

Energy Tidbits

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Supplemental Documents

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Short-Term Energy Outlook (STEO)

Forecast highlights

Global liquid fuels

- Brent crude oil spot prices averaged \$59 per barrel (b) in August, down \$5/b from July and \$13/b lower than the average from August of last year. EIA forecasts Brent spot prices will average \$60/b in the fourth quarter of 2019 and \$62/b in 2020. EIA forecasts that West Texas Intermediate (WTI) prices will average \$5.50/b less than Brent prices in 2020.
- EIA forecasts that global liquid fuels consumption will increase by 0.9 million barrels per day (b/d) in 2019, down from year-over-year growth of 1.3 million b/d in 2018. The slowing liquid fuels demand growth reflects EIA's assumption (based on forecasts from Oxford Economics) of decelerating growth in global oil-weighted gross domestic product (GDP). EIA expects that global liquid fuels demand will increase by 1.4 million b/d in 2020 as a result of an expected increase in global GDP growth.
- EIA forecasts U.S. crude oil production will average 12.2 million b/d in 2019, up by 1.2 million from the 2018 level. Forecast crude oil production then rises by 1.0 million b/d in 2020 to an annual average of 13.2 million b/d. The slowing rate of crude oil production growth reflects relatively flat crude oil price levels and slowing growth in well-level productivity.

Natural gas

- The Henry Hub natural gas spot price averaged \$2.22 per million British thermal units (MMBtu) in August, down 15 cents/MMBtu from July. This summer, prices have declined amid rising natural gas production, despite high levels of both natural gas exports and consumption in the electricity generation sector. Based on recent price movements and EIA's assessment that natural gas production will be sufficient to meet expected demand and export levels at a lower price than previously forecasted, EIA lowered its Henry Hub spot price forecast for 2020 to an average of \$2.55/MMBtu, 20 cents/MMBtu lower than the August forecast.
- EIA forecasts that U.S. dry natural gas production will average 91.4 billion cubic feet per day (Bcf/d) in 2019, up 8.0 Bcf/d from 2018. EIA expects monthly average natural gas production to grow in late 2019 and then decline slightly during the first quarter of 2020 as the lagged effect of low prices in the second half of 2019 reduces

- natural gas-directed drilling. However, EIA forecasts that growth will resume in the second quarter of 2020, and natural gas production in 2020 will average 93.2 Bcf/d.
- Natural gas storage injections have outpaced the five-year (2014–18) average so far during the 2019 injection season as a result of rising natural gas production. At the beginning of April, the natural gas inventory [injection season started](#) with working inventories 28% lower than the five-year average for the same period. By the week ending August 30, [working gas inventories](#) were 82 billion cubic feet (Bcf), or 3%, lower than the five-year average of 3,023 Bcf. [EIA forecasts](#) that natural gas storage levels will be 3,769 Bcf by the end of October, which is slightly higher than the five-year average and 16% higher than October 2018 levels.

Electricity, coal, renewables, and emissions

- EIA expects the share of U.S. total [utility-scale electricity generation](#) from natural gas-fired power plants will rise from 34% in 2018 to 37% in 2019 and 38% in 2020. EIA forecasts that the share of U.S. generation from coal will average 25% in 2019 and 22% in 2020, down from 28% in 2018. EIA's forecast nuclear share of U.S. generation remains at about 20% in 2019 and in 2020. Hydropower averages a 7% share of total U.S. generation in the forecast for 2019 and 2020, similar to 2018. [Wind, solar, and other nonhydropower renewables](#) together provided 10% of U.S. total utility-scale generation in 2018. EIA expects they will provide 10% in 2019 and 12% in 2020.
- EIA forecasts generally lower wholesale electricity prices in 2019 compared with 2018. The lower forecast prices reflect lower natural gas fuel costs. In the first half of 2019, the average U.S. cost of natural gas delivered to power generators was 9% lower than the same period in 2018. EIA expects the delivered cost of natural gas during the second half of 2019 to be 31% lower than last year. Forecast electricity prices in the southeast are less than 1% lower than 2018, while prices in New England are 28% lower.
- EIA forecasts that U.S. coal production in the second half of 2019 will be 328 million short tons (MMst), or 59 MMst (15%) less than in the second half of 2018. EIA expects that coal exports will continue to fall during the projection period as international demand for U.S. coal is dampened by high Atlantic freight costs in the near term and increased uncertainty in the metallurgical coal market in the longer term. EIA forecasts that U.S. coal consumption will total 593 MMst in 2019 and 548 MMst in 2020, a decline of 14% in 2019 and 8% in 2020.
- [EIA forecasts](#) that utility-scale renewable fuels, [including wind, solar, and hydropower](#), will collectively produce 18% of U.S. electricity in 2019 and 19% in 2020. EIA expects that annual generation from wind will surpass hydropower generation for the first time in 2019 to become the leading source of renewable electricity generation and that it will maintain that position in 2020.

