout, and Chinese health officials expect the current outbreak to be brought under control in two to three weeks if containment measures are fully enacted.
While the majority of the country's vast population is vaccinated, a former health chief who is now a consultant to China Health Economics Association said in an opinion piece that the country will strictly control its borders to stop Covid-19 from gaining a foothold. The country will also continue to try to stamp out the virus rather than "learning to co-exist" with it.


Hong Kong-listed Beijing Capital International Airport Co. pared back its outlook last week, saying it expects its net loss to widen to as much as 860 million yuan ($133 million) in the six months though June due to the pandemic's impact on passenger throughput.

--With assistance from Will Davies.

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OIL DEMAND MONITOR: Global Air Traffic Dragged Down by China
2021-08-10 11:05:24 GMT

- **Worldwide commercial flights stall after three-month ascent**
- **Berlin city congestion is closest to 2019 levels within Europe**

By Stephen Voss

(Bloomberg) -- A plunge in Chinese airline activity sparked by the spread of the coronavirus delta variant is pulling down the global number of commercial flights, dealing a new blow to demand for jet fuel.

Seats being offered by airline carriers in China sank by 32% in the week ended Aug. 9, helping to reduce the global figure by 6.5%, according to capacity estimates from OAG Aviation. That's backed up by a recent decline in the number of worldwide commercial flights tracked by FlightRadar24 to about 90,000 a day, ending a steady climb since mid-May.

"This week sees 5.25 million fewer seats operated from Chinese airports than last week as China's provinces have asked residents not to travel domestically in response to the latest Covid-19 outbreak," OAG said in its latest report.

The downturn in China is significant as its market is the second biggest, after the U.S. Both countries have large domestic markets insulated from the restrictions on international travel that have hobbled flights to and from places such as the U.K. and Singapore during much of the pandemic.


Elsewhere, airline seat capacity has recovered well in the U.S. and Mexico, and more recently in India and parts of Europe, while falling in Australia, the OAG data shows.

The number of people passing through U.S. airport turnstiles on Sunday was only 6% lower than the equivalent day in 2019, down from a 17% deficit a month earlier, according to the Transportation Security Administration. The data shows the extent of the recovery in the world's largest air travel market.

Airline activity in Europe has lagged the recovery in the U.S. and China for many months. The continent's air traffic measured by intergovernmental agency Eurocontrol currently lags 2019 levels by about 30%. While Spain remains the biggest market in western Europe in terms of seat capacity, the OAG data shows Germany recently overtaking France for second place by a small margin.

**Car Traffic**

City traffic typically dies down in the month of August and that's certainly reflected in TomTom data for the biggest five capitals in Western Europe. Among 11 major world cities regularly tracked in this monitor, Madrid, Rome, Paris and Tokyo had the biggest reductions when compared against congestion times for a typical Monday morning in 2019, while Berlin was closest to the pre-pandemic year, registering a reduction of only 23%. A Japanese national holiday likely reduced road use in Tokyo on Monday.

Even so, data on nationwide vehicle movements from government agencies and companies show a continued recovery. Motorways in Brazil, Mexico and Chile in the week ended Aug. 1 were all busier than they were during the equivalent period of 2019 while Italy and France were just 0.9% and 3.3% below, respectively, according to operator Atlantia Group. The number of vehicle miles traveled on U.S. interstate highways during that same week was level-pegging with 2019, according to the Department of Transportation.

Gasoline demand measured by service station sales was about 6% lower than pre-pandemic levels in the U.K., while estimates from the Energy Information Administration recently put U.S. gasoline demand 1.3% above 2019 levels.

The Bloomberg weekly oil-demand monitor uses a range of high-frequency data series to help identify trends that may become clearer later in more comprehensive monthly figures.

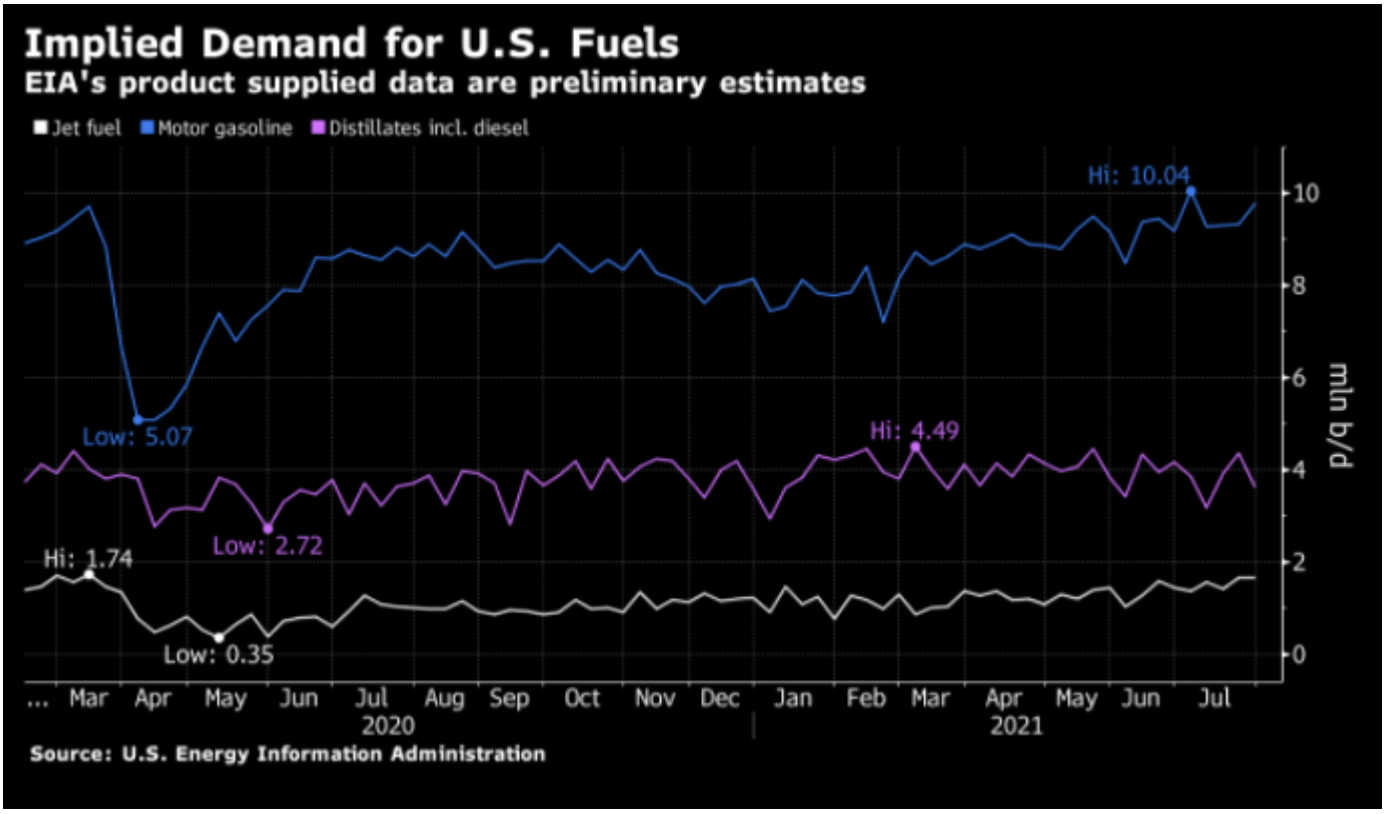
Following are the latest indicators, in the four tables below. The first two show fuel demand and mobility, the next shows air travel globally and the last is refinery activity:

| Measure | Location | % y/y | % vs 2019 | % m/m | Freq. | Latest as of Date | Latest Value | Source |
|---|---|---|---|---|---|---|---|---|
| Gasoline demand | U.S. | +13 | +1.3 | -2.7 | w | July 30 | 9.78m b/d | EIA |
| Distillates demand | U.S. | -2.2 | -6.9 | -5.8 | w | July 30 | 3.62m b/d | EIA |
| Jet fuel demand | U.S. | +63 | -9.3 | +20 | w | July 30 | 1.64m b/d | EIA |
| Total oil products demand | U.S. | +18 | -1.5 | -1.8 | w | July 30 | 21.2m b/d | EIA |
| All vehicles miles traveled | U.S. | | unch | | w | Aug. 1 | 17.0b miles | DoT |
| Passenger car VMT | U.S. | | -2 | | w | Aug. 1 | n/a | DoT |
| Truck VMT | U.S. | | +8 | | w | Aug. 1 | n/a | DoT |
| All motor vehicle use index | U.K. | +8.9 | -2 | unch | d | Aug. 2 | 98 | DfT |
| Car use | U.K. | +8 | -5 | +2.2 | d | Aug. 2 | 95 | DfT |
| Heavy goods vehicle use | U.K. | +7.2 | +4 | -3.7 | d | Aug. 2 | 104 | DfT |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Gasoline (petrol) avg sales per filling station | U.K. | +8.3 | -6 | -2.2 | m | Aug. 1 | 6,824 liters/d | BEIS |
| Diesel avg sales per station | U.K. | +4.4 | -8.3 | -2 | m | Aug. 1 | 9,560 liters/d | BEIS |
| Total road fuels sales per station | U.K. | +6 | -7.4 | -2.1 | m | Aug. 1 | 16,383 liters/d | BEIS |
| Gasoline | India | +17 | +3.6 | +12 | 2/m | July 2021 | 2.37m tons | Bberg |
| Diesel | India | +12 | -11 | +1.7 | 2/m | July 2021 | 5.45m tons | Bberg |
| LPG | India | +4 | +7.6 | +5.7 | 2/m | July 2021 | 2.37m tons | Bberg |
| Jet fuel | India | +30 | -53 | +25 | 2/m | July 2021 | 291k tons | Bberg |
| Total Products | India | +7.9 | -6.5 | +2.9 | m | July 2021 | 16.83m tons | PPAC |
| Passenger car traffic | Poland | +5 | +2 | +3.3 | w | Aug. 2-8 | 26,595 | GDDKiA |
| Heavy goods traffic | Poland | +7 | +7 | -6.6 | w | Aug. 2-8 | 4,376 | GDDKiA |
| Toll roads volume | Italy | +12 | -0.9 | | w | Aug. 1 | n/a | Atlantia |
| Toll roads volume | Spain | +18 | -7.3 | | w | Aug. 1 | n/a | Atlantia |
| Toll roads volume | France | -1.8 | -3.3 | | w | Aug. 1 | n/a | Atlantia |
| Toll roads volume | Brazil | +16 | +4.5 | | w | Aug. 1 | n/a | Atlantia |
| Toll roads volume | Chile | +112 | +16 | | w | Aug. 1 | n/a | Atlantia |
| Toll roads volume | Mexico | +26 | +0.8 | | w | Aug. 1 | n/a | Atlantia |
| All vehicles traffic | Italy | +7 | | +10 | m | July | n/a | Anas |
| Heavy vehicle traffic | Italy | +4 | | +2 | m | July | n/a | Anas |
| Gasoline | Portugal | +9.6 | -0.6 | +6.3 | m | June | 84k tons | ENSE |
| Diesel | Portugal | +2.2 | -4.9 | -1.3 | m | June | 375k tons | ENSE |
| Jet fuel | Portugal | +314 | -57 | +40 | m | June | 65k tons | ENSE |
| Gasoline | Spain | +13 | +3.1 | | m | July | 565k m3 | Exolum |
| Diesel | Spain | +7.5 | -4.8 | | m | July | 2341k m3 | Exolum |
| Jet fuel | Spain | +122 | -45 | | m | July | 422k m3 | Exolum |

The frequency column shows d for data updated daily, w for weekly, 2/m for twice a month and m for monthly.

* In DfT U.K. data, 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 U.K. 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.




City Congestion:

| Measure | Location | % chg vs 2019 | % chg m/m | Aug. 9 | Aug. 2 | Jul. 26 | Jul. 19 | Jul. 12 | Jul. 5 | Jun. 28 | Jun. 21 | Jun. 14 | Jun. 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (Aug. 9) | | Minutes of congestion at 8am local time | | | | | | | | | |
| Congestion | Tokyo | -81 | -76 | 7 | 28 | 28 | 29 | 31 | 36 | 27 | 28 | 30 | 27 |
| Congestion | Mumbai | -80 | +50 | 7 | 9 | 7 | 9 | 5 | 6 | 5 | 5 | 4 | 4 |
| Congestion | New York | -46 | -7 | 17 | 16 | 16 | 14 | 18 | 0 | 16 | 16 | 22 | 23 |
| Congestion | Los Angeles | -53 | -3 | 17 | 16 | 16 | 18 | 17 | 3 | 17 | 16 | 19 | 20 |
| Congestion | London | -51 | -3 | 19 | 15 | 19 | 25 | 19 | 34 | 38 | 37 | 39 | 40 |
| Congestion | Rome | -86 | -72 | 7 | 16 | 22 | 23 | 23 | 35 | 13 | 36 | 34 | 49 |
| Congestion | Madrid | -95 | -86 | 2 | 5 | 5 | 8 | 13 | 14 | 16 | 18 | 22 | 27 |
| Congestion | Paris | -84 | -76 | 7 | 17 | 16 | 22 | 29 | 39 | 37 | 44 | 42 | 42 |
| Congestion | Berlin | -23 | +65 | 26 | 16 | 14 | 13 | 16 | 16 | 19 | 28 | 28 | 28 |
| Congestion | Mexico City | -61 | -11 | 19 | 20 | 19 | 20 | 22 | 23 | 24 | 21 | 26 | 24 |
| Congestion | Sao Paulo | -42 | +14 | 25 | 21 | 22 | 22 | 22 | 20 | 23 | 26 | 23 | 26 |

Source: TomTom. Note: M/m comparison is Aug 9 vs July 12. Japan had a public holiday on Aug 9. TomTom has been unable to provide Chinese data since late April.

Air Travel:

| Measure | Location | % chg y/y | % chg vs 2019 | % chg m/m | Freq. | Latest as of Date | Latest Value | Source |
|---|---|---|---|---|---|---|---|---|
| Airline passenger throughput | U.S. | +161 | -6 | -1.4 | d | Aug. 8 | 2.17m people | TSA |
| Commercial flights | Worldwide | +35 | -27 | -0.9 | d | Aug. 9 | 90,332 | FlightRadar24 |
| Air traffic (flights) | Europe | | -30 | +7 | d | Aug. 9 | 24,382 | Eurocontrol |
| Seat capacity | Worldwide | +27 | -36 | | w | Aug. 9 | 75.97m | OAG |
| Seat cap. | China | -27 | -35 | | w | Aug. 9 | 11.22m | OAG |
| Seat cap. | U.S. | +64 | -15 | | w | Aug. 9 | 19.66m | OAG |
| Seat cap. | India | +105 | -27 | | w | Aug. 9 | 2.95m | OAG |
| Seat cap. | Japan | -14 | -44 | | w | Aug. 9 | 2.44m | OAG |
| Seat cap. | Australia | +57 | -73 | | w | Aug. 9 | 558k | OAG |
| Seat cap. | Brazil | +151 | -31 | | w | Aug. 9 | 1.75m | OAG |
| Seat cap. | France | +39 | -31 | | w | Aug. 9 | 1.72m | OAG |
| Seat cap. | Germany | +43 | -48 | | w | Aug. 9 | 1.72m | OAG |
| Seat cap. | Spain | +39 | -25 | | w | Aug. 9 | 2.72m | OAG |
| Seat cap. | Mexico | +100 | -8.3 | | w | Aug. 9 | 1.78m | OAG |
| Seat cap. | U.K. | +13 | -58 | | w | Aug. 9 | 1.65m | OAG |
| Seat cap. | S. Africa | +306 | -58 | | w | Aug. 9 | 246k | OAG |

Refineries:

| Measure | Location | y/y chg | vs 2019 chg | m/m chg | Latest as of Date | Latest Value | Source |
|---|---|---|---|---|---|---|---|
| Crude intake | U.S. | +8.8% | -10% | -1.2% | July 30 | 15.9m b/d | EIA |
| Utilization | U.S. | +12 ppt | -5.1 ppt | -0.9 ppt | July 30 | 91.3 % | EIA |
| Utilization | Gulf Coast U.S. | +11 ppt | -3.1 ppt | +2.3 ppt | July 30 | 93.6 % | EIA |
| Utilization | East Coast U.S. | +34 ppt | +12 ppt | -3.2 ppt | July 30 | 85.9 % | EIA |
| Utilization | Midwest U.S. | +3 ppt | -11 ppt | -9.4 ppt | July 30 | 89.4 % | EIA |
| Apparent Oil Demand | China | -1.7% | | +1.7% | June 2021 | 13.81m b/d | NBS |
| Indep. refs run rate | Shandong province, China | -7.3 ppt | +4.8 ppt | -5.6 ppt | Aug. 6 | 68.1 % | SCI99 |
| State refs run rate | East China | +4.6 ppt | +5.3 ppt | +3.4 ppt | July 30 | 82.2 % | SCI99 |
| State refs run rate | South China | -1.2 ppt | +5.2 ppt | +0.6 ppt | July 30 | 83.0 % | SCI99 |

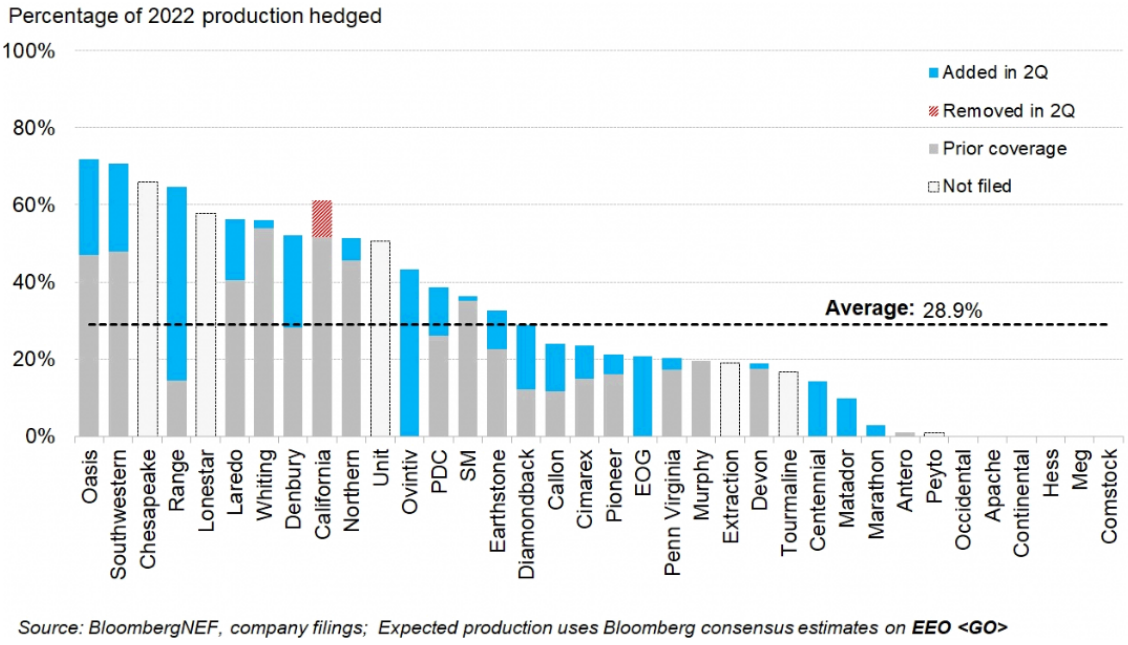
NOTE: All of the refinery data is weekly, except for SCI99 state refineries, which is twice per month, and the NBS apparent demand, which is usually monthly.

BNEF Theme: Oil and Gas Hedging in the Shale Era
2021-08-12 05:32:57.851 GMT

ByDanny Adkins
(BloombergNEF) -- To protect against price uncertainty, producers can hedge and lock in a future price. This shields them from volatility and low prices, but often requires producers to forgo additional revenue if prices rise. To better understand producer hedging strategies, BNEF offers a database that covers the oil, gas and natural gas liquids hedges of publicly traded North American oil firms jointly producing 6 million barrels a day. The database has reported data going back to 2Q 2017, and has been updated to include 2Q 2021 filings for 33 firms reported as of August 11, 2021, out of 42 expected.

BNEF View

The unprecedented volatility oil markets have faced since the onset of the pandemic has amplified the impact hedge books have on oil and gas producer bottom lines. Well-hedged producers were insulated from last year's oil price collapse, but with WTI now sitting near $70/bbl, the script has flipped. As of August 11, tracked firms are expected to lose $10.5 billion on oil hedges through 2022.

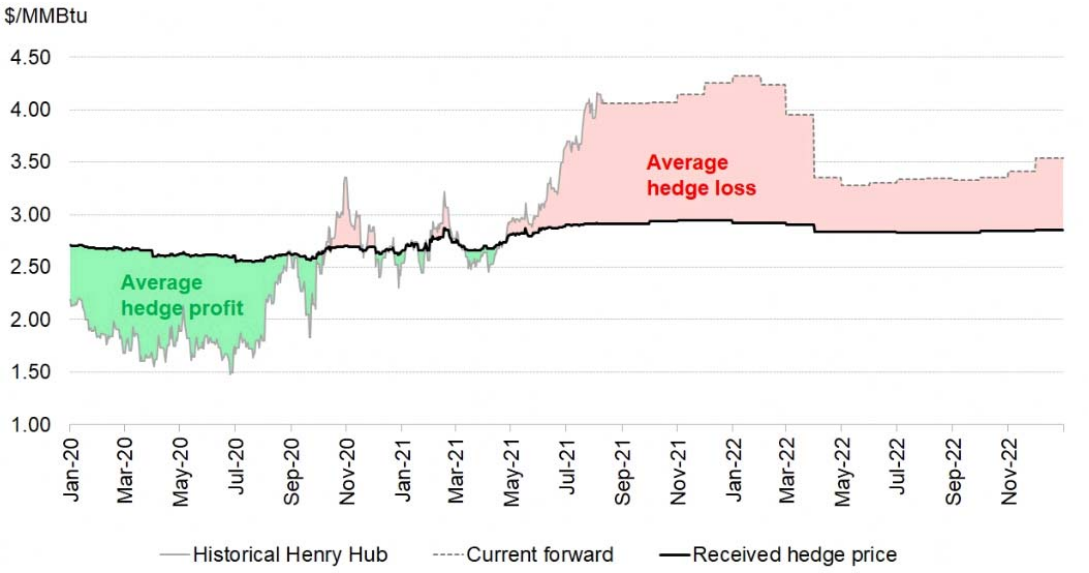



*Source: BloombergNEF, company filings; Expected production uses Bloomberg consensus estimates on* ***EEO <GO>***

Percentage of 2022 oil production hedged after 2Q 2021 filings

Second quarter filings thus far show many firms bolstering 2022 hedge books, but unwilling to expand 2021 coverage. The 33

firms that have reported 2Q positions nearly doubled year-ahead hedge volumes and are now hedged for 29% of 2022 output on average. The additions improved average 2022 hedge prices by $7.84/bbl, but still sit at a sub-par $53.06.




*Source: BloombergNEF Gas Hedging Anaylsis LiveSheet (2.2); Pricing as of August 11, 2021.*

Average hedge price differential to Henry Hub

Gas-centric producers also face extensive hedge losses. With Henry Hub surging beyond $4/MMBtu, more than $8.2 billion in hedge losses are expected through next year. Firms seem to have taken a similar approach on gas hedges, leaving 2021 hedges untouched while layering on 2022 coverage. The 33 reported firms added 4.8Bcf/d of 2022 gas hedges in 2Q and are now hedged for 33% of expected 2022 production at an average ceiling of $2.89/MMBtu.

Related Companies

Shale Producers::Cabot Corp , Southwestern Energy Co , Marathon Oil Corp , Range Resources Corp , EOG Resources Inc , SM Energy Co , Pioneer Natural Resources Co
See all BNEF Themes

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https://www.accuweather.com/en/weather-news/does-the-atmosphere-have-a-memory-when-it-comes-to-tropical-weather/997081?utm_campaign=breakingweather&utm_medium=social&utm_source=twitter

# Does the atmosphere have a 'memory' when it comes to tropical weather?

By Zachary Rosenthal, AccuWeather staff writer
Updated Aug. 10, 2021 3:06 PM MDT

Sometimes it seems that the weather likes to repeat itself. Much like how lightning can (and does) strike the same place twice, astute observers might notice that tropical systems often take similar paths as they travel across the Atlantic Ocean.

In some circles, the term "atmospheric memory" is used, a phrase that suggests that the atmosphere somehow remembers the path of a storm system and that other storms will follow it, as if some cosmic intelligence is involved. And after a cursory look at recent storm tracks, you might buy into the theory.

According to AccuWeather forecasters, the latest entrant to stir things up in the Atlantic basin this summer appears likely to follow an uncannily similar path to Elsa, which made landfall on northern Florida's gulf coast in early July.
During the 2020 Atlantic hurricane season, residents of Louisiana may have felt like the atmosphere had it out for them after four named storms made landfall there: Tropical Storm Cristobal, Hurricane Laura, Hurricane Delta and Hurricane Zeta. Another named storm, Hurricane Marco, stalled off the Louisiana coast, never quite making landfall before it dissipated.


A comparison of Elsa's Eye Path® (top) as it approached the Lesser Antilles and Potential Tropical Cyclone Six's Eye Path® (bottom).

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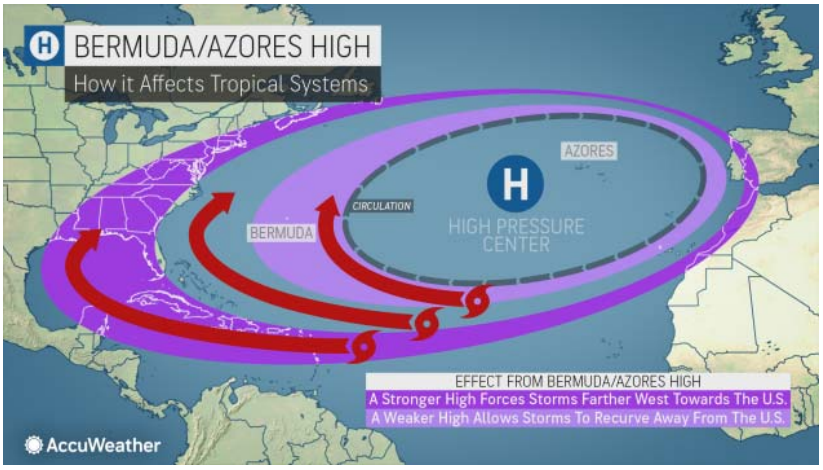
Hurricanes Laura and Delta, specifically, walloped the exact same part of the state as strong hurricanes. Laura was a powerful Category 4 storm when it made landfall in southwestern Louisiana on Aug. 27, while Delta was a strong Category 2 storm when it made landfall on Oct. 9.

So, all of that said, is there such a thing as atmospheric memory? According to AccuWeather's Lead Hurricane Forecaster Dan Kottlowski, the answer is a firm no.


Hurricane Laura and Hurricane Delta both made landfall south of Lake Charles, Louisiana.
AccuWeather

"All it refers to is that often the large-scale weather pattern often does not change much during the middle of the warm season," Kottlowksi explained. "This means the steering flow remains the same or nearly the same for several weeks."

When the steering flow does not change, storms will tend to follow the same general paths. When it comes to Elsa and Potential Tropical Cyclone 6, the Bermuda Azores high has barely moved, which is a critical steering force in the Atlantic basin.




"Any feature that happens to move within this flow pattern will track in a similar way as the previous developed storm system," Kottlowski said.

AccuWeather Senior Weather Editor and Meteorologist Jesse Ferrell added that the stability of these high-pressure regimes actually helps tropical forecasters figure out where storms will track.

"Estimating where the storm corridors will be, based on the long-range forecast position of high-pressure systems, is one of the tools we use to seasonally forecast hurricanes," Ferrell said.

AccuWeather forecasters take into account the position of high-pressure systems when they are determining the track that a storm will take, which is shown in AccuWeather's Forecast Eye Path®.
The Eye Path® shows a detailed visualization of where a tropical system is forecast to track, along with descriptive impacts for locations that are expected to be impacted. For the first time ever, users on the AccuWeather app on iOS and Android can access the new AccuWeather Hurricane Tracker, which includes Eye Path® technology.

estimated potential reserves and estimated resource potential, not necessarily calculated in accordance with the SEC's reserve reporting guidelines. We incorporate by reference the cautionary note to U.S. investors that appears at the bottom of our earnings of our earnings release issued yesterday.

Participating on the call this morning are Bill Thomas, Chairman and CEO; Billy Helms, Chief Operating Officer; Ezra Yacob, President; Ken Boedeker, EVP, Exploration and Production; Jeff Leitzell, EVP, Exploration and Production; Lance Terveen, Senior VP, Marketing; and David Streit, VP, Investor and Public Relations.

Here's Bill Thomas.

## **Bill Thomas** {BIO 17154618 <GO>}

Thanks, Tim, and good morning, everyone. EOG is focused on improving returns. Results from the first half of the year are already reflecting the power of EOG shift to our double-premium investment standard. Once again we posted outstanding results in the second quarter, we delivered adjusted earnings of a $1.73 per share, and nearly $1.1 billion of free cash flow repeating the record level of free cash flow we generated last quarter.

Our outstanding operational performance included another beat of the high end of our oil production guidance, while capital expenditures and total per unit operating costs were below expectations. We are delivering exceptional well productivity that continues to improve. In addition, even though the industry in an inflationary environment, EOG continues to demonstrate the company's unique ability to sustainably lower cost. Our performance clearly proves the power of doubling our reinvestment hurdle rate, double premium requires investments to earn a minimum of 60% direct after-tax rate of return using flat commodity prices of $40 oil and $250 natural gas.

I'm confident our reinvestment hurdle is one of the most stringent in the industry and a powerful catalyst to drive future out performance across key financial metrics, including return on capital employed and free cash flow.

As double premium improves our potential to generate free cash flow, we remain committed to using that cash to maximize shareholder value. The regular dividend, debt reduction, special dividends, opportunistic buybacks and small high-return bolt-on acquisitions are our priorities. In the first half of this year, we reduced our long-term debt by $750 million, and then demonstrated our priority to returning cash, significant cash to shareholders with a commitment of $1.5 billion in regular and special dividends.

We also closed some several low-cost high potential bolt-on acquisitions in the Delaware Basin over the last 12 months. Year-to-date, we have committed $2.3 billion to debt reduction in dividends which is slightly more than a $2.1 billion of free cash flow we generated. Looking ahead to the second half of the year and beyond, our free cash flow priorities and framework have not changed. As we generate additional free cash, we remain committed to returning cash to shareholders in a meaningful way. We are focused on doing the right thing at the right time in order to maximize shareholder returns.

Over the last four years, we've made huge progress reducing our GHG and methane intensity rates, nearly eliminating routine flaring and increasing the use of recycled water in our operations. We're focused on continued progress towards reducing our GHG emissions in line with our targets and ambitions. This quarter, we announced a carbon capture and storage pilot project, which we believe will be our next step forward in the process of reaching our net-zero ambition. Ken will provide more color on this and other emission reduction projects in a few moments. Driven by EOG's innovative culture, our goal is to be one of the lowest cost, highest return and lowest emission producers, playing a significant role in the long-term future of energy.

Now, here's Ezra to talk more about how our returns continue to improve.

## **Ezra Yacob** {BIO 20046413 <GO>}

Thanks, Bill. Well, we announced our shift to the double premium investment standard at the start of this year, the shift has been underway since 2016 when we first established our premium investment standard, a 30% minimum direct after-tax rate of return, using a conservative price tag of $40 oil and $2.50 natural gas for the life of the well. In the three years that followed, our premium drilling program drove 45% increase in earnings per share, a 40% increase in ROCE, in an oil price environment, nearly 40% lower compared to the three-year period prior to premium. This comparative financial performance can be reviewed on Slide 15 of our investor presentation.

In addition, premium enabled this remarkable step change in our financial performance while reinvesting just 78% of our discretionary cash flow on average, resulting in $4.6 billion of cumulative free cash flow. The impact from doubling our investment hurdle rate from 30% to 60% using the same conservative premium price tag is now positioning EOG for a similar step change to our well productivity and costs, boosting returns, capital efficiency and cash flow. Double premium wells offer shallower production declines and significantly lower finding and development costs resulting in well payouts of approximately six months at current strip prices.

The increase in capital efficiency resulting from reinvesting in these high-return projects is increasing our potential to generate significant free cash flow. This year, we are averaging less than $7 per barrel of oil equivalent finding cost, adding these lower cost reserves is continuing to drive down the cost basis of the company and when combined with the EOGs operating cost reductions, is driving higher full cycle returns. Looking back over the last four quarters, EOG has earned a 12% return on capital employed with oil averaging $52. We are well on our way to earning double digit ROCE at less than $50 oil and it begins with disciplined reinvestment in high-return double premium drilling.

While EOG is 11,500 premium locations, approximately 5,700 are double premium wells located across each of our core assets. We are confident, we can continue to grow our double premium inventory through organic exploration, improving well cost and well productivity and small bolt-on acquisitions, just like we did with the premium over the last five years.

In the past 12 months through eight deals, we have added over 25,000 acres in the Delaware Basin through opportunistic bolt-on acquisitions and an approximate cost of $2,500 per acre. These are low-cost opportunities within our core asset positions, which in some cases receive immediate benefit from our existing infrastructure. Premium and now double premium established a new higher threshold for adding inventory. Exploration and bolt-on acquisitions are focused on improving the quality of the inventory by targeting returns in excess of the 60% after-tax rate of return hurdle.

EOG's record for adding high-quality low cost inventory predominantly through organic exploration, is why we do not need to pursue expensive large M&A deals. 2021 is turning into an outstanding year for EOG. Our exceptional well level returns are translating into double-digit corporate returns, and our employees continue to continue to position EOG for long-term shareholder value creation.

Here's Billy with an update on our operational performance.

## **Billy Helms** {BIO 18366099 <GO>}

Thanks, Ezra. Our operating teams continue to deliver strong results. Once again, we exceeded our oil production target, producing more than the high end of our guidance driven by strong well results. In addition, capital came in below the low end of our guidance as a result of sustainable well cost reductions. We have already exceeded our targeted 5% well cost reduction in the first half of 2021. We now expect that our average well cost will be more than 7% lower than last year. As a reminder, this is in addition to the 15% well cost savings achieved in 2020.

We continue to see operational improvements outpaced the inflationary pressure in the service sector. Average drilling days are down are down 11%, and the feet of lateral completed in a single day increased more than 15%. We are utilizing our recently discussed super zipper completions on about a third of our well packages this year and expect that percentage to increase next year. In addition, our sand cost are flat to slightly down year-to-date. We have line of sight to reduce the cost of sand sourcing and processing, and expect to start realizing savings in the second half of 2021 and into 2022.

Water reuse is another source of significant savings and we continue to expand reuse infrastructure throughout our development areas.

Finally, we have renegotiated several of the expiring higher price contracts for drilling rigs, and expect to see additional savings through remainder of this year and next. We also use the strength of our balance sheet to take advantage of opportunities to reduce future cost in several areas. As an example, last summer, we pre-purchased the tubulars needed for our 2021 drilling program, when prices were at their lowest point. EOG is not immune to the inflationary pressures we're seeing across our industry, but this forward-looking approach helps EOG mitigate anticipated cost increases.

As a reminder, 65% of our well cost are locked in for the year and the remaining cost we are actively working down through operational efficiencies. As usual, we have begun to

secure services and products ahead of next year's activity with the goal of keeping well cost at least flat in 2022. But as you can rest assured that with our talented and focused operational teams our ultimate goal is to always push well cost down each year. The same amount of effort is being placed on reducing our per unit operating cost, with the results showing up and reduced LOE driven mainly by lower work over expense, reduced water handling expense and lower maintenance expenses.

Savings are also being realized from our new technology being developed internally to optimize our artificial lift. We have several new tools that help us reduce the amount of gas lift volumes required to produce wells without reducing the overall production rate. These optimizing tools not only reduce costs but also help reduce the amount of compression horsepower needed, which ultimately reduces our greenhouse gas footprint as well. These and other continual improvements are a great testament to our please, but not satisfied culture.