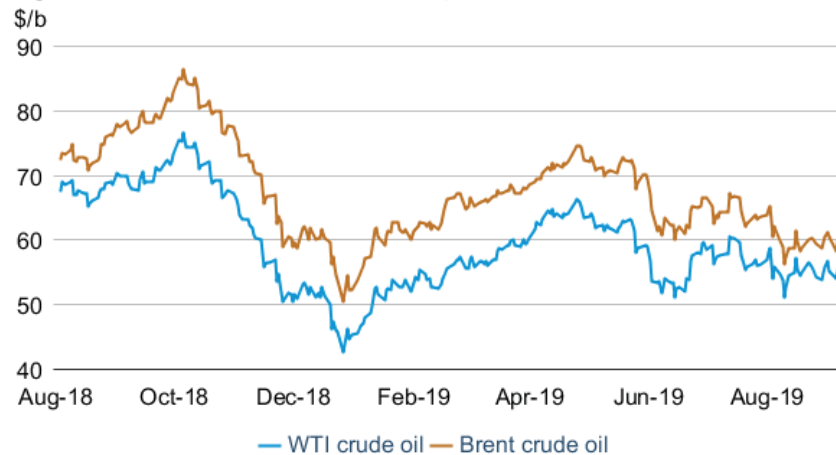
- EIA expects electric power sector generation from renewables other than hydropower—principally wind and solar—to grow from 409 billion kilowatthours (kWh) in 2019 to 467 billion kWh in 2020. In EIA’s forecast, Texas accounts for 19% of the U.S. nonhydro renewables generation in 2019 and 21% in 2020. California has a share of 15% in 2019 and 14% in 2020. Regionally, the Midwest and Central power regions each have shares in the 16% to 17% range of the U.S. generation total from renewables other than hydropower.
- EIA forecasts that, after rising by 2.7% in 2018, U.S. energy-related carbon dioxide (CO₂) emissions will decline by 2.5% in 2019 and by 1.0% in 2020. In 2019, EIA forecasts that space cooling demand (as measured in cooling degree days) will be lower than in 2018, when it was 13% higher than the previous 10-year (2008–17) average. In addition, EIA expects U.S. CO₂ emissions in 2019 to decline because the forecast share of electricity generated from natural gas and renewables is increasing while the forecast share generated from coal, which is a more carbon-intensive energy source, is decreasing.

Petroleum and natural gas markets review

Crude oil

Prices: The front-month futures price for Brent crude oil settled at \$60.95 per barrel (b) on September 5, 2019, an increase of \$0.45/b from August 1. The front-month futures price for West Texas Intermediate (WTI) crude oil for delivery at Cushing, Oklahoma, increased by \$2.35/b during the same period, settling at \$56.30/b on September 5 (**Figure 1**).

Figure 1. Crude oil front-month futures prices



CME Group and Intercontinental Exchange, as compiled by Bloomberg L.P.

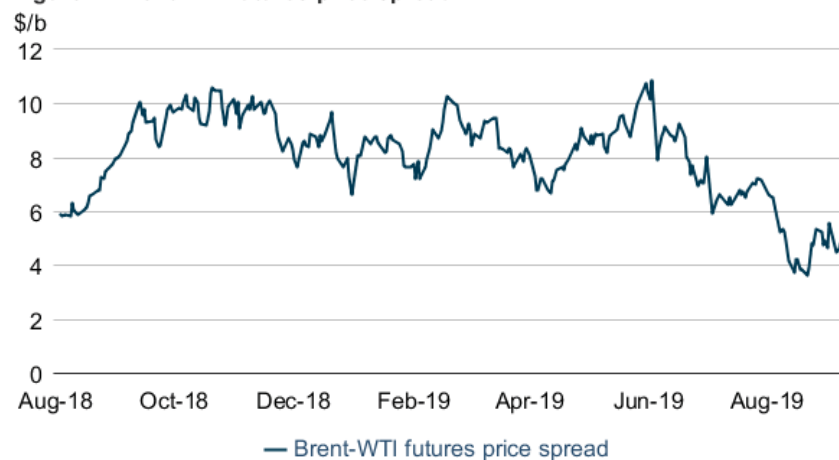
Global economic indicators continued to decline, contributing to oil price declines and volatility. Manufacturing Purchasing Managers' Indices (PMIs)—which can serve as a leading indicator for economic growth—from several countries for August showed a contraction in manufacturing activity. PMI reports remained mixed for the United States, with the IHS Markit PMI still showing slight expansion, although at the lowest level since September 2009, while the U.S. Institute for Supply Management's PMI showed contraction for the first time since 2016. Reports on trade negotiations between the United States and China also contributed to daily movements in global crude oil prices. On August 23, WTI prices fell by 2% when China announced a 5% tariff on its imports of U.S. crude oil, the first time U.S. crude oil was included in Chinese tariffs. However, Chinese imports of U.S. crude oil have decreased in 2019 year-to-date compared with 2018, and China has imported more from other countries, including Saudi Arabia.

EIA is reducing its 2019 Brent crude oil price forecast to \$63/b, which is \$2/b lower than in the August STEO. The lower 2019 price forecast largely reflects recent global crude oil price fluctuations and lower forecast global oil demand growth. EIA has revised its expected global oil demand growth down to 0.9 million barrels per day (b/d) in 2019, 0.1 million b/d lower than the August forecast. Lower expected oil demand growth mainly reflects lower forecast gross domestic product growth and lower forecast demand from countries in the Organization for Economic Cooperation and Development. If realized, 2019 would be the first year when demand

growth is less than 1.0 million b/d since 2011. EIA expects that annual average Brent prices will slightly decrease in 2020 to \$62/b, which is \$3/b lower than EIA's August STEO forecast.

Notwithstanding the decline in overall price levels in August, several factors specific to the WTI market contributed to a narrowing of the Brent–WTI futures price spread since late July 2019. The Brent–WTI futures price spread settled at \$4.79/b on September 5, a decrease of \$1.70/b since August 1 (**Figure 2**). On August 19, the price spread decreased to \$3.60/b, the narrowest spread since March 2018. Crude oil prices in the Permian region increased during this period with the addition of two pipelines mid-month that reduced takeaway constraints to the U.S. Gulf Coast. The Cactus II crude oil pipeline added an estimated 670,000 b/d, and the EPIC Midstream natural gas liquids pipeline—repurposed to deliver crude oil—added about 400,000 b/d of capacity. The pipeline additions between the Permian and the U.S. Gulf Coast reduced the need for crude oil to first transit through Cushing, lowering the cost of transportation to refineries and export terminals on the U.S. Gulf Coast. Cushing crude oil stocks decreased by 10 million barrels from the third week in July through August 23, likely as a result of less crude oil flowing to the storage hub from the Permian region. EIA expects the spread to widen slightly from the lows seen in mid-August, as regional markets rebalance and the spread settles closer to the new pipelines' tariff from the Permian Basin to the Gulf Coast.

Figure 2. Brent–WTI futures price spread

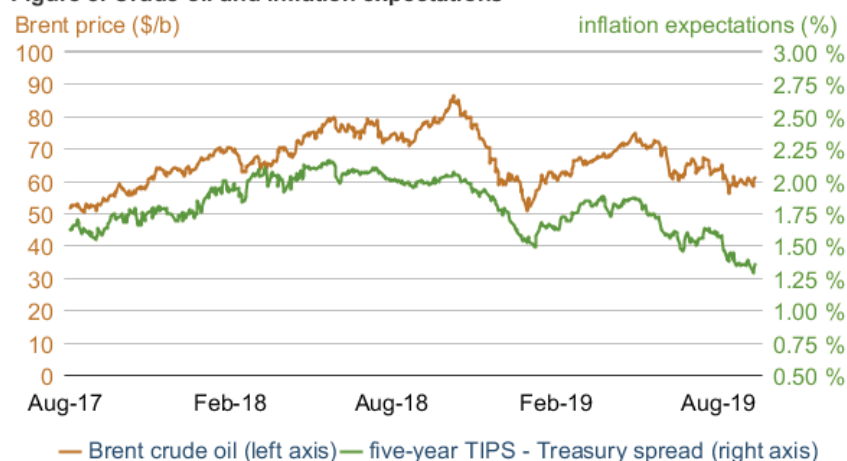


eia CME Group and Intercontinental Exchange, as compiled by Bloomberg L.P.

Crude oil and inflation expectations: Changes in crude oil prices affect market participants' expectations of future rates of inflation because energy is a significant input into other areas of the economy. Lower crude oil prices have a deflationary effect because petroleum products are a primary variable cost for businesses and consumers. Recent decreases in Brent crude oil prices have coincided with a decrease in inflation expectations, as measured by the difference in yield between the five-year Treasury rate and five-year Treasury Inflation-Protected Securities (TIPS). The five-year TIPS–Treasury spread decreased from 1.47% on August 1 to 1.35% as of September 5, and crude oil prices remained relatively flat during the same time (**Figure 3**). Relatively flat inflation growth was an important factor in the Federal Reserve Board's decision to decrease

interest rates, which the Board decided to do for the first time since 2008 in the Federal Open Market Committee meetings in July. Since the Board's meeting, the market has continued to price in inflation expectations lower than 2%, which is the Board's inflation target.

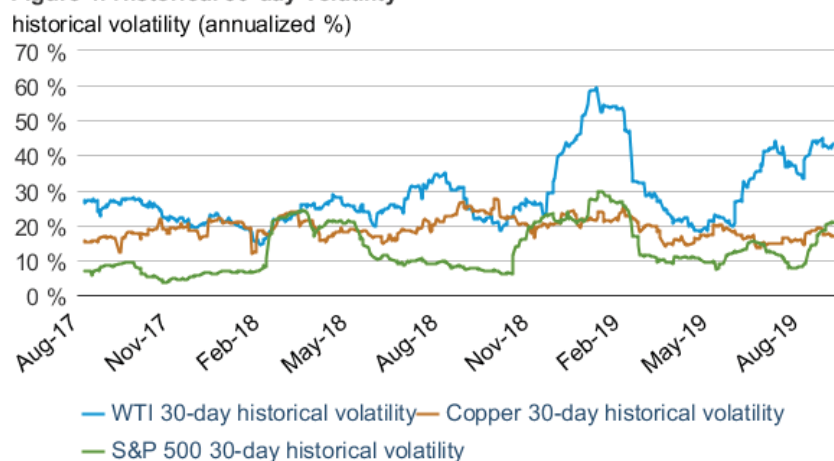
Figure 3. Crude oil and inflation expectations