This quarter, we can also update you on our final ESG performance results from last year. We reduced our greenhouse gas intensity rate 8% in 2020, driven by sustainable reductions to our flaring intensity. Operational performance in the first half of this year indicates promise for future, further improvements to our emissions performance in 2021, putting us comfortably ahead of pace to meet our 2025 intensity targets for GHG and methane and our goal to eliminate routine flaring. Achieving these targets is the first step on the path towards our ambition of net-zero emissions by 2040.

Water infrastructure investments also continue to payoff, nearly all water used in our Powder River Basin operations last year with sourced from reuse. For company-wide operations in the U.S., water supplied by reused sources last year increased to 46%, reducing freshwater to less than one-fifth of the total water used. These achievements and other along with the inside into ongoing efforts to improve future performance will be detailed in our sustainability report to be published in October. We are starting to fill in the pieces on the road map to get to net-zero by 2040.

Here's Ken with the details.

**Ken Boedeker** {BIO 19947444 <GO>}

Thanks, Billy. Earlier this year, we announced our net-zero ambition for our Scope 1 and Scope 2 GHG emissions by 2040. Our ambition is aggressive but achievable, and we expect will be an iterative process requiring trial and error. This approach mirrors how we develop an oil and gas asset. We pilot creative applications of existing and new technologies to determine the most effective solutions to optimize efficiencies by minimizing costs and maximizing recoveries of oil and natural gas. Here, we are aiming to maximize emissions reductions, we then apply the successful technologies and solutions across our operations where feasible.

Our net-zero strategy generally falls into three categories, reduce, capture or offset. That is we are focused on directly reducing emissions from our operations, capturing emissions from sources that can be concentrated for storage and offsetting any remaining

emissions, reducing emissions intensity from our operations as a direct and immediate path to reducing our carbon footprint. Our approach is to invest with three terms in mind and seek achievable and scalable results.

We made excellent progress for last four years through initiatives to upgrade equipment in the field, invest in pilots using existing and new technologies, and leverage our extensive big data platform to automate and redesign processes to improve emissions efficiencies. As a result, since 2017, we have reduced our GHG intensity rate 20%, our methane emissions percentage by 80% and our flaring intensity rate by more than 50%. We recently obtain permits to expand the successful pilot of our closed loop gas capture project, which prevents flaring in the event of a downstream interruption.

We designed an automated system that redirects natural gas back into our infrastructure system and injects the gas temporarily that can to existing wells. The project requires a modest investment to capture a resource that would have otherwise been flared, and stores it for further or for future production and beneficial use. The result is a double premium return investment, that reduces flaring emissions. Our wellhead gas capture rate was 99.6% in 2020, and rollout of additional closed-loop gas capture systems will help capture more of the remaining 0.4%.

Turning to our efforts to capture CO2, we are launching a project that will capture carbon emissions from our operations for long-term storage. This project is designed to capture and store a concentrated source of EOG's direct CO2 emissions. We believe we can design solutions to generate returns from carbon capture and storage by leveraging our competitive advantages in geology, well facility design and field operations. Our CCS efforts are directed at emissions from our operations, and we are not currently looking to expand those efforts into another line of business. We will provide updates in our pilot CCS project as it progresses.

EOG is also exploring other innovative solutions for GHG emissions reductions. Over the past 18 months, we have deployed capital into several fuel substitution projects to power compressors used for natural gas pipeline operations and natural gas artificial lift. Compressors are the largest source of EOG stationary combustion emissions. By replacing NGL rich field gas with lean residue gas, EOG can reduce the carbon intensity of the fuel which lower CO2 emissions and improves engine efficiency. Using lean residue gas also earns a very favorable financial return by recovering the full value of the natural gas liquids versus using those components as fuel.

Another fuel substitution test we conducted recently was blending hydrogen with natural gas. While it is still in the early stages, we are analyzing the test data to evaluate the emissions reductions that would be possible from this blended fuel at an operational and economic scale.

We're very excited about this part of the of the business just like cost reductions, well improvements our expiration success, this is a bottom-up driven initiative. EOG employees thrive on this type of challenge. We create innovative solutions and apply technology to solve problems, improve processes and optimize efficiencies while

The next question is from Neal Dingmann with Truist Securities. Please go ahead.

## Q - Neal Dingmann {BIO 6416564 <GO>}

Good morning, guys. Nice quarter. My first question is really just around when you talk about shareholder return, obviously, that seems to be the hot topic these days. Billy, I'm glad you don't do this, but my thoughts about, if you guys would ever -- there's been others out there that have sort of guaranteed a type of return or amount or something like that, you guys seem to want to stay more flexible. But I'm just -- would just love to hear more color on, again, obviously, you guys have a monster amount of free cash flow coming in, that's not the issue. I'm just wondering how you think about if you put any sort of guarantees on the type of amount going forward?

## A - Bill Thomas {BIO 17154618 <GO>}

Yeah. Neal, we've outlined a very clear framework and we've consistently delivered on our priorities. And so, maybe the best way to think about the future is to look what we've done in the past and -- I want to ask to Ezra, to give more color on that.

## A - Ezra Yacob {BIO 20046413 <GO>}

Yes. Neil. In our investor presentation there on Slide 5 and 6, I think, we can reference that. This year, we've been very successful executing on all of our cash flow priorities in the framework that we've kind of laid out. We've been able to increase the regular dividend by 10%, which we feel is our primary mode of capital return.

Secondly, we're able to reduce our debt earlier this year by $750 million by retiring bond. And then third, we just paid $600 million special dividend on July 30 of this year, which we had announced during the last earnings call. So our year-to-date free cash flow commitment is $2.3 billion, which is slightly more than the $2.1 billion we generated. And going forward, our framework and priorities have not changed.

Lastly, we also highlighted in the opening remarks as we just spoke about a little bit with Leo, some of the small, small bolt-on acquisitions we've done, which is one of the avenues to growing our inventory. And that's really where the entire process begins, its having the depth and quality of inventory to continually improve the business. And with our shift to drilling these double premium wells, the free cash flow potential the company continues to expand, and as it does and as we realize the cash, we're well positioned to continue executing on our priorities. We're committed to creating the most shareholder value, and our cash return strategy is really a reflection of that. So as the company continues to improve, we're excited about that potential.

## Q - Neal Dingmann {BIO 6416564 <GO>}

Agree guys, really like the cash return strategy. And then just one thought, exploration opportunity that's really, you guys continue to stick out there, you obviously continue to be the leaders, you mentioned a number of things that have you excited. Could you just remind us again, I think, the last was it -- I forget, Bill, was it maybe 13 or 15 was it unique projects here in the U.S.? I'm just wondering kind of again could you tell us, maybe you've

been thinking earlier and focus on returns, and we're like super excited about that. The capital discipline, spending well below cash flow and generating high returns and giving significant amount of cash back to shareholders, I think is certainly all very positive. So, I think really we're entering a super new era and I think it's a more positive than it's ever been before. I think we as an industry are going to generate better returns and going to give more back to the shareholders. And I think we're in a more positive macro environment than we've been in since really the shale business started. I think OPEC-plus is solid, I think the U.S. will remain disciplined. And so, I think, the industry is in for a long run of really good results.

### Q - Doug Leggate {BIO 1842815 <GO>}

We've enjoyed bucking heads with you over the years, Bill, so congratulations again, good luck. Ezra, just my follow-up is maybe for you. EOG has obviously been an organic story for many, many years, and you've touched on exploration again today. But Yates was one of the, I guess, the step out acquisitions that you did. And if we look at your portfolio position today, there's clearly a large asset potentially for sale right in your backyard in a very high quality acreage position, you could argue. Why would M&A may not be a feature of the business at some point? And maybe I'd go so far as to say, would you rule yourself out of being interested in that shale package? And I'll leave it there. Thank you.

### A - Ezra Yacob {BIO 20046413 <GO>}

Yes. Doug. No, we're not evaluating any large acquisition packages at this time, we're focused on the small, high-return bolt-on acquisitions. And as discussed in the opening remarks, the larger expensive M&A deals, the opportunity to struggle to compete with the existing return profile that we have within the company due to either high PDP cost, the high acreage cost or both. Often times the acreage being marketed might be additive to the quantity of our inventory, but not additive to the quality. And as we've discussed, Roy's working to improve the quality of our assets. We're having a great success with these small bolt-on acquisitions, we're feeling very confident with our ability to increase the quality of our deep inventory through our organic exploration program. And so we're excited about our prospects there.

### Q - Doug Leggate {BIO 1842815 <GO>}

Very clear. Thanks, Ezra.

### Operator

The next question comes Paul Cheng with Scotiabank. Please go ahead.

### Q - Paul Cheng {BIO 17337436 <GO>}

Thank you. Good morning, gentlemen. Two questions, please. The first one maybe that, Bill, you can help us on that to bring it to understand the decision on EBIT better. If we look at the last quarter, when you announced the special dividend, I think you set a number of peak condition, and that all being met, such as you generate substantial free cash flow, you don't have much of the debt and maturity in the near term, and your cash is already in excess of what you think is a reasonable level, which has been true. And if we

look in this quarter, basically all those conditions are still being met, but you decide not to give another special dividend.

So we're just trying to understand that, what is the additional consideration in that decision? And also, if you can talk about between buyback and special dividend at this point of the cycle, which is more preferable for you or there how you look at the differences? So that's the first question.

The second question is, we need to -- I think that you guys can use one of the question is that in many of the basins you are not interested in large-scale M&A which is understandable. But does it makes sense, however, that to work with some of your peers to pull together the asset to form a really large joint venture. So everyone still have their own equity ownership, you don't play any premium, but you will be able to allow to use your technical know how to apply to even a larger scale asset and drive even better efficiency gain. Do you think that it makes sense for EOG for that kind of a structure? Thank you.

## A - Ezra Yacob {BIO 20046413 <GO>}

Yes, Paul. So, on the first question, I think, it's super important and I think we've already shared this, we've got a very clear framework and we've consistently delivered, as you pointed out, on that framework, and significantly given in that framework -- significantly given a lot of money back to shareholders. And going forward, our framework and priorities have changed at all. So, as we generate additional free cash flow, we're committed to returning cash to shareholders in a very meaningful way.

It's really all about doing the right thing at the right time. As the company continues to improve, we're excited about our potential to increase total shareholder return. And in the framework, we do have the option for opportunistic buybacks as long as -- along with special dividends. And so, we look at opportunistic buybacks as being able to have the opportunity to consider buying back shares and counter-cyclical environments where the market is not well, and our stock price is significantly undervalued, well that would be an opportunity to consider buybacks. In good times we take the special dividend as the way to go and that's what we're executing on now. And that's what we're hopeful to continue to execute in the future.

On the second part of your question, on the large scale M&A. I'm a going to ask Billy to kind of think through that question and give his feelings on that.

## A - Billy Helms {BIO 18366099 <GO>}

Yeah. Thanks Bill. On the large-scale MMA, as Ezra just talked about a minute ago, certainly we're not interested in adding quantity to our inventory, but it is more about the quality of the assets we have. And as we think about forming may be a potential larger JV, that same approach needs to apply as we look across the fence if our assets are in, what we consider the core acreage position in to play, adding in outside of that ring fence would dilute our efforts. We've also taken, as you know, taken a lot of effort to build out the infrastructure, to make -- to lower our unit cost and continue to improve our returns.

### A - Bill Thomas {BIO 17154618 <GO>}

Yes, Arun. This is Bill. We've got an enormously positive responses from every shareholder on the special dividend. That was a super hit and they like our framework. When you really think through, it's not really a complicated framework, it's a framework where we want to be in a position to maximize total shareholder returns. And as we said, I've said, be able to do the right thing at the right time.

If you look at the history of what we've been doing, really over the last several years we've increased regular dividend by a 146%. Now, we're working on special dividends. So, as we go forward, it is certainly our goal to continue to return meaningful cash back to the shareholders through the process. So, really it's a pretty straightforward process if you kind of think through it, in the framework is pretty simple. And it's just a matter of giving us the ability the ability to have the options to do the right thing to maximize total shareholder return.

### Q - Arun Jayaram {BIO 5817622 <GO>}

Great. Thanks a lot.

### Operator

The next question is from Michael Scialla, with Stifel. Please go ahead.

### Q - Michael Scialla {BIO 22184273 <GO>}

Hi, good morning, everybody. And Bill, I'd like to offer my congratulations on a great career as well. I know it's too early to give details on 2022, but want to see if you could speak to at least at a high level given your outlook for flat to lower well cost next year. If you still see barrels held off the market by OPEC-plus, would you just look to hold production flattish and could you do that with kind of equal to lower capital than you spent this year?

### A - Bill Thomas {BIO 17154618 <GO>}

Yes Mike. Well, thank you very much, again, we appreciate your comments. It's a team effort at EOG. I tell you what, we've got a lot of great employees and a super management team. So, it's a team effort and it's been an honor to be able to work with all the -- everybody. About 2022, you know, it's really too early to talk about growth. We need to watch the pace of demand and recovery and the spare capacity draw down. So, we don't want to really speculate on anything specific for 2022. But I'm going to, to ask Ezra to make some additional color on that.

### A - Ezra Yacob {BIO 20046413 <GO>}

Yes. Michael. As Bill said, it's pretty early on 2022, it's really -- it's still pretty early to discuss any type of growth. EOG is -- we're committed, we're not going to grow until the market clearly needs the barrels. And we've outlined what we're looking for, we're committed to staying disciplined. And currently we want to see demand return to pre-

**Q - Robert Brackett** {BIO 6074963 <GO>}

Good morning. To put you on the spot a little bit, you highlighted the various well cost categories. Tubular sticks out is being both significant and also exposed to inflation. You tackled the problem last year with pre-purchasing, can you throw out some ideas that the organization has come up with to sort of attack that cost category?

**A - Bill Thomas** {BIO 17154618 <GO>}

Billy, you want to comment on that?

**A - Billy Helms** {BIO 18366099 <GO>}

Yes. Good morning, Bob. Obviously, yes, steel costs are going up, which is affecting tubular cost. This last year, we were very fortunate to take advantage of pre-purchasing the tubulars we needed for this year's program and benefited greatly from that. As costs go up in the future, we use the same approach and try to take an opportunistic look at when to secure tubulars for the next coming drilling program. And so we'll continue to look at that.

Undoubtedly, it's likely that cost for tubulars will be higher next year than they are this year, which is why in that slide number 10 we tried to give you some color on other ways we're trying to keep our well cost flat to down going in next year. And those come from the efficiencies we're seeing across the operation, from drilling time to the implementation of our Super Zipper technology on the completion side, to newer contracts at a lower rate for some of the services we have. So, it's a mixture of things we use to offset those inflationary pressures we see in the different parts of our business.

**Q - Robert Brackett** {BIO 6074963 <GO>}

Okay. That's clear. And just as a quick follow-up, could you contrast Super Zippers the way you think about them versus say a traditional zipper frac that we might think of or even a dual frac?

**A - Billy Helms** {BIO 18366099 <GO>}

Sure. So, our super zipper technique is very similar to what industry calls simo-frac. The differences would be in how we actually implemented on a well to well basis. We keep very close control over the injection rates and pressures of individual wells within the super zipper operation. So it's a very scripted and very detailed procedure, that allows us to control the rates and pressures just like we were doing a conventional frac with any other fleet.

But the advantages of course is, has been able to double the amount of stages you get in a particular day by attacking the locations two at a time, and we really are advancing that technology quite a bit. Last year, we probably did less than 10% of our wells across the company and benefited from super zipper this year, it's probably directionally closer to a third of the world's, and we expect that percentage to increase going in next year. So, we think it's going to give us a tremendous cost advantage next year as we go into the program.

filings. And with that, I'll turn the call over to Lee, who will provide his opening remarks. We'll also hear from Dane and Mike today before we get to our question-and-answer session. Lee?

## Lee M. Tillman {BIO 18078379 <GO>}

Thank you, Guy, and good morning to everyone listening to our call today. I want to begin by once again thanking our employees and contractors for their continued dedication and hard work and putting together another quarter of outstanding execution. It is their hard work that makes all of the accomplishments that we will discuss today possible.

The combination of our high-quality multi-basin portfolio, our differentiated execution, and our commitment to capital discipline are driving truly exceptional results for our company. During second quarter we generated $420 million of free cash flow, bringing free cash flow generation through the first half of the year to over $860 million.

For our $1 billion full year 2021 capital budget assuming $65 WTI and $3 Henry Hub, we now expect to generate $1.9 billion of free cash flow this year. This corresponds to a free cash flow yield North of 20% at a reinvestment rate of just 35% and a corporate free cash flow breakeven well below $35 per barrel WTI. A powerful combination of results that we believe differentiates us against any company in our sector as well as the broader market.

We are successfully delivering on all of our financial, operational, and ESG related objectives. We remain fully committed to capital discipline and our $1 billion capital program. As I've said many times, our budget is our budget, and we won't raise our spending levels with stronger commodity prices but will simply generate more free cash flow. Supported by such strong performance, we have just raised our quarterly base dividend by 25%. This is the second quarter in a row that we have increased our base dividend.

We are also accelerating our balance sheet objectives, pulling forward achievement of our gross debt target which will drive a shift in our return of capital focus toward equity holders. Further, we are enhancing our return of capital framework, now targeting at least 40% of our annual cash flow from operations to equity holders and a $60 per barrel WTI or higher price environment while still retiring future debt at maturity. This is one of the most significant return of capital commitments to shareholders in our sector. Perhaps, most importantly, everything that we are doing is sustainable. The proof point for this sustainability is our five-year benchmark maintenance scenario.

We previously highlighted that this scenario can deliver around $5 billion of free cash flow from 2021 to 2025 and a flat $50 WTI price environment with corporate free cash flow breakeven below $35 per barrel throughout the period. Updating our scenario for a flat $60 per barrel WTI price deck highlights the power of our balanced but oil weighted portfolio and the significant leverage we have to even modest commodity price support.

At $60 flat WTI and an average reinvestment rate of 40%, we can deliver around $8 billion of cumulative free cash flow through 2025 or more than 90% of our company's current

market capitalization. Integrating our updated capital allocation framework with this maintenance capital scenario provides clear visibility to a leading return of capital profile, over $1 billion of capital return to equity holders per year and a $60 per barrel environment. And this consistent financial delivery is underpinned by well over a decade of high-return inventory across four of the most competitive U.S. resource plays, complemented by our free cash flow generative EG integrated gas business.

Finally, the ongoing pursuit of ESG excellence remains foundational to our strategy. Safety remains our top priority. Our first half 2021 safety performance, as measured by total recordable incident rate stands at 0.29 and follows on from two consecutive years of record-setting company's safety performance. We have taken a leadership role in governance, particularly when it comes to reshaping executive compensation.

We have reduced compensation for executives and the board while also optimizing our framework for better alignment with shareholders, and the financial metrics that matter. This includes the elimination of oil production and growth targets as well as the introduction of a cumulative free cash flow target and our long-term incentive program. And last but not least, we remain hard at work to reduce our GHG emissions. We continue to make progress towards achieving our GHG intensity reduction target of 30% in 2021, a metric hardwired into our compensation scorecard as well as our goal for a 50% reduction by 2025, both of these relative to our 2019 baseline.

With that brief overview, I would like to turn it over to Mike Henderson, our Executive Vice President of Operations, who will provide an update on our 2021 performance.

## **Mike Henderson** {BIO 20493678 <GO>}

Thanks Lee. Second quarter operational results were outstanding demonstrating that we remain firmly on track to achieve or outperform all of the key 2021 financial and operational objectives that we established at the beginning of the year.

First and foremost, our consistent operational execution is translating to strong financial outcomes. $1.9 billion of free cash flow generation assuming $65 WTI and $3 Henry Hub. A reinvestment rate of approximately 35% and a corporate free cash flow breakeven well below $35 per barrel WTI. Operationally, we remain disciplined and focused on delivering on all of our commitments.

As we mentioned, there is no change to our $1 billion full year 2021 capital budget. Raising our spending levels is simply not a consideration. We are however raising our full year U.S. oil equivalent production guidance by 5,000 barrels per day or approximately 2%. Our full year oil production guidance remains unchanged. While full year guidance for CapEx and for oil production remains unchanged, I would like to I would like to address the production profile for the second half of the year.

We now expect third quarter oil production to be relatively flat with the second quarter oil production of 170,000 barrels per day before an increase during fourth quarter towards the high end of our annual guidance range. The flat trend in third quarter is largely the

result of deferred Bakken production. As a result, we are taking advantage of our multi-basin model and moving up a few Oklahoma and Permian Wells in our schedule. This action is returns and free cash flow accretive, especially in the current price environment, will be accomplished within our $1 billion capital budget and contributes to the 5000 barrel a day increase to our annual oil equivalent production guidance.

Our second half capital spending will be heavily weighted to third quarter. A schedule shift -- this quarter, our peak quarter for completion activity including a Rex multi-well pod and the Texas Delaware oil plane. More specifically, we expect third quarter CapEx to accounting for approximately 65% of our second half spending or around $340 million. Relative to peers our 2021 capital program remains well positioned to continue delivering industry leading results.

As the top left graphic on slide nine shows, for every dollar of capital we're spending this year, we are delivering more cash flow than any other company in our peer group, a testament to our peer leading capital and operating efficiency. We are also delivering top-tier free cash flow as highlighted by a free cash flow yield of more than 20%. Our 2021 CapEx per barrel of production on either an oil or oil equivalent basis remains among the lowest in the sector, another indication of our capital efficiency advantage.

Finally, the strength of our results is driving rapid improvement to our investment grade balance sheet, which is already one of the strongest in our peer space. I will now turn it over to our Executive VP and CFO, Dane Whitehead, who will talk more about our balance sheet as well as our enhanced return of capital framework.



## Dane E. Whitehead {BIO 16648014 <GO>}

Thank you, Mike, and good morning, everybody. My key message today is that we're clearly delivering on our top financial priorities. We're generating significant free cash flow, bulletproofing our already investment grade balance sheet, and returning significant capital to our shareholders.

Starting with our balance sheet. Strong operational and financial performance were enabling us to accelerate all the objectives we previously highlighted. This includes our $4 billion gross debt target, which will now be at you achieved in early September, when we close the full $900 million makeover redemption of the 2025 maturity.

With this balance sheet improvement, we're shifting our return on capital focused toward equity holders. To be clear, we've already made strong progress this year in returning capital to shareholders while simultaneously reducing our gross debt. It really has not been an either oil proposition. We've increased our base dividend in each of the past two quarters or by 67% over this period.

The annualized cash interest expense saving from this year's $1.4 billion gross debt reduction will largely fund our last two base dividend increases, allowing us to keep our low corporate free cash flow breakeven on a post dividend basis effectively unchanged at $35 a barrel. Importantly, we're now at a key inflection point where we can accelerate the

return of additional capital to equity holders above and beyond our sustainable and competitive base dividend.

Our commitment is underscored by our enhanced return of capital framework, which now features a target to return at least 40% of our cash flow from operations to equity holders, assuming a $60 per barrel WTI or higher price environment, while also retiring future debt as it matures.

To put this commitment into perspective, at a $60 price and with a maintenance level capital program, this equates to a return of over $1 billion to equity holders per year and equity return equivalent of more than 11% of our current market cap.

So it's premature to discuss the 2022 capital program. At consensus operating cash flow for Marathon in '22, our target return of capital to equity holders would be over $1.2 billion. This equates to a 13% return of capital yield leading return of capital profile among EMPs and indeed across the energy sector at large. I'd like to emphasize that 40% of cash flow from operations is a minimum equity return target, and so there's upside potential.

At $60/bbl on a maintenance scenario, we'd still be building cash on our balance sheet, given our low projected reinvestment rate. And importantly, we don't necessarily have to wait until 2022 to get started. With the progress we made in our balance sheet and assuming continued strong free cash flow generation, it's reasonable to expect that we can begin making incremental returns of capital to our equity holders during the second half of this year in 2021.

While we want to be clear and transparent regarding our commitment to deliver a peer leading percentage of cash flow from operations back to shareholders, we will retain flexibility regarding the exact mechanism. Market dynamics change over time and this flexibility will ensure that we're returning capital in the most efficient and most valuable way possible for our shareholders. The specific return of cash mechanism is something we'll continue to discuss with our board and with our shareholders. While both buybacks and variable dividends are on the table, we certainly believe that with the free cash flow yield north of 20% and equity valuations disconnected from commodity prices, buybacks look like a very accretive option with the potential to significantly improve our per share metrics. As a reminder, we have $1.3 billion of share repurchase authorization currently outstanding.

I'll now turn it back to Lee, who will provide his closing remarks.

**Lee M. Tillman** {BIO 18078379 <GO>}

Thank you, Dane. To close, I would like to briefly reiterate a few of the key takeaways from our second quarter and year-to-date results. It should be clear that we have successfully positioned our company to deliver strong financial performance not only relative to our EMP peers but relatives to the broader S&P 500 as well. And we can now deliver the strong performance at a wide range of commodity prices.

We are price takers not price predictors and must be prepared to not only survive, but to thrive in a volatile commodity environment. We are proving this year we can deliver outsize financial performance versus the broader market when we experience commodity price support, highlighted by an expected $1.9 billion of free cash flow generation this year.

Yet perhaps more importantly, we are positioned to deliver a competitive free cash flow yield with the S&P 500 at much lower prices than we see today, all the way down to $40 per barrel WTI oil price. Such is the power of our sustainable cost structure reductions, our capital and operating efficiency improvements, which combine to generate our sub $35 per barrel break even.

To use Dane's term, we have further bulletproofed our investment grade balance sheet, accelerating both our gross debt and net debt leverage objectives. And with this balance sheet improvement, we are now at an inflection point for capital return to equity holders supported by an enhanced framework that provides clear visibility to a peer leading return of capital profile, and all of this is sustainable highlighted by $8 billion of free cash flow through 2025 and our $60 per barrel maintenance scenario with the majority of that free cash flow going back to our equity investors, consistent with our capital allocation priorities.

To close, our company was among the first to recognize the need to move to a business model that prioritizes returns, sustainable free cash flow, balance sheet improvement, and return of capital. We have also led the way in better aligning executive compensation to this new model and with investor expectations. We are positioned to deliver both financial outcomes and ESG excellence that are competitive not just with our direct EMP peers but also the broader market.

With that, we can open up the line for Q&A.

## Questions And Answers

### Operator

(Question And Answer)

Thank you. We will now begin our question-and-answer session. (Operator Instructions) I see we have our first question from Scott Hanold from RBC Capital Markets. Please go ahead.

### Q - Scott Hanold {BIO 6237956 <GO>}

Thanks. Good morning, all. I think the updated shareholder return plan is pretty interesting and exciting frankly if I'm an investor. And Dane, I think you'd made mention of look it's something you all don't have to necessarily wait on until 2022. Can you -- can you give us a sense of like how you think about timing is this -- more likely like, look once you guys get that debt reduction done in September, that's when you'd look at it and just kind

of curious on the go forward plan. Is this something you, evaluate once a quarter is done what the prices were, what the cash flow is to make that determinations. Is there any kind of structure of just getting a sense of, how we're connecting that, ultimately that return with the commodity price environment?

## A - Dane E. Whitehead {BIO 16648014 <GO>}

Yeah, thanks Scott. So the short answer to the question. I said in my opening comments, is we feel like we can begin this enhanced return to equity holders in 2021. But, let me give you a little more context in that, so you understand kind of where I'm looking at is to when we start doing that and then I'll get on to your question about how do we execute it. So financial priorities are clear. We haven't changed those. Generate corporate returns with significant sustainable, free, cash flow, bulletproof already investment-grade balance sheet and return a significant amount of capital to shareholders, well, ahead of schedule, on our balance sheet plan, and assuming continued, commodity price support and associated free cash flow

We think we can start to make incremental returns above our base dividend to equity holders in the second half of this year. On the base dividend to touch on that for a second, we've increased that twice now, this year. The cumulative impact of that is a 67% increase year-to-date. At the same time, we've accelerated gross debt reduction by $1.4 billion and there's a synergy there, the annualized interest savings from the gross debt reduction will essentially pay for the dividend increases.

So our post-dividend and enterprise break-even, it's really holding flat at $35 a barrel as a result of that synergy. So getting the returns to equity holders and improving the balance sheet, I'd say walking a chewing gum mission accomplished, but more to come. So, strong operational and financial performance year-to-date in commodity prices allowed us to really accelerate the balance sheet to get, to what I laid out in our last quarterly call as my bogey, which is $4 billion gross debt target.

We gave notice to the trustee on those 2025 bonds the $900 million maturity yesterday that we intend to exercise to make whole on the entire amount. It will close on September 3rd. And so after we do that make whole redemption on September 3rd, I would say, it'll take a bit of time to rebuild cash to a level where we can manage in for months sort of working capital swings without having to lean too heavily on our credit facility.

But given the commodity price support, we're getting right now. That should happen pretty quickly. And so, with our balance sheet of goals, goals achieved and continued supportive commodity prices we're right there at the inflection point, where we can start moving ahead. And like I said, once we get reasonable cash level, I think of like $400 million it is probably a reasonable amount and then we can move forward.

In terms of how do we execute on this thing, and we've done share repurchases, historically and have really approached it on sort of a ratable basis, thinking about it. Maybe a quarter at a time set aside an amount of cash flow that generally that we've already generated, that we want to use to purchase -- repurchase shares over that period was 60 or 90 days. And then just execute it ratably sort of dollar cost averaging into it.

And you can do that seamlessly, it allows you to manage your repurchase, share repurchase limits, more easily, daily limits more easily when you do it that way, as opposed to try and outsmart the market. Then and buy in bulk on big chunks -- in big chunks.

**Q - Scott Hanold** {BIO 6237956 <GO>}

Okay. And just, I mean, part of that was -- is like that you had different payout thresholds, but depending on the commodity price, looking at -- I was just kind like how do you determine like this is a, we're now looking at a 40% payoff versus a 30% payoff, because obviously commodity prices right now, really point to more of a 40%, but obviously things can fluctuate.

So is it on, the quarter that was just accrued or the year that was accrued or just the dynamics at work that are kind of currently in the market and I think you all have a high-class problem. And, sort of my second question is that, when you look over each year, you've got a billion dollars of cash that could come back to equity holders. Your buybacks $1.3 billion, your dividend -- base dividend is 150. So, like, you've got to do a lot more in terms of like, giving money back to shareholders. And so obviously there's a lot of different mechanisms you can look at but like how do you think about what the best way to incrementally give back. And I know it's probably a little premature for that, but if you can give us some structurally on how you think about that high class problem of like, giving money back.

**A - Dane E. Whitehead** {BIO 16648014 <GO>}

Yeah. So I think, Scott was your second question is it share repurchases or variable dividends?

**Q - Scott Hanold** {BIO 6237956 <GO>}

Yeah, I'm sorry. Just to be clear, it's -- you've got like, if you look over a three to five-year period, your multiples in excess of what your buyback is right now and your base dividend. So there's a lot of room to do a lot more, right? And so like as an investor and analyst, how should we think about like how you guys are thinking about the incremental ways of giving money back?

**A - Dane E. Whitehead** {BIO 16648014 <GO>}

Yeah, okay. Well let me talk about that first and then we can come back to, are we targeting 40% or 30% based on fluctuations in commodity price? So, buybacks versus variable dividends, obviously something we have discussed frequently with our board. We engage with shareholders about that on a regular basis. The bottom line is, our clear commitment is to be delivering, peer leading returns back to shareholders regardless of the vehicle. Both options are on the table and there are pros and cons to each.

And here's how we think about them in the case of buybacks with energy, equity valuations. So disconnected from commodity prices and our free cash flow yield at north of 20% buyback. Certainly look like a very accretive option for shareholders in the current

environment. In fact is it executed consistently over time, they have the potential to significantly reduce share count and meaningfully improve all our per-share metrics.

And in we're kind of in a new paradigm which I think makes share repurchases feel a little different maybe than they have historically. In the new AMP model, where capital discipline through commodity cycles provides a platform for ratable repurchases over time, whereas previously, in a price improving price environment, the call for growth would have sent the capital to drill better or to acquisitions as opposed to that shareholders.

The other point is our corporate break-even has been driven, so low that we could continue to generate free cash flow and execute buybacks at much lower prices and be more counter cyclical than we were in the past. And of course, buybacks are more tax efficient from an investment -- investors perspective compared to dividends. We do I noted in my comments have a $1.3 billion share repurchase authorization outstanding currently, so that's readily available to us.

In the case of variable dividends they are interesting, they make conceptual sense in a cyclical industry kind of new unproven concepts in the -- I guess you'd say across the U.S. and certainly within our sector. The jury is out, and in our minds on whether the stock price will adjust reflect a higher implied yield in a variable dividend structure, but we do have a couple of pure examples to watch, and we are watching that to see how that works.

So, we have flexibility to employ either or both models over time. And I would say, there certainly is the potential for that to change depending on market conditions and what looks like big the -- best value for our investors. I think, the share repurchase in the near-term seems like a clear winner from a value perspective. And then, we also have the flexibility within the base dividends Scott to increase that. That's, our target there is to have sort of a 10% of operating cash flow in a pro-forma $45 to $50 oil price environment in our base dividends and today, we're probably more like 7% to 8%. So we have some upside on that as well. And we'll continue to -- we'll continue to think about that.

Is it a $60 world and we're returning 40% or is it a $50 world and returning 30% question? Obviously we're going to have to take a view. We will have the quarters behind us when we generated cash flow in a certain commodity price environment and they'll have a view forward, will have a forward curve in also our outlook. And I think all of that will inform the levels, at which we're planning to distribute cash flow. And within one quarter, we decide we're going to dial it back a tad. We can always catch that up later. This year we've been well above our target distribution levels combination of debt reduction and base dividend. And I did want to emphasize that point in my opening comments, what we're talking about here are minimum targets, not maximums.

**Q - Scott Hanold** {BIO 6237956 <GO>}

That's all great. Appreciate the color. Thank you.

### A - Dane E. Whitehead {BIO 16648014 <GO>}

You bet

### A - Lee M. Tillman {BIO 18078379 <GO>}

And Scott maybe if I could just add a couple just really quick comments here? Obviously, if we have that excess free cash flow, we can re-up, obviously our share repurchase authorization with approval from our board and we've obviously done that in the past. Additionally as Dane mentioned, there still is that headroom that resides within our base dividend and, in the 40% versus 30% question, that's something that's going to be naturally governed by the free cash flow generation in a given month or a given quarter.

And we're going to drive that free cash flow back to our shareholders. And that the 30%, 40% is kind of a natural outcome from that. And as Dane stated, that's a minimum objective and if you look at, the combination of our gross debt reduction of $1.4 billion, and $100 million or so, and base dividend this year, we're obviously well beyond that 40%. So anyway, it's a framework, It's one that we're committed to. I think what we're trying to -- I think, give investors is a strong commitment on the quantum.

We're going to get back to our equity holders, a good transparency on timing around that, while also preserving flexibility to get that back in the most efficient manner possible, which as Dane said today, when we look at, the facts in the market, certainly, that would appear to be a leaning toward share repurchase.

### Q - Scott Hanold {BIO 6237956 <GO>}

Thanks again.

### Operator

We have our next question from Neal Dingmann with Truist Securities.

### Q - Neal Dingmann {BIO 6416564 <GO>}

Good morning all. Great results of the last question, by the way. Dane my question is really just on the reinvestment rate, could you talk a little bit about that it continues this to impress, and I'm trying to think, when you go forward for next year, is this sort of an outcome of just, based on the plan or is this reinvestment rate kind of something that you are focused on, I'm just wondering how you're thinking about that?

### A - Lee M. Tillman {BIO 18078379 <GO>}

Yes. Hi, this is Lee, Neal. Certainly the reinvestment rate is something that we as an input into our planning process and really does reflect not only our commitment to capital discipline and driving corporate returns but ensuring that we do in fact have that incremental cash flow available for distribution to our shareholders. So that really is a key input.

## Q - Doug Leggate {BIO 1842815 <GO>}

Thanks. Good morning, everyone. I appreciate you getting me on. Lee you've given plenty of detail on the cash return idea. But if you don't mind, I'm going to be on this just a little bit more and it really gets to the issue of the current fashion of variable dividends because that's -- that's still I guess part of your consideration. I just wonder if you could kind of frame for us, how you think about, how that creates sustainable value in terms of what the market might be prepared to price in as repeatable, because obviously it's highly subjective versus the obvious disconnect between where your stock is trading and the cash flow you're generating right now. So clearly it's a buy back question, but I'm just wondering if you could be more definitive about why one and not the other? This seems pretty obvious.