eia Bloomberg, Federal Reserve Bank of St. Louis

Historical 30-day volatility: Unlike implied volatility, which is a calculated measure derived from options prices, historical volatility measures the magnitude of daily changes in closing prices for a commodity during a given time in the past. WTI 30-day historical volatility increased from August 1 to September 5, increasing from 38.7% to 45.1% (**Figure 4**). In 2019, historical volatility peaked at 59.4% in January, as WTI crude oil prices increased from large price declines in December because of supply-side uncertainty following an extension of the production agreement by producers in the Organization of the Petroleum Exporting Countries (OPEC) and several non-OPEC producers (OPEC+). The mid-August increase in volatility is likely related to demand-side uncertainty as well as the addition of two pipelines out of the Permian Basin. The volatility of copper futures prices has been lower than volatility of WTI prices because copper futures prices almost solely respond to demand-side concerns rather than supply-side uncertainty. In general, the industrial metal is used in many economically sensitive sectors, such as construction and industrial production, and lower prices may indicate expectations of a slowdown in industrial and economic activity. The volatility in the S&P 500 Index, which includes a basket of companies across many industries, was greater than the volatility of copper in late August, possibly in response to global trade concerns and slowing demand.

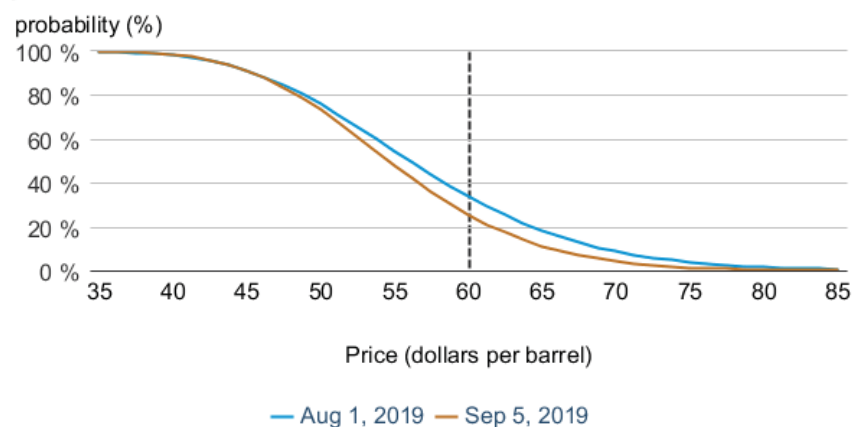
Figure 4. Historical 30-day volatility



eia CME Group and Intercontinental Exchange, as compiled by Bloomberg L.P.

Market-derived probability: From the beginning of August to the first week of September, the probability that the December 2019 WTI crude oil futures contract will expire above \$60/b decreased slightly. The probability that was calculated using futures and options data indicates WTI futures prices have a 25% chance of reaching \$60/b at expiration as of September 5 (**Figure 5**). The probability of reaching \$60/b was at 34% on August 1.

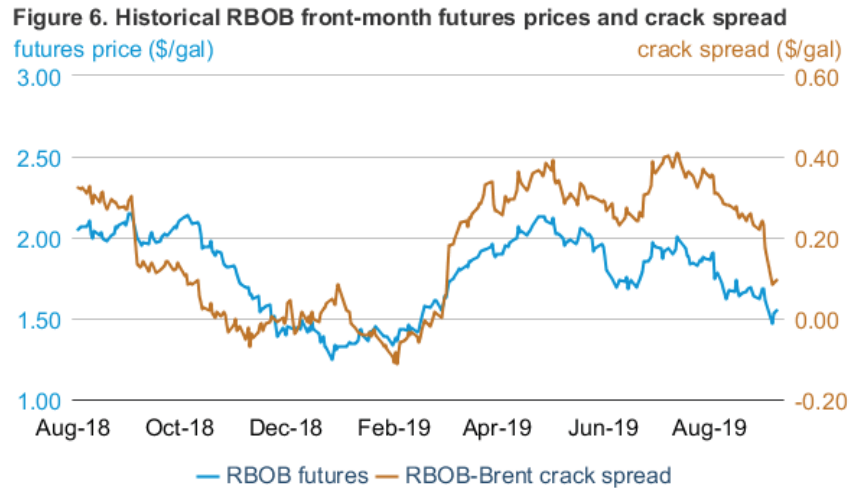
Figure 5. Probability of the December 2019 WTI contract expiring higher than price levels



eia U.S. Energy Information Administration, CME Group

Petroleum products

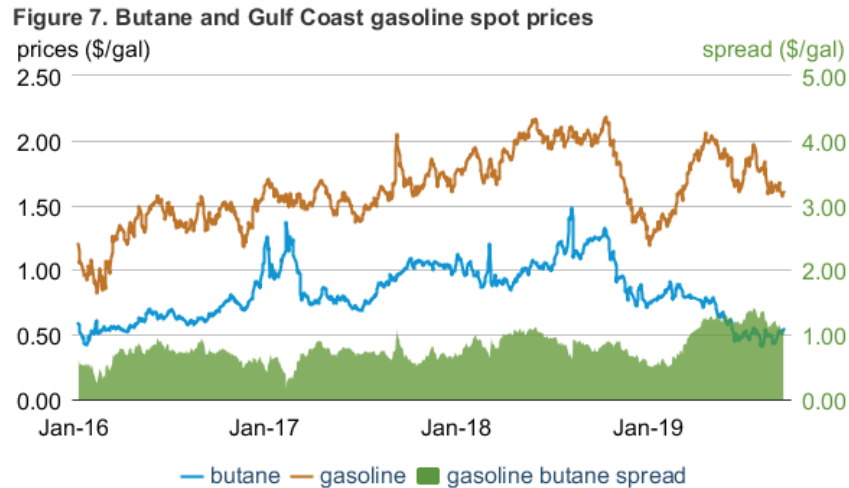
Gasoline prices: The front-month futures price of reformulated blendstock for oxygenate blending (RBOB, the petroleum component of gasoline used in many parts of the country) settled at \$1.55 per gallon (gal) on September 5, down 20 cents/gal since August 1 (**Figure 6**). The RBOB–Brent crack spread (the difference between the price of RBOB and the price of Brent crude oil) decreased by 21 cents/gal to settle at 9 cents/gal during the same period.



eia CME Group, as compiled by Bloomberg L.P., RBOB=reformulated blendstock for oxygenate blending

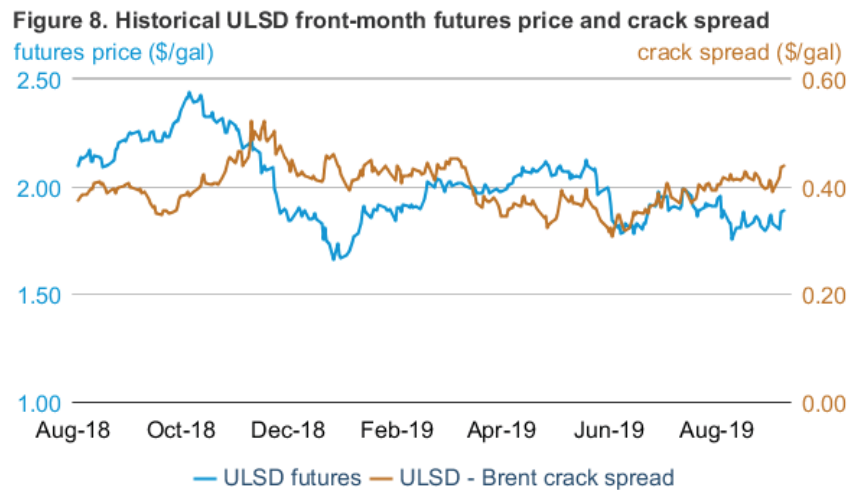
The crack spread declined throughout August and then fell further at the beginning of September, when the front-month contract rolled to October delivery, which reflects winter grade gasoline that is cheaper for refineries to produce. The August monthly average gasoline crack spread declined to lower than the five-year (2014–18) range after increasing to the five-year average in July for the first time this year. U.S. gasoline inventories decreased in August despite what EIA estimates would be record high gasoline production if confirmed by monthly data. In addition, gasoline imports into the East Coast increased after the Philadelphia Energy Solutions refinery closed in June, reaching 0.8 million barrels per day (b/d) for the four weeks ending August 30, 22% higher than the five-year average.

Butane prices: In each of the past three months, butane spot prices averaged 49 cents/gal (**Figure 7**), the lowest monthly average prices in 17 years. U.S. [butane inventories](#) in May 2019 (the latest data available) reached 48 million barrels, 12 million barrels higher than the five-year average. [Butane produced](#) through natural gas processing was 418,000 b/d in April and May 2019, the highest level ever recorded. Lower prices have provided incentives to export butane as well as input more butane into refinery processing. In April, the United States [exported](#) 331,000 b/d of butane, the highest amount ever. In November and December 2018, [butane refinery inputs](#) of 363,000 b/d were also the highest on record. Blending butane into gasoline is one of its major uses. During the summer months, however, the amount that can be blended is limited by lower vapor pressure specifications. The limited refinery use contributed to the rising inventory levels and low prices during this past summer.



eia Bloomberg L.P.