## A - Lee M. Tillman {BIO 18078379 <GO>}

Yes. Well. Yes, thanks for the question Doug. You know it's a -- it's a dialogue that we continue to have, but certainly when we looked at the facts as presented today when we look at a stock that's generating a greater than 20% free cash flow yield, when we look at the fundamental disconnect between the equity and the commodities. When we examine, I think a more capital disciplined business model, coupled with extremely low break-evens, which kind of takes some of the pro-cyclicality risk out of share repurchases.

Certainly that would look like the case to beat right now. Variable dividend as Dane stated is something that's relatively new. Conceptually yeah, it make sense for a cyclical industry. But as we focus on financial metrics particularly per-share metrics, there is a natural synergy there, obviously by going after share repurchase, particularly when those shares are fundamentally undervalued, whether that be on an internal NAV basis, or just on macro indicators from the market side.

And so, that's what we're really focused on, in a more maintenance type world. How do we continue to improve our free cash flow yield and our per cash -- our per share cash flow. And we think the strongest mechanism for doing that is something that the market can bake in is a very ratable and consistent approach to thoughtful share repurchases.

## Q - Doug Leggate {BIO 1842815 <GO>}

I appreciate, I know it's been beaten pretty hard on this call, Lee so I appreciate the answer. If I could offer just a very quick perspective that I think is about the debate that is going on right now. If your equity value is -- your unlevered free cash flow minus your net debt seems to me that when you take cash off the balance sheet on a backward looking basis actually reduces your equity value. Just something to think about.

My follow-up is hopefully a quick one. Dane the balance sheet is obviously moving into terrific shape. How does that change your thinking about the need for a policy or philosophy around hedging going forward? I'll leave it there thanks.

## A - Dane E. Whitehead {BIO 16648014 <GO>}

Yeah, it's a great question. It definitely factors into our thinking on hedging. Really hedging is one element of overall enterprise risk management and the less stress your

balance sheet can get in a lower commodity price environment. It kind of takes the real strong impetus out of being heavily hedged. It is still a tool in the toolkit for us, we've been fairly circumspect about entering into new hedges in 2022.

Just kind of dipped our toe into the water, there given the shape of the curve, which we just haven't wanted to go in whole hog. And I think that's been, it has borne out to be a good judgment so far. But expect us to be hedgers, but not heavy hedgers going forward and we'll be very methodical about it.

### A - Lee M. Tillman {BIO 18078379 <GO>}

Yes. I would just maybe add to that, Doug that there are some structural things that allow us to approach our hedge book a little bit differently and ensure that we can take advantage of upside performance, in the commodity, I mean, Dane mentioned, obviously our balance sheet, our cost structure, the fact that we do have a peer leading, free cash flow breakeven, but I'd also mention our diversified portfolio, not just the -- the multi-basin nature of it, but the fact that it's a, it's an oil weighted, but very balanced portfolio.

It's pretty much 50% oil, 50% gas, and NGLs, and so that gives us a very good balance from a market facing standpoint, and all those things combined give us a little bit different approach to commodity risk management, that does allow us to take a bit more risk on the commodity given our torque to oil.

### Q - Doug Leggate {BIO 1842815 <GO>}

Appreciate the answers, fellas. Thank you.

### A - Lee M. Tillman {BIO 18078379 <GO>}

Thanks, Doug.

### A - Dane E. Whitehead {BIO 16648014 <GO>}

Thanks, Doug.

### Operator

And thank you. We have a next question from David Heikkinen with Pickering Energy.

### Q - David Heikkinen {BIO 4266495 <GO>}

Still getting used to that. Thanks guys for taking the question. As I was thinking through this interplay between your buybacks and your dividends. Let's say you buy back 10% of your stock, and trying to balance the 10% of cash flow into dividends. Should we think about as shares go down, your base dividend basically goes up to keep the total dollars in that kind of 8% to 10 % of operating cash flows. So you really are kind of getting a double benefit if you balance that through each year, as you go forward.

### A - Dane E. Whitehead {BIO 16648014 <GO>}

Good morning, gentlemen. Two questions please. First on the Texas Delaware Resource Play, how many well are you going to bring one stream in the second half? And also that given the much stronger balance sheet, what is the spending for the exploration program on that the RXD going to be over the next couple years?

The second question, yes. You guys are one of the best operators in Bakken and Eagle Ford, and but there's a limit of running room or maybe that you think that that's still sufficient. Do you think that it makes sense for the industry including you guys to join forces with other people, some large-scale joint venture to put all the efforts together in those basins so that the best operator, like you guys get back in the Eagle Ford, I would be wondering that that would drive significant cost efficiency will that be the future for the Shell 4.0 for the industry. Thank you.

**A - Lee M. Tillman** {BIO 18078379 <GO>}

Yeah, Paul I just want to make sure that we, get all your questions, and I'll kind of parse them out, maybe around the table. But I think your first question was just around kind of the wells to sales profile as we go into the second half of this year and I'll let -- and I'll let Mike address that.

I think your second question was more around just our balance sheet giving us the ability to look at also more organic enhancement, resource capture opportunities and how is that kind of folded into the business. And then finally are there kind of consolidation options within the Bakken and the Eagle Ford and does that make sense from an efficiency standpoint?

**Q - Paul Cheng** {BIO 17337436 <GO>}

Sorry. Lee, on the last question it is not so much about M&A, but just like, just like joint venture that losing -- you just pull the asset together. Because I mean yeah, a lot of people don't want to lose their ownership of the asset but does it make sense to put the asset together as a partner that each one still owns the assets just that you're the best operator to one each of the basin and with a much better asset pay.

**A - Lee M. Tillman** {BIO 18078379 <GO>}

Okay, got it. Well let's start with maybe the wells to sales question.

**A - Mike Henderson** {BIO 20493678 <GO>}

Hey Paul. It's Mike here. I think you may be had a Texas Delaware question and there isn't on the wells sales. So I'll answer that one and then I'll give you a little bit of color on the general wells to sales cadence in the second half of the year. So we've got three Texas Delaware Wells that we're going to be bringing to sales in the second half of this year.

More broadly, speaking prior full-year guidance as you'd probably recall, we were giving 165 to 215 was the range of wells to sales that we were looking at. So midpoint of 190, we do expect that now to be a little bit closer to the 200 range. We're expecting 50 wells to sales in both the Eagle Ford and Bakken over the second half of the year. As I alluded to

in my prepared remarks, that is going to be weighted to the third quarter for both assets and with Bakken probably weighted a little bit more to the third quarter.

And then with the production deferment that we're seeing in Bakken that is creating an opportunity in Oklahoma and northern Delaware. So we're bringing a few wells online there as well in the second half of the year. Hopefully, that answers the question.



**Q - Paul Cheng** {BIO 17337436 <GO>}

Thank you.

**A - Lee M. Tillman** {BIO 18078379 <GO>}

Thanks. Mike. On the -- on the kind of the balance sheet and resource capture spin, I guess the way that I would think about that is that we continue to reinvest back in the business. And even within for instance, our $1 billion capital program this year embedded in that of course is the Texas Delaware oil play activity that Mike just highlighted, but also within basin, we continue to do, to chase opportunities that we refer to as organic enhancement opportunities, that have the ability to either add incremental sticks and or enhance the economics of existing inventory that we have in play.

And generally speaking, we try to allocate something on the order of about 10% of our capital program, towards those type of resource, capture inventory, life, type activities. And that's also even embedded in our kind of five-year maintenance type scenario that same type of approach. And again as you say the balance sheet gives us the platform to take some of that incremental risk on some of those resource capture opportunities.



On the last one just around, the JV structure, JVs have typically particularly large scale JVs certainly in U.S. onshore we have -- don't have a lot of really strong positive benchmarks there. They tend to really escalate the complexity. We tend to look at JVs or drill codes as there may be a smaller scope opportunity to look at acreage. That likely is much longer dated for us. And that we likely won't get to from a value perspective in the near-term.

Large-scale, I think, we want to make sure that we're doing just what you asked, which is we want to protect the operational excellence that we generate in places, like the Bakken and the Eagle Ford and certainly would not want to see that diluted somehow in a JV structure where some of that control maybe rest away from us. So, not saying that all JVs are bad. It's just that we just can't point to a lot of large scale, JVs in the onshore U.S. that have made a lot of sense for both partners. So anyway, something that obviously we'll always consider all options anything that allows us to continue to leverage, our operational expertise, we certainly want to consider that. But today, I would say that's pretty So, that's pretty far down our list.

**Q - Paul Cheng** {BIO 17337436 <GO>}

Thank you.

**Operator**

results to differ. For further discussion of risk factors, see Murphy's 2020 Annual Report on Form 10-K on file with the SEC. Murphy takes no duty to publicly update or revise any forward-looking statements. I would now like to turn the call over to Roger Jenkins.

## **Roger Jenkins** {BIO 7268013 <GO>}

Thank you, Kelly. Good morning everyone and thank you for listening to our call today. On slide 2, as we kick off our quarterly call and investor meeting, so we would like to remind our investors of our story. We're pleased to do so briefly again this morning as each tenant of this slide remains in effect this quarter and in the future. Our ongoing execution in our three producing areas continues to show outstanding results, proper guessing our offshore long term projects and expansion of the Tupper Montney. Our competitive advantage of executing in offshore again is illustrated by the outstanding progress on our Khaleesi/Mormont, Samurai and King's Quay projects. We also maintain strong cash flow that easily covers our planned spending for 2021 and support shareholders through our longstanding dividend. Further, we were able to increase our cash position in this quarter and nearly $190 million, which allows us to accelerate our delevering plans. Our ongoing meaningful level, board and management ownership highlights our personal interests in the company's long-term success.

Slide 3. Our three priorities are simply to delever, execute and explore and I'm pleased with the progress we've made on all fronts in the second quarter and this yea. After our initial delevering event, we repaid our revolver in full in quarter one. We stated our goal of reducing long-term debt by $200 million by year-end 2021. We've recently announced the redemption of $150 million of 6.875% senior notes due in 2024 and now today we're able to increase our delevering goal to $300 million assuming a $65 oil price for the remainder of 2021. The additional cash flows accomplished not only through stronger oil prices but also ongoing operational excellence as we've achieved less operated downtime offshore, while experiencing the benefits of our optimization efforts and upgrades completed over the previous 18-months. Along with continuing to bring on our onshore wells online below budget and ahead of schedule. As a result of this work, production from every single asset was above the midpoint of guidance this quarter with all onshore operations exceeding the high end of the guidance range. Additionally, we produced 100,000 barrels of oil per day in the second quarter topping our guide by 5%. Offshore Gulf of Mexico projects remain on budget and on schedule. We also remain focused on advancing our exploration program. We participated in the drilling in Brunei in the second quarter with the Jagus SubThrust-1X exploration well owing to spurning with non-operated Silverback well in the Gulf of Mexico. In the 4th quarter we will participate in the drilling of the cut throat exploration well in Brazil.

On our sustainability report on slide 4, our report has been published on our website and includes expanded disclosures to share our sustainability efforts and further align us with multiple international standards such as the UN Sustainable Development Goals and 5 reporting principles outlined in sustainability reporting guidance for our industry. We've now established a goal of zero routine flaring by 2030 and obtain third party assurance of our 2020 Scope 1 and 2 greenhouse gas emissions. Additionally we have revived and strengthened our Climate Change Position, instituted human rights policy, advanced our diversity equity inclusion efforts. Statistical highlights include receiving a 47% reduction in Scope 1 and 2 greenhouse gas emissions since 2016 and a 10% decrease in greenhouse

gas emissions from 2019 to 2020. Our current top quartile low carbon emission intensity for oil weighted peers, we are continuing the internal work, reduce our environmental footprint and advance the energy transition while protecting and supporting our people and the communities in which we work.

On slide 5, our second quarter production volumes of 171,000 barrels oil equivalent per day were 4% above our guidance midpoint for the quarter. Accrued CapEx for the quarter was $198 million, revenue of near 700 million, which is the highest in the year, was achieved through strong realized pricing of $65.3 per barrel of oil.

I'd now like to turn the call over to our CFO, David Looney to give his financial update.Thank you.

## **David Looney** {BIO 1989288 <GO>}

Thank you, Roger, and good morning everyone. I'll start with Slide 6. In the second quarter, we reported a net loss of $63 million or $0.41 per diluted share. After adjusting for certain after-tax items such as $103 million non-cash mark-to-market loss on crude oil derivatives and a $49 million non-cash mark-to-market loss on contingent consideration, we reported adjusted net income of $91 million or $0.59 per diluted share. Cash from operations for the quarter totaled $449 million including the non-controlling interest. After accounting for net property additions of $203 million we achieved positive adjusted cash flow of $246 million. On the hedging front, Murphy continues to protect its future cash flow in the Tupper Montney with additional fixed-price forward sales contracts for a portion of production through 2024.

Slide 7. Our 2021 CapEx plan is heavily weighted towards the first half of the year with 198 million total accrued CapEx in the second quarter, but slightly above our previous guide. This was due to timing adjustments of non-operated activity and has no impact on our annual CapEx. Overall, our ongoing disciplined spending has led us to tighten our CapEx guidance for the year now ranging from $685 million to $715 million, with $700 million maintained as the midpoint. As we established on our last earnings call, CapEx will step down for the remainder of the year with the shift in Eagle Ford Shale spending our 4th quarter CapEx is forecast lower than previously. Approximately 63% has already been spent in the Eagle Ford Shale as of June 30th, and 66% has been spent in the Gulf of Mexico, while 76% of onshore Canada CapEx has been spent by that date. We continue to proactively manage our supply chain exposure, particularly with our long lead items. Since 60% of our 2021 capital plan is complete and key contracts are in place for the remaining plan, we have minimal near term supply chain risk to our capital spending. Our third quarter production guidance range of 162,000 to 170,000 barrels of oil equivalent per day includes 4100 barrels of oil equivalent per day of assumed Gulf of Mexico storm downtime.

Additionally, we are adjusting our full-year production guidance range to 157.5 thousand barrels of oil equivalent per day to 165.5 thousand barrels of oil equivalent per day, which includes 4th quarter impacts of 1300 barrels of oil equivalent per day for assumed Gulf of Mexico storm downtime and 7900 barrels of oil equivalent per day for net planned offshore downtime. With that I will turn it back over to Roger.

**Roger Jenkins** {BIO 7268013 <GO>}

Thank you David. Slide 9 in the second quarter, we brought online 3 operated and 29 gross non-operated wells in the Eagle Ford Shale, ten wells were brought online in the Tupper Montney, that wraps up our activity in offshore Canada for the year. Our US onshore drilling program is nearly complete with just four operated Eagle Ford wells planned to come online in the 4th quarter.

Slide 10, our Eagle Ford Shale wells produced 42,000 barrels equivalent per day in the second quarter and process 75% oil and 88% liquids. For the remainder of the year, we plan to drill and complete 4 wells in the 4th quarter just mentioned in our Catarina Acreage, all within our planned annual CapEx of $170 million. The team continues to execute and generate efficiencies as evidenced by our 25% improvement in our rate of penetration, completion cost per lateral foot since 2019. Overall, we've achieved a 40% reduction in completion costs in 4 years through strict focus on non-productive time and making operational improvements. Our average per well drilling and completion cost has improved to $4.7 million from $6.3 million in 2018. As a result we are now achieving well payouts of approximately 9 months on our 2021 program at oil prices averaging nearly $62 per barrel in the first half of this year.

On slide 11, as Austin Chalk, one of our 4 Eagle Ford wells we plan to drill and bring online in the 4th quarter is target for the Austin Chalk formation. Overall, our recent Karnes Austin Chalk wells have nicely outperformed our average type curve. Additionally, other public operators near our Catarina Acreage in the Western portion of our Eagle Ford Shale. Acreage have reported strong Austin Chalk results from their recent wells. We're excited to drill this well and highlight potential derisk another 100 plus Austin Chalk locations in our portfolio in that area.

On slide 12 on the Tupper Montney, we produced 248 MMCFD per day in the second quarter. Ten wells were brought online which completes all well activity for the year. Costs continue to decrease here as well. We've seen a 24% reduction in drilling and completion costs since 2017 while achieving a total well cost of just $4.4 million in 2021 compared to $5.5 million in 2019. In particular, our completion cost per lateral foot have improved 25% since 2019 through lower non-productive time, optimized wireline operations, enhanced water handling and natural gas-powered frac pumps. Further, our average pumping hours per day has increased more than 50% since 2017 from almost 12 hours to 18 hours per day. The ability to lower our cost per well by nearly $1 million was significant value to our Tupper Montney project and represents the tremendous work of our drilling and completions team in that area.

As to our Gulf of Mexico projects, done extremely well. On slide 14 Murphy continues to progress as scheduled. Major Gulf of Mexico projects Samurai number 3 wells drilled in the quarter, and we're now drilling the Khaleesi 3 well. Our next well Samurai 4, which is planned for later in the 3rd quarter before we begin completions work on all seven wells to make Khaleesi/Mormont Samurai development. Team has been able to maintain the schedule and capital plan to this project and we still anticipate flowing first oil in the King's Quay in the first half next year. Completions work on the final producing well of our

non-operated St Malo waterflood project is set to wrap up within the week and thereby completing rig activity in this project for the remainder of the year.

We're pleased that a project of this size has remained on schedule and highlights the completing the rig work for the remainder of 21 provides further certainty on our capital spending. At the King's Quay the second quarter saw completion of the construction of the King's Quay floating production system. The FPS is now sailed away from Korea and had headed to the Texas Coast where final work will be accomplished at the shore based prior to its placement in the Gulf in early 2022. This team has done incredible job in this project not only remaining on schedule, but also keeping everyone safe and healthy through the pandemic. We're excited to see this come to fruition. This is yet another example of our industry leading offshore execution ability.

In Brunei on slide 17 in the quarter, we participate in the drilling the discovery well in Block CA-1 in Brunei with the Jagus SubThrust-1X well for a total cost of Murphy of just $2.8 million at approximately an 8% working interest. Post this well where we reclassified our working interest in Block CA-1 of Brunei has not held for sale any longer. Partners are assessing development appraisal plans. W're evaluating seismic data, further prospectivity. Exploration in the Gulf of Mexico in the second quarter on page 18, drilling was commenced up Chevron operated Silverback prospect in the Gulf, which we anticipate finishing this month. Our participation provides access to 12 blocks with potential for attractive play opening trend is adjacent to the large position Murphy holds with our partners.

On Slide 19 in Brazil, started about our non-operated exploration position in Sergipe-Alagoas Basin and the additional optionality and resource potential it provides our company. Murphy along with the operator ExxonMobil and partners plan to spud the cut throat one well in the 4th quarter 2020 and approximate net cost of Murphy of just $15 million. On Slide 21 to our capital program, I'm pleased with our excellent production results this quarter and our oil production exceeded by 5% has remained consistent in our ever improving operations and operated offshore and in the Eagle Ford Shale.

We remain on track with our full-year production, our midpoint 161.5 thousand barrels equivalent per day with 55% oil-weighting. We remain very disciplined on our capital spending with no intention to change our plans remainder of the year as such we affirm being at midpoint of CapEx for 2021 when we announced it today that we are tightening the range around this mid point.

On Slide 22, as we remain focused on our strategy of delevering, executing and exploring, we note that our long-term plan remains unchanged. Our continued execution and capital discipline, lay the maintaining our capital spend of $600 million from 2021 through 2021 with production CAGAR of approximately 6% through that period. Of course, we're trending well in our current oil weighting and are above the plan for 2021 at 55%.

Assuming an average long term WTI price of $60 per barrel, Murphy's will be able to cut it debt in half to less than $1.4 billion by the end of 2024. While maintaining a quarterly

dividend payment to shareholders, we know that this accelerates used an average price of $70 per barrel in 2023 enabling us to reach the debt reduction by just mid 2023. Beyond delevering, we remain focused on our exploration program and portfolio of over 1 billion barrels of oil equivalent net risk resource potential. Long term, once our major Gulf projects are complete there is significant optionality we're making capital allocation decisions, and we'll look to what's best for Murphy and our shareholders and stakeholders at that time. While we have many options will seek to balance, increased asset development with funding exploration, success and potential A&D and execute additional debt repurchases and return more cash to shareholders.

On slide 23, throughout the remainder of 2021 in longer term, we are steadfast and focused on our priorities of delevering, executing and exploring besides to accelerate our long-term debt reduction goal for 2021 to $300 million or $200 million assuming oil price of $65 for the rest of the year. And look forward to achieving our goal of 1.4 billion in long-term debt reduction about 24 with the long-term average price of $60 per barrel. Very little competition part by disciplined spending, but also continued execution of our major Gulf of Mexico projects ahead of first oil next year as well as keeping everyone safe and healthy while protecting the environment which we're operating.

Lastly, we're excited with the recent exploration success in Brunei forward to drilling wells with operating partners in the Gulf, in Brazil this year while planning for next year's exploration campaign. Murphy could not have achieved a successful second quarter that the effort evolve our employees to continue operating with excellence in every single department. I'd like to personally thank each and every one of them maintain their individual focus on our strategic priorities and the long-term vision for our Company.

With that we'd be glad to take your questions this morning.



## Questions And Answers

### Operator

Thank you, ladies and gentlemen we will now begin the question-and-answer session. (Operator Instructions).

Your first question comes from Arun Jayaram of JP Morgan. Please go ahead.

**Q - Arun Jayaram** {BIO 5817622 <GO>}
Good morning Roger some nice results.

**A - Roger Jenkins** {BIO 7268013 <GO>}
Thank you, Arun, I appreciate that.

**Q - Arun Jayaram** {BIO 5817622 <GO>}

Yeah, so I wanted to see if you can. I know Chevron operates. But I was just wondering if you could just give us a progress report on silver back and just, and it just maybe also talk a little bit about the Brunei discovery and if this could be a needle mover for Murphy.

### A - Roger Jenkins {BIO 7268013 <GO>}

Thank you for that question Arun about our exploration program.The way this is really shaking out as to Silverback in your report this week. I'm glad you asked that question, so we can clarify any confusion around that.There is a mechanical issue, very early days of drilling in the well, what we would call the top hole section of the well. Well, had to be, if you will and drilled adjacent that has no at all any implication as to the prospectivity of the well, remains the same and Exxon and Chevron and partner with both. Chevron is in a very good well and drilling here and also St Malo and do their operational teams and their ability. They were able to catch back up. The cost of that raises, and we anticipate our capital will be identical to our original plan and it was just an operational matter that was handled moved on, it happened 2 or 3 months ago, and I'm not sure where that filing came from at that late date, but there is no impact to our company, nor Chevron on that matter due to their performance.

### Q - Arun Jayaram {BIO 5817622 <GO>}

Great. Great. And just on the exploration program in Brunei.

### A - Roger Jenkins {BIO 7268013 <GO>}

Yes. We've had those blocks for a very long time, very long time and there has been a really nice well to drill, it's a sub thrust site well underneath the major Gumusut-Kakap field on the Brunei side of the field where little over 8% working interest there. There is a time when we were exiting Malaysia, we were going to sell Brunei and had that held for sale and through COVID and other matters, we reassessed. This was a very nice looking well successfully drilled by our partner group, done very well there and we pull that out of held for sale. And they of course major key field that we discovered and operated for many years, very near there. And Of course, major Gumusut-Kakap field. Many successful partners operated by Shell and into this region we're going to hang on here and hopefully build a long-term East Coast Canada business here 2000 to 3,000 barrels a day long term for us is very profitable, very high oil quality and I'm very happy about.

### Q - Arun Jayaram {BIO 5817622 <GO>}

Great. And my follow-up, Roger is just talking about the Austin Chalk opportunity at Catarina, you had a nice map in your, in your update, but you're going to be testing one well but to set the stage, SM is near you, but give us some thoughts on the potential of the Austin Chalk.

### A - Roger Jenkins {BIO 7268013 <GO>}

I mean - we are managing that but we're glad to get down there and try something new in that area. Go ahead Eric.

### Q - Eric Hambly {BIO 20750675 <GO>}

Okay, great. Thanks, Arun. Just a couple of points to emphasize there on the Austin Chalk. As you know, we've had some really nice results in our Karnes County position. We have had limited appraisal effort, our development effort in the Austin Chalk, in our Dimmit County, lots of nearby operators have had quite a bit of success. We've done a bunch of work to assess and optimize in the landing zone in the Austin Chalk and we think it has some nice potential and we are sort of stepping our toe into that with one well in the Austin Chalk in a 4 well pad. And we think it has some nice potential to be sort of top tier performing, but we'd like to go out and prove that it really looks very attractive on our acreage. If it is successful, then we think we have 100 plus Austin Chalk locations that would be top tier performance, which would really help us continue to execute and de-lever.

### Q - Arun Jayaram {BIO 5817622 <GO>}

Great. Roger, thanks thanks for letting us into your conference. And I'll hand it back.

### A - Roger Jenkins {BIO 7268013 <GO>}

No problem, Arun. I appreciate your help and we'll be talking to you soon.

### Operator

Your next question comes from Neal Dingmann with Truist Securities. Please go ahead.

### A - Roger Jenkins {BIO 7268013 <GO>}

Good morning, Neal. How are you doing?

### Q - Neal Dingmann {BIO 6416564 <GO>}

Good. Roger my first question just on development activities, or I should say development opportunities. I mean, do you get that great slide 40 that really spells out the spend and production around Khaleesi/Mormont and Samurai ecetera and I'm just wondering, any thoughts or your thoughts here on anything potentially coming a bit earlier, are those going to be just really right as you've been expecting on those. And then I'm just want to roger any further comments you can make on any other potential development opportunities.

### A - Roger Jenkins {BIO 7268013 <GO>}

Thanks Neal for that question. The way we're doing looking at this today is that we are doing extremely well. We are doing extremely well in the flow line installation, the boring installation, the permitting, the obvious build and tow of this major facility, which is now around the case of good hope headed up toward, almost going over our Sergipe-Alagoas basin in Brazil on its way to the Gulf, which is ironic, and we're very happy about it all systems are go possibly to be sooner, but we're staying with our mid 2022 and very happy with how the permits, government team is doing a great job and very happy about that. We are bringing on another well called Kelly open in the region this year as to offshore execution and that's our plans now all within our budget, holding our budget, doing very well and I appreciate you asking that question because it is leading to our

execution, which is leading to the delevering, which is our major, major thing for us in hitting these major project own budget super critical and the delevering plan.

### Q - Neal Dingmann {BIO 6416564 <GO>}

Yes, it does seem like running just like clockwork which is great to see. And then just one quick follow-up. Non-op activity was a little, again, I don't mind to see good non-op activity in some good wells. A little higher than 2Q, could you just talk about your thoughts for the remainder of the year, how you see that going forward and what opportunities you will continue to have for the non-op side.

### A - Roger Jenkins {BIO 7268013 <GO>}

I'll let Eric handle that question. That was primarily an advancement of some wells by BPX in the Eagle Ford, and I'll let Eric. Go ahead.

### Q - Eric Hambly {BIO 20750675 <GO>}

With that, yeah, that's right. So in our Eagle Ford position, we had a number of non-operated wells that we thought would come online in the 3rd quarter, which actually progressed faster and came online in the second quarter. That acceleration contributed about 2,100 barrels oil equivalent to the second quarter, which we're really happy to have. It's important to note that even if those wells had not moved faster, our Eagle Ford business still would have exceeded guidance and been towards the high end of guidance. So our operated business performed strongly, both our new wells this year and our base performance from wells that are brought online in prior years, on the back of strong operated well performance exceeding expectations and lower downtime. So really happy with our Eagle Ford position operated, non-operated, happy to see production come online sooner as well.

### Q - Neal Dingmann {BIO 6416564 <GO>}

Great details. Thanks guys.

### A - Roger Jenkins {BIO 7268013 <GO>}

Thank you, Neal.

### Operator

Your next question comes from Neil Mehta of Goldman Sachs. Please go ahead.

### Q - Neil Mehta {BIO 16213187 <GO>}

Good morning.

### A - Roger Jenkins {BIO 7268013 <GO>}

Second Neil in a row?

**Q - Neil Mehta** {BIO 16213187 <GO>}

Yeah. Had it would double travel here. The first question is just on Brazil. Again, it does seem to be pretty excited about the opportunity set down there with cutthrough, just can you give us the lay of the land, it sounds like we're going to get an update in Q4 and how are you just thinking about the opportunity set in Brazil.

**A - Roger Jenkins** {BIO 7268013 <GO>}

I thank you Neil for that question. And that really leads to one of our key tenants of our strategy of not only delevering and executing which are tied together, but of course exploring. This is a series of acreage rebuilt built with Exxon and another and a partner down in Rio, this goes back several years and built a very large position here. The key to this exploration opportunity, does board of some very successful fields that have been for sale, if you will, which have information available on this field, of course, it is very adjacent to those in the same geologic setting. We're very excited about the opportunity. We're excited to work with ExxonMobil here in Houston as to seismic and the work and the selection of the wells. We have many opportunities to drill there over the next few years and very excited these are very large prospects we've disclosed our view of those here in our Slide 19 and I'm very excited about it and they being ExxonMobil have another rig working elsewhere in the country on something we're not part of. And when they finish that work there'll be mobilizing up here early in the 4th quarter. And we're very excited about.

**Q - Neil Mehta** {BIO 16213187 <GO>}

Thanks, Roger. Follow up just on the capital, cadence of capital spending first half as you indicated, was a little bit higher, it sounds like the second half is little bit lower. How do you feel about the cost inflation side in terms of your confidence to see that step down in CapEx in the back half of the year. It makes sense as we are some signs of inflation in different parts of the ecosystem.

**A - Roger Jenkins** {BIO 7268013 <GO>}

I am going to have Tom handle the procurement part of that, but let me frame the early part of it. We're very confident in our capital program, because our work is ending, St Malo where we're 20% player has stopped. We will be stopping the drilling. Silverback well is about to complete. We stopped all our drilling in the (inaudible) free cash flow. We are about to drill just 4 wells in Catarina our most inexpensive place with thousands of wells that we've drilled in the Eagle Ford. So we're very confident about the CapEx because we are stopping our program, our program is front-end loaded and our non-op work is completing. So that's really set for most of the CapEx as we don't have anything to inflate the OS this year. Tom runs technical Services including procurement and I'll have him provide you a bit more color and I appreciate your question.

**A - Tom Mireles** {BIO 17541852 <GO>}

Yeah, Neil as Roger said, we've got the majority of our capital behind us now. But they're even the remaining that's in front of us is pretty much fixed. We've got contracts in place just through our strategic sourcing with supply chain that's given us good visibility and the

the prior period adjustment as I mentioned, but if you look at the whole company we expect operating expenses to be in the $8 to $9 range, so it's still quite a strong performance for us across the globe.

**Q - Gail Nicholson** {BIO 17305119 <GO>}

It was really, really great to see so excellent work there. And then I would just also wondering if you guys could provide us any incremental details in regards to Terra Nova and do you think that those volumes be back online in 2022 or is that more 2023 situation?

**A - Roger Jenkins** {BIO 7268013 <GO>}

Thank you, Gail for that question. The way we're sharing information about Terra Nova today is as follows. It's still being executed by all the partners, I can tell you that our Board sanctioned it yesterday in the idea that everyone else will also sanction. So we're going to move forward with it if everyone else does. And when all of that is complete with all of our partners and we will disclose more. It is late 2022 flow back at Terra Nova, very late. So practically in early 2023 would make no difference in that regard. And the way the deal structured, it makes no change to our guided capital of average capital that I just discussed in our remarks and it's a really good project. We're very happy to be in it. And I look forward to work with Suncor and Cenovus long term on that project.

**Q - Gail Nicholson** {BIO 17305119 <GO>}

Great, thank you. An excellent quarter, guys.

**A - Roger Jenkins** {BIO 7268013 <GO>}

Thank you so much.

**Operator**

Your next question comes from Leo Mariani with KeyBanc. Please go ahead.

**A - Roger Jenkins** {BIO 7268013 <GO>}

Good morning, Leo.

**Q - Leo Mariani** {BIO 20899117 <GO>}

Good morning. Want to follow up a little bit on some of the exploration comments that you guys made here. So you talked about success in Brunei, you mentioned 2000 to 3,000 barrels a day of oil here. Would that be gross or net to Murphy and just any kind of high level timeframe and when that might come online as they can take a couple of years to get the production or what do you see there?

**A - Roger Jenkins** {BIO 7268013 <GO>}

Thank you, Leo for the question. Our exploration program, which is a key of our strategy here. What I meant is that just a type of a net production it could be for a long-term of

course the operator Shale and Of course to government Brunei and our other partners have to go through a SaaS, a delineation of the wells are very successful well and then we will go and determine all that down the road and I don't really have an idea of that timing. That's not immediate to us at this time. It's just a discovery wells, a nice projects. We pulled it out, held for sale, and we are glad with our position there. Glad we kept it.

### Q - Leo Mariani {BIO 20899117 <GO>}

Okay and then just on Brazil. I think you guys have always characterized it is a very large prospect that you guys are drilling down there. And I guess just wanted to going to get a sense of probability of success, is this kind of your typical one in four type of offshore exploration well, in terms of how you view the chances here.

### A - Roger Jenkins {BIO 7268013 <GO>}

Thank you, Leo for that question. Our program there is key part of our strategy this year. Yes, I would think a one in 4 typical big deep water opportunity would be clear. But this is also offsetting major fields that are discovered and operated by Petrobras in the region and setting of course shelf production historic shelf production in a successful area of Brazil. So that has a little bit of positivity to that where we as our strategy who knows to drill, near known all areas instead of rank exploration with no success in board of deepwater. So I think it meets all that criteria fits right into our strategy on F&D size, scale, partner and we're very happy about.

### Q - Leo Mariani {BIO 20899117 <GO>}

Okay, thanks guys.

### A - Roger Jenkins {BIO 7268013 <GO>}

Thank you, Leo.

### Operator

(Operator Instructions).Your next question comes from Josh Silverstein with Wolfe. Please go ahead.

### A - Roger Jenkins {BIO 7268013 <GO>}

Good morning, Josh.

### Q - Josh Silverstein {BIO 17750530 <GO>}

Hey, good morning guys. I'll stick with the exploration front for the first question. Mexico used to be really big in focus for you guys. I know you had some activity there little a while ago. It's kind of nowhere to be seen now on the slides. And so I just wanted to get an update as to what's going on there. And maybe just rank that relative to the opportunities that you have elsewhere in the portfolio.

### A - Roger Jenkins {BIO 7268013 <GO>}

Thank you, Josh for that question on our exploration program. Brazil still major and focus for us. There is a slide in the appendix around. I mean, apologize, it is going to be drilled next year there, but everyone is working on their budget with our partners, is very likely to be drilled next year and get back on schedule post COVID world of 2020. This a very nice opportunity in the subsalt especially the well called Tulum, it's on page 42 in our appendix. There are recent discoveries all around this area and same age rocks and reservoirs. See this week that Eni had yet another discovery in that region. Cholula is a place discovered and will be delineated but we've advanced to loom, it has a series of subsalt opportunities that are larger, very nice and on a trend of success in the region and just so happens that our focus in the slides is trying to, as you know, Josh because you follow up the Company closely we're delevering, executing and exploring really working on that this year while we've increased our debt reduction target this morning. So the Mexico drilling is into next year with our partner group and in no way if we pull back there our focus there are likeness if you will of Mexico. It's actually very strong for us because we get to operate it and we have running room of similar plays in that area. So just because it's not up in the deck on our delever execute explore area it doesn't mean, we're not there and like in that or changed our view there in anyway.

**Q - Josh Silverstein** {BIO 17750530 <GO>}

Got it. Thanks for that. And I know you have a multi-year kind of outlook for what you're trying to do it at Tupper when you greenlit the project and then hedged a bunch of volumes there. It was a while ago, prices have obviously risen pretty significantly since then, I'm curious as you think to next year, is there any thought about stepping up some activity here given the significant increase in gas prices or is the outlook kind of steady from the the project that you've outlined already.

**A - Roger Jenkins** {BIO 7268013 <GO>}

Thanks for that question. The way we're thinking about Montney today, it's a long-term project. It's going to flow near 500 million a day for a long time, and we took a long-term view on the hedging. And we have an activity plan to reach that level of production that we've disclosed in our capital plans and it's just like drilling in the Eagle Ford or anywhere else when it gets better we're not going to change those plans. Because we can reach our plant level there without it. And we have about 15% on raw AECO today we're enjoying some of those prices. I'd also like to commend my outstanding team under Eric's leadership there where we handle this heat wave crisis there with very little downtime, as the way we operate and execute in our facilities and our fields and it's going well. And it's going to be bigger this quarter than last quarter and no change to our program there, just enjoy some higher cash flow on the non-hedged peaks at this time, Josh.

**Q - Josh Silverstein** {BIO 17750530 <GO>}

Right, thanks guys.

**A - Roger Jenkins** {BIO 7268013 <GO>}

Thank you.

**Operator**

# Eagle Ford Shale

## Base Production Outperforms While Lowering Costs

### 2Q 2021 42 MBOEPD, 75% Oil, 88% Liquids

- 3 operated wells online, all Catarina Lower EFS
  - Avg 1,080 BOEPD IP30, 87% oil
- 29 gross non-op wells online, primarily Karnes Upper EFS and Austin Chalk
  - Avg 1,700 BOEPD IP30

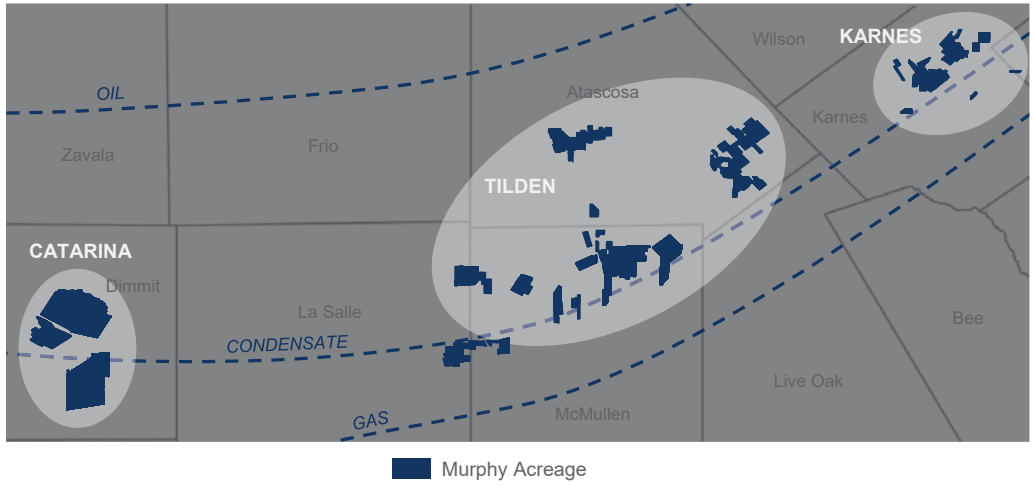
### 2H 2021 Activity

- 4 operated wells online in Catarina in 4Q 2021
  - 1 Upper EFS, 2 Lower EFS, 1 Austin Chalk
- Reaffirm FY 2021 CAPEX of $170 MM

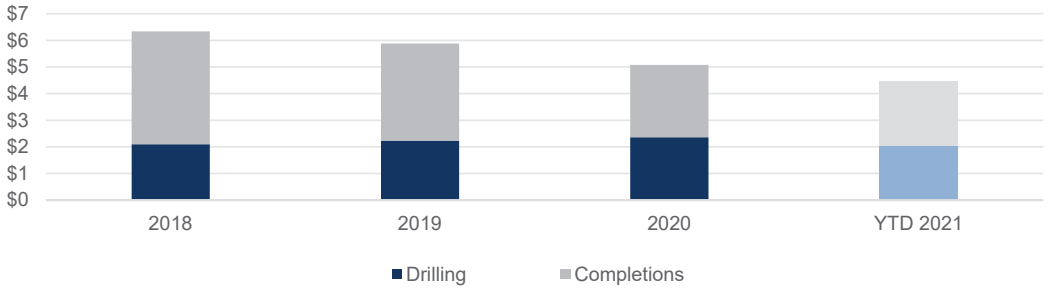
### Drilling and Completions Costs

- ~40% reduction in completions costs since FY 2018
  - 25% reduction in CLAT since FY 2019
- 24% increase in RoP since FY 2018
- $4.7 MM avg well cost in 1H 2021, down from $6.3 MM in FY 2018
  - Now achieving ~9 month well payout

Eagle Ford Shale Acreage




Eagle Ford Shale Drilling and Completions *$MM per well*



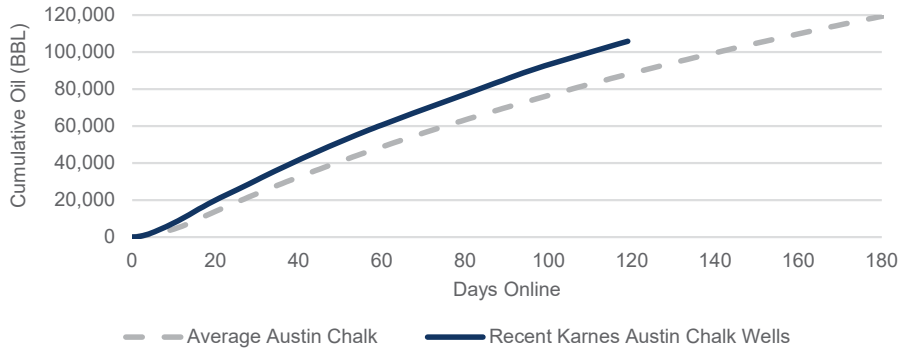
# Eagle Ford Shale

## Analyzing Results in Austin Chalk De-Risk Murphy Locations

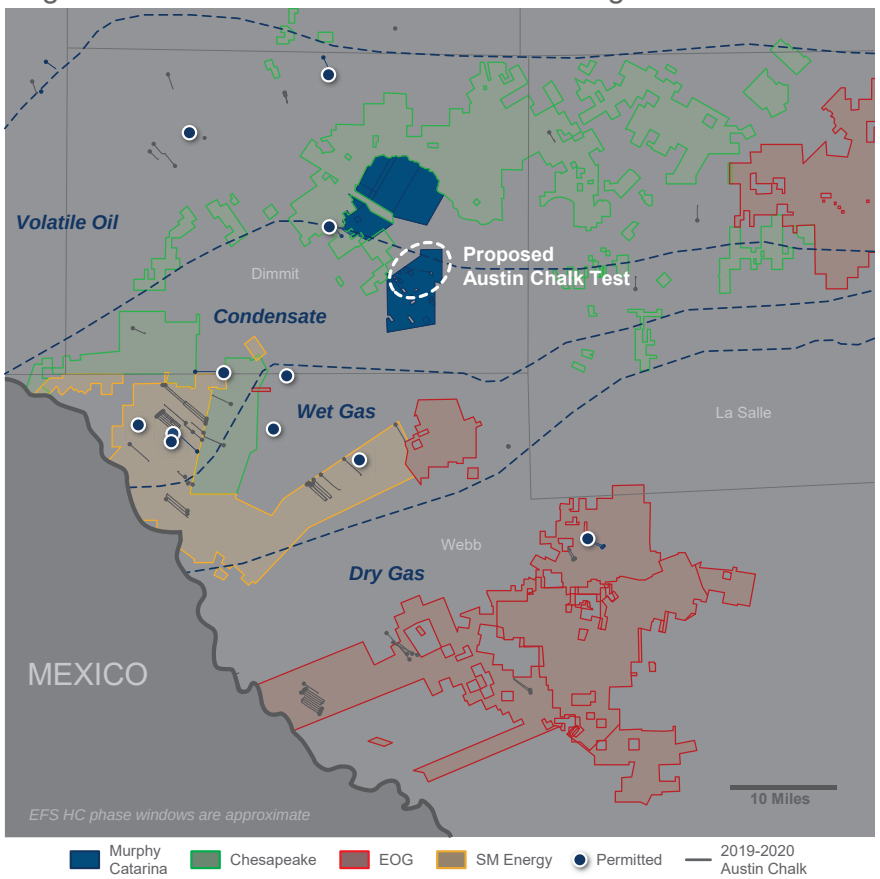
### Achieving Strong Austin Chalk Results

- Recent Karnes wells meaningfully outperforming type curve
  - Avg 1,400 BOEPD IP30 rate
  - ~100 Karnes locations as of FYE 2020
- Operators near Murphy Catarina acreage reporting robust production rates
  - Working to delineate their acreage
- 1 Murphy Austin Chalk well online in Catarina in 4Q 2021
  - Potential to de-risk ~110 Catarina locations as of FYE 2020

2021 Karnes Austin Chalk Well Performance




Eagle Ford Shale – Austin Chalk Peer Acreage



# Tupper Montney

## Increasing Recoveries While Lowering Costs

### 2Q 2021 248 MMCFD, 100% Natural Gas

- 10 wells online, activity complete for FY 2021

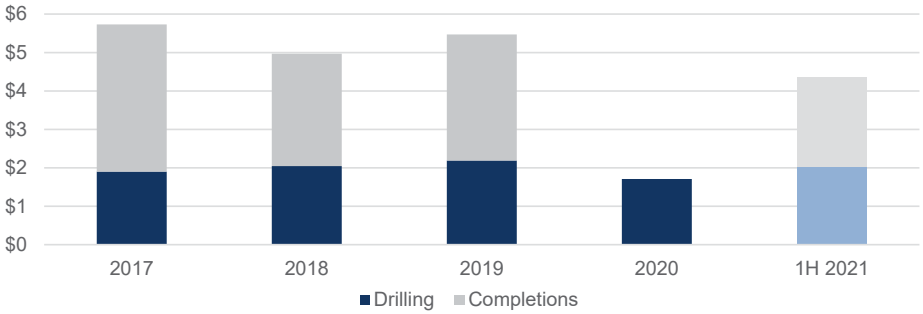
### Lowering D&C costs

- 24% reduction since FY 2017
- $4.4 MM avg well cost in 1H 2021, down from $5.5 MM in FY 2019
  - 25% reduction in CLAT since FY 2019

### Low Execution Risk

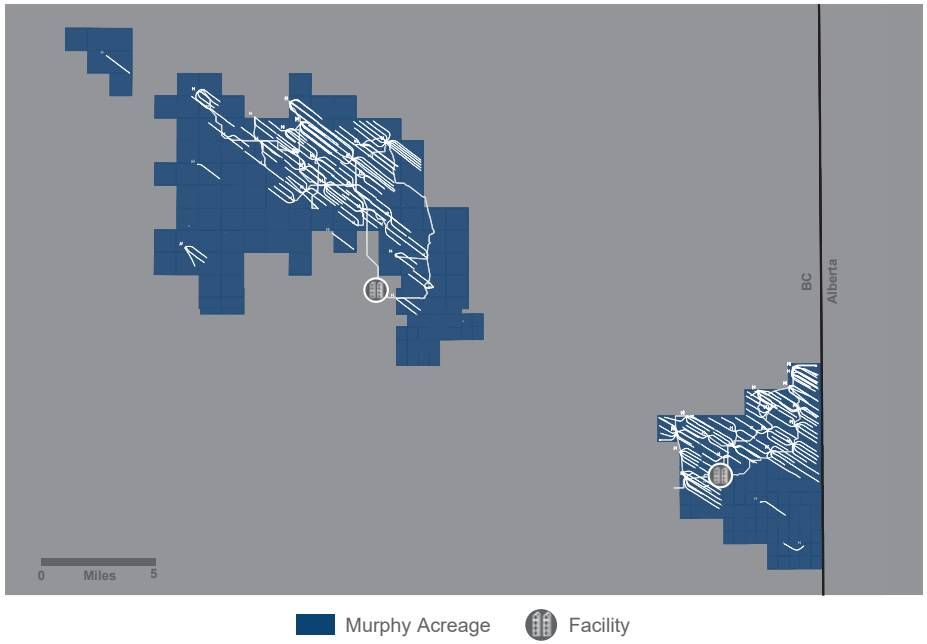
- Average ultimate recovery of ~21 BCF / well
- Low subsurface risk from proven resource
- Ample existing take-away and infrastructure in place

Tupper Montney Drilling and Completions *$MM per well*




** Includes contingent well count*

Tupper Montney Acreage



Muddy Waters Capital LLC
(Working from Home)
Austin, Texas
USA

August 11, 2021

Dear Investor:

In almost six years of managing your and other investors' money, this is the first investor letter that I've written. The catalyst for writing this one is to talk about our new fund, which launched in mid-February of this year. After I get through the fund-speak, I have thoughts you'll hopefully find interesting on the intersection of monetary policy and the future of humanity, a newfound understanding of Elon Musk, and the political decay liberal democracies are experiencing.

The Domino Fund

[Redacted]

A Cancelled Visit from The Prophet

This is a true story, even though it's hard for me to keep a straight face while writing it. One of the accomplishments I've had this year is to stick Chamath Palihapitiya with the name "SPAC Jesus." I came up with this name after waking up on a Sunday morning and seeing that the erstwhile SPAC promoter had, during a run of faux populism, Tweeted "There are only two priorities: Inequality + Climate Change." There are few expressions of human proclivities that I can stand less in this world than fake populism. Like a proud father, I smile whenever I see someone using that name for Chamath somewhere in the Twitterverse.

Last week, I dreamt that (for some reason) I had reached out to Chamath to schedule a meeting. (To be clear, I wouldn't mind meeting the guy so long as he has a sense of humor – and a willingness to share his leg workout routine.) Anyway, there I was in my dream waiting for him to show up when his assistant arrived instead. She told me with bureaucratic relish that Chamath would not be meeting me after all. Then after a few scenes of a Los Angeles that doesn't actually exist, I woke up at 3 am in a panic. I had a revelation – one that I still believe is true several days, and many hours of sleep, later.

Interest rates must stay at ridiculously low levels in order to de-carbonize the economy. I believe that for the coming few decades, interest rates will be at these levels in order to stimulate investment in technologies to de-carbonize. I think that will become the express policy of the ECB, BOJ, and eventually the Fed. To the extent that governments ever had the ability to allocate technology investments well, those days are long gone. I don't believe government-directed spending will be the answer. So much of the needed investment will be value-destructive – as Tesla (absent accounting bullshit, subsidies, and credits) shows. And I'm no environmentalist – my two-driver household is the proud owner of 30 cylinders of ICE collectively producing almost 1,400 horsepower. But seriously, our way of life isn't sustainable.

Does this mean that what we do as activist short sellers is – or will be – futile? I don't think so. There will be a torrent of charlatans who come out of the woodwork to cheat people out of their money based on false promises of disruptive technologies – witness RIDE, NKLA, and our short of XL. We at MW have no edge when it comes to evaluating technologies, and I suspect that our short activist brethren like Hindenburg don't either. But we excel at playing the man – not the ball. And that's what's needed to ferret out the shysters from the Elon Musks.

But haven't I publicly called Elon a "liar" and railed against his lies and cheating? Yes, but let me digress for a moment. Last month, we took a small group of summer interns to New York to meet with accomplished people from various corners of Wall Street. One of the meetings was with one of my favorite people in the investment business. He's as successful as one can be, having built a fantastic business over multiple decades. We were at lunch with him, and he stated that "integrity is everything in our business". Playing the role of sidekick, I chimed in by stating that if I realize that someone has ever lied to me, that person "is dead to me". (It's been chronicled why I'm so sensitive to even the slightest whiff of dishonesty.) Then this person went on to tell a great story, but one that on the surface completely belied the point about integrity.

He graduated years ago from a non-Harvard type university, and he badly wanted to be in finance. He applied to all of the investment banks, but kept getting rejected before getting the chance to even interview. After receiving a rejection from an HR manager at First Boston, he called the First Boston switchboard and asked to speak with a "Vice President." Amusingly, he didn't know that Vice President was probably the most common title on Wall Street at that time. The switchboard operator connected him to the first VP who came up in the alphabetical directory. "Tom", as we'll call the aspiring banker, then told the random VP that the HR manager (who'd signed the letter) had instructed Tom to call the VP and schedule an interview. The VP was a little surprised, but agreed on a day and time.

Tom went to the city and had a great meeting with the VP. The VP said, "Let me introduce you to somebody else", and did. The rest of Tom's day went the same way, with everybody liking Tom and introducing him to more senior colleagues. At the end of the day, somebody quite senior phoned the HR manager and said he wanted to make Tom an offer. The HR manager demurred, explaining that First Boston had already rejected Tom. The banker then insisted that First Boston would make Tom an offer. Tom got the offer, and went on to have an amazing career that he's still building. As I heard this, I thought admiringly of 22-year old Tom and his chutzpah. But how to square this with an emphasis on integrity?

The reality is that a certain amount of bullshit is necessary – even desirable – in life. I tried on the spot at that lunch to formulate a bright line rule for the interns – i.e., a way for them to know what the necessary / desirable bullshit is, versus what is a lack of integrity. I was unable to. The truth is that acceptable bullshit versus lack of integrity is situational and requires accurately reading the bullshit tolerance of your audience. Jedi Mastery is being able to set your audience's acceptance level for the amount of bullshit you want to deliver. Nobody embodies this better than Elon.

It was only after the Prophet SPAC Jesus canceled his visit to me in my dream that I understood Elon Musk. Or at least got a far greater understanding for him than I had. To be fair to myself, I was telling people as early as 2013 that I wouldn't short Elon Musk. My saying at the time was "Whether you want to go long him or not is a different question, but he is way too skilled at pulling rabbits out of the hat to short." Some years later, an interview I did with my TV foil, Wilfred Frost, generated clickbait headlines about me saying we were short Tesla and that it would go bankrupt. The reality is that we had been long TSLA bonds, and had used the coupons to buy long-dated deep OTM puts. The puts came tantalizingly close to paying off in 2019, but Elon pulled the requisite rabbits out of the hat, the Fed loosened in response to Covid, and our puts went to Put Heaven.

While I always admired that Elon demonstrated the viability of EVs with the Model S and has built rockets that really do innovate and work, I disdained his incessant bullshit. I felt it was an unnecessary stain on his legacy. But with what I think is newfound wisdom about the way the world needs to work, I'm less hostile. In my view, the Tesla shorts have been right and wrong all along about Tesla's problem.

Tesla shorts have focused on Tesla's lack of scale to compete in EVs with GM, Ford, VW, etc. They are correct in that lack of scale would have been the death of Tesla. But they were looking at the wrong scale. Tesla is here not because it has scale in terms of manufacturing base or unit sales. It has scale because of its *capital base*. At the end of the day, for someone who can actually make the fucking car drive and the rocket fly, that is all that matters. All those years of lying (e.g., "funding secured"), wars with short sellers that we assumed were driven only by his pathological narcissism, and trampling rules he found inconvenient have given Tesla capital base scale. With Tesla having an enterprise value of ~$700 billion, it has far more capital scale than any competitor.

One could look at Tesla's market cap and think it's fragile – that reality will shatter it. However, Tesla should be able to raise many billions before its cap becomes sub-scale – and keep in mind that Tesla equity raises tend to push the stock higher. (Those "dumb money" investors actually knew that capital base scale is what mattered all along.) The other issue with the fragility view is that while the cap could crumble under the weight of reality, it's not actually that hard to keep it up. It certainly doesn't require selling the number of cars that Toyota does! It just requires Elon to continue setting his audience's receptivity level of bullshit to Absurdly – if not Adoringly – Accepting. Might he fail? Maybe. But look at the iterations of Elon's image – from that of a humanity loving environmentalist to gladly letting Ted Cruz hang from his jock while flouting the law. The market cap, the luster, the elan of Elon, is still there.

But I return to the proposition that there are still numerous opportunities for activist short sellers. Most charlatans will be too charlatany to make a real car or rocket. If we retain our focus on playing the man, but with a better-informed framework for assessing him, we can continue to do well. The biggest threat to our model comes not from infinite emergency monetary policy, but from the erosion in the rule of law that liberal democracies have experienced.

In my wars in continental Europe, I've repeatedly made the point that you cannot separate politics from capital markets. The capital markets are where political and financial power meet. The French and Germans value relatively free expression when it comes to matters of government and politics, but have been notoriously averse to capital markets-related critiques. (Credit where credit is due though – France seems to have evolved a decent bit in the past five years.) I believe that there is a feedback loop between the lack of rule of law in the markets and in broader society. The more that our elite enrich themselves while violating the spirit – if not the letter – of the law without negative repercussions, the more it erodes the rule of law because the public becomes increasingly radicalized and viscerally opposed to institutions. As institutions erode, you have more untouchables like Elon Musk (or numerous other people of whom you've never heard), which creates more radicalization, and so forth.

I see both political parties as nihilistic in their own ways, trying to destroy institutions directly while egging the other party on to do the same. Additionally, both the left and right routinely assault the freedom of expression, which is the lifeblood of what we do. Therefore, the political dysfunction of America is the largest threat to the viability of the activist short selling model. Because at some point, government actors must hold market participants accountable at least some of the time. Without that, there really is no financial disincentive to be long a debt-fueled fraud.

I believe that President Biden is a centrist, and that his win was a triumph for anti-nihilism. I am concerned though that centrism, while holding the break in the dam, cannot hold the dam itself. We're

going to remain out there for the foreseeable future, pulling down the pants of the grifters in the markets. If there comes a day when that's completely ineffective, grieve not for us, but for the national greatness that is lost.

Sincerely,

Carson Block

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https://www.ft.com/content/f9e5c5ec-f4bc-4565-a1cd-903117547f5e?shareType=nongift

# Cenovus chief urges Trudeau to pay for greening of Canada's oil sands

Alex Pourbaix says government should pay 70% of project to decarbonise key sector

Derek Brower in Calgary AUGUST 8 2021

Canada's government should pay for up to 70 per cent of a proposed C$75bn ($60bn) project to decarbonise the country's controversial oil sands and protect a critical engine of the country's economy, one of the proposal's backers said.

"If we're able to solve the puzzle of making Canadian oil significantly lower carbon intensive", the oil would be the "cleanest in the world", Alex Pourbaix, chief executive of Cenovus Energy, the country's second-largest oil producer, told the Financial Times.

But Justin Trudeau's Liberal government, which last year committed Canada to slashing emissions by 40-45 per cent below its 2005 levels by 2030, must pay up to make it happen, he argued.

"It's going to take tens of billions of dollars over 30 years to decarbonise [our oil] industry," said Pourbaix. "But at the same time that will protect something in the range of C$3tn of GDP."

Pourbaix and industry group the Canadian Association of Petroleum Producers (Capp) also urged the federal government to extend tax credits to oil companies that would use captured carbon to produce more oil.

The calls for federal funding will complicate matters for Trudeau amid criticism that Canada is not moving quickly enough to meet its climate targets while his government defends its high-emissions oil industry, the biggest petroleum exporter to the US.

Despite imposing an aggressive carbon tax regime, the federal government lobbied for the controversial Keystone XL pipeline from Alberta to Texas — which was cancelled by US President Joe Biden earlier this year — and is funding another export pipeline development from the oil sands to Canada's west coast.

"Our prosperity and our economy are still highly dependent on" the oil sector, Seamus O'Regan, the country's Liberal federal resources minister said in a recent interview with the FT. "It is what we do."

Last month Cenovus joined the four other largest producers in Canada's oil and gas sector, the biggest single contributor to the country's greenhouse gas emissions, to propose a vast carbon capture, utilisation and storage (CCUS) project they said was "the only realistic proposal" to curb pollution.

Critics of CCUS say the technology, mentioned for years as a solution to emissions, remains too expensive to achieve the scale needed.

Pourbaix said it showed operators were now "attuned to where the world is moving".

The proposal includes installation of a trunk line capturing carbon from oil sands projects and other industries near Fort McMurray, in northern Alberta, and storing it further south near Cold Lake.

The proposal came as the Canadian government mooted an investment tax credit designed to accelerate development of a domestic CCUS industry. The credits are due to begin next year.

Pourbaix urged the federal government to reverse a decision to exclude enhanced oil recovery — a method of reinjecting the captured CO2 to help produce more oil — from the tax incentive scheme, saying the EOR could make the CCUS projects economic "right out of the chute".

Tim McMillan, Capp's chief executive, welcomed the federal government's focus on CCUS to help meet its emissions goal, but said "excluding EOR from the federal programme will create substantial challenges to the government in reaching this goal".

A spokesperson for O'Regan's office said CCUS was "one of many technologies that will get us to net zero by 2050", but did not say if the federal government would help pay for the oil sands companies' proposed project. The government has set aside $319m for research into CCUS and is working on a new strategy to promote it.

The oil sands sector is recovering from last year's crash. But operators continue to face opposition from climate activists and environment-focused investors because of the higher emissions associated with producing the heavy, bituminous oil found in northern Alberta and Saskatchewan.

International oil supermajors, including Shell, TotalEnergies and Equinor, have pulled investment from the region, home to the world's third-biggest oil deposit.

Alberta's provincial government has fought aggressively to protect the sector, including a recent failed legal challenge to stop the federal carbon tax.

Pourbaix said he supported the new carbon pricing scheme and his company has a "long-term ambition" to achieve net zero emissions from its operations. But like other oil sands operators, Cenovus would not commit to a net zero target for its so-called scope 3 emissions — the pollution caused by the burning of the products its sells.

"Scope 3 is largely the responsibility of consumers," said Pourbaix. "And kind of absolving the consumer of accountability for this doesn't make sense."

SAF Group created transcript of PM Trudeau post G7 press conference June 13, 2021.

At 49:00 min mark of CBC Rosemary Barton Live [LINK]

Question: "*COP-26 coming up as well, the oil sands/tar sands producers, they've got a plan to Net Zero by 2050, is that good enough, a lot of it is based on technology, which as of yet is unproven on a mass scale, sequestration as well. Do you Sir, does Canada need to be more ambitious?"*

Trudeau: "*Canada has put in place one of the strongest, broad based prices on pollution in the world. We know putting a price on pollution is one of the strongest ways not just to move forward on fighting climate change, but to incentivize business to make investments that decarbonize the workings of our economy. We also at the same time know that transforming our energy mix is going to be extremely important. that's why the energy expertise by workers across this country are going to be put forward in initiatives like a recent agreement we signed on hydrogen for example. Investing in critical minerals that will be essential for zero emissions vehicles of the future. when we talk of critical minerals, we know that china is right now a strong provider to the world of critical minerals. But Canada is a place where we have strong and stable supplies of that as well that could be of use in a reliable supply chain to the world. There are many many conversations we have on strengthening our environment and creating good jobs in the future and that involves being ambitious as we have been in setting not just ambitious targets for 2030 but showing a very clear plan on how we are going to reach those targets as well as being deeply committed to being net Zero by 2050, which is something actually we are working very hard to pass in the House of Commons in Canada right now. Hopefully we will see the necessary progressive parties come together to support that Net Zero legislation so Canada can continue to demonstrate real leadership in fighting climate change*".

https://www.newswire.ca/news-releases/canada-s-largest-oil-sands-producers-announce-unprecedented-alliance-to-achieve-net-zero-greenhouse-gas-emissions-866303015.html

# Canada's largest oil sands producers announce unprecedented alliance to achieve net zero greenhouse gas emissions

Oil Sands Pathways to Net Zero

NEWS PROVIDED BY **MEG Energy Corp.**
Jun 09, 2021, 06:45 ET

CALGARY, AB, June 9, 2021 /CNW/ - Canadian Natural Resources, Cenovus Energy, Imperial, MEG Energy and Suncor Energy formally announced today the Oil Sands Pathways to Net Zero initiative. These companies operate approximately 90% of Canada's oil sands production. The goal of this unique alliance, working collectively with the federal and Alberta governments, is to achieve net zero greenhouse gas (GHG) emissions from oil sands operations by 2050 to help Canada meet its climate goals, including its Paris Agreement commitments and 2050 net zero aspirations.

Canada’s largest oil sands producers announce unprecedented alliance to achieve net zero greenhouse gas emissions (CNW Group/MEG Energy Corp.)

- This collaborative effort follows welcome announcements from the Government of Canada and the Government of Alberta of important support programs for emissions-reduction projects and infrastructure. Collaboration between industry and government will be critical to progressing the Oil Sands Pathways to Net Zero vision and achieving Canada's climate goals.
- The Pathways vision is anchored by a major Carbon Capture, Utilization and Storage (CCUS) trunkline connected to a carbon sequestration hub to enable multi-sector 'tie-in' projects for expanded emissions reductions. The proposed CCUS system is similar to the multi-billion dollar Longship/Northern Lights project in Norway as well as other CCUS projects in the Netherlands, U.K. and U.S., all of which involve significant collaboration between industry and government.
- The Pathways initiative is ambitious and will require significant investment on the part of both industry and government to advance the research and development of new and emerging technologies.
- The companies involved look forward to continuing to work with the federal and Alberta governments, and to engaging with local Indigenous communities in northern Alberta to make this ambitious, major emissions-reduction vision a reality so those communities can continue to benefit from Canadian resource development.

As proud Canadian companies, members of the Pathways alliance share the aspiration of Canadians to find realistic and workable solutions to the challenge of climate change. The oil sands industry is a significant source of GHG emissions and the initiative will develop an actionable approach to address those emissions, while also preserving the more than $3 trillion in estimated oil sands contribution to Canada's gross domestic product (GDP) over the next 30 years. The initiative will create jobs, accelerate development of the clean tech sector, provide benefits for multiple other sectors and help maintain Canadians' quality of life. The members of the Pathways alliance will do their part by making the economic investments needed to ensure that our companies successfully make the transition to a net zero world, and hence, deliver long-term value to shareholders.

Because there is no single solution to achieving net zero emissions, the initiative incorporates a number of parallel pathways to address GHG emissions, including:

- A core Alberta infrastructure corridor linking oil sands facilities in the Fort McMurray and Cold Lake regions to a carbon sequestration hub near Cold Lake via a $CO_2$ trunkline. The trunkline would also be available to other industries in the region interested in capturing and sequestering $CO_2$. There is also potential to link the infrastructure corridor to the Edmonton region.
- Deploying existing and emerging GHG reduction technologies at oil sands operations along the corridor, including CCUS technology, clean hydrogen, process improvements, energy efficiency, fuel switching and electrification.
- Evaluating, piloting and accelerating application of potential emerging emissions-reducing technologies including direct air capture, next-generation recovery technologies and small modular nuclear reactors.

In addition to collaborating and investing together with industry, it is essential for governments to develop enabling policies, fiscal programs and regulations to provide certainty for this type of long-term, large-scale investment. This includes dependable access to carbon sequestration rights, emissions reduction credits and ongoing investment tax

credits. We look forward to continued collaboration with both the federal and Alberta governments to create the regulatory and policy certainty and fiscal framework needed to ensure the economic viability of this initiative.

Canada is uniquely positioned to be a global leader in responsible oil production. The country has the world's third-largest oil reserves, some of the most stringent regulations and standards governing energy projects anywhere in the world, a strong track record for technology development and an established reputation of industry working together with Indigenous communities and municipalities. Members of the Pathways initiative believe the most effective way to address climate change is by developing and advancing new technologies and that this unprecedented challenge can and will be solved by Canadian ingenuity, leadership and collaboration.

While alternative energy sources will play an increasingly important role in the decades ahead, all internationally recognized forecasts indicate fossil fuels will continue to be an essential requirement through 2050 and beyond as part of a diversified energy mix, including as a feedstock for carbon fibres, asphalt, plastics and other important products. That's why it's critical to take action now to ensure Canada takes its place as a leading supplier of responsibly produced oil to meet the world's demand for energy well into the future.

**QUOTES:**

**Government of Alberta**

*"The Oil Sands Pathways to Net Zero initiative is an industry driven, made-in-Alberta solution which will strengthen our position as global ESG leaders," said Sonya Savage, Alberta's Minister of Energy. "Every credible energy forecast indicates that oil will be a major contributor to the energy mix in the decades ahead and even beyond 2050. Alberta is uniquely positioned and ready to meet that demand. This initiative will also pave the way for continued technological advancements, ultimately leading to the production of net zero barrels of oil."*

**Canadian Natural Resources Limited**

*"Canada has an opportunity to lead on climate change by delivering meaningful emissions reductions as well as balancing sustainable economic development," said Tim McKay, Canadian Natural President. "Canadian ingenuity has enabled oil sands development and with continued innovation, positions Canada to be the ESG-leading barrel to meet global energy demand. We are committed to working together with industry partners and governments to help meet Canada's climate objectives while providing sustainable long-term economic and social benefits for Canadians from the oil sands*."

**Cenovus Energy**

*"This collaborative effort amongst oil sands peers shows our serious commitment to global climate leadership," said Alex Pourbaix, Cenovus President and CEO. "We are doing more than just talking about the need to play a role – we are taking bold action to address our emissions challenge and earn our spot as the supplier of choice to meet the world's growing demand for energy."*

***Imperial***

*"Canada has what it takes to be the responsible energy provider to the world," said Brad Corson, Imperial Chairman, President and Chief Executive Officer. "Canada's long-term success in achieving its climate goals lies in a collective commitment to innovation, global competitiveness, supportive public policy and open and ongoing dialogue on constructive solutions. Imperial is collaborating with others in industry and governments to develop and commercialize the breakthrough technologies that will reduce emissions and support society's net zero ambitions."*

**MEG Energy**

*"We are pleased to be part of this collaborative effort committed to the critical measures needed to achieve net zero green house gas emissions in the oil sands," said Derek Evans, President and Chief Executive Officer of MEG Energy. "Bold action today demonstrates our commitment to tackling climate change and global climate leadership. This alliance working collectively with the federal and Alberta governments and all stakeholders will ensure that Canada continues to be a leading supplier to the world of responsibly produced oil."*

**Suncor Energy**

*"Collaboration among companies, innovators and governments is critical to achieving ambitious goals. That's how we built a budding oil sands resource into one of the world's most reliable and ESG-leading oil basins in the world," said Mark Little, Suncor President and Chief Executive Officer. "Canada - as one of the few jurisdictions with industrial-scale commercial CCUS projects in operation -- coupled with Alberta's abundant natural gas resources, geology and relevant technological expertise - is well positioned to lead in this area."*

**About the Pathways initiative member companies**

**Canadian Natural Resources Limited**

Canadian Natural Resources Limited (Canadian Natural) is a senior oil and natural gas production company, with continuing operations in its core areas located in Western Canada, the U.K. portion of the North Sea and Offshore Africa. Canadian Natural shares trade under the symbol CNQ on the Toronto and New York stock exchanges. Refer to the Company's website for complete forward-looking statements at www.cnrl.com

**Cenovus Energy Inc.**

Cenovus Energy Inc. is an integrated energy company with oil and natural gas production operations in Canada and the Asia Pacific region, and upgrading, refining and marketing operations in Canada and the United States. The company is focused on managing its assets in a safe, innovative and cost-efficient manner, integrating environmental, social and governance considerations into its business plans. Cenovus common shares and warrants are listed on

the Toronto and New York stock exchanges, and the company's preferred shares are listed on the Toronto Stock Exchange under the symbol CVE. For more information, visit cenovus.com.

**Imperial**

After more than a century, Imperial continues to be an industry leader in applying technology and innovation to responsibly develop Canada's energy resources. As Canada's largest petroleum refiner, a major producer of crude oil, a key petrochemical producer and a leading fuels marketer from coast to coast, our company remains committed to high standards across all areas of our business.

**MEG Energy**

MEG is an energy company focused on sustainable in situ thermal oil production in the southern Athabasca oil region of Alberta, Canada. MEG is actively developing innovative enhanced oil recovery projects that utilize steam-assisted gravity drainage ("SAGD") extraction methods to improve the responsible economic recovery of oil as well as lower carbon emissions. MEG transports and sells its thermal oil (AWB) to customers throughout North America and internationally.

**Suncor Energy**

Suncor Energy is Canada's leading integrated energy company, with a global team of over 30,000 people. Suncor's operations include oil sands development, production and upgrading, offshore oil and gas, petroleum refining in Canada and the US, and our national Petro-Canada retail distribution network (now including our Electric Highway network of fast-charging EV stations). A member of Dow Jones Sustainability indexes, FTSE4Good and CDP, Suncor is responsibly developing petroleum resources, while profitably growing a renewable energy portfolio and advancing the transition to a low-emissions future. Suncor is listed on the UN Global Compact 100 stock index. Suncor's common shares (symbol: SU) are listed on the Toronto and New York stock exchanges.

https://rbnenergy.com/come-clean-part-6-why-sustainable-aviation-fuel-is-taking-flight

# Come Clean, Part 6 - Why Sustainable Aviation Fuel Is Taking Flight

**Tuesday, 08/10/2021**
Published by: Aaron Imrie

Traveled by air in the U.S. lately? Airports and airplanes are packed to the gills. Unruly passengers are making the nightly news and becoming YouTube sensations. Jet fuel shortages are popping up. But there are other developments in air travel too, including a push by the global airline industry to rein in its greenhouse gas emissions. And the heart of that movement is sustainable aviation fuel, or SAF. While the blending of SAF with conventional jet fuel is not mandated in the U.S., the alternative fuel is gaining altitude, in part because it can generate layers of credits that can be utilized in various renewable fuel trading programs. In today's blog, we look at the current status of renewable fuel in the U.S. aviation sector.