Ultra-low sulfur diesel prices: The ultra-low sulfur diesel (ULSD) front-month futures price increased 4 cents/gal from August 1 to settle at \$1.89/gal on September 5. The ULSD–Brent crack spread (the difference between the price of ULSD and the price of Brent crude oil) increased 2 cents/gal to settle at 44 cents/gal during the same period (**Figure 8**).



eia CME Group, as compiled by Bloomberg L.P., ULSD=ultra-low sulfur diesel

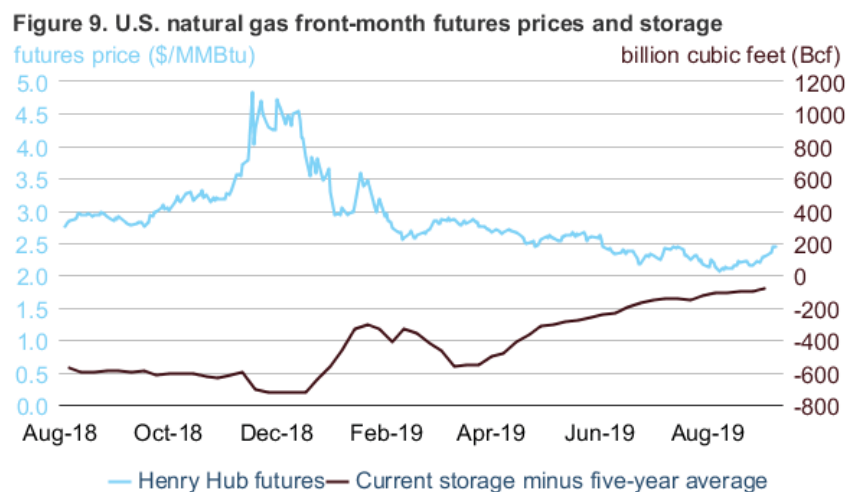
ULSD prices remained higher than RBOB from May to August for the second consecutive year. Even though [distillate consumption declined](#) in August to below the five-year range, exports increased and production declined, helping to keep inventories lower than the five-year average. Distillate exports increased to 1.5 million b/d for the four weeks ending August 30, which, if confirmed by monthly data, would be the highest monthly amount in 2019 and the third-largest on record. EIA estimates that production declined in August compared with July 2019. The production decline was also the largest year-on-year decrease since September 2017.

EIA estimates that distillate inventories ended August 11 million barrels lower than the five-year average.

Natural Gas

Prices: The front-month natural gas futures contract for delivery at the Henry Hub settled at \$2.44 per million British thermal units (MMBtu) on September 5, an increase of 23 cents/MMBtu from August 1 (**Figure 9**). Natural gas futures prices declined early in August, reaching \$2.07/MMBtu on August 5, the lowest price since May 26, 2016, as continued increases in production contributed to inventory gains. As of September 5, natural gas storage injections equaled or exceeded the five-year (2014–18) average in all but two weeks in the 2019 injection season that began in April.

Henry Hub spot prices increased in the second half of August, and EIA forecasts that prices will average \$2.44/MMBtu in the fourth quarter of 2019 and \$2.55/MMBtu in 2020. EIA estimates that natural gas production increased to a record-high 92.2 billion cubic feet per day (Bcf/d) in August but expects that production will level off, averaging 93.2 Bcf/d in 2020. However, EIA forecasts that liquefied natural gas (LNG) exports, estimated at 3.9 Bcf/d in August, will continue to rise through the forecast, averaging 6.4 Bcf/d in 2020. EIA expects that continued growth of LNG exports combined with flattening production will provide support for natural gas prices through the forecast.

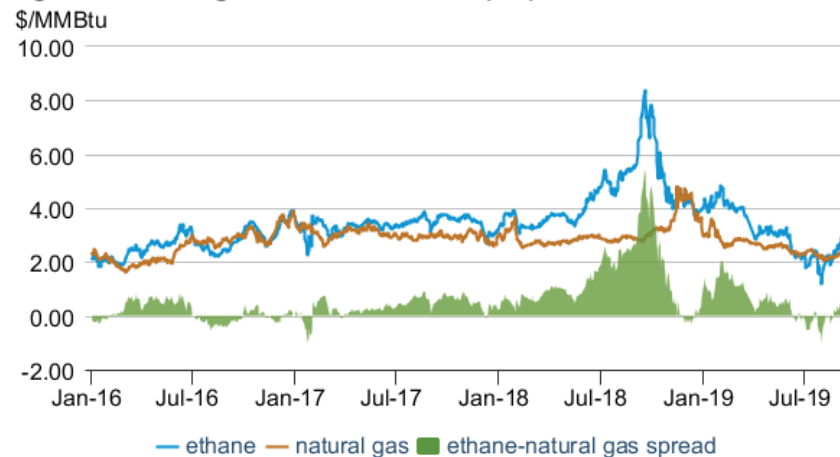


 U.S. Energy Information Administration, CME Group, as compiled by Bloomberg L.P.