In this blog series, we are reviewing laws and regulations aimed at reducing carbon-dioxide and other greenhouse gas (GHG) emissions from the transportation sector in the U.S. and Canada. Low carbon fuel standards (LCFSs) have been adopted in a number of jurisdictions to help meet increasingly stringent GHG-related goals, which are likely to have sizable impacts on refined products markets. In Part 1 of this series, we provided an overview of various policies that have been adopted and are being discussed to reduce GHG emissions from transportation fuel use. We noted several approaches being taken, all of which measure performance based on carbon intensity (CI), an account of lifecycle GHG emissions associated with producing, refining, distributing, and consuming a fuel, typically measured in grams of carbon dioxide equivalent per megajoule ($gCO_2e/MJ$). In Part 2, we focused on California's LCFS, which was first implemented in January 2011 and subsequently enhanced. California's LCFS sets CI limits on finished gasoline and diesel fuel consumed in the state each year on a gradually declining scale to meet the 2030 goal of a 20% reduction in the carbon intensity of motor fuels consumed there. In Part 3, we zeroed in on motor gasoline and how ethanol has come to play a major role in increasing the use of renewables. In Part 4 and Part 5, we discussed diesel, and how biodiesel and renewable diesel, respectively, have come to play major roles in increasing the use of renewables. Today, we turn our attention to sustainable aviation fuel (SAF) and discuss the regulations, production, and increasing role of SAF in decarbonization efforts.

In the U.S., jet fuel is the third most consumed transportation fuel, accounting for about 12% of all transportation fuel sold in 2019 — the last "normal" year for air travel — before dropping to about 8% in COVID-impacted 2020 and rebounding to 9% in the first five months of 2021, according to the Energy Information Administration (dashed red line and right axis in Figure 1). After many years of development, aviation turbine engines have proven to be reliable and efficient, with a very high power-to-weight ratio. The high energy density of liquid jet fuel enables modern aircraft to fly long distances without the need to refuel. Therefore, use of SAF in existing aircraft engines is currently viewed by many to be the most viable option to achieve GHG reductions in the aviation sector.

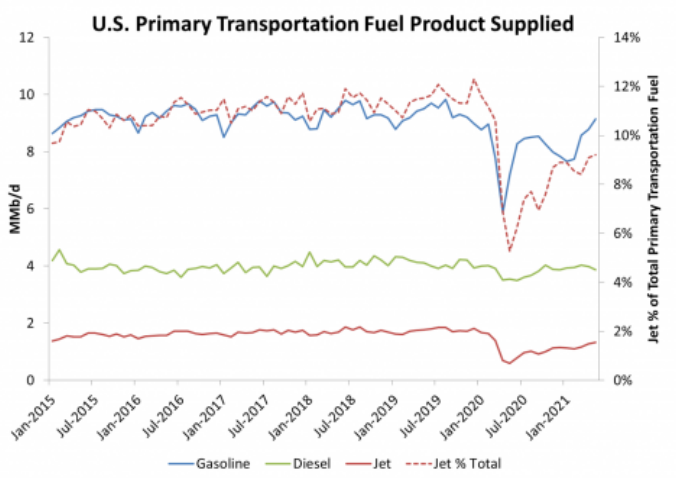


Figure 1. U.S. Primary Transportation Fuel Product Supplied by Fuel Type. Sources: EIA, Baker & O'Brien

***Fuel Properties, Specifications, and Certification***

Conventional jet fuel has a composition similar to diesel and there is considerable overlap in some of their properties. Likewise, SAF manufactured from renewable feedstock is in many ways similar to renewable diesel (RD). In a typical petroleum refinery, conventional jet fuel and diesel are processed in similar processing units, with catalysts and operating conditions adjusted somewhat to effect modestly different product specifications. A key resulting difference is that jet fuel is "lighter" than diesel — both in density and distillation range. Diesel specifications allow longer-chain hydrocarbons than do jet fuel specifications, resulting in a higher distillation end point (the boiling temperature correlating to the heaviest components in the fuel). Other key differences between jet fuel and diesel include sulfur content, cetane number (an octane-like measure), and cold-flow properties like freeze point. See Figure 2 below for a comparison of select quality differences between diesel and jet fuel.

| Property | Jet A | ULSD |
|---|---|---|
| Distillation temperature, end point, max. °C | 300 | 338 |
| Freezing point, max. °C | -40 | - |
| Cetane number, min. | - | 40 |
| Sulfur, max. wt. ppm | 3,000 | 15 |

Figure 2. Jet Fuel and Diesel Specifications. Sources: ASTM, EPA

Why are there differences between jet and diesel fuel specifications? The last time you were on a flight, you may have seen the in-flight entertainment system indicate just how incredibly cold it can get at high altitude. At 35,000 feet, the air temperature is well below zero degrees Fahrenheit. (Who wants to worry about a frozen fuel line when you are halfway across the Pacific?) The cold flow properties of jet fuel are a very important safety consideration. No *biodiesel* components, i.e., fatty acid methyl esters (FAME), or other oxygenated oils, can be blended into jet fuel. Why? As we discussed in Part 5, the oxygenated components in biodiesel mean bad news for the cold-flow performance properties required of jet fuel.

Nearly all commercial aircraft and airport fueling infrastructure built to date has been designed based on the supply of (fossil-based) jet fuels compliant with conventional jet fuel specifications defined and published in the ASTM D1655 standard: *Standard Specification for Aviation Turbine Fuels* (see

Figure 3.) To avoid the need for separate fueling infrastructure (remember “water-loving” ethanol from Part 3?) or new turbine engines, it is vital that SAF be fully compatible with existing aircraft, i.e., it must be a true “drop-in” fuel, essentially indistinguishable from the fossil-based conventional jet fuel used today. In fact, all types of SAF permitted for commercial use to date have been tested and approved by an industry consortium of turbine engine and airframe original equipment manufacturers (OEMs). Although this “fit-for-purpose” testing can cost millions of dollars and take years to complete, we can all sleep better on those long flights knowing it is a rigorous and thorough process.

Once approved, the specification requirements for all new types of SAF are incorporated into an annex of the ASTM D7566 standard: *Standard Specification for Aviation Turbine Fuels Containing Synthesized Hydrocarbons.* Importantly, D7566 specifies the maximum blend rate at which each type of SAF can be used. Currently, no types of SAF can be commercially used at blending rates higher than 50%, and some have limits as low as 10%.

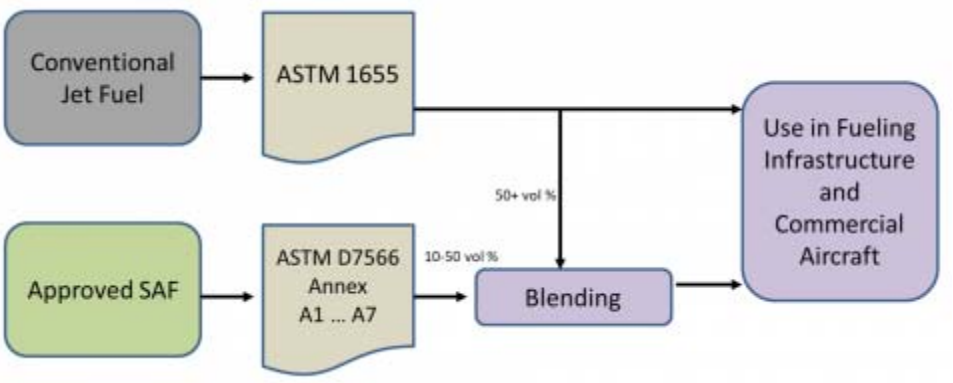


Figure 3. ASTM SAF and Conventional Jet Fuel Requirements. Source: ASTM

### *SAF Production Processes*

Several technologies exist to produce RD — and SAF — but a general design typically reacts a renewable feedstock (such as vegetable oil) with hydrogen ($H_2$) at high pressure over a reactor filled with catalyst (blue step in Figure 4 flow diagram). After the reactor, the liquid hydrocarbons are separated (from unreacted hydrogen and water; gray step) and then fed into a lower-pressure fractionation system (orange step) and distilled into refinery intermediates.

This basic design can be modified to maximize production of SAF. One way this can be accomplished is by incorporating a “dewaxing” catalyst to satisfy the cold-flow properties required for jet fuel. However, dewaxing tends to lower the cetane number of the fuel, which could be a bit of a headwind for a renewable fuel manufacturer seeking optionality to sell either RD or SAF (or both), depending on market conditions.

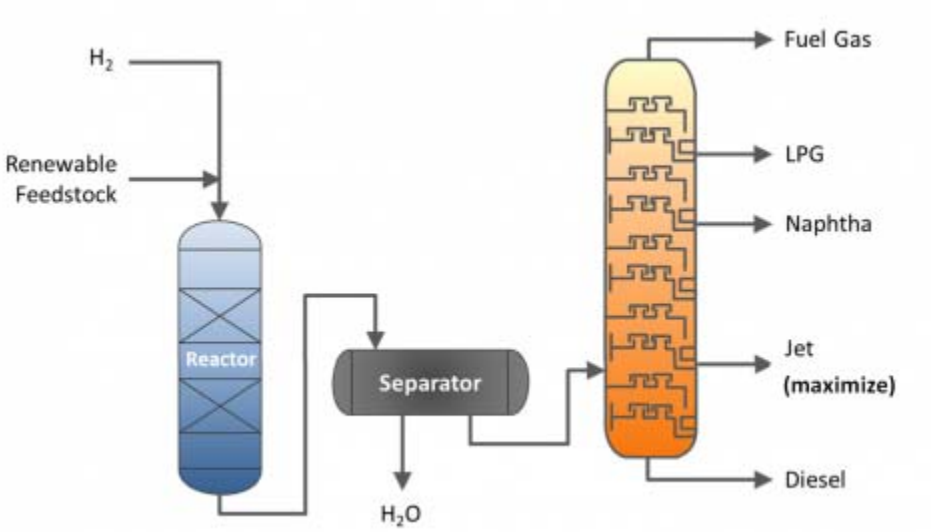


Figure 4. RD/SAF Manufacturing Process Utilizing Hydrotreating Technology. Source: Baker & O'Brien

Additionally, the catalyst formulation used can be adjusted to "hydrocrack" the heavier, diesel hydrocarbons in an effort to boost the yield of jet fuel. However, as the verb suggests, this involves "cracking" open the larger diesel molecules into smaller molecules. So, in addition to producing jet fuel, this also yields less valuable co-products like fuel gas, LPG, and naphtha, and therefore less revenue is earned. From what we have discussed so far, RD would appear to have an edge over SAF on profitability because it generally requires less hydrocracking and dewaxing during processing, allowing for a higher yield of the desired fuel product. Note that historically, before COVID, conventional jet fuel prices often demanded a premium over ultra-low sulfur diesel (ULSD), depending on the specific market.

***SAF Policies and Manufacturer Incentives***

In Part 1, we discussed various policies aimed at reducing the CI of transportation fuels. Some policies include jet fuel, while others do not. Consider California's LCFS program, for example. Currently, jet fuel is exempt from the program, and the production of conventional jet fuel does not generate deficits for refiners. However, production of SAF can generate *credits* under California's LCFS program and thereby offset deficits generated from conventional gasoline and diesel production. Similarly, while renewable blending is not required for jet fuel under the U.S. Renewable Fuel Standard (RFS), it does generate RINs (Renewable Identification Numbers) when blended, which can then be sold to "obligated parties" under the RFS program.

There are certain voluntary programs, such as the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), that we should note. CORSIA was developed by the International Civil Aviation Organization (ICAO), an agency of the United Nations, and the program is currently in a voluntary, pilot phase with an aspirational goal of achieving carbon-neutral growth from 2020 onwards. Although CORSIA is voluntary, there is a credit trading scheme currently in place for SAF. That means, if you're utilizing SAF (in California, for example), there is a potential opportunity to layer on credit opportunities under the U.S. RFS, the California LCFS, and CORSIA.

Given that many policies in support of SAF use are currently voluntary, and the technologies and pathways to its production are still evolving, commercial volumes of SAF are miniscule today. The Environmental Protection Agency (EPA) reported that just over 2.4 million gallons of neat (100%) SAF were produced in the U.S. in 2019 (the latest numbers available). Compared to the 21.5 *billion* gallons of conventional jet fuel produced the same year, SAF accounted for a paltry

0.01% of the total. The disproportionately negative impact on jet fuel demand from COVID certainly hasn't helped. However, given the compositional similarities between RD and SAF, if we assume that at least half of all RD produced in 2019 (or approximately 500 million gallons) had instead been produced and sold to SAF specifications, it would have represented just over 2% of U.S. jet fuel supply that year.

Looking ahead (as noted in Part 5), projections for RD capacity in 2025 are approaching 500 Mb/d (7.7 billion gallons per year). If we assume that at least half of this could instead be produced and sold to SAF specifications, it would represent over 17% of 2019's U.S. jet fuel supply. Considering the "headwinds" faced by SAF relative to RD — regulatory hurdles, narrower specifications, and fewer economic incentives — SAF will likely require more demand "pull" and/or economic incentives to encourage increased SAF production in the coming years. However, given the relatively smaller market for jet fuel relative to diesel, the projected capacities for renewable distillate production could offer volumes that would make up a fairly substantial fraction of future jet fuel consumption.

In the next blog in this series, we'll look at hydrogen as a potential transportation fuel under the various LCFS programs.

"Come Clean" was written by Kara DioGuardi and John Shanks and in January 2004 was the second single released from Hilary Duff's second studio album, *Metamorphosis*. Produced by John Shanks, the song peaked at #35 on the Billboard Hot 100 Singles chart in the U.S., but broke into the Top 20 in the UK and Australia.

The song was used in the theatrical trailer for the 2004 film *A Cinderella Story*, which stars Duff. It also was used as the theme song for the MTV reality television shows *Laguna Beach: The Real Orange County* and *Newport Harbor: The Real Orange County*. A remix of "Come Clean" was included in Duff's 2005 compilation album, *Most Wanted*, and another remix appeared in the *Best of Hilary Duff* LP in 2008.

Hilary Duff is an American actress, businesswoman, singer-songwriter, producer, and writer. She began her acting career at a young age, starring in the TV series *Lizzie McGuire* in 2001-04, followed by leading roles in The Lizzie McGuire Movie and several other films.

https://www.argusmedia.com/en/news/2243663-swiss-government-rejects-post2050-fossil-fuel-ban?backToResults=true

# Swiss government rejects post-2050 fossil fuel ban

Published date: 12 August 2021



Switzerland's federal government yesterday called for climate policy to be "realistic" and "socially responsible", and rejected a ban on fossil fuels beyond 2050, in its official reply to a referendum initiative.

The government suggested toning down the demands made in an environmentalists' petition for referendum, the so-called glacier initiative. The initiative calls for a ban on marketing fossil fuels in the country after 2050 to be enshrined in Switzerland's constitution, and for carbon storage counting towards Switzerland's climate target to be restricted to its domestic territory.

The government said that while it "fundamentally" supports the glacier initiative, it also believes the initiative goes too far in "certain points".

The government proposed enshrining in Switzerland's constitution that consumption of fossil fuels should be reduced as much as "technically feasible, economically viable, and compatible with the security of the country and the protection of the population".

It also proposed enshrining the stipulation that man-made greenhouse gas (GHG) emissions arising in Switzerland from 2050 must be compensated by "secure" GHG sinks "at home and abroad".

The glacier initiative proposed that fossil fuel consumption beyond 2050 be permitted only in the case of "technically not substitutable applications", and only if "secure" GHG sinks within the country "permanently" compensate for the climate effects.

The government proposals will be set against the glacier initiative in a public referendum, in line with Switzerland's direct democracy rules. No date has as yet been set for the referendum.

The government argued that decarbonisation must take into account the special needs of sectors such as the army or rescue forces, but also of people living in remote or mountainous areas. And given the limited space in Switzerland, the possibility of using carbon storage sites outside of the country should not be banned. The permanence of carbon sinks in forests, wood or soil cannot be guaranteed, the government said.

The government reiterated its view that the recent vote in a public referendum in June against the draft CO2 law amendment proposed by government and parliament was not a vote against climate policy, or against Switzerland's pledge to become carbon neutral in 2050 in line with its commitments under the Paris climate agreement.

The federal environment office said a new draft for CO2 law amendment will be drawn up in autumn. The federal government has admitted that the rejected law may have been too "overloaded", which may have contributed to its failure.

Meanwhile, parliament is drawing up a stop-gap law to safeguard certain exemptions and compensation measures in the existing CO2 law, which expires at the end of the year.

By Chloe Jardine

2021/17/PR

**IPCC PRESS RELEASE**

9 August 2021

# Climate change widespread, rapid, and intensifying – IPCC

GENEVA, Aug 9 – Scientists are observing changes in the Earth's climate in every region and across the whole climate system, according to the latest Intergovernmental Panel on Climate Change (IPCC) Report, released today. Many of the changes observed in the climate are unprecedented in thousands, if not hundreds of thousands of years, and some of the changes already set in motion—such as continued sea level rise—are irreversible over hundreds to thousands of years.

However, strong and sustained reductions in emissions of carbon dioxide ($CO_2$) and other greenhouse gases would limit climate change. While benefits for air quality would come quickly, it could take 20-30 years to see global temperatures stabilize, according to the IPCC Working Group I report, *Climate Change 2021: the Physical Science Basis*, approved on Friday by 195 member governments of the IPCC, through a virtual approval session that was held over two weeks starting on July 26.

The Working Group I report is the first instalment of the IPCC's Sixth Assessment Report (AR6), which will be completed in 2022.

"This report reflects extraordinary efforts under exceptional circumstances," said Hoesung Lee, Chair of the IPCC. "The innovations in this report, and advances in climate science that it reflects, provide an invaluable input into climate negotiations and decision-making."

## Faster warming

The report provides new estimates of the chances of crossing the global warming level of 1.5°C in the next decades, and finds that unless there are immediate, rapid and large-scale reductions in greenhouse gas emissions, limiting warming to close to 1.5°C or even 2°C will be beyond reach.

The report shows that emissions of greenhouse gases from human activities are responsible for approximately 1.1°C of warming since 1850-1900, and finds that averaged over the next 20 years, global temperature is expected to reach or exceed 1.5°C of warming. This assessment is based on improved observational datasets to assess historical warming, as well progress in scientific understanding of the response of the climate system to human-caused greenhouse gas emissions.

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“This report is a reality check,” said IPCC Working Group I Co-Chair Valérie Masson-Delmotte. “We now have a much clearer picture of the past, present and future climate, which is essential for understanding where we are headed, what can be done, and how we can prepare.”

**Every region facing increasing changes**

Many characteristics of climate change directly depend on the level of global warming, but what people experience is often very different to the global average. For example, warming over land is larger than the global average, and it is more than twice as high in the Arctic.

“Climate change is already affecting every region on Earth, in multiple ways. The changes we experience will increase with additional warming,” said IPCC Working Group I Co-Chair Panmao Zhai.

The report projects that in the coming decades climate changes will increase in all regions. For 1.5°C of global warming, there will be increasing heat waves, longer warm seasons and shorter cold seasons. At 2°C of global warming, heat extremes would more often reach critical tolerance thresholds for agriculture and health, the report shows.

But it is not just about temperature. Climate change is bringing multiple different changes in different regions – which will all increase with further warming. These include changes to wetness and dryness, to winds, snow and ice, coastal areas and oceans. For example:

- Climate change is intensifying the water cycle. This brings more intense rainfall and associated flooding, as well as more intense drought in many regions.
- Climate change is affecting rainfall patterns. In high latitudes, precipitation is likely to increase, while it is projected to decrease over large parts of the subtropics. Changes to monsoon precipitation are expected, which will vary by region.
- Coastal areas will see continued sea level rise throughout the 21st century, contributing to more frequent and severe coastal flooding in low-lying areas and coastal erosion. Extreme sea level events that previously occurred once in 100 years could happen every year by the end of this century.
- Further warming will amplify permafrost thawing, and the loss of seasonal snow cover, melting of glaciers and ice sheets, and loss of summer Arctic sea ice.
- Changes to the ocean, including warming, more frequent marine heatwaves, ocean acidification, and reduced oxygen levels have been clearly linked to human influence. These changes affect both ocean ecosystems and the people that rely on them, and they will continue throughout at least the rest of this century.
- For cities, some aspects of climate change may be amplified, including heat (since urban areas are usually warmer than their surroundings), flooding from heavy precipitation events and sea level rise in coastal cities.

For the first time, the Sixth Assessment Report provides a more detailed regional assessment of climate change, including a focus on useful information that can inform risk assessment, adaptation, and other decision-making, and a new framework that helps translate physical changes in the climate – heat, cold, rain, drought, snow, wind, coastal flooding and more – into what they mean for society and ecosystems.

This regional information can be explored in detail in the newly developed Interactive Atlas interactive-atlas.ipcc.ch as well as regional fact sheets, the technical summary, and underlying report.

**Human influence on the past and future climate**

"It has been clear for decades that the Earth's climate is changing, and the role of human influence on the climate system is undisputed," said Masson-Delmotte. Yet the new report also reflects major advances in the science of attribution – understanding the role of climate change in intensifying specific weather and climate events such as extreme heat waves and heavy rainfall events.

The report also shows that human actions still have the potential to determine the future course of climate. The evidence is clear that carbon dioxide ($CO_2$) is the main driver of climate change, even as other greenhouse gases and air pollutants also affect the climate.

"Stabilizing the climate will require strong, rapid, and sustained reductions in greenhouse gas emissions, and reaching net zero $CO_2$ emissions. Limiting other greenhouse gases and air pollutants, especially methane, could have benefits both for health and the climate," said Zhai.

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*Notes for Editors*

**Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change**

The Working Group I report addresses the most updated physical understanding of the climate system and climate change, bringing together the latest advances in climate science, and combining multiple lines of evidence from paleoclimate, observations, process understanding, global and regional climate simulations. It shows how and why climate has changed to date, and the improved

understanding of human influence on a wider range of climate characteristics, including extreme events. There will be a greater focus on regional information that can be used for climate risk assessments.

The Summary for Policymakers of the Working Group I contribution to the Sixth Assessment Report (AR6) as well as additional materials and information are available at https://www.ipcc.ch/report/ar6/wg1/

**Note**: Originally scheduled for release in April 2021, the report was delayed for several months by the COVID-19 pandemic, as work in the scientific community including the IPCC shifted online. This is first time that the IPCC has conducted a virtual approval session for one of its reports.

**AR6 Working Group I in numbers**

234 authors from 66 countries

- 31 – coordinating authors
- 167 – lead authors
- 36 – review editors

plus

- 517 - contributing authors

Over 14,000 cited references

A total of 78,007 expert and government review comments

(First Order Draft 23,462; Second Order Draft 51,387; Final Government Distribution: 3,158)

More information about the Sixth Assessment Report can be found here.

**About the IPCC**

The Intergovernmental Panel on Climate Change (IPCC) is the UN body for assessing the science related to climate change. It was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) in 1988 to provide political leaders with periodic scientific assessments concerning climate change, its implications and risks, as well as to put forward adaptation and mitigation strategies. In the same year the UN General Assembly endorsed the action by the WMO and UNEP in jointly establishing the IPCC. It has 195 member states.

Thousands of people from all over the world contribute to the work of the IPCC. For the assessment reports, IPCC scientists volunteer their time to assess the thousands of scientific papers published each year to provide a comprehensive summary of what is known about the drivers of climate change, its impacts and future risks, and how adaptation and mitigation can reduce those risks.

The IPCC has three working groups: Working Group I, dealing with the physical science basis of climate change; Working Group II, dealing with impacts, adaptation and vulnerability; and Working Group III, dealing with the mitigation of climate change. It also has a Task Force on National Greenhouse Gas Inventories that develops methodologies for measuring emissions and removals. As part of the IPCC, a Task Group on Data Support for Climate Change Assessments (TG-Data) provides guidance to the Data Distribution Centre (DDC) on curation, traceability, stability, availability and transparency of data and scenarios related to the reports of the IPCC.

IPCC assessments provide governments, at all levels, with scientific information that they can use to develop climate policies. IPCC assessments are a key input into the international negotiations to tackle climate change. IPCC reports are drafted and reviewed in several stages, thus guaranteeing objectivity and transparency. An IPCC assessment report consists of the contributions of the three working groups and a Synthesis Report. The Synthesis Report integrates the findings of the three working group reports and of any special reports prepared in that assessment cycle.

**About the Sixth Assessment Cycle**

At its 41st Session in February 2015, the IPCC decided to produce a Sixth Assessment Report (AR6). At its 42nd Session in October 2015 it elected a new Bureau that would oversee the work on this report and the Special Reports to be produced in the assessment cycle.

*Global Warming of 1.5°C, an IPCC special report on the impacts of global warming of 1.5 degrees Celsius above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* was launched in October 2018.

*Climate Change and Land, an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems* was launched in August 2019, and the *Special Report on the Ocean and Cryosphere in a Changing Climate* was released in September 2019.

In May 2019 the IPCC released the *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories*, an update to the methodology used by governments to estimate their greenhouse gas emissions and removals.

The other two Working Group contributions to the AR6 will be finalized in 2022 and the AR6 Synthesis Report will be completed in the second half of 2022.

*For more information go to* www.ipcc.ch

The website includes outreach materials including videos about the IPCC and video recordings from outreach events conducted as webinars or live-streamed events.

# Headline Statements from the Summary for Policymakers

9 August 2021 (subject to final copy-editing)

## A. The Current State of the Climate

**A.1** It is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred.

**A.2** The scale of recent changes across the climate system as a whole and the present state of many aspects of the climate system are unprecedented over many centuries to many thousands of years.

**A.3** Human-induced climate change is already affecting many weather and climate extremes in every region across the globe. Evidence of observed changes in extremes such as heatwaves, heavy precipitation, droughts, and tropical cyclones, and, in particular, their attribution to human influence, has strengthened since the Fifth Assessment Report (AR5).

**A.4** Improved knowledge of climate processes, paleoclimate evidence and the response of the climate system to increasing radiative forcing gives a best estimate of equilibrium climate sensitivity of 3°C, with a narrower range compared to AR5.

## B. Possible Climate Futures

**B.1** Global surface temperature will continue to increase until at least the mid-century under all emissions scenarios considered. Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in carbon dioxide ($CO_2$) and other greenhouse gas emissions occur in the coming decades.

**B.2** Many changes in the climate system become larger in direct relation to increasing global warming. They include increases in the frequency and intensity of hot extremes, marine heatwaves, and heavy precipitation, agricultural and ecological droughts in some regions, and proportion of intense tropical cyclones, as well as reductions in Arctic sea ice, snow cover and permafrost.

**B.3** Continued global warming is projected to further intensify the global water cycle, including its variability, global monsoon precipitation and the severity of wet and dry events.

**B.4** Under scenarios with increasing $CO_2$ emissions, the ocean and land carbon sinks are projected to be less effective at slowing the accumulation of $CO_2$ in the atmosphere.

**B.5** Many changes due to past and future greenhouse gas emissions are irreversible for centuries to millennia, especially changes in the ocean, ice sheets and global sea level.

## C. Climate Information for Risk Assessment and Regional Adaptation

**C.1** Natural drivers and internal variability will modulate human-caused changes, especially at regional scales and in the near term, with little effect on centennial global warming. These modulations are important to consider in planning for the full range of possible changes.

**C.2** With further global warming, every region is projected to increasingly experience concurrent and multiple changes in climatic impact-drivers. Changes in several climatic impact-drivers would be more widespread at 2°C compared to 1.5°C global warming and even more widespread and/or pronounced for higher warming levels.

**C.3** Low-likelihood outcomes, such as ice sheet collapse, abrupt ocean circulation changes, some compound extreme events and warming substantially larger than the assessed *very likely* range of future warming cannot be ruled out and are part of risk assessment.

## D. Limiting Future Climate Change

**D.1** From a physical science perspective, limiting human-induced global warming to a specific level requires limiting cumulative $CO_2$ emissions, reaching at least net zero $CO_2$ emissions, along with strong reductions in other greenhouse gas emissions. Strong, rapid and sustained reductions in $CH_4$ emissions would also limit the warming effect resulting from declining aerosol pollution and would improve air quality.

**D.2** Scenarios with low or very low greenhouse gas (GHG) emissions (SSP1-1.9 and SSP1-2.6) lead within years to discernible effects on greenhouse gas and aerosol concentrations, and air quality, relative to high and very high GHG emissions scenarios (SSP3-7.0 or SSP5-8.5). Under these contrasting scenarios, discernible differences in trends of global surface temperature would begin to emerge from natural variability within around 20 years, and over longer time periods for many other climatic impact-drivers (*high confidence*).

https://www.narendramodi.in/text-of-prime-minnister-narendra-modi-s-address-from-the-red-fort-on-75th-independence-day-556737

# Sabka Saath, Sabka Vikas, Sabka Vishwas and now Sabka Prayas are vital for the achievement of our goals: PM Modi on 75th Independence Day

August 15, 2021

Share

TELL A FRIEND

My dear countrymen!

Best wishes to all of you and those who love India and democracy from all over the world on the occasion of the Amrit Mahotsav of freedom, the 75th Independence Day.

Today, on the pious festival of the Amrit Mahotsav of freedom, the country is bowing to all its freedom fighters and brave heroes who continue to sacrifice themselves day and night in the defense of the nation. The country is remembering every personality, including the revered Bapu, who made freedom a mass movement, Netaji Subhash Chandra Bose, who sacrificed everything for the freedom, or great revolutionaries like Bhagat Singh, Chandrasekhar Azad, Bismil and Ashfaqulla Khan; Rani of Jhansi Lakshmibai, Queen Chennamma of Kittur or Rani Gaidinliu or the valour of MatanginiHazra in Assam; the country's first Prime Minister Pandit Nehru ji, Sardar Vallabhbhai Patel, who integrated the country into a united nation, and Baba Saheb Ambedkar, who determined and paved the way for the future direction of India. The country is indebted to all these great personalities.

India is a land endowed with gems. I salute countless people from every corner of India whose names don't even figure in history, but who have built this nation and have also taken it forward in every period.

India has fought for the motherland, culture and freedom for centuries. This country never gave up the pain of slavery and the longing for freedom for centuries. In the midst of victories and defeats, the aspiration of freedom engraved in the mind was never diminished. Today is the time to bow down to the leaders of all these struggles, the warriors of centuries of struggle and they also deserve our reverence.

Our doctors, nurses, paramedical staff, sanitation staff, scientists engaged in developing vaccines, millions of countrymen engaged with the spirit of service during this Corona global pandemic also deserve praise from all of us.

Today there are floods in some areas of the country, landslides have also occurred. Some sad news also keeps coming. The hardships of the people have increased in many areas. At such a time, both the Central and State Governments are with them in complete readiness. Today, the young athletes and our players who have brought laurels to India are also present in this event.

Some are present and sitting here. Today, I appeal to all the countrymen, those who are present here and all those who are present in this ceremony from every corner of India, that in the honour of our players, for a few moments let's salute them with resounding clapping applause and show respect for their huge accomplishments.

Let us show our respect to the sports of India, youth of India and honour the young Indians who bring laurels to the nation. Crores of countrymen are showing respect to the youth of India, especially the athletes who brought honour to India with a thunderous applause. I can be proud that they have not only won our hearts today, but also inspired the youth of India and future generations with their huge achievements.

My dear countrymen,

While we celebrate our freedom today, we cannot forget the pain of partition that still pierces through the heart of all Indians. This has been one of the biggest tragedies of the last century. After attaining freedom, these people were forgotten too soon. Just yesterday India has taken an emotional decision in their memory. We will henceforth commemorate August 14 as “Partition Horrors Remembrance Day” in the memory of all the victims of partition. Those who were subjected to inhuman circumstances, suffered torturous treatment, they could not even receive a dignified cremation. They must all remain alive and never get erased from our memories. The decision of celebrating “Partition Horrors Remembrance Day” on the 75th Independence Day is a befitting tribute from every Indian to them.

My dear countrymen,

For the country moving on the path of progress and humanity in the entire world, the Corona period came as a major challenge. Indians fought this fight with great grit and patience. We had many challenges. Countrymen performed extraordinarily in every field. It is due to the power of our entrepreneurs and scientists that the country is not dependent on anyone or any country for vaccines. Imagine for a ment, if we did not have the vaccine. How long did it take to get polio vaccine?

It was extremely difficult to get vaccines during such a major crisis, with pandemic plaguing the entire world. India might or might not have received it and even if it had received the vaccine there was no certainty of getting that in time. But today we can proudly say that the world's largest vaccination programme is being run in our country. More than 54 crore people have received the vaccine dose. Online systems like Cowin and digital certificates are attracting the world today.

The way India has kept the stoves burning in the poor households by providing free food grains to 80 crore countrymen continuously for months during the pandemic is not only astonishing to the world but also a matter of discussion. It is true that fewer people have been infected in India as compared to other countries; it is also true that in comparison to the population of other countries of the world, we managed to save more citizens in India but it is not something to be proud of! We cannot rest on these laurels. To say that there was no challenge, will become a restrictive thought in the path of our own development.

Our systems are insufficient compared to that of the rich countries of the world, we do not have what the rich countries have. Moreover, we also have a greater population compared to the other countries of the world. And our lifestyle is also different. Despite all our efforts, we could not save many people. So many children have been orphaned. This unbearable pain is going to remain forever.

My dear countrymen,

There comes a time in the development journey of every country when the country redefines itself afresh and pushes forward with new resolutions. Today that time has arrived in the development journey of India. We should not limit the occasion of 75 years of Indian independence to just one ceremony. We must lay the groundwork for new resolutions and move forward with new resolutions. Starting from here, the entire journey of the next 25 years, when we celebrate the centenary of Indian independence, marks the Amrit period of creation of a new India. The fulfillment of our resolutions in this Amrit period will take us to the hundredth anniversary of Indian independence with pride.

The goal of 'Amrit Kaal' is to ascend to new heights of prosperity for India and the citizens of India. The goal of 'Amrit Kaal' is to create an India where the level of facilities is not dividing the village and the city. The goal of 'Amrit Kaal' is to build an India where the government does not interfere unnecessarily in the lives of citizens. The goal of 'Amrit Kaal' is to build an India where there is world’s every modern infrastructure.

We should not be lesser than anyone. This is the resolve of the crores of countrymen. But the resolve remains incomplete until it is not accompanied by the extreme hard work and courage. Therefore, we have to realize all our resolutions with hard work and courage, and these dreams and resolutions are also for effective contribution to a safe and prosperous world beyond our borders.

Amrit Kaal is of 25 years. But we don't have to wait for long to achieve our goals. We have to start now. We don't have a moment to lose. This is the right time. Our country also has to change and we as citizens have to change ourselves too. We also have to adapt ourselves to the changing era. We have started with the spirit of 'SabkaSaath, Sabka Vikas, Sabka Vishwas'. Today I am requesting from the ramparts of the Red Fort that 'SabkaSaath, Sabka Vikas, Sabka Vishwas' and now 'SabkaPrayas' are very important for the achievement of our goals. Crores of people are getting the benefits of many schemes started in the last seven years. Every poor of the country knows the importance of Ujjwala to Ayushman Bharat. Today the speed of government schemes has increased and they are achieving the desired goals.

We have progressed much faster than before. But it does not end here. We have to achieve saturation. All the villages should have roads, all the households should have bank accounts, all the beneficiaries should have Ayushman Bharat cards and all the eligible persons should get the benefit of Ujjwala Yojana and should have gas connections. We have to connect every entitled person with the government's insurance, pension and housing schemes. We have to move ahead with a mindset of cent percent achievement. Till now, no thought was given for our street vendors, who sell their goods on tracks, footpaths and carts. All these colleagues are now being linked to the banking system through the SVANidhi scheme.

Just as we have made electricity accessible to 100% households, and have made authentic efforts to construct toilets in 100% households, similarly, we now have to move ahead with the goal of achieving saturation of schemes, and, for this, we do not have to keep a distant deadline. We have to make our resolutions come true within a few years.

Today, our country is working with speed on the Har Ghar Jal Mission. I am happy that in just two years of the Jal Jeevan Mission, more than four and a half crore families have started getting water from taps. They have started getting water from pipes. Receiving the blessings from crores of mothers and sisters, is our true capital. The biggest advantage of this 100 percent accomplishment rate is that no one remains deprived of the benefits of the government scheme. When the government operates with a target to reach the person in the last line, only then there is no discrimination and there is no scope for corruption.

My dear countrymen,

Providing nutrition to every poor person of the country is also a priority of this government. Malnutrition and lack of essential nutrients in poor women and poor children poses major obstacles in their development. In view of this, it has been decided that the government will fortify the rice given to the poor under its various schemes. Will give rice fortified with nutrition to the poor. Be it the rice available at the ration shop, the rice provided to the children in the mid-day meal, or the rice available through every scheme, it shall be fortified by the year 2024.

My dear countrymen,

Today, the campaign to provide better health facilities to every poor in the country is also going on at a fast pace. For this, important reforms have also been made in medical education. Equal attention has been paid to preventive healthcare. Simultaneously, there has been a substantial increase in the number of medical seats in the country. Under the Ayushman Bharat scheme, quality health services are being provided to every village in the country. Affordable medicines are being made available to the poor and middle class through Jan Aushadhi Yojana. So far, more than 75 thousand Health and Wellness centers have been set up. At the block level too, modern health infrastructure is being exclusively set up on a network of good

hospitals and modern labs. Very soon thousands of hospitals in the country will also have their own oxygen plants.

My dear countrymen,

To take India to new heights in the 21st century, the optimal utilisation of India's potential is the need of the hour.

This is extremely important. For this, we need to provide hand holding to the backward categories and sectors. Alongwith the concern of fulfilling the basic needs, reservation is being ensured for the Dalits, Backward classes, Adivasis and the poor people from general category. More recently, in the field of medical education, reservation has also been ensured for the OBC category in the All India quota. By formulating a law in Parliament, the right to make their own list of OBC has been given to the states.

My dear countrymen,

Just as we are making sure that no person or no class should be left behind in the development journey of society, similarly no part of the country, no corner of the country should be left behind. Development should be all-round, development should be all-pervasive, development should be all-inclusive. We are now accelerating the efforts that have been made in the last seven years to bring forward such backward areas of the country. Be it the eastern India, the North-east, Jammu-Kashmir, Ladakh including the entire Himalayan region, be it our coastal belt or the tribal region, these regions are going to turn into a major foundation for India's development in future, India's development journey.

Today a new history of connectivity is being written in the North-East. This is a connectivity of both the hearts and the infrastructure. Very soon the work of connecting all the state capitals of the North-East with rail service is going to be completed. Under the Act-East Policy, today North-East, Bangladesh, Myanmar and South-East Asia are also being connected. Due to the efforts made in the past years, now the enthusiasm for the creation of Shreshtha Bharat and long lasting peace in the North-East has increased manifold.

There is a huge potential in the fields of tourism, adventure sports, organic farming, herbal medicine, and oil pump in the North East. We have to fully harness this potential and make it a part of the development journey of the country. And we have to complete this work within a few decades of the 'Amrit kaal'. Giving a fair opportunity to the capabilities of all is the true spirit of democracy. Be it Jammu or Kashmir, the balance of development is now visible on the ground.

The Delimitation Commission has been constituted in Jammu and Kashmir and preparations are also going on for the assembly elections. Ladakh has also progressed towards its limitless possibilities of development. On one hand Ladakh is witnessing the creation of modern infrastructure, while on the other hand Sindhu Central University is also making Ladakh a center of higher education.

In this decade of the 21st century, India will further accelerate its efforts towards the Blue Economy. Along with aquaculture, we have to take full advantage of the new possibilities that are emerging in the cultivation of seaweed. The Deep Ocean Mission is the result of our ambition to explore the unlimited possibilities of the ocean. The mineral wealth which is hidden in the sea, the thermal energy which is in the sea water, can give new heights to the development of the country.

We have also awakened the aspirations of the districts of the country believed to have been left behind. Priority is being given to schemes related to education, health, nutrition, roads and employment in more than 110 aspirational districts in the country. Many of these districts are in our tribal areas. We have created a spirit of healthy competition for development among these districts. There is a strong competition going on in that direction so that these aspirational districts are at par with other districts of India.

My dear countrymen,

Capitalism and socialism are discussed a lot in the world of economics, but India also emphasizes cooperativism. Cooperativism is also compatible with our traditions and values. Cooperativism, in which the collective power of the masses becomes the driving force of the economy, is important for the country's grassroots level economy. Co-operatives are not just a system with a network of laws and rules, but co-operative is a spirit, culture, and a mindset of collective growth. We have taken steps to empower them by forming a separate ministry. We have taken this step to empower the cooperative sector in the states.

My dear countrymen,

We will have to put all our efforts to build a new economy in the villages in this decade. Today we can see our villages changing rapidly. In the last few years, our government has provided roads and electricity to the villages. Now these villages have been strengthened with optical fibernetwork data and the Internet. Digital entrepreneurs are emerging in the villages also. The more than eight crore sisters in the villages, who are associated with Self-Help Groups, design top-end products. Now the government will also prepare an e-commerce platform for their products so that get a big market in our country and abroad. Today, when the country is moving forward with the mantra of Vocal for Local, this digital platform will connect the products of women self-help groups with people across the length and breadth of the country as well as internationally. Their horizon shall thus get enhanced.

During Corona, the country has witnessed the power of technology, as well as the commitment and capabilities of our scientists. The scientists of our country are working very diligently and strategically across the expanse of the country. Now the time has come for us to integrate the capabilities of scientists and their suggestions in our agriculture sector as well. Now we cannot wait any longer. We have to leverage this strength. This will go a long way in increasing the production of fruits, vegetables and grains along with giving food security to the country. Thus we shall catapult ourselves strongly into the world orbit.

Amongst these concerted efforts, we need to take cognizance of a major challenge posed in our agriculture sector. Challenge of shrinking of land of villagers which is due to immense rise in population, and smaller land holdings due to the divisions happening in the family. Farming land has shrunk alarmingly. More than 80 percent of the farmers of the country are those who have less than two hectares of land. If we see, 80 out of 100 farmers have less than two hectares of land i.e. the farmers of our country are practically in the small farmer category. Unfortunately, this segment remained eliminated from the benefits in our yesteryear's policies. They did not get their due importance. Now, keeping in mind these small farmers in the country, agricultural reforms are being undertaken, and critical decisions are being taken to benefit them.

Whether the improvement in the crop insurance scheme or important decision of increasing the MSP by one and a half times; a system to provide loans from banks at cheaper rates through Kisan Credit Card; taking the schemes related to solar power to the farm, formulate a Farmer Producer Organization. All these efforts will increase the power of the small farmer. In the coming times, a campaign will also be launched to create a warehouse facility up to the block level.

Keeping in mind the small expenses of every small farmer, PM KisanSamman Nidhi Yojana is being run. So far, more than 1.5 lakh crores have been deposited directly into the bank accounts of more than ten crore farmer families. The small farmer is now our resolve and mantra for us. The small farmer becomes the country's pride.... the small farmer becomes the nation's pride. This is our dream. In the coming years, we will have to increase the collective power of the small farmers of the country. New facilities have to be provided.

Today, Kisan Rail is plying on more than 70 rail routes of the country. Kisan Rail can help small farmers with this modern facility to reach far flung areas on a low cost of produce and transportation. Several

products like Kamalam, Shahi litchi, BhutJolokiachillis, black rice or turmeric are being exported to different countries of the world. Today, the country feels delighted when the aroma of these products produced in the soil of India reaches different countries of the world. Today the world is developing a taste for the vegetables and food grains grown in the fields of India.

My dear countrymen,

Swamitva Yojana is an example of one of the initiatives taken to boost the capabilities of the villages today. We all know what happens to the price of land in villages. They do not get any loan from the banks on the basis of land, despite being the owners of the land because no work had been done in terms of documents of rural land for several years. People do not have this system. The Swamitva scheme attempted to change this situation. Today every village, every house, every land is being mapped through drones. The data and property papers of village lands are being uploaded online. With this, not only the disputes related to land in the villages are being ended, but a system has also been created for the people of the village to get loans easily from the banks. The lands of village poor should be the foundation for development rather than disputes. And the country is moving in the same direction today.

My dear countrymen,

When Swami Vivekananda used to talk about the future of India, when he used to see the magnificence of Mother Bharati in front of his eyes, he used to say – Try to look into the past as far as possible. Drink the water of the ever new spring flowing back there, and after that, look ahead. Go ahead and make India brighter, greater & better than ever. In this 75th year of independence, it is our duty to move forward believing in the immense potential of the country. We have to work together for new generation infrastructure; we have to work together for world class manufacturing; we have to work together for cutting edge innovations; we have to work together for new age technology.

My dear countrymen,

The foundation of progress in the modern world lies on modern infrastructure. It also fulfills the needs and aspirations of the middle class. Weak infrastructure derails the pace of development and the urban middle class also suffers.

We have to work together for next generation infrastructure, for world class manufacturing, for cutting edge innovation and for New Age technology.

My dear countrymen,

Realizing this need, the country has demonstrated extraordinary speed and scale in every field from the seas, land to the skies. Rapid progress is underway whether it is development of new waterways or connecting new places with seaplanes. Indian Railways is also rapidly adapting to its modern avatar. The country has resolved to celebrate the Amrit Mahotsav of independence. You would know that we have decided to celebrate this Amrit Mahotsav of independence for 75 weeks. It started from 12th March and will continue till 15th August, 2023. We have to move forward with new enthusiasm and, therefore, the country has made a very important decision.

During these 75 weeks of the Amrit Mahotsav of Independence, 75 Vande Bharat trains will connect every corner of the country. The pace at which new airports are being built in the country and the UDAN scheme connecting remote areas is unprecedented. We can see how better air connectivity gives new flights to people's dreams.

My dear countrymen,

Along with modern infrastructure, there is a great need for adopting a holistic and integrated approach in infrastructure construction. In the near future, we are going to launch the National Master Plan of Prime Minister 'Gati Shakti' which will be a huge scheme and fulfill the dreams of crores of countrymen. This scheme of more than 100 lakh crores rupees will result in new employment opportunities for lakhs of youth.

Gati Shakti will be a National Infrastructure Master Plan for our country which will lay the foundation of holistic Infrastructure and will lead to an integrated and holistic pathway to our economy. Right now, there is no coordination between our means of transport. Gati Shakti will break the silos, and will remove all these obstacles. This will reduce the travel time for the common man and the productivity of our industry will also increase. Gati Shakti will also go a long way in making our local manufacturers globally competitive and this will also develop new possibilities for the creation of future economic zones. In this decade, the power of speed will form the basis of India's transformation.

My dear countrymen,

India will have to increase both its manufacturing and exports while moving ahead on the path of development.

My dear countrymen,

Treading ahead on the path of development, India will have to augment both its manufacturing and exports. You have witnessed, just a few days ago, India launched its first indigenous Aircraft Carrier INS Vikrant for trial in the sea. Today India is making its own indigenous fighter aircraft, its own submarine. Gaganyaan is also slated to hoist India's flag in space. This itself is evidential of our immense capabilities in indigenous manufacturing.

The country has also announced Production Linked Incentive to consolidate our Make in India campaign in the wake of the new economic conditions that have emerged due to Corona. The electronic manufacturing sector stands as an example of the change that is enforced through this scheme. Seven years ago we used to import mobile phones worth about eight billion dollars. However, now the import has reduced considerably, and today we are also exporting mobile phones worth three billion dollars.

Today, when our manufacturing sector is gaining momentum, our focus should be that whatever we make in India should be of highest quality standards so that we sustain in the global competition. Rather, if possible we should aim at going a step ahead and take proactive steps to prepare ourselves for the global market. We have to target that. I want to say emphatically to all the manufacturers of the country, that you should never forget that the product you sell overseas is not just a product made by your company, it is the identity of our nation, India's prestige and the faith of all the citizens of our country.

My dear countrymen

That is why I tell all our manufacturers that each of your products is a brand ambassador of India. When someone will buy and use your product, the customer should say with pride- now "This is Made in India". That's the mindset we need. You all should now aspire to win over the global market. The government is fully with you in realising this dream.

My dear countrymen,

Today, several new start-ups are being formed in different sectors of the country and even in smaller tier 2, tier 3 cities of the country. They also have a big role to play in getting entry of their Indian products into the inter-state market.The government stands with all its might, with these start-ups. Whether it is giving them financial help, cash discounts, rules simplification for them, the government is fully with them. We have seen that thousands of new start-ups have emerged in this difficult period of Corona. They are moving

forward with great success. Yesteryear's start-ups are becoming today's unicorns. Their market value is reaching thousands of crores of rupees.

These are new types of wealth creators in our country today. They are standing on their feet with the power of their unique ideas, moving ahead and walking with the dream of conquering the world. They are new kinds of wealth creators. They are moving by the force of their unique ideas and a dream to win over the world. In this decade, we need to relentlessly work towards making India's Startups and the Startup Ecosystem the best in the whole world.

My countrymen,

Political will is needed to bring about major changes and reforms. Today the world is witnessing that there is no dearth of political will in India. Good and smart governance is required to implement the reforms. Today the world is also a witness to how India is writing a new chapter of governance here. In this decade of 'Amrit Kaal', we will give priority to Next Generation reforms... We will ensure that all the facilities like service delivery should reach citizens up to the last mile; it should reach the last person seamlessly, without hesitation or any kind of difficulty. For the overall development of the country, unnecessary interference by the government and the government processes in the lives of the people has to be ended.

Earlier, the government itself was on the driving seat. This might have been the demand of that time. But now the time has changed. In the last seven years, efforts have also intensified in the country to liberate the people of the country from the web of unnecessary laws and procedures. Till now hundreds of old laws of the country have been abolished. Even during this period of Corona pandemic, the government has abolished more than 15,000 compliances. Now you see, you might have experienced a lot of hassles and paperwork for a small government work. That has been the situation so far. We have ended 15,000 compliances.

Just imagine.....I want to give you an example. A law has been in place in India for over 200 years, 200 years i.e. even before 1857. As per this law, the citizens of the country did not have the right to create maps. Now imagine, it was in place since 1857. If you want to create a map, then seek permission from the government, if you want to print the map in a book, then seek permission from the government; there is a provision for arrest if the map is lost. Nowadays every phone has a Map app. Satellites have so much power! Then how will we take the country forward with a burden of such laws? It is very important to get rid of this burden of compliances. We have abolished several regulations in various sectors like mapping, space, information technology and BPO.

My dear countrymen,

Freedom from the clutches of unnecessary laws is very important for both Ease of Living as well as Ease of Doing Business. Our country's industries and businesses are experiencing this change today.

Today dozens of labor laws have been subsumed into just 4 codes. Tax related arrangements have also been made easy and become faceless now. We will have to work together so that such reforms are not limited to the government only, but percolate down to gram panchayats, municipal corporations and municipalities. I am calling upon, making an earnest appeal to all the central and state departments to launch a campaign to review the existing rules and procedures. We have to get rid of every rule, every process which has become a hindrance and a burden for the people of the country. I know what has accumulated in 70-75 years will not go away in a day or in a year. But if we start working with a purpose, we will definitely be able to do this.

My dear countrymen,

Keeping this in mind, the government has also started Mission Karmayogi and Capacity Building Commission to increase people-centric approach in bureaucracy and improve their efficiency.

My dear countrymen,

Our education, education system, education tradition has a great role in preparing the youth, who are possessed with skill and ability, and who have the spirit to do something for the country. Today the country also has a new National Education Policy to meet the needs of the 21st century. Now our children will neither stop due to lack of skills nor will they be bound by language barriers. Unfortunately, there is a massive divide in our country regarding language. We have tied a huge talent of the country to the cage of language. One can find promising people in their mother tongue. If people from the vernacular medium come forward, their self-confidence will grow. Justice will be done to the potential of the poor children when they will become professionals by studying in their mother tongue.

I believe that language is the instrument of the fight against poverty in the new National Education Policy. This new National Education Policy is also going to be a great tool to fight against poverty in a way. The basis of winning the war against poverty is also the education, prestige and importance of the vernacular language. The country has seen this in the playground... and we are experiencing that language has not become a barrier and as a result we have seen that the youth are playing and blossoming. Now the same thing will happen in other fields of life as well.

Another special feature of the new National Education Policy is that sports has been made a part of mainstream education instead of extra-curricular. Sports is also one of the most effective means of pursuing life. It is very important to have sports in life for perfection in life. There was a time when sports was not considered mainstream. Parents also considered indulging in sports as wastage of life. Now, there is a new awareness about fitness and sports. We have seen and felt this in the olympics. This change is a big turning point for us. That is why, we need to speed up and expand the campaign that is going on in the country for infusing talent, technology and professionalism in sports.

It is a matter of pride for the country that our daughters are performing in an unprecedented manner in the fields of education, sports, Boards results or olympics. Today daughters are raring to occupy their place. We have to ensure that women have equal partnership in every career and workspace. We have to ensure that they feel safe from roads to the workplace and everywhere. There should be a feeling of respect for them and in this, the government, administration, police and justice system will have to perform their duty cent percent. We have to make this resolution , the resolution of the 75 years of Independence.

Today I am sharing good news with the countrymen. I used to get lakhs of messages from our daughters that they want to study in the Sainik Schools. The Doors of the schools should be opened for them. We dis aq pilot project in the Sainik School of Mizoram two-two and half years ago by giving admission to our daughters. Now the Government has decided that all the Sainik Schools will be open for the girls. Daughter too will study in all the Sainik Schools of the Country.

Environmental security is getting the same importance in the world as national security.Today India is a vibrant voice of environmental security, whether it is biodiversity or land neutrality, climate change or waste recycling, organic farming or biogas, energy conservation or clean energy transition. India’s efforts in environment are giving results today. Increase in forest cover, number of national parks, increase in number of tigers and Asiatic lions are a matter of happiness for the countrymen.

Among all these successes one truth needs to be understood. India is not yet energy independent. India today spends more than 12 lakh crore rupees annually for importing energy. For India's progress and to build a self-reliant India, India's energy independence is the need of the hour! Therefore today, India has to make a resolution to make India energy independent before the completion of 100 years of independence and our roadmap is very clear for the same. It should be a gas based economy. There should

be a network of CNG & PNG across the country. There should be a target of 20 percent ethanol blending. India is moving ahead with a set goal. India has also made a move towards Electric Mobility and the work on 100% electrification of Railways is also progressing at a fast pace. Indian Railways has set a target of becoming Net Zero Carbon Emitter by 2030. Besides these efforts, the country is also emphasizing on Mission Circular Economy. Our Vehicle Scrap Policy is a great example of the same. Today, India is the only country in the group of G-20 countries, which is moving fast towards achieving its climate goals.

India has set a target of 450 GW of renewable energy by the end of this decade - 450 GW by 2030. Of this, the target of 100 GW has been achieved by India ahead of schedule. These efforts are also instilling confidence in the world. The formation of the International Solar Alliance on the Global State is a great example of the same.

Of every effort being made by India today, the thing that is going to help India with a quantum leap in terms of climate is the field of Green Hydrogen. To achieve the goal of Green Hydrogen, I am announcing the National Hydrogen Mission today with this tricolour as a witness. We have to make India a Global Hub for Green Hydrogen Production and Export in the 'Amrit Kaal'. This will not only help India to make a new progress in the field of energy self-reliance but will also become a new inspiration for Clean Energy Transition all over the world. New opportunities from Green Growth to Green Job are opening up today for our start-ups & youth.

My dear countrymen,

Today, the 21st century India has the ability to create and achieve big goals as well. Today India is also solving those subject areas, which were hanging fires for decades and centuries. Be it a historic decision to abrogate Article 370, introduction of GST, a system that frees the country from the web of taxes, a decision regarding 'One Rank-One Pension' for our military friends, a peaceful solution to the Ram Janmabhoomi issue, we have seen it come true in a few years

India’s willpower is realizing all the resolutions whether it is the Bru-Reang agreement in Tripura after decades, constitutional status to the OBC commission or the BDC and DDC elections in Jammu and Kashmir for the first time since independence.

Even in this period of Corona, record foreign investment is coming to India. India's foreign exchange reserves are also at an all-time high. India has also given the message of the might of New India to the enemies of the country by carrying out surgical and air strikes. It shows that India is changing. India can change. India can take the toughest decisions and it does not hesitate and stop in taking even the toughest decisions.

My dear countrymen,

The nature of global relations has changed after the Second World War. There is a possibility of a new world order post Corona. The world has seen and appreciated India's efforts during Corona. Today the world is looking at India from a new perspective. There are two important aspects of this perception -- one is terrorism and the other is expansionism. India is fighting both these challenges and is also responding strongly in a restrained manner. Our defense preparedness has to be equally strong if India has to fulfil its obligations properly.

We are making constant efforts to provide new opportunities to our hardworking entrepreneurs and to encourage Indian companies to make the country self-reliant in the field of defence. I assure the country that we will leave no stone unturned to strengthen the hands of our forces engaged in the defense of the country.

My dear countrymen,

Today is also the birth anniversary of the great thinker of the country, Sri Aurobindo. His 150th birth anniversary will be celebrated in 2022. Sri Aurobindo was a visionary of India's bright future. He used to say that we have to be as powerful as we were never before. We have to change our habits. We have to re-awaken ourselves. These words of Sri Aurobindo remind us of our duties. We also have to think about what we are giving to the country as a citizen and as a society. We have always given importance to rights. They were needed during that period, but now we have to make duties paramount. Everybody will have to contribute in fulfilling the resolutions of the country. Every citizen will have to own this up.

Our country has initiated a campaign of water conservation, so it is our duty to include saving water in our habits. If the country is emphasizing on digital transactions, then it is also our duty to do minimum cash transactions. The country has started the campaign of Local for Vocal, so it is our duty to buy as many local products as possible. To strengthen our vision of a plastic-free India of the country, it is our duty to completely stop the use of single use plastic. It is our duty not to throw dirt in our rivers, keep our sea shores clean. We also have to take the Swachh Bharat Mission to another new level.

Today, when the country is celebrating the Amrit Mahotsav on the occasion of 75 years of independence, it is the duty of all of us to join this event, participate in it enthusiastically, and keep kindling our resolutions again and again. Keeping freedom struggle in mind, whatever little you do… whatever… will be pure like a drop of nectar, and this Amrit Kumbh made by the pure efforts of many Indians will inspire the entire nation for years to come.

My dear countrymen,

I am not a fortune teller, I believe in action. I have faith in the youth of my country, I trust the sisters of the country, the daughters of the country, the farmers of the country, and the professionals of the country. This 'CAN DO' generation can achieve every goal imaginable.

I believe that in 2047, on the occasion of celebrating 100 years of independence… whoever will be the Prime Minister… whoever will be the Prime Minister after 25 years from today, when he will be unfurling the flag… I say this with confidence today that he or she shall be chronicling those accomplishments in his speech about which the country has taken a vow today... This is my firm belief of victory.

Today whatever I am speaking of in the form of a resolution, whoever hoists the flag after 25 years, shall be speaking of the same in the form of accomplishments. The country would be singing its glory in the form of these accomplishments. Youth of the country of today, shall also see at that time how the country has achieved this glory.

In the 21st century, no obstacle can stop us from fulfilling the dreams and aspirations of India. Our strength is our vitality, our strength is our solidarity, our vitality is the spirit of nation first - always first. This is the time for shared dreams, this is the time for shared resolve, this is the time for shared efforts... and this is the time to move towards victory.

And so I say once again-

This is the time,

This is the time.. the right time!

India's precious time!

This is the time, the right time! India's precious time!

The power of countless arms,

The power of countless arms,

There is patriotism everywhere!

There is the power of innumerable arms, there is patriotism everywhere…

Come, rise and unfurl the Tricolour!

Come, rise and unfurl the Tricolour!

Turn the fate of India,

Turn the fate of India,

This is the time, the right time! India's precious time!

There is nothing..

There is nothing you cannot do,

There is nothing you cannot achieve,

You Rise...

You Rise and Begin,

Recognize your abilities,

Recognize your abilities,

Understand all your duties,

Understand all your duties!

This is the time, the right time! India's precious time!

When the country completes 100 years of independence, the goals of the countrymen must be turned into reality; that is my desire. With my best wishes, I once again congratulate all the countrymen on the 75th Independence Day! Say aloud with your fists up -

Jai Hind,

Jai Hind,

Jai Hind!

VandeMatram,

VandeMatram,

VandeMatram!

Long live Mother India,

Long live Mother India,

Long live Mother India!

Thanks a lot!

https://investors.gevo.com/news/gevo-to-sell-renewable-natural-gas-to-bp

# Gevo to Sell Renewable Natural Gas to bp

ENGLEWOOD, Colo., Aug. 09, 2021 (GLOBE NEWSWIRE) -- Gevo, Inc. (NASDAQ: GEVO), is extremely pleased to announce today that its wholly-owned dairy manure-based renewable natural gas ("RNG") project company located in northwest Iowa, Gevo NW Iowa RNG, LLC ("NW Iowa RNG"), has signed binding, definitive agreements with BP Canada Energy Marketing Corp. and BP Products North America Inc. (collectively, "bp" ) for the sale of NW Iowa RNG's production (the "bp Agreements").

The NW Iowa RNG project is currently being constructed and is expected to commence production in early 2022. Upon project completion, NW Iowa RNG is estimated to produce approximately 355,000 MMBtu of RNG per year. The RNG is expected to be sold into the California market under dispensing agreements bp has in place with Clean Energy Fuels Corp., the largest fueling infrastructure in the U.S. for RNG.

RNG-fueled vehicles are estimated to result in up to 95 percent lower emissions than those fueled by gasoline or diesel on a lifecycle basis, according to a US Department of Energy study .

It is anticipated that NW Iowa RNG will benefit from environmental product revenues under California's Low Carbon Fuel Standard program and the U.S. Environmental Protection Agency's Renewable Identification Number program.

Beginning in late 2022 upon stabilized operations and pathway certifications of its environmental products, NW Iowa RNG is expected to generate cash distributions to Gevo of approximately $9 to $16 million per year. Starting in 2024, Gevo will have the right to use a portion of NW Iowa RNG's production as process energy at its Net-Zero 1 Project or other production facilities, including future Net-Zero projects.

"RNG is proving to be a key fuel in the energy transition. bp has a value chain that allows RNG to reach the transportation market, and it's a pleasure to work with a company that shares our vision of a low-carbon future," said Dr. Patrick R. Gruber, Chief Executive Officer of Gevo. "This is an excellent opportunity to meet the growing demand for RNG and to expand our RNG business. We are glad to be working with bp."

For more information and details about the terms of the bp Agreements, please see the Current Report on Form 8-K that Gevo has filed with the U.S. Securities and Exchange Commission on August 9, 2021.

**About Gevo**

Gevo's mission is to transform renewable energy and carbon into energy-dense liquid hydrocarbons. These liquid hydrocarbons can be used for drop-in transportation fuels such as gasoline, jet fuel and diesel fuel, that when burned have potential to yield net-zero greenhouse gas emissions when measured across the full life cycle of the products. Gevo uses low-carbon renewable resource-based carbohydrates as raw materials, and is in an advanced state of developing renewable electricity and renewable natural gas for use in production processes, resulting in low-carbon fuels with substantially reduced carbon intensity (the level of greenhouse gas emissions compared to standard petroleum fossil-based fuels across their life cycle). Gevo's products perform as well or better than traditional fossil-based fuels in infrastructure and engines, but with substantially reduced greenhouse gas emissions. In addition to addressing the problems of fuels, Gevo's technology also enables certain plastics, such as polyester, to be made with more sustainable ingredients. Gevo's ability to penetrate the growing low-carbon fuels market depends on the price of oil and the value of abating carbon emissions that would otherwise increase greenhouse gas emissions. Gevo believes that its proven, patented technology enabling the use of a variety of low-carbon sustainable feedstocks to produce price-competitive low-carbon products such as gasoline components, jet fuel and diesel fuel yields the potential to generate project and corporate returns that justify the build-out of a multi-billion-dollar business.

Gevo believes that the Argonne National Laboratory GREET model is the best available standard of scientific-based measurement for life cycle inventory or LCI.

Learn more at Gevo's website: www.gevo.com

# GEVO NW IOWA RENEWABLE NATURAL GAS FACILITY

## Description

- 355,000 MMBtu/yr RNG
- ~$70mm capex
- +30% LIRR(1)
- Multiple dairy farms with over 20,000 milking cows combined
- Gas upgrading system to be located adjacent to Northern Natural Gas pipeline
- Sell RNG to LCFS market ***and to augment Gevo renewable fuels production***

## Status

✓ Under Construction

✓ Start-up expected in early 2022

(1) Projected project-level leveraged internal rate of return based on project financing structure and assumptions around offtake contract pricing, number of cows producing manure, carbon value, capital costs, and operating costs, all of which are subject to change and revisions. The returns assume that at least 50% of the RNG is sold into CA for transportation use.

https://www.osc.state.ny.us/press/releases/2021/08/dinapoli-announces-more-climate-actions-nys-pension-fund-launches-evaluation-shale-oil-and-gas

# DiNapoli Announces More Climate Actions; NYS Pension Fund Launches Evaluation of Shale Oil and Gas Companies

## Fund Also Divests From Five Additional Coal Producers

August 12, 2021

The New York State Common Retirement Fund (Fund) is evaluating 42 publicly traded shale oil and gas companies to determine if they are prepared for the transition to a low-carbon economy, New York State Comptroller Thomas P. DiNapoli, trustee of the third largest public pension plan in the country, announced today. The Fund also restricted investments in five more coal producers, adding those companies to the list of 22 that the Fund divested from in 2020.

"A low-carbon economy is already becoming a reality and companies that aren't prepared for it could pay a heavy financial cost," DiNapoli said. "Shale oil and gas companies face significant economic, environmental and regulatory challenges. We will carefully review these companies and may restrict investments in those that do not have viable plans to adapt."

Today's actions come as part of DiNapoli's comprehensive Climate Action Plan to mitigate investment risks posed by climate change and ultimately transition the Fund's investment portfolio to net zero greenhouse gas emissions by 2040.

### Review of Shale Oil and Gas Companies

Shale oil and gas companies under review are those that derive over 10% of their revenue from crude oil and gas production from shale. Included on the list are major energy companies including Marathon Oil Corp., ConocoPhillips and Hess Corp.

Shale rock deposits containing reserves of crude oil and natural gas are found in the United States and in other regions around the world. Companies that produce oil and gas from shale face financial risks from diminishing cost competitiveness, increasing climate regulation, and declining fossil fuel demand.

The Fund has requested that each of the 42 shale oil and gas companies provide additional information, within 60 days, to demonstrate how they are developing, adopting, or implementing low-carbon transition strategies.

### Restricted Investments

DiNapoli also announced the Fund would restrict investments in the following coal producers: New Hope Corp., PT Indo Tambangraya Megah Tbk, Semirara Mining and Power Corp., Shanxi Coking Coal Energy Group Co. and Whitehaven Coal Ltd.

The Fund will not directly purchase or directly hold debt or equity securities, or invest through an actively managed account or vehicle, in these coal companies, and approximately $1.8 million in such securities currently held by the Fund will be sold in a prudent manner and timeframe.

This follows DiNapoli's 2020 review of coal companies that led to divestment from 22 firms that failed to demonstrate transition readiness. The Fund annually reviews the universe of companies that derive 10% of their revenues from thermal coal mining and these additional companies did not demonstrate transition readiness.

Earlier this year, the Fund announced it would restrict investments in seven oil sands companies after conducting its initial transition readiness assessment.

### Background on DiNapoli's Climate Investment Actions

Since taking office in 2007, DiNapoli has been recognized as a global leader for his efforts to protect the Fund's investments, address material risks from climate change and pursue sustainable investment opportunities for the Fund. In 2019, DiNapoli released a Climate Action Plan, a multi-faceted strategy that includes a goal of committing $20 billion to sustainable investments, dedicated staff to pursue climate solution investments, and minimum standards for portfolio companies that will inform engagements, investments and potential divestment decisions. Building on the Climate Action Plan's solid foundation, in December 2020, DiNapoli announced the Fund has adopted a goal to transition its portfolio to net zero greenhouse gas emissions by 2040.

## Background on New York State Common Retirement Fund

The New York State Common Retirement Fund is the third largest public pension fund in the United States with assets of approximately $254.8 billion as of March 31, 2021. The Fund holds and invests the assets of the New York State and Local Retirement System on behalf of more than one million state and local government employees and retirees and their beneficiaries. It has consistently been ranked as one of the best managed and best funded plans in the nation.

https://www.oxfam.org/en/press-releases/one-emergency-tax-billionaires-pandemic-windfalls-could-fund-covid-19-jabs-entire

# One-off emergency tax on billionaires' pandemic windfalls could fund COVID-19 jabs for entire world

**Published: 12th August 2021**

A one-off 99 percent levy on billionaires' wealth gains during the pandemic could pay for everyone on Earth to be vaccinated against COVID-19 and provide a $20,000 cash grant to all unemployed workers, according to new analysis released today by Oxfam, the Fight Inequality Alliance, the Institute for Policy Studies and the Patriotic Millionaires. The organizations are calling on governments to tax the ultra wealthy who profited from the pandemic crisis to help offset its costs.

The one-time emergency COVID-19 billionaire tax would raise $5.4 trillion and still leave the world's 2,690 billionaires $55 billion richer than before the virus struck. Governments across the world are massively under-taxing the wealthiest individuals and big corporations, which is undermining the fight against COVID-19 and poverty and inequality.

The world's billionaires have a collective net worth of $13.5 trillion —up from $8 trillion at the beginning of the pandemic, a gain of nearly 69 percent. Amazon's Jeff Bezos' wealth increased by $79.4 billion during the pandemic, rising from $113 billion in March 2020 to $192.4 billion. Billionaire wealth has increased more over the past 17 months than it has in the past 15 years, and 325 new billionaires joined the '3-comma club' since the pandemic began —equivalent to roughly one new billionaire minted every day.

Less than one percent of people in low-income countries have received a vaccine, while the profits made by Big Pharma has seen the CEOs of Moderna and BioNTech become billionaires. The COVID-19 crisis has pushed over 200 million people into poverty and cost women around the world at least $800 billion in lost income in 2020, equivalent to more than the combined GDP of 98 countries. At the same time, 11 people are now dying of hunger and malnutrition each minute, outpacing COVID-19 fatalities.

**Morris Pearl, former Managing Director at Blackrock and Chair of the Patriotic Millionaires, said**: "The surge in global billionaire wealth as millions of people have lost their lives and livelihoods is a sickness that countries can no longer bear. Rich people getting endlessly richer is not good for anyone. Our economies are choking on this hoarded resource that could be serving a much greater purpose. Billionaires need to cough up that cash ball —and governments need to make them do it by taxing their wealth."

Governments have in the past turned to the wealthiest in response to major crises. After World Wars I and II, one-off wealth taxes were levied in European countries and Japan to fund reconstruction. France, for example, taxed excessive wartime wealth gains at a rate of 100 percent after the Second World War. More recently, following the global financial crisis of 2008, countries including Iceland introduced temporary wealth taxes to help refill public coffers.

Policymakers, leading economists, civil society organizations, the UN, IMF and the World Bank are calling for one-time 'solidarity taxes' and longer-term wealth taxes targeted at the super-rich to mitigate the economic impacts of the pandemic and reduce inequalities. In December 2020, debt-saddled Argentina adopted a one-off special levy dubbed the 'millionaire's tax' that has brought in around $2.4 billion to pay for pandemic recovery.

**Max Lawson, Oxfam International's Global Inequality Policy Lead, said**: "Billionaire Jeff Bezos could personally pay for enough vaccines for the whole world, yet he would rather spend his wealth on a thrill ride to space. COVID-19 is turning the gap between rich and poor into an unbridgeable chasm. The obscene levels of wealth gained from the pandemic by a handful of mega rich individuals should immediately be taxed at 99 percent —enough to fully vaccinate everyone on Earth and help millions of workers who lost their jobs due to COVID-19. Only with this kind of radical and progressive policy making will we be able to fight inequality and end poverty."