Ethane prices: On July 31, 2019, ethane spot prices declined to the lowest point on record (**Figure 10**). Although prices increased in August, the monthly average prices for June through August were the lowest recorded for those months. Ethane inventories rose to 56 million barrels in May 2019 (the latest data available), 14 million barrels more than the five-year average and less than 3 million barrels lower than the November 2017 record high in EIA's data series, which starts in 2010. The low prices during the summer months indicate that inventories likely have remained high. Ethane produced through natural gas processing continues to increase. Every

month since September 2016 has set a production record for that month. Consumption and exports have also increased, but ethane production grew at a faster rate in the first five months of 2019. Although ethane is usually more expensive than natural gas, ethane prices have been lower than natural gas futures prices for more than half of the days from June 1 to September 5. Low ethane prices could make extraction from the natural gas stream cost prohibitive for natural gas processors. Processors will likely leave ethane in the natural gas stream—behavior known as “ethane rejection”—to the extent possible while still meeting the specifications for dry natural gas distribution.

Figure 10. Natural gas futures and ethane spot prices



eia Bloomberg L.P.

Notable forecast changes

- EIA forecasts that global liquid fuels consumption will increase by 0.9 million barrels per day (b/d) in 2019, which is 0.1 million b/d lower than forecast in the August STEO. It also marks the seventh consecutive month in which EIA has lowered its 2019 consumption outlook, after EIA had forecast growth of 1.5 million b/d for the year in the January 2019 STEO. The downward revisions reflect successive reductions in EIA’s assumption (based on forecasts from Oxford Economics) of global gross domestic product growth for 2019.
- EIA forecasts natural gas spot prices at Henry Hub to average \$2.55 per million British thermal units (MMBtu) in 2020, which is 20 cents/MMBtu lower than expected in the August STEO.
- Because of the [delayed release](#) of EIA’s *Petroleum Supply Monthly* (PSM) data for June 2019, historical monthly petroleum data in this STEO end one month earlier than standard, in May 2019. This delay does not materially affect the September STEO forecast. The June data will be incorporated into the October STEO.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2019

	2018				2019				2020				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2018	2019	2020
Supply (million barrels per day) (a)															
OECD	29.17	29.32	30.47	31.41	31.03	31.20	31.87	33.05	33.19	33.53	33.77	34.31	30.10	31.79	33.70
U.S. (50 States)	16.80	17.39	18.41	19.03	18.91	19.43	19.79	20.73	20.89	21.22	21.48	21.71	17.91	19.72	21.33
Canada	5.32	5.10	5.33	5.55	5.38	5.35	5.44	5.50	5.45	5.44	5.49	5.54	5.33	5.42	5.48
Mexico	2.17	2.13	2.09	1.95	1.91	1.91	2.01	2.03	2.01	1.98	1.96	1.94	2.08	1.96	1.97
Other OECD	4.88	4.69	4.64	4.87	4.82	4.52	4.63	4.78	4.85	4.88	4.83	5.10	4.77	4.69	4.92
Non-OECD	70.20	70.53	71.02	70.99	69.23	69.12	69.45	69.27	68.13	69.07	69.42	68.87	70.69	69.27	68.87
OPEC	37.46	37.07	37.34	37.29	35.83	35.41	35.15	35.15	34.66	34.66	34.82	34.58	37.29	35.38	34.68
Crude Oil Portion	32.10	31.78	32.02	31.93	30.47	30.02	29.75	29.90	29.57	29.59	29.75	29.48	31.96	30.03	29.60
Other Liquids (b)	5.36	5.29	5.33	5.36	5.36	5.39	5.40	5.25	5.09	5.06	5.07	5.10	5.33	5.35	5.08
Eurasia	14.44	14.44	14.63	14.89	14.88	14.45	14.55	14.68	14.60	14.55	14.57	14.62	14.60	14.64	14.59
China	4.78	4.83	4.77	4.86	4.93	4.97	4.94	4.95	4.93	4.96	4.96	5.01	4.81	4.95	4.97
Other Non-OECD	13.52	14.19	14.27	13.96	13.59	14.30	14.82	14.49	13.94	14.89	15.06	14.66	13.99	14.30	14.64
Total World Supply	99.37	99.85	101.49	102.40	100.26	100.32	101.33	102.31	101.33	102.59	103.18	103.17	100.79	101.06	102.57
Non-OPEC Supply	61.91	62.78	64.15	65.11	64.43	64.91	66.17	67.17	66.67	67.94	68.36	68.59	63.50	65.68	67.89
Consumption (million barrels per day) (c)															
OECD	47.62	47.01	47.92	47.52	47.19	46.82	47.78	48.10	47.51	47.00	48.27	48.27	47.52	47.47	47.76
U.S. (50 States)	20.24	20.33	20.63	20.60	20.29	20.37	20.72	20.95	20.45	20.67	21.22	21.04	20.45	20.59	20.85
U.S. Territories	0.10	0.08	0.09	0.11	0.12	0.11	0.12	0.13	0.12	0.11	0.12	0.13	0.10	0.12	0.12
Canada	2.34	2.37	2.58	2.51	2.37	2.34	2.53	2.50	2.46	2.40	2.50	2.48	2.45	2.44	2.46
Europe	14.00	14.18	14.61	14.04	13.85	14.13	14.57	14.27	13.93	14.13	14.64	14.34	14.21	14.21	14.26
Japan	4.31	3.46	3.56	3.92	4.09	3.40	3.46	3.82	4.08	3.34	3.42	3.76	3.81	3.69	3.65
Other OECD	6.63	6.59	6.44	6.34	6.48	6.47	6.39	6.42	6.47	6.34	6.37	6.52	6.50	6.44	6.43
Non-OECD	51.56	52.60	52.57	52.91	52.62	53.50	53.54	53.72	53.61	54.64	54.66	54.89	52.41	53.35	54.45
Eurasia	4.80	4.84	5.11	4.99	4.79	4.86	5.13	5.08	4.84	4.93	5.31	5.21	4.94	4.97	5.07
Europe	0.75	0.74	0.76	0.76	0.75	0.75	0.77	0.77	0.76	0.76	0.78	0.78	0.75	0.76	0.77
China	13.80	14.00	13.73	13.95	14.28	14.57	14.30	14.51	14.83	15.03	14.74	14.97	13.87	14.42	14.89
Other Asia	13.77	14.02	13.60	14.00	14.13	14.18	13.87	14.20	14.36	14.53	14.11	14.46	13.85	14.09	14.37
Other Non-OECD	18.44	19.00	19.36	19.20	18.66	19.13	19.47	19.16	18.82	19.39	19.72	19.47	19.00	19.11	19.35
Total World Consumption	99.17	99.62	100.49	100.43	99.81	100.32	101.32	101.83	101.12	101.64	102.93	103.16	99.93	100.82	102.22
Total Crude Oil and Other Liquids Inventory Net Withdrawals (million barrels per day)															
U.S. (50 States)	0.36	-0.06	-0.70	0.22	0.15	-0.60	-0.02	0.32	-0.02	-0.45	-0.16	0.31	-0.05	-0.04	-0.08
Other OECD	-0.01	0.12	0.18	-0.08	-0.21	0.24	0.00	-0.27	-0.06	-0.16	-0.03	-0.11	0.05	-0.06	-0.09
Other Stock Draws and Balance	-0.55	-0.29	-0.49	-2.11	-0.39	0.36	0.01	-0.53	-0.12	-0.34	-0.06	-0.22	-0.86	-0.14	-0.19
Total Stock Draw	-0.20	-0.23	-1.00	-1.97	-0.45	-0.01	-0.01	-0.49	-0.21	-0.95	-0.25	-0.02	-0.86	-0.24	-0.36
End-of-period Commercial Crude Oil and Other Liquids Inventories (million barrels)															
U.S. Commercial Inventory	1,196	1,207	1,272	1,262	1,249	1,308	1,310	1,291	1,294	1,336	1,351	1,326	1,262	1,291	1,326
OECD Commercial Inventory	2,805	2,805	2,856	2,861	2,863	2,903	2,905	2,911	2,919	2,976	2,994	2,978	2,861	2,911	2,978