The Festival to Fight Inequality, a two-day virtual gathering of thousands of activists from nearly 30 countries, will take place 13-14 August. They will discuss solutions to the worsening global inequality crisis, including taxing the rich.

**Njoki Njehu, Pan Africa Coordinator of the Fight Inequality Alliance, said**: "With a 99 percent tax on billionaires' COVID-19 wealth gains, we are calling time on this age of greed. Billionaire wealth is not earned. Billionaires are profiting from working people's hard graft and pain. It's their money 'earned' by your sweat —and it's high time that sweat began to pay off. Governments need to tax the rich for us to stand any chance of reversing the inequality crisis we're in."

# Notes to editors

The cost of vaccinating the world's adult population was calculated as follows: two doses at $7 per dose for 5 billion people, for a total of $70 billion. This is based on the average cost per dose. Oxfam, the Fight Inequality Alliance, the Institute for Policy Studies and the Patriotic Millionaires do not endorse such high prices for vaccines and, as part of The People's Vaccine Alliance, are campaigning for patent-free access to allow generic manufacturers to produce COVID-19 vaccines to drive down prices.

According to the ILO's World Employment and Social Outlook 2021 Flagship Report, 220 million people are currently unemployed. Of these, 114 million people were made jobless by COVID-19. To give a one-off $20,000 cash grant to all workers currently unemployed would cost $4.4 trillion dollars.

Analysis of *Forbes*' real-time and annual billionaire lists shows that the world's billionaires increased their wealth by $5.5 trillion over the past 17 months, from $8 trillion on 18 March 2020 to $13.5 trillion on 31 July 2021. This is more than the $5.4 trillion billionaires gained over a period of 15 years, from 2006 to 2020. A one-off 99 percent levy on billionaires' $5.5 trillion pandemic windfalls would raise $5.445 trillion.

At least nine people have become new billionaires since the beginning of the pandemic, thanks to the excessive profits pharmaceutical corporations with monopolies on COVID-19 vaccines are making.

The COVID-19 pandemic has pushed over 200 million people into poverty, according to estimates by World Bank researchers.

United Nations Secretary-General Antonio Guterres urged governments to "consider a solidarity or wealth tax on those who have profited during the pandemic, to reduce extreme inequalities". The IMF and the World Bank have also called for wealth taxes to help cover the costs of COVID-19.

Argentina has collected 223 billion pesos (around $2.4 billion) from its one-off pandemic wealth tax.

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For updates, please follow @Oxfam

Please support Oxfam's Coronavirus Response Appeal.

https://www.wsj.com/articles/these-people-who-work-from-home-have-a-secret-they-have-two-jobs-11628866529

# These People Who Work From Home Have a Secret: They Have Two Jobs

## When the pandemic freed employees from having to report to the office, some saw an opportunity to double their salary on the sly. Why be good at one job, they thought, when they could be mediocre at two

*By* Rachel Feintzeig Aug. 13, 2021 10:55 am ET

They were bored. Or worried about layoffs. Or tired of working hard for a meager raise every year. They got another job offer.

Now they have a secret.

A small, dedicated group of white-collar workers, in industries from tech to banking to insurance, say they have found a way to double their pay: Work two full-time remote jobs, don't tell anyone and, for the most part, don't do too much work, either.

Alone in their home offices, they toggle between two laptops. They play "Tetris" with their calendars, trying to dodge endless meetings. Sometimes they log on to two meetings at once. They use paid time off—in some cases, unlimited—to juggle the occasional big project or ramp up at a new gig. Many say they don't work more than 40 hours a week for both jobs combined. They don't apologize for taking advantage of a system they feel has taken advantage of them.

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"It's two jobs for one," says a 29-year-old software engineer who has been working simultaneously for a media company and an events company since June. He estimates he was logging three to 10 hours of actual work a week back when he held down one job. "The rest of it is just attending meetings and pretending to look busy."

He was emboldened by a new website called Overemployed. Started by two tech workers this spring, it aims to rally workers around the concept of stealthily holding multiple jobs, framing it as a way to wrest back control after decades of stalled wages for some and a pandemic that led to unpredictable layoffs.

Gig work and outsourcing have been on the rise for years. Inflation is now ticking up, chipping away at spending power. Some employees in white-collar fields wonder why they should bother spending time building a career.

"The harder that you work, it seems like the less you get," one of the workers with two jobs says. "People depend on you more. My paycheck is the same."

Overemployed says it has a solution.

“There’s no implied lifetime employment anymore, not even at IBM, ” writes one of the website’s co-founders, a 38-year-old who works for two tech companies in the San Francisco Bay Area. The site serves up tips on setting low expectations with bosses, staying visible at meetings and keeping LinkedIn profiles free of red flags. (A “social-media cleanse” is a solid excuse for an outdated LinkedIn profile, it says.) In a chat on the messaging platform Discord, people from around the world swap advice about employment checks and downtime at various brand-name companies.
“Avoid the slippery ladder in your career,” one Overemployed post says. “Take the side door instead.”

This article is based on conversations with a half-dozen workers who have secretly worked multiple full-time jobs, as employees and contractors, during the pandemic. The workers spoke anonymously for fear of being fired or not being able to pull off the arrangement again. The approach doesn’t violate federal or state laws, according to employment lawyers, but it could represent a breach of contract or raise issues around confidentiality. And it could certainly result in an employee’s termination.

The Wall Street Journal verified the workers’ accounts by examining offer letters, employment contracts, concurrent pay stubs and corporate emails. Most of them say they are on track to earn a total of $200,000 to nearly $600,000 a year, including bonuses and stock. They have paid off chunks of student-loan debt, plumped their kids’ college-savings accounts and bought everything from an engagement ring to a sports car with the extra cash.

The money is incredible, the 29-year-old software engineer says. So is the stress: “I’ll wake up in the morning and I’m like, ‘Oh, this is the day I’m gonna get found out.’ ”

## A job search takes a left turn

The Overemployed co-founder’s journey to two jobs started with a career slump. Passed over last year for a promotion he thought was in the bag, he saw half his team get promoted instead. Next came layoffs. He started looking for another job, assuming his number would soon be up.

Upon receiving an offer from a tech company less than 10 miles down the road, he figured he would quit his current job. Then it occurred to him: What if he didn’t?

“When push comes to shove, you’re going to become a number,” he says. He launched the website early this spring, five months after starting his second job, with the aim of alerting other workers to the possibility of diversifying their sources of income and benefits. “They say it’s a free market. I’m going to go ahead and get mine too.”

## ‘Am I trying to be, like, a five-star employee? Not really. I’m just trying to do the job I need to not get fired.’

The pandemic has given us new opportunities to shirk and fib. No matter how many check-ins they load on someone’s calendar, bosses can’t keep tabs on remote workers like they did when they sat one desk over.

Employees feel the freedom. The change is logistical—a worker can head to the beach this afternoon, and no one has to know—as well as emotional. After months away from the office, where workers forged deeper relationships with colleagues and identified more with their companies, many feel increasingly disconnected from their employers, says Vanessa Burbano, a management professor at Columbia Business School who has studied employee misconduct.

To be sure, many employees have filled their days at home with more work, feeling pressure to prove themselves. But others have taken their foot off the pedal.
The tech worker started declining calendar invitations for meetings. Nothing happened.

“The beauty of working remotely is you actually have a choice,” he says. The boss at his first company, he says, was distracted by managing up. The worker started handing off responsibilities to an eager new colleague. He took advantage of the company’s unlimited PTO policy with a month off, citing Covid-19 burnout. By now he has perfected the art of diplomatically declining colleague requests. (Sorry, not enough bandwidth, he tells them.) If a complex project gets bogged down by co-workers, he doesn’t try to get things back on track; delays can make it easier for him to juggle his multiple professional identities.

He spends his days switching off among three laptops—work, personal, other work—keeping the one for his new job synced up to a desktop monitor and his other work computer open beside it.

“You have to physically switch and then that keys up your brain to say this is Job 1 or Job 2,” he says. To maintain separation and secrecy, other workers swear by color-coding browser windows or using external microphones that can be muted without alerting others on a video

call. One worker manages double meetings by logging on to one via computer and the other via phone.

“I’ve gotten better at hearing two different things at the same time and trying to process it,” he says. The phone enables a quick getaway if one meeting risks hearing the other during a sudden unmute situation.

## ‘Let’s be honest. You have to be pretty bad at being sly to get caught.’

When the worker gets called on simultaneously in both meetings—it happens—he drops one call, answers the other’s query and then pops back onto the “dropped” call. Sorry, he had a network issue. What was the question again?

Even better: Evade the meeting altogether. He often tells colleagues he doesn’t think their issue requires a call, and he can help them faster on Slack.

“People love it because they’re like, ‘This guy just gets [stuff] done. He’s not wasting his time in these meetings,’ ” he says.

One software engineer in Europe who has held down two jobs for most of the past few years says he was confused by the scene in his office when he first started working as a developer several years ago. Everyone looked so busy, but it didn’t seem like they were getting much done. Was he just a superfast, talented developer?

“I think because I was new to the business I didn’t fully understand the unwritten rules,” says the man, who gave up his most recent second job in June but plans to try for a second one again in September.

He took on his first double gig in 2018, telling his original company he would be attending a cybersecurity course in London. He moved there for several months, spent the hours he was supposedly at the nonexistent class at a new contract assignment, and earned an extra $350 a day. He has since cycled through several other remote double jobs, varying his use of video on calls so it won’t look weird if he needs to go audio-only and using two laptops, with the speakers muted on one, to pull off double-booked meetings.
Once, he unmuted his speaker too quickly before turning off the sound on the other laptop. For five seconds, Meeting One could hear Meeting Two. He cringed. No one noticed.

## Nearly giving the game away

Anybody who lives a double life for long enough will experience a close call. One worker was confused about his compensation and pulled up his pay stub to show his manager the discrepancy. To his horror, the paystub from his other job was listed on the same platform. He quickly stopped sharing his screen, telling his manager he didn't feel comfortable showing his paycheck.

A data scientist in Richmond, Va., was surprised when his boss suddenly reached out for a video call—the team never did video calls—while he was teaching a coding class at his secret second job. He told the students to take a 10-minute break and jumped on his other computer. Overemployed has a list of possible moves and excuses for those in a pickle, like an imaginary call from a child's school.

The data scientist had long been frustrated by the pace at his big bank.

"I just felt like I wasn't doing anything," he says. He wanted to do contracting work on the side, but stuck in the office, it felt impossible. When the pandemic sent him home in March of 2020, he saw his chance, and began working for three other companies.

"I had nothing to do," he says of those early locked-down months. "It was the perfect time to try something."

## 'Every other Friday, when those paychecks drop, I am reinvigorated.'

Soon he was working 100-hour weeks. Little of it was for his original job. Eventually, his manager confronted him, asking him to ramp up his effort.

"My initial reaction was like, 'I'm working so hard. How would you even say that?' " he says. "I guess from his perspective it looked like I wasn't doing anything."

He eventually left his main job and took a full-time job, with benefits, at one of his other companies, negotiating an employment contract that gave him the ability to do work on the side.

"Now I feel totally free," he says.

Workers still playing the game say they worry constantly about someone catching on. Yet they simultaneously feel their experiments in double work have finally given them a sense of control.

Even if companies start calling people back to the office—whether this fall, or further down the line—those with two jobs say the world of remote work has gotten big enough to give them options. One woman in Atlanta, who was working for an insurance company and a telecommunications company, scoffed when one of her employers sent an email outlining a tentative return-to-work plan. Then a colleague started encroaching on her projects.

She handed in her notice and quickly landed another second job.
"I now have leverage," she says.

She recently hired a personal assistant, who sits in on calls when she is double-booked and alerts her if she is needed in a meeting.

"Am I trying to be, like, a five-star employee?" she says. "Not really. I'm just trying to do the job I need to not get fired."

## How they get away with it

Holding two jobs isn't illegal, says Richard Greenberg, an employment attorney with Jackson Lewis PC in New York.

"It's more of a contract issue. You're jeopardizing your employment. There's very few things that rise to criminal violations," he says.

If a worker violates a noncompete agreement by working for another firm, the employer could sue him, says Claire Deason, a Minneapolis employment attorney with Littler Mendelson PC.

A company could also theoretically sue a duplicitous worker for things like disclosing confidential information or misrepresenting himself, Mr. Greenberg says.

But that could mean public attention on the issue. Chances are the worker would just get fired, Mr. Greenberg says. Maybe not even that.

"Let's be honest. You have to be pretty bad at being sly to get caught," he says.

Besides, managers sometimes see incentives to hang on to dead weight. Losing head count can amount to losing power in some organizations. No one wants to be caught short-staffed. And in the current tight labor market, workers often have the upper hand.
Chris Hansen, a technology manager who lives on Cape Cod, was working for a startup last year when he noticed one of his coders engaging in odd behavior. The contractor had agreed to leave

his role with a financial firm to help out Mr. Hansen's team for a few months, per his deal with the staffing agency that hired him, Mr. Hansen says. But even after supposedly making the transition from his last role, the contractor wasn't showing up to meetings. Work he turned in missed the mark.

It turned out the man hadn't left his original job, Mr. Hansen says.

Mr. Hansen worried about hitting his own work goals. He felt frustrated and shortchanged. But he opted not to press the issue.

"I could have cut him loose, I suppose, but that would have been cutting off my own arm," he says. "It was better to have somebody than nobody."

Besides, the coder was a contractor: no benefits, no job security. Mr. Hansen says he can't help but sympathize a little with contingent workers who game the system. "What incentive is there for people to be deliberately honest?" he says. "That loyalty between employer and employee is vacant."

When Laurie Ruettimann, now a human-resources consultant in Raleigh, N.C., was an HR executive at a Fortune 500 company, she dealt with an employee with a secret side gig. After being exposed by peers, the IT worker admitted the ploy. Ms. Ruettimann and her colleagues put him on a performance-improvement plan. A few months later, he was laid off.

"That's not a guy who's built for longevity at an organization," she says.

One computer engineer put in long hours for years, climbing the ladder to become one of his company's most senior engineers. Days were for meetings and strategy, nights and weekends for coding. He felt like he was performing free labor.

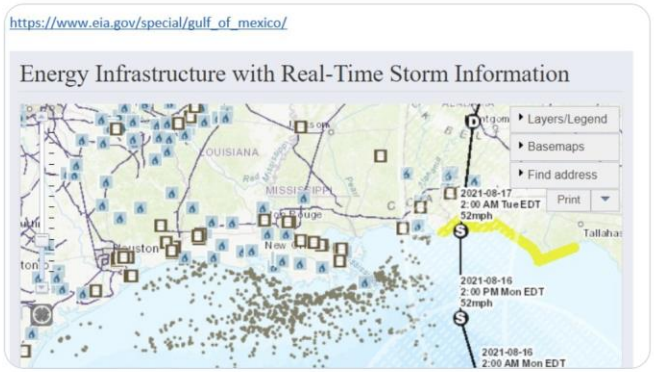
He took a second job last year, figuring he would tap paternity leave at both companies once his pregnant wife delivered their baby, and then return to one job. But, even with the baby born, he can't seem to quit the game. He is earning nearly $500,000, and working as much as 100 hours a week.

"It's 100% overwhelming, and my wife's like, 'How long can you do this?' " he says. But "every other Friday, when those paychecks drop, I am reinvigorated."

Write to Rachel Feintzeig at rachel.feintzeig@wsj.com

**Dan Tsubouchi** @Energy_Tidbits · 2h

Key for #Oil #NatGas #LNG will be if #TropicalStormGrace will be like Fred and turn sharply north and east when it gets in GoM. If it doesn't, more likely to hit major oil & gas fields/infra. Thx @EIAgov for great energy infra interactive map. #OOTT
eia.gov/special/gulf_o...




> **Dan Tsubouchi** @Energy_Tidbits · 3h
>
> 
>
> #Oil #NatGas #LNG looks to escape #TropicalStormFred but not #TropicalStormGreace next week. @NHC_Atlantic Aug 15am update. #OOTT

1 2

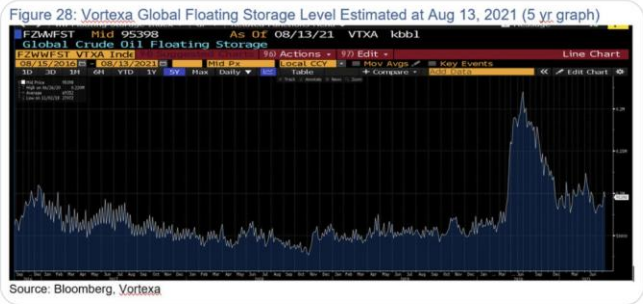
**Dan Tsubouchi** @Energy_Tidbits · 3h

#Oil #NatGas #LNG looks to escape #TropicalStormFred but not #TropicalStormGreace next week. @NHC_Atlantic Aug 15am update. #OOTT


1

**Dan Tsubouchi** @Energy_Tidbits · 13h

Increased #OPEC+ #Oil not being absorbed by market. Vortexa floating crude oil storage estimated 08/13 at 95.40 mmb, down vs revised 08/06 of 101.78 mmb, original 08/06 was 92.13 mmb. Up 19.37 mmb vs recent 06/25 trough of 76.11 mmb. Thx @Vortexa @TheTerminal #OOTT




3 4

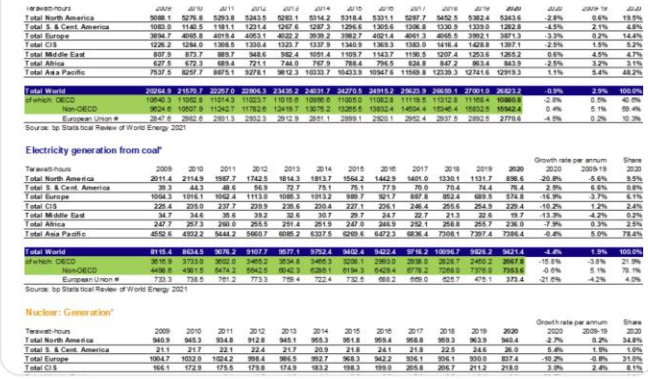
**Dan Tsubouchi** @Energy_Tidbits · 20h

thought this baby #Canmore sparrow was about to leave the nest and take his/her first flight but instead just took another washroom break. they are so ready to fly away. until then we just have to get our hose out to clean up.

**Dan Tsubouchi** @Energy_Tidbits · 21h

Causation not correlation. Near record #EU #Electricity prices. No surprise, @bp_plc data is clear. 24/7 baseload #Nuclear #Coal power been forced out by politicians & replaced by unpredictable #Solar #Wind. Tight supply/demand days = very high prices. #NatGas #EnergyTransition

> **Dan Tsubouchi** @Energy_Tidbits · Aug 6
>
> Positive to #NatGas #LNG in 2020s. OECD's steady replacement of 24/7 #Coal #Nuclear baseload with variable #Renewable means OECD #Electricity prices spike/shortage risk when supply/demand gets tight. China/India just increase coal. #Electricity will cost more in #EnergyTransition



Terawatt-hours | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2020 | 2009-19 | 2020
---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---
Total North America | 5098.1 | 5276.8 | 5293.8 | 5343.5 | 5285.1 | 5314.2 | 5318.4 | 5331.1 | 5297.7 | 5452.5 | 5382.4 | 5343.6 | -2.8% | 0.6% | 19.5%
Total S. & Cent. America | 1083.9 | 1140.5 | 1181.1 | 1231.4 | 1247.6 | 1287.3 | 1296.6 | 1305.6 | 1306.8 | 1330.9 | 1339.0 | 1282.8 | -4.5% | 2.1% | 4.8%
Total Europe | 3894.7 | 4065.8 | 4019.4 | 4053.1 | 4022.2 | 3939.2 | 3982.7 | 4021.4 | 4061.3 | 4065.5 | 3992.1 | 3871.3 | -3.3% | 0.2% | 14.4%
Total CIS | 1226.2 | 1284.6 | 1308.5 | 1330.4 | 1323.7 | 1337.9 | 1340.9 | 1369.3 | 1383.0 | 1416.4 | 1428.8 | 1367.1 | -2.5% | 1.5% | 5.2%
Total Middle East | 807.9 | 873.7 | 889.7 | 948.6 | 982.4 | 1051.4 | 1109.7 | 1143.7 | 1190.5 | 1207.4 | 1253.6 | 1265.2 | 0.6% | 4.5% | 4.7%
Total Africa | 627.5 | 672.3 | 689.4 | 721.1 | 744.0 | 767.9 | 788.4 | 796.5 | 824.8 | 847.2 | 863.4 | 843.9 | -2.5% | 3.2% | 3.1%
Total Asia Pacific | 7537.5 | 8257.7 | 8875.1 | 9278.1 | 9812.3 | 10333.7 | 10433.9 | 10947.6 | 11569.8 | 12339.3 | 12741.6 | 12919.3 | 1.1% | 5.4% | 48.2%
**Total World** | **20274.9** | **21570.7** | **22257.0** | **22906.3** | **23435.2** | **24031.7** | **24270.5** | **24915.2** | **25623.3** | **26659.1** | **27001.0** | **26823.2** | **-0.9%** | **2.9%** | **100.0%**
of which: OECD | 10640.3 | 11052.8 | 11014.3 | 11023.7 | 11016.6 | 10956.6 | 11025.0 | 11082.8 | 11119.5 | 11312.5 | 11150.4 | 10883.8 | -2.5% | 0.5% | 40.6%
Non-OECD | 9624.6 | 10507.9 | 11242.7 | 11782.6 | 12419.7 | 13075.2 | 13265.5 | 13832.4 | 14504.4 | 15346.4 | 15852.5 | 15942.4 | 0.4% | 5.1% | 59.4%
European Union # | 2847.6 | 2982.6 | 2901.3 | 2932.3 | 2912.9 | 2851.1 | 2899.1 | 2920.1 | 2952.4 | 2937.5 | 2892.5 | 2779.6 | -4.5% | 0.2% | 10.3%

Source: bp Statistical Review of World Energy 2021

**Electricity generation from coal***

Terawatt-hours | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | Growth rate per annum 2020 | Growth rate per annum 2009-19 | Share 2020
---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---
Total North America | 2011.4 | 2114.9 | 1987.7 | 1742.5 | 1814.3 | 1813.7 | 1564.2 | 1442.9 | 1401.0 | 1330.1 | 1131.7 | 898.6 | -20.6% | -5.6% | 9.5%
Total S. & Cent. America | 39.3 | 44.3 | 48.6 | 56.9 | 72.7 | 75.1 | 75.1 | 77.9 | 70.0 | 70.4 | 74.4 | 76.4 | 2.5% | 6.6% | 0.8%
Total Europe | 1094.3 | 1016.1 | 1062.4 | 1113.0 | 1085.3 | 1013.2 | 949.7 | 921.7 | 887.8 | 852.4 | 689.5 | 574.8 | -16.9% | -3.7% | 6.1%
Total CIS | 225.4 | 235.0 | 237.7 | 239.9 | 235.5 | 230.4 | 227.1 | 236.1 | 246.4 | 255.6 | 254.9 | 229.4 | -10.2% | 1.2% | 2.4%
Total Middle East | 34.7 | 34.6 | 35.6 | 39.2 | 32.6 | 30.7 | 29.7 | 24.7 | 22.7 | 21.3 | 22.5 | 19.7 | -13.3% | -4.2% | 0.2%
Total Africa | 247.7 | 257.3 | 280.0 | 255.5 | 251.4 | 251.9 | 247.0 | 246.9 | 252.1 | 258.8 | 255.7 | 236.0 | -7.9% | 0.3% | 2.5%
Total Asia Pacific | 4552.6 | 4932.2 | 5444.2 | 5660.7 | 6085.2 | 6337.5 | 6269.6 | 6472.3 | 6836.4 | 7308.1 | 7397.4 | 7386.4 | -0.4% | 5.0% | 78.4%
**Total World** | **8115.4** | **8634.5** | **9076.2** | **9107.7** | **9577.1** | **9752.4** | **9402.4** | **9422.4** | **9716.2** | **10096.7** | **9826.2** | **9421.4** | **-4.4%** | **1.9%** | **100.0%**
of which: OECD | 3616.9 | 3733.0 | 3602.0 | 3465.2 | 3634.8 | 3466.3 | 3208.1 | 2993.0 | 2938.0 | 2828.7 | 2450.2 | 2067.8 | -15.6% | -3.8% | 21.9%
Non-OECD | 4498.6 | 4901.5 | 5474.2 | 5642.5 | 6042.3 | 6286.1 | 6194.3 | 6429.4 | 6778.2 | 7268.0 | 7376.0 | 7353.6 | -0.6% | 5.1% | 78.1%
European Union # | 733.3 | 738.5 | 761.2 | 773.3 | 759.4 | 722.4 | 732.5 | 669.2 | 669.0 | 625.7 | 475.1 | 373.4 | -21.6% | -4.2% | 4.0%

Source: bp Statistical Review of World Energy 2021

**Nuclear: Generation***

Terawatt-hours | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | Growth rate per annum 2020 | Growth rate per annum 2009-19 | Share 2020
---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---
Total North America | 940.9 | 945.3 | 934.8 | 912.8 | 945.1 | 955.3 | 951.8 | 959.4 | 958.8 | 959.3 | 963.9 | 940.4 | -2.7% | 0.2% | 34.8%
Total S. & Cent. America | 21.1 | 21.7 | 22.1 | 22.4 | 21.7 | 20.9 | 21.8 | 24.1 | 21.8 | 22.5 | 24.6 | 26.0 | 5.4% | 1.9% | 1.0%
Total Europe | 1004.7 | 1032.0 | 1024.2 | 998.4 | 986.5 | 992.7 | 968.3 | 942.2 | 936.1 | 936.1 | 930.0 | 837.4 | -10.2% | -0.8% | 31.0%
Total CIS | 166.1 | 172.9 | 173.5 | 179.8 | 174.9 | 183.2 | 198.3 | 199.0 | 205.8 | 206.7 | 211.2 | 218.0 | 3.0% | 2.4% | 8.1%

1 2

**Dan Tsubouchi** @Energy_Tidbits · 23h

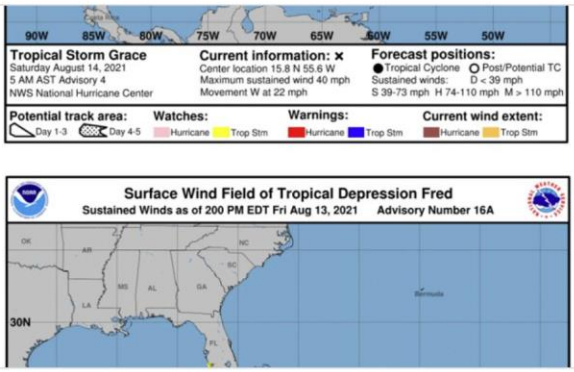
this is a tragedy. people get killed when trying to help others. reminds how lucky we are to have firefighters risking their lives to keep people safe wherever we live. my sympathies to the families.

> **Sputnik** @SputnikInt · Aug 14
>
> Russia state-affiliated media
>
> No survivors in Russian Be-200 firefighting plane crash in Turkey - report sptnkne.ws/Haxp
>
> Show this thread

2

**Dan Tsubouchi** @Energy_Tidbits · Aug 14

#TropicalStormGrace. @NHC_Atlantic early projected path is identical to #TropicalStormFred. But Fred shifted a little west once it hit Cuba. Not necessarily a surprise, @accuweather @z_rosenthal that Atlantic steering flow system remains the same for several weeks. #OOTT #NatGas

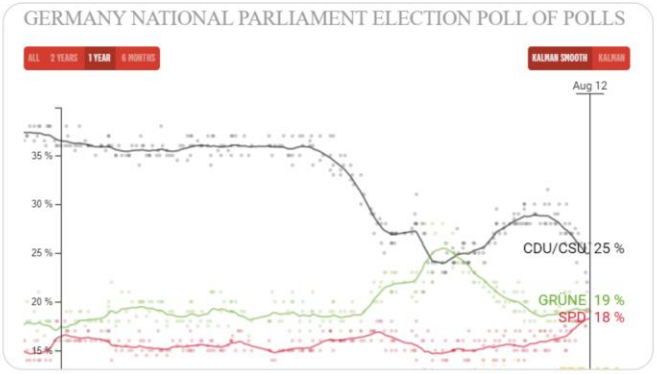



> **Dan Tsubouchi** @Energy_Tidbits · Aug 11
>
> 
>
> Why #TropicalStorms/#Hurricanes tend to follow similar paths - "large scale weather patter often does not change much during the warm seaons" "means the steering flow remains the same or nearly the same for several weeks" Thx @accuweather @Helicityman ...

1

**Dan Tsubouchi** @Energy_Tidbits · Aug 14

Surely Laschet didn't expect #ElonMusk to say hydrogen. Only feeding concerns he isn't ready to take over for #Merkel & huge unknown what coalition will emerge post Sept 26 election. Good thing for #NatGas & German 2022 electricity prices Merkel got US agreement on #NordStream2.




> **DW Politics** @dw_politics · Aug 13
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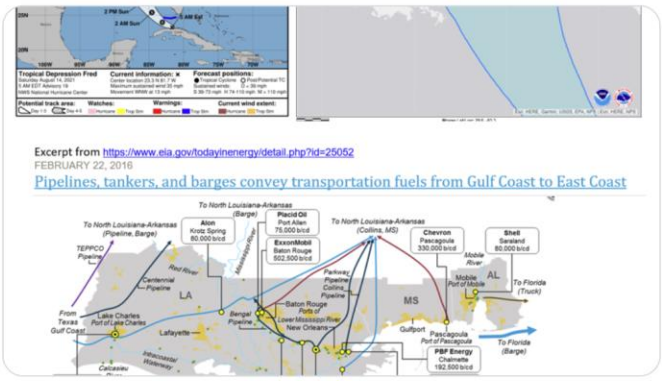
> 
> 
>
> Perhaps not the best question to ask Elon Musk

**Dan Tsubouchi** @Energy_Tidbits · Aug 14

Good @EIAgov map to keep, shows #Oil #Refinery in MS now incl in updated @NHC_Atlantic #TropicalStormFred that shifted projected path west. Major New Orleans refinery row is just west of cone, but still 2 days to go until landfall. #OOTT




1 2 1

**Dan Tsubouchi** @Energy_Tidbits · Aug 13

Latest @NHC_Atlantic projected path for #TropicalStormFred shifted a little west. Expected to be Tropical Storm strength when hits land Mon PM. Path is still east of New Orleans #Refinery row, but still 3 days to go. #OOTT #NatGas #LNG


1 1

**Dan Tsubouchi** @Energy_Tidbits · Aug 13

#EnergyTransition will happen but will cost more, take longer & be bumpy road. @muddywatersre interest rates must stay at ridiculously low levels to de-carbonize, so much of the needed investment will be value-destructive. Demise of #NatGas #Oil will take longer. #OOTT

Muddy Waters Capital LLC
(Working from Home)
Austin, Texas
USA

MUDDY WATERS CAPITAL

August 11, 2021

Dear Investor:

In almost six years of managing your and other investors' money, this is the first investor letter that I've written. The catalyst for writing this one is to talk about our new fund, which launched in mid-February of this year. After I get through the fund-speak, I have thoughts you'll hopefully find interesting on the intersection of monetary policy and the future of humanity, a newfound understanding of Elon Musk, and the political decay liberal democracies are experiencing.

The Domino Fund

4 10

**Dan Tsubouchi** @Energy_Tidbits · Aug 13

Was July a game changer for #TOT #XOM in Mozambique #LNG? Give a chance for force majeure removal in early 2022? Rwanda troops weren't under international scrutiny, aggressively fought and pushed out rebels from key ports/towns. Thx @AntonySguazzin

> **Antony Sguazzin** @AntonySguazzin · Aug 13
> Why is Rwanda fighting in Mozambique and what will it gain? Next Africa bloom.bg/3lWPWtn

1 1

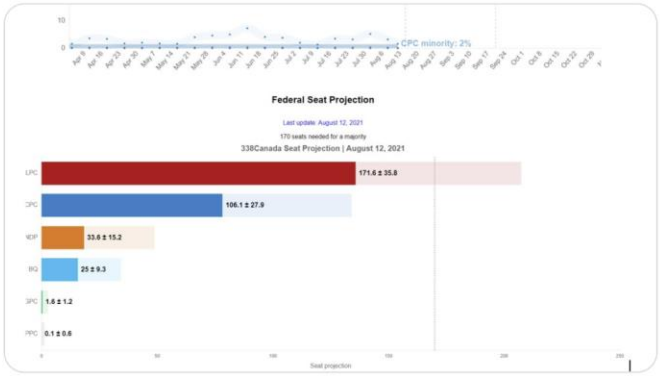
**Dan Tsubouchi** @Energy_Tidbits · Aug 13

these four baby #Canmore sparrows are getting too big for their nest. gotta be soon but i still haven't seen them leave the nest.


4

**Dan Tsubouchi** @Energy_Tidbits · Aug 12

No surprise, CAN federal election expected Sept 20. #Liberals tracking well in polls. Thx @338Canada. NDP & Bloc know their voters to be courted ie. they can do more in a majority ie. if Moderna site surprisingly gets announced in Quebec. Expect more hits on #OilSands #Oil #OOTT




> **Dan Tsubouchi** @Energy_Tidbits · Aug 8
>
> 
>
> #Cenovus CEO, can solve puzzle to make Cdn #Oil significantly lower #Carbon intensive with #Liberals assistance. But if @JustinTrudeau wouldn't even acknowledge #OilSands #NetZero 06/13 plan, he likely has zero interest in wanting to help solve the puzzle. ...

1

**Dan Tsubouchi** @Energy_Tidbits · Aug 12

At least they didn't drop the english version. reminds where #Aramco and #OPEC see as the most important #Oil market for 2020s. And likely also as a capital partner. #OOTT

> وزارة الطاقة @MoEnergy_Saudi · Aug 12
>
> The Ministry of Energy today launched its new official website, in three languages: Arabic, English and Chinese. The website was developed as part of the Ministry's ongoing measures to meet the needs and aspirations of the target users.

1

**Dan Tsubouchi** @Energy_Tidbits · Aug 12

Too bad #OPEC MOMR didn't lower H2/21 #OilDemand for 2 mth transitory impact of Delta like Goldman revision. Means no one pays attention to very bullish 2022. Demand back pre-Covid levels in Q3/22 & huge in Q4/22 of 102.62 mmb/d, which is +1.83 mmb/d vs pre-Covid Q4/19. #OOTT

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Russia | 3.37 | 3.57 | 3.42 | 3.57 | 3.74 | 3.57 | 0.21 | 6.14 |
| Other Eurasia | 1.07 | 1.18 | 1.24 | 1.14 | 1.28 | 1.21 | 0.14 | 12.59 |
| Other Europe | 0.65 | 0.73 | 0.67 | 0.68 | 0.74 | 0.70 | 0.06 | 8.89 |
| **Total Non-OECD** | **48.56** | **50.23** | **50.99** | **52.62** | **53.85** | **51.93** | **3.37** | **6.94** |
| **Total World** | **90.62** | **92.61** | **95.51** | **98.23** | **99.82** | **96.57** | **5.95** | **6.57** |
| Previous Estimate | 90.62 | 92.81 | 95.31 | 98.23 | 99.82 | 96.58 | 5.96 | 6.57 |
| Revision | 0.00 | -0.20 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

*Note: * 2021 = Forecast. Totals may not add up due to independent rounding. Source: OPEC.*

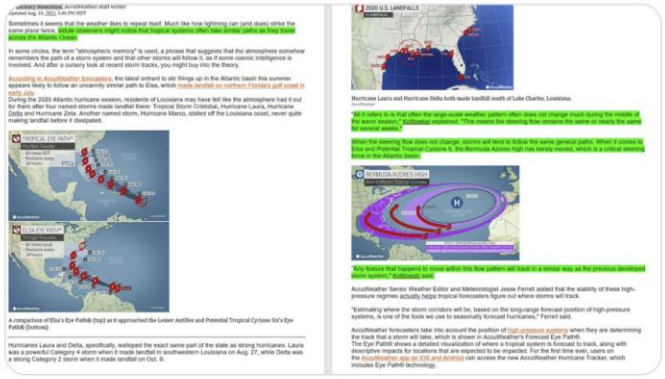
**Table 4 - 2: World oil demand in 2022*, mb/d**

| | | | | | | | Change 2022/21 | |
|---|---|---|---|---|---|---|---|---|
| **World oil demand** | **2021** | **1Q22** | **2Q22** | **3Q22** | **4Q22** | **2022** | **Growth** | **%** |
| Americas | 24.31 | 24.12 | 25.64 | 25.72 | 25.55 | 25.27 | 0.95 | 3.93 |
| *of which US* | *19.93* | *19.85* | *20.89* | *21.11* | *21.17* | *20.76* | *0.83* | *4.17* |
| Europe | 12.99 | 12.38 | 13.14 | 14.01 | 14.03 | 13.40 | 0.41 | 3.17 |
| Asia Pacific | 7.34 | 7.85 | 7.26 | 7.29 | 7.62 | 7.51 | 0.17 | 2.28 |
| **Total OECD** | **44.64** | **44.36** | **46.03** | **47.02** | **47.21** | **46.17** | **1.53** | **3.43** |
| China | 14.30 | 13.50 | 14.75 | 15.32 | 15.44 | 14.76 | 0.45 | 3.16 |
| India | 4.97 | 5.28 | 4.65 | 5.14 | 5.88 | 5.24 | 0.27 | 5.35 |
| Other Asia | 8.62 | 8.78 | 9.29 | 8.82 | 8.86 | 8.94 | 0.32 | 3.71 |
| Latin America | 6.29 | 6.39 | 6.34 | 6.61 | 6.56 | 6.48 | 0.18 | 2.89 |
| Middle East | 7.99 | 8.29 | 8.01 | 8.49 | 8.20 | 8.25 | 0.26 | 3.31 |

3 2

**Dan Tsubouchi** @Energy_Tidbits · Aug 11

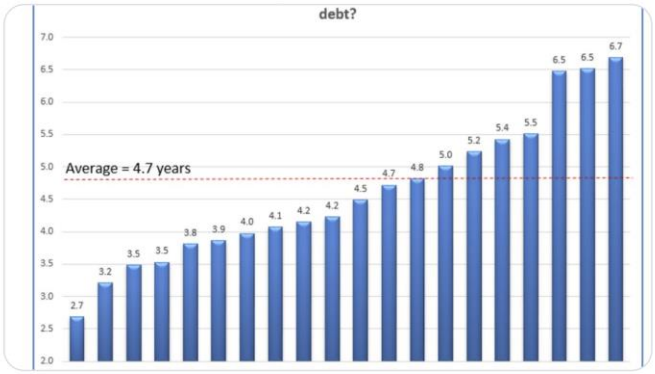
Why #TropicalStorms/#Hurricanes tend to follow similar paths - "large scale weather patter often does not change much during the warm seaons" "means the steering flow remains the same or nearly the same for several weeks" Thx @accuweather @Helicityman @z_rosenthal #OOTT #NatGas




3 2

**Dan Tsubouchi** @Energy_Tidbits · Aug 11

Eye opening Cdn E&P free cash flow valuation. @ericnuttall est how many yrs of FCF would it take for an E&P to buy back all outstanding shares and debt. <3 yrs = 1, 3-4 yrs = 5, 4-5 yrs = 7, 5-6 yrs = 4. No wonder he's still long despite his fund being +97% YTD. #NatGas #OOTT




2 17 78

**Dan Tsubouchi** @Energy_Tidbits · Aug 11

For those not near their laptop. @EIAgov weekly #Oil #Gasoline #Distillate inventory data just out as of Aug 6. Prior to release, #WTI price was ~$67.50 #OOTT

ir.eia.gov/wpsr/overview....

| Oil/Products Inventory Aug 6: EIA, Bloomberg Survey Expectations, API | | | |
|---|---|---|---|
| (million barrels) | EIA | Expectations | API |
| Oil | -0.45 | -0.75 | -0.82 |
| Gasoline | -1.40 | -2.00 | -1.11 |
| Distillates | 1.77 | -0.50 | 0.67 |
| | -0.08 | -3.25 | -1.25 |
| Note: In addition, there was no change in the SPR for Aug 6 week | | | |
| Note: Included in the data, Cushing had a draw of 0.325 mmb for Aug 6 week | | | |
| Source EIA, Bloomberg | | | |
| Prepared by SAF Group | | | |

**Dan Tsubouchi** @Energy_Tidbits · Aug 11

Record/near record #Electricity prices in UK, DE, ES, IT reports @JavierBlas . Replacing reliable baseload 24/7 #Coal #Nuclear with unpredictable #Wind #Solar brings inevitable price spikes/shortage risk when supply/demand is tight. Sign of the times for 2020s #EnergyTransition

> **Dan Tsubouchi** @Energy_Tidbits · Aug 6
>
> Positive to #NatGas #LNG in 2020s. OECD's steady replacement of 24/7 #Coal #Nuclear baseload with variable #Renewable means OECD #Electricity prices spike/shortage risk when supply/demand gets tight. China/India just increase coal. #Electricity will cost more in #EnergyTransition

| Terawatt-hours | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2020 | 2009-19 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total North America | 5088.1 | 5276.8 | 5293.8 | 5243.5 | 5283.1 | 5314.2 | 5318.4 | 5331.1 | 5287.7 | 5452.5 | 5382.4 | 5243.6 | -2.8% | 0.6% | 19.5% |
| Total S. & Cent. America | 1083.0 | 1140.5 | 1181.1 | 1231.4 | 1257.6 | 1287.3 | 1296.6 | 1305.6 | 1306.8 | 1330.9 | 1339.0 | 1282.8 | -4.5% | 2.1% | 4.8% |
| Total Europe | 3894.7 | 4065.8 | 4019.4 | 4053.1 | 4022.2 | 3939.2 | 3982.7 | 4021.4 | 4061.3 | 4065.5 | 3992.1 | 3871.3 | -3.3% | 0.2% | 14.4% |
| Total CIS | 1226.2 | 1284.0 | 1308.5 | 1339.4 | 1323.7 | 1337.9 | 1340.9 | 1369.3 | 1383.0 | 1416.4 | 1428.8 | 1397.1 | -2.5% | 1.5% | 5.2% |
| Total Middle East | 807.9 | 873.7 | 889.7 | 948.6 | 982.4 | 1051.4 | 1109.7 | 1143.7 | 1190.5 | 1207.4 | 1253.6 | 1265.2 | 0.6% | 4.5% | 4.7% |
| Total Africa | 627.5 | 672.3 | 689.4 | 721.1 | 744.0 | 767.9 | 788.4 | 796.5 | 824.8 | 847.2 | 863.4 | 843.3 | -2.5% | 3.2% | 3.1% |
| Total Asia Pacific | 7537.5 | 8257.7 | 8875.1 | 9278.1 | 9812.3 | 10333.7 | 10433.9 | 10947.6 | 11569.8 | 12339.3 | 12741.6 | 12919.3 | 1.1% | 5.4% | 48.2% |
| Total World | 20264.9 | 21570.7 | 22257.0 | 22806.3 | 23435.2 | 24031.7 | 24270.5 | 24915.2 | 25623.9 | 26659.1 | 27001.0 | 26823.2 | -0.9% | 2.9% | 100.0% |
| of which: OECD | 10640.3 | 11062.8 | 11014.3 | 11023.7 | 11015.6 | 10956.6 | 11005.0 | 11082.8 | 11119.5 | 11312.8 | 11168.4 | 10880.8 | -2.8% | 0.5% | 40.6% |
| Non-OECD | 9624.6 | 10507.9 | 11242.7 | 11782.6 | 12419.7 | 13075.2 | 13265.5 | 13832.4 | 14504.4 | 15346.4 | 15832.5 | 15942.4 | 0.4% | 5.1% | 59.4% |
| European Union # | 2847.6 | 2882.6 | 2931.3 | 2932.3 | 2912.9 | 2851.1 | 2899.1 | 2929.1 | 2952.4 | 2937.5 | 2892.5 | 2770.6 | -4.0% | 0.2% | 10.3% |

Source: bp Statistical Review of World Energy 2021

**Electricity generation from coal***

| Terawatt-hours | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | Growth rate per annum 2020 | Growth rate per annum 2009-19 | Share 2020 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total North America | 2011.4 | 2114.9 | 1987.7 | 1742.5 | 1814.3 | 1813.7 | 1564.2 | 1442.9 | 1401.0 | 1330.1 | 1131.7 | 898.6 | -20.8% | -5.6% | 9.5% |
| Total S. & Cent. America | 39.3 | 44.3 | 48.6 | 56.9 | 72.7 | 75.1 | 75.1 | 77.9 | 79.0 | 79.4 | 74.4 | 76.4 | 2.9% | 6.6% | 0.8% |
| Total Europe | 1094.3 | 1016.1 | 1062.4 | 1113.0 | 1085.3 | 1013.2 | 989.7 | 921.7 | 887.8 | 852.4 | 689.5 | 574.8 | -16.9% | -3.7% | 6.1% |
| Total CIS | 225.4 | 235.0 | 237.7 | 239.9 | 235.6 | 230.4 | 227.1 | 235.1 | 246.4 | 255.6 | 254.9 | 229.4 | -10.2% | 1.2% | 2.4% |
| Total Middle East | 34.7 | 34.6 | 35.6 | 39.2 | 32.6 | 30.7 | 29.7 | 24.7 | 22.7 | 21.3 | 22.6 | 19.7 | -13.3% | -4.2% | 0.2% |
| Total Africa | 247.7 | 257.5 | 260.0 | 255.5 | 251.4 | 251.3 | 247.0 | 246.9 | 252.1 | 258.8 | 255.7 | 236.0 | -7.9% | 0.3% | 2.5% |
| Total Asia Pacific | 4552.6 | 4932.2 | 5444.2 | 5660.7 | 6085.2 | 6337.5 | 6269.6 | 6472.3 | 6836.4 | 7308.1 | 7397.4 | 7386.4 | -0.4% | 5.0% | 78.4% |
| Total World | 8115.4 | 8634.5 | 9076.2 | 9107.7 | 9577.1 | 9752.4 | 9402.4 | 9422.4 | 9716.2 | 10096.7 | 9826.2 | 9421.4 | -4.4% | 1.9% | 100.0% |
| of which: OECD | 3616.9 | 3733.0 | 3602.0 | 3466.2 | 3634.8 | 3466.3 | 3208.1 | 2993.0 | 2938.0 | 2828.7 | 2450.2 | 2067.8 | -15.8% | -3.8% | 21.9% |
| Non-OECD | 4498.5 | 4901.5 | 5474.2 | 5642.5 | 5942.3 | 6286.1 | 6194.3 | 6429.4 | 6778.2 | 7268.0 | 7376.0 | 7353.6 | -0.6% | 5.1% | 78.1% |
| European Union # | 733.3 | 738.5 | 761.2 | 773.3 | 759.4 | 722.4 | 732.5 | 668.2 | 659.0 | 625.7 | 475.1 | 379.4 | -21.6% | -4.2% | 4.0% |

Source: bp Statistical Review of World Energy 2021

**Nuclear: Generation***

| Terawatt-hours | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | Growth rate per annum 2020 | Growth rate per annum 2009-19 | Share 2020 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total North America | 948.9 | 945.3 | 934.8 | 912.8 | 945.1 | 955.3 | 951.8 | 959.4 | 958.8 | 959.3 | 963.9 | 940.4 | -2.7% | 0.2% | 34.8% |
| Total S. & Cent. America | 21.1 | 21.7 | 22.1 | 22.4 | 21.7 | 20.9 | 21.8 | 24.1 | 21.8 | 22.5 | 24.6 | 26.0 | 5.4% | 1.9% | 1.0% |
| Total Europe | 1004.7 | 1032.0 | 1024.2 | 998.4 | 986.5 | 992.7 | 968.3 | 942.2 | 936.1 | 936.1 | 930.0 | 837.4 | -10.2% | -0.8% | 31.0% |
| Total CIS | 166.1 | 172.9 | 175.5 | 179.8 | 174.9 | 183.2 | 198.3 | 199.0 | 205.8 | 206.7 | 211.2 | 218.0 | 3.0% | 2.4% | 8.1% |

3 8

**Dan Tsubouchi** @Energy_Tidbits · Aug 11

2/2. @FTC ensure high #Gasoline not due to "anti-competitive or other illegal practices". Yet @POTUS
has held back US #Oil supply ie. drilling on fed lands. If #OilDemand returns to pre-Covid, Sign of the times - power returns to #OPEC in 2020s. Thx PippaStevens13
@ylanmui #OOTT

NATIONAL ECONOMIC COUNCIL
1600 PENNSYLVANIA AVENUE NW, WASHINGTON, DC 20500
WHITEHOUSE.GOV

I appreciate your consideration of this request.

Sincerely,

Brian Deese,
Director, National Economic Council

CC:
The Hon. Rostin Behnam, Acting Chair, Commodity Futures Trading Commission
The Hon. Richard Glick, Chair, Federal Energy Regulatory Commission
The Hon. Karl A. Racine, President, National Association of Attorneys General
The Hon. Merrick B. Garland, Attorney General, U.S. Department of Justice

Source: CNBC

2 4 5

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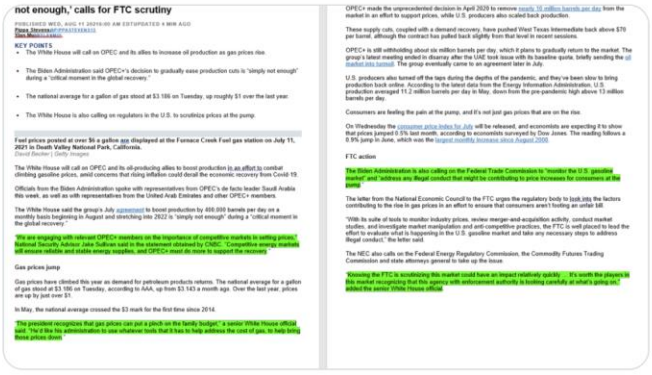
**Dan Tsubouchi** @Energy_Tidbits · Aug 11

1/2. Power returns to #OPEC in 2020s? #Gasoline prices getting @POTUS attention. #CNBC says #Biden wants his admin to use whatever tools it has to bring Gasoline prices down. @JakeSullivan46 says are engaging with "relevant" (read KSA) OPEC+ members to do more #OOTT



not enough," calls for FTC scrutiny

PUBLISHED WED, AUG 11 2021 6:00 AM EDT UPDATED 1 MIN AGO

KEY POINTS

- The White House will call on OPEC and its allies to increase oil production as gas prices rise.
- The Biden Administration said OPEC+'s decision to gradually ease production cuts is "simply not enough" during a "critical moment in the global recovery."
- The national average for a gallon of gas stood at $3.186 on Tuesday, up roughly $1 over the last year.
- The White House is also calling on regulators in the U.S. to scrutinize prices at the pump.

Fuel prices posted at over $6 a gallon are displayed at the Furnace Creek Fuel gas station on July 11, 2021 in Death Valley National Park, California.

The White House will call on OPEC and its oil-producing allies to boost production in an effort to combat climbing gasoline prices, amid concerns that rising inflation could derail the economic recovery from Covid-19.

Officials from the Biden Administration spoke with representatives from OPEC's de facto leader Saudi Arabia this week, as well as with representatives from the United Arab Emirates and other OPEC+ members.

The White House said the group's July agreement to boost production by 400,000 barrels per day on a monthly basis beginning in August and stretching into 2022 is "simply not enough" during a "critical moment in the global recovery."

"We are engaging with relevant OPEC+ members on the importance of competitive markets in setting prices," National Security Advisor Jake Sullivan said in the statement obtained by CNBC. "Competitive energy markets will ensure reliable and stable energy supplies, and OPEC+ must do more to support the recovery."

Gas prices jump

Gas prices have climbed this year as demand for petroleum products returns. The national average for a gallon of gas stood at $3.186 on Tuesday, according to AAA, up from $3.143 a month ago. Over the last year, prices are up by just over $1.

In May, the national average crossed the $3 mark for the first time since 2014.

"The president recognizes that gas prices can put a pinch on the family budget," a senior White House official said. "He'd like his administration to use whatever tools that it has to help address the cost of gas, to help bring those prices down."

OPEC+ made the unprecedented decision in April 2020 to remove nearly 10 million barrels per day from the market in an effort to support prices, while U.S. producers also scaled back production.

These supply cuts, coupled with a demand recovery, have pushed West Texas Intermediate back above $70 per barrel, although the contract has pulled back slightly from that level in recent sessions.

OPEC+ is still withholding about six million barrels per day, which it plans to gradually return to the market. The group's latest meeting ended in disarray after the UAE took issue with its baseline quota, briefly sending the oil market into turmoil. The group eventually came to an agreement later in July.

U.S. producers also turned off the taps during the depths of the pandemic, and they've been slow to bring production back online. According to the latest data from the Energy Information Administration, U.S. production averaged 11.2 million barrels per day in May, down from the pre-pandemic high above 13 million barrels per day.

Consumers are feeling the pain at the pump, and it's not just gas prices that are on the rise.

On Wednesday the consumer price index for July will be released, and economists are expecting it to show that prices jumped 0.5% last month, according to economists surveyed by Dow Jones. The reading follows a 0.9% jump in June, which was the largest monthly increase since August 2008.

FTC action

The Biden Administration is also calling on the Federal Trade Commission to "monitor the U.S. gasoline market" and "address any illegal conduct that might be contributing to price increases for consumers at the pump."

The letter from the National Economic Council to the FTC urges the regulatory body to look into the factors contributing to the rise in gas prices in an effort to ensure that consumers aren't footing an unfair bill.

"With its suite of tools to monitor industry prices, review merger-and-acquisition activity, conduct market studies, and investigate market manipulation and anti-competitive practices, the FTC is well placed to lead the effort to evaluate what is happening in the U.S. gasoline market and take any necessary steps to address illegal conduct," the letter said.

The NEC also calls on the Federal Energy Regulatory Commission, the Commodity Futures Trading Commission and state attorneys general to take up the issue.

"Knowing the FTC is scrutinizing this market could have an impact relatively quickly. ... It's worth the players in this market recognizing that this agency with enforcement authority is looking carefully at what's going on," added the senior White House official.

1 3 6

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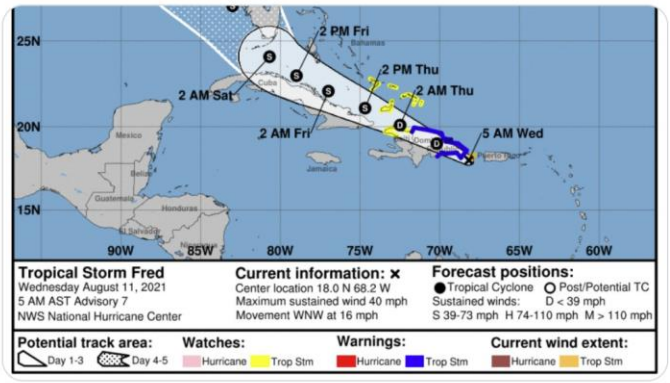
**Dan Tsubouchi** @Energy_Tidbits · Aug 11

#TropicalStormFred. Still early, but latest cone projections end up just east of New Orleans #Refinery row and major offshore GoM #Oil #NatGas fields. Hope everyone is safe in Dominican Republic, which always seems to get hit. #OOTT




2 2

**Dan Tsubouchi** @Energy_Tidbits · Aug 10

#Chevron Richmond (California) refinery is 250,000 b/d throughput. Thx @PennieOpal for the video. #OOTT

https://richmond.chevron.com/our-businesses/the-refining-process

**the refining process**

Refineries play an important role in keeping the world on the move. Oil refineries take crude oil and refine it into products that we use every day.
The Richmond Refinery takes crude oil and other feedstocks and refines it into gasoline, diesel, jet fuel, fuel oil and lubricating base oils. On average, the Richmond Refinery processes about 250,000 barrels of crude oil. All of the crude oil we process arrives at our refinery via ship and is unloaded at our Richmond Long Wharf.
Refining crude oil into transportation fuels and other products is a complex process involving many steps. The key steps include:

- Separation: Crude oil is separated into different parts based on the size of the molecules.
- Treatment: Using hydrogen and catalyst, natural impurities are removed from crude oil to meet California's emissions standards, which are the toughest in the nation.
- Cracking: Large molecules of crude oil are broken into smaller molecules that make up different

**Pennie Opal Plant** @PennieOpal · Aug 10


This is happening at the Chevron Refinery in Richmond CA right now and no shelter in place sirens have gone off. If you live in the area close your doors and windows, get your children and pets inside, and call the Bay Area Air Quality Management District to report ...

1 3 1

**Dan Tsubouchi** @Energy_Tidbits · Aug 10

Kharg Island fire, now #Oil tanker fire in Syria port. Another accident or part of payback for Iran drone attack on #MercerStreet? What will Iran do now? Maybe time for some geopolitical risk premium in #Oil? thx @allawati @pat_syk for added info this was an oil tanker. #OOTT

Read: U.S., Israel, U.K. Vow Action Against Iran on Tanker Attack

Iran's semi-official Raja News agency reported there was a blast off Syria's coast on a ship, called Wisdom, that had previously been used for exporting Iranian oil.

To contact the reporters on this story:
Abbas Al Lawati in Dubai at aallawati6@bloomberg.net;
Patrick Sykes in London at psykes5@bloomberg.net
To contact the editors responsible for this story:
Emma Ross-Thomas at erossthomas@bloomberg.net
Paul Wallace

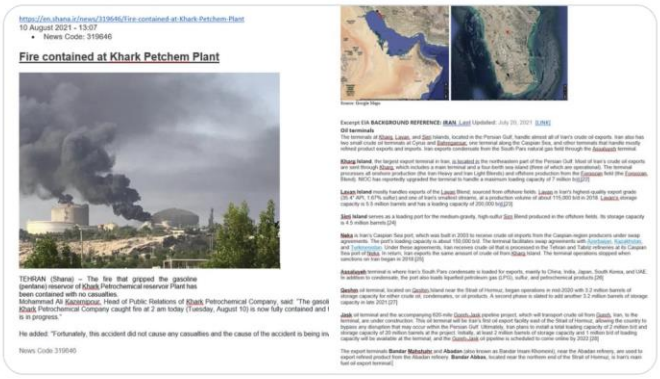
**Dan Tsubouchi** @Energy_Tidbits · Aug 10

Fire at Iran's Kharg Island Petrochemical plant, reported gasoline storage tank, no casualities. EIA notes Kharg Island is the most important Iran #Oil infra - processes all onshore produciton & 7 mmbd export loading capacity. Accident or part of #MercerStreet ...

1 4 4

**Dan Tsubouchi** @Energy_Tidbits · Aug 10

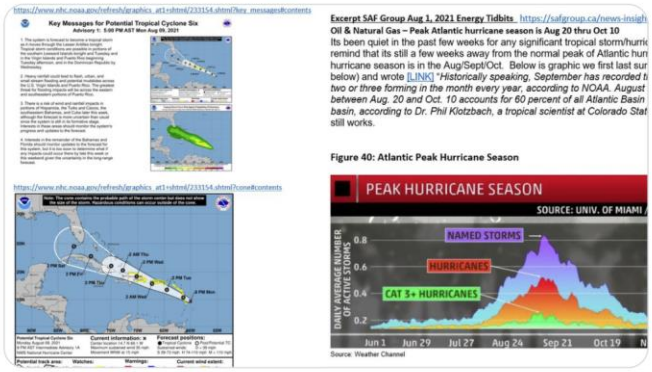
Fire at Iran's Kharg Island Petrochemical plant, reported gasoline storage tank, no casualities. EIA notes Kharg Island is the most important Iran #Oil infra - processes all onshore produciton & 7 mmbd export loading capacity. Accident or part of #MercerStreet payback? #OOTT




1 4 3

**Dan Tsubouchi** @Energy_Tidbits · Aug 9

Potential #TropicalStorm next week into Gulf of Mexico. Projected path shifted a little to the west. Reminds that just now moving into peak Atlantic #Hurricane season. #NatGas #OOTT




2 1

**Dan Tsubouchi** @Energy_Tidbits · Aug 9

Stronger for longer #Oil demand & prices. #Aramco ranking for use of cash "sustaining capital, ordinary dividends, followed by growth, and then a combination of distribution and leveraging", increasing MSC f/ 12 to 13 mmbd to "anticipate the growth you see in the future". #OOTT

*low cost and the rest of the world is not really investing all that much. But the history of those types of expectations, I can say from experience, I have to admit, has been mixed at best. And for the next two years, it doesn't look like the under investment is so obvious, the world still has a little spare capacity, the U.S. rig count is kind of coming back. What gives you longer dated confidence that the world indeed will need 13 million barrels a day of MSC from Aramco?"*

CEO Nasser replied *"Okay, thank you Martin, I will address the second question and allow Ziad to go through the first question. Now, with regard to the 13 million, yes, if you look at the next two years, and in terms of what MSC capacity of 12 million in markets and how much of that we will utilize, you might (inaudible). But don't forget, it will take you almost good number of years to bring that capacity to the market. A front engineering alone takes two years, we didn't do anything on the ground, that's front-end engineering approximately two years. When we do our plan, we look at the long-term. I always caution the international markets about what is coming ahead of us. When there is a need for additional capacity, it's not going to come easy. Any increments, it takes five to seven years at least, some increments they take eight and nine years to bring them to the market. So for us just front-end engineering, in the next two years you're looking at front-end engineer. Then you start the construction, then it will take a good number of years, five to seven years just to bring these facilities on stream. So it's a -- you have to plan for the long term, you need to put the investment and anticipate the growth that you will see in the future. Considering that you are the lowest cost producers and you have the lowest emissions so you have the biggest opportunity in terms of placing that in the markets".*

6

**Dan Tsubouchi** @Energy_Tidbits · Aug 9

many tweets w/ great info are never read. great tweeters catch my attention to make sure i read their tweets, like #BerryGordy secret for a great song. thx @chigrl @ericnuttall @BrynneKKelly @SStapczynski @JavierBlas & others #OOTT


6

**Dan Tsubouchi** @Energy_Tidbits · Aug 8

#EnbridgeLine5. ICYMI, Readouts of Aug 2 call. CAN, @JustinTrudeau highlighted importance of Line 5 for Cdn energy security. US, no mention Line 5 but leads off @POTUS thanked him for the smoke meats. Looks like left to ENB to fight it out vs Michigan. was it the same call? #OOTT

The Prime Minister and President discussed the importance of physical and human infrastructure investments being made to build back better from the COVID-19 pandemic and address its disproportionate impact on women, including by prioritizing supports for child care and education. They looked forward to working closely together for the benefit of people and jobs on both sides of the border. The Prime Minister highlighted the significant alignment between labour and environmental standards in both countries and the benefits to each country of open government procurement.

The Prime Minister highlighted the importance of Line 5 for Canada's energy security and reiterated Canada's support for a negotiated settlement between Enbridge and the State of Michigan.

The Prime Minister and President agreed to continue to monitor developments closely.

The Prime Minister and the President discussed China's arbitrary detention of Canadian citizens Michael Spavor and Michael Kovrig. The leaders agreed on the need for their immediate release.

The Prime Minister and President discussed COVID-19 and agreed to continue close collaboration in the management of the Canada-U.S. land border.

Canada and the U.S. will work together to further strengthen bilateral cooperation on wildfires, including by developing proposals to increase and share firefighting resources.

The two leaders also discussed the upcoming COP26 summit, and they looked forward to working closely together to strengthen bilateral trade and collaborating as friends and allies on global challenges such as fighting climate change and promoting international security.

The Prime Minister and President discussed the Olympic Games, including yesterday's win by the Canadian women's soccer team.

The two leaders agreed to stay in touch over the coming days and weeks.

3 3

**Dan Tsubouchi** @Energy_Tidbits · Aug 8

India not giving up reliable traditional fossil fuels #Coal #Oil #NatGas. Note Indian Oil Corp annual report statements. More in today's SAF Group Aug 8 Energy Tidbits memo safgroup.ca/news-insights/

Excerpts from Indian Oil Corp 2020/21 annual report posted Aug 3.
https://iocl.com/download/IndianOil_IR_02_08_2021_single_pg_view.pdf

P16. *Crafting a new energy future. With more than 1.3 billion people, India is hon population but accounts for a mere 7% of the world's energy demand. This vast g aspirations of Indians for improved living standards, will be the key driver of the c result, India is set to experience the fastest growth in energy consumption among to this exponential demand growth, we need a more comprehensive, diverse ener offerings like coal, oil, and natural gas coexist with bioenergy and renewables. Ea cut out in fuelling the emergent nation that is the world's third largest oil consum IndianOil's growth agenda reflects this diversity and translates into refinery expan renewables and alternative fuel options. Your Company is pacing ahead to energi the four pillars of India's energy future as envisioned by the Hon'ble Prime Ministe efficiency, Energy sustainability, and Energy security; at the same time ensuring E objective of access to safe, affordable and sustainable energy for all citizens. In a will witness a renewed consensus on urgent climate action with a more significan solutions. So, while the aspirations of our nation are unique, the commitment tow remains steadfast."*

Pg 21. *"A future-ready IndianOil Worldwide, the most significant overall long-terr and affordable energy while addressing the concerns related to climate change. T will be crucial for the energy sector and let me affirm that IndianOil is geared up t order of the future. India, like several other countries, is in the midst of an energy continuity of energy consumption patterns, but a profound change in the energy integrate renewables more intensely. For a country like India with high energy ap energy transition will involve balancing our enthusiasm for the future with the rel the magnitude of incremental energy required in addition to meeting existing nee greener energy options in a requisite scale and scope is needed to offer sustainab changeover. IndianOil has been working in mission mode to meet the rapid growt needs while pursuing the aspiration for a greener tomorrow."*

SAF GROUP

Energy Tidbits

Aug 8, 2021

Produced by: Dan Tsubouchi

Excellent Insights Into India's Energy Focus For The 2020s From Indian Oil's New Annual Report

**Welcome to new Energy Tidbits memo readers.** We are continuing to add new readers to our Energy Tidbits memo, energy blogs and tweets. The focus and concept for the memo was set in 1999 with input from PWs, who were looking for research (both positive and negative items) that helped them shape their investment thesis to the energy space, and not just focusing on daily trading. Our priority was and still is to not just report on events, but also try to interpret and point out implications therefrom. The best example is our review of investor days, conferences and earnings calls focusing on sector developments that are relevant to the sector and not just a specific company results. Our target is to write on 48 to 50 weekends per year and to post by noon mountain time on Sunday.

This week's memo highlights:

1. There are multiple oil, natural gas, LNG, energy transition insights into India's energy focus for the 2020s from the new Indian Oil annual report. (Click Here)
2. More support for bullish LNG outlook, Cheniere says *"began to see the return of long-term LNG contracts and support of the construction of new liquefaction capacity"* (Click Here)
3. A good Rystad blog reminds that 47% of DUCs are "dead" DUCs ie. not likely to ever be completed. (Click Here)
4. China's pollburo reminds reducing carbon doesn't come at the expense of economic stability. (Click Here)
5. A good RBN blog leads to the question can the world plant enough trees and protect enough forests to cover carbon offsets? (Click Here)
6. Please follow us on Twitter at (Link) for breaking news that ultimately ends up in the weekly Energy Tidbits memo that doesn't get posted until Sunday noon MT.
7. For new readers to our Energy Tidbits and our blogs, you will need to sign up at our blog sign up to receive future Energy Tidbits memos. The sign up is available at (Link)

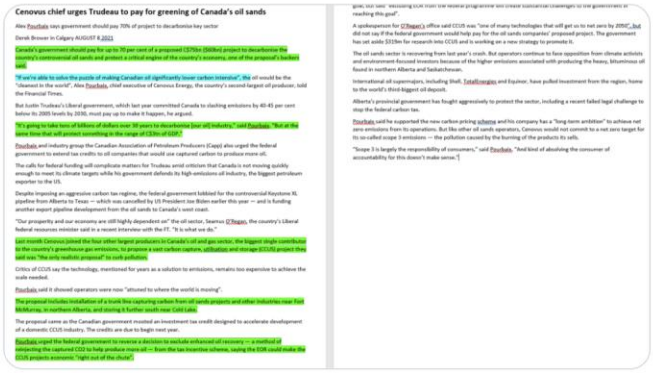
**Dan Tsubouchi** @Energy_Tidbits · Jul 24

IOC Chair why 1/3 increase to India #Gasoline #Diesel output "consumption is going from leaps and bounds and energy security is primary concern for me, which may not be the concern to the developed world". Why @POTUS @JustinTrudeau will ask #G7 to pay more ...

2 5

**Dan Tsubouchi** @Energy_Tidbits · Aug 8

#Cenovus CEO, can solve puzzle to make Cdn #Oil significantly lower #Carbon intensive with #Liberals assistance. But if @JustinTrudeau wouldn't even acknowledge #OilSands #NetZero 06/13 plan, he likely has zero interest in wanting to help solve the puzzle. Thx @derek_brower #OOTT



**Cenovus chief urges Trudeau to pay for greening of Canada's oil sands**

Alex Pourbaix says government should pay 70% of project to decarbonize key sector

Derek Brower in Calgary AUGUST 8 2021

Canada's government should pay for up to 70 per cent of a proposed C$7bn ($6bn) project to decarbonise the country's controversial oil sands and protect a critical engine of the country's economy, one of the proposal's backers said.

"If we're able to solve the puzzle of making Canadian oil significantly lower carbon intensive", the oil would be the "cleanest in the world", Alex Pourbaix, chief executive of Cenovus Energy, the country's second-largest oil producer, told the Financial Times.

But Justin Trudeau's Liberal government, which last year committed Canada to slashing emissions by 40-45 per cent below its 2005 levels by 2030, must pay up to make it happen, he argued.

"It's going to take tens of billions of dollars over 30 years to decarbonise [our oil] industry," said Pourbaix. "But at the same time that will protect something in the range of C$1tn of GDP."

Pourbaix and industry group the Canadian Association of Petroleum Producers (Capp) also urged the federal government to extend tax credits to oil companies that would use captured carbon to produce more oil.

The calls for federal funding will complicate matters for Trudeau amid criticism that Canada is not moving quickly enough to meet its climate targets while his government defends its high-emissions oil industry, the biggest petroleum exporter to the US.

Despite imposing an aggressive carbon tax regime, the federal government lobbied for the controversial Keystone XL pipeline from Alberta to Texas — which was cancelled by US President Joe Biden earlier this year — and is funding another export pipeline development from the oil sands to Canada's west coast.

"Our prosperity and our economy are still highly dependent on" the oil sector, Seamus O'Regan, the country's Liberal federal resources minister said in a recent interview with the FT. "It is what we do."

Last month Cenovus joined the four other largest producers in Canada's oil and gas sector, the biggest single contributor to the country's greenhouse gas emissions, to propose a vast carbon capture, utilisation and storage (CCUS) project they said was "the only realistic proposal" to curb pollution.

Critics of CCUS say the technology, mentioned for years as a solution to emissions, remains too expensive to achieve the scale needed.

Pourbaix said it showed operators were now "attuned to where the world is moving".

The proposal includes installation of a trunk line capturing carbon from oil sands projects and other industries near Fort McMurray, in northern Alberta, and storing it further south near Cold Lake.

The proposal came as the Canadian government mooted an investment tax credit designed to accelerate development of a domestic CCUS industry. The credits are due to begin next year.

Pourbaix urged the federal government to reverse a decision to exclude enhanced oil recovery — a method of reinjecting the captured CO2 to help produce more oil — from the tax incentive scheme, saying the EOR could make the CCUS projects economic "right out of the chute".

> **Dan Tsubouchi** @Energy_Tidbits · Jun 13
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> 
>
> #OilSands. Note #Trudeau wouldn't even acknowledge the oil sands pathways to net zero, or say positive move but need to do more or move faster. not a good sign. have to worry it links to prior tweet #G7 May 21 warning re stranded assets risk. #OOTT...

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**Dan Tsubouchi** @Energy_Tidbits · Aug 8

Our weekly SAF Aug 8, 2021 Energy Tidbits memo was just posted to our SAF Group website. This 40-pg energy research piece expands upon and covers many more items than tweeted this week. See the research section of the SAF website #Oil #OOTT #LNG #NatGas safgroup.ca/news-insights/

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