- = 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, 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), Ecuador, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, the United Arab Emirates, Venezuela.

(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.

Notes: 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.

Projections: EIA Regional Short-Term Energy Model.

Table 4a. U.S. Petroleum and Other Liquids Supply, Consumption, and Inventories
U.S. Energy Information Administration | Short-Term Energy Outlook - September 2019

	2018				2019				2020				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2018	2019	2020
Supply (million barrels per day)															
Crude Oil Supply															
Domestic Production (a)	10.27	10.54	11.25	11.89	11.81	12.11	12.24	12.78	13.01	13.19	13.30	13.44	10.99	12.24	13.23
Alaska	0.51	0.48	0.43	0.49	0.49	0.47	0.45	0.49	0.51	0.49	0.46	0.49	0.48	0.47	0.49
Federal Gulf of Mexico (b)	1.68	1.60	1.87	1.87	1.85	1.93	1.82	1.95	2.05	2.06	2.00	2.02	1.76	1.89	2.04
Lower 48 States (excl GOM)	8.07	8.46	8.94	9.53	9.47	9.71	9.97	10.34	10.45	10.64	10.83	10.92	8.75	9.88	10.71
Crude Oil Net Imports (c)	6.18	6.19	5.84	4.82	4.25	4.15	4.29	4.10	4.17	4.58	4.37	4.02	5.75	4.20	4.29
SPR Net Withdrawals	-0.03	0.06	0.00	0.12	0.00	0.05	0.00	0.11	0.01	0.01	0.00	0.03	0.04	0.04	0.01
Commercial Inventory Net Withdrawals	-0.02	0.09	-0.01	-0.28	-0.19	-0.06	0.37	-0.21	-0.40	0.04	0.13	-0.09	-0.06	-0.02	-0.08
Crude Oil Adjustment (d)	0.02	0.25	0.25	0.44	0.34	0.52	0.32	0.15	0.19	0.19	0.21	0.15	0.24	0.33	0.19
Total Crude Oil Input to Refineries	16.41	17.14	17.32	16.99	16.20	16.77	17.23	16.94	16.98	17.99	18.02	17.56	16.97	16.79	17.64
Other Supply															
Refinery Processing Gain	1.11	1.12	1.17	1.16	1.06	1.09	1.12	1.17	1.19	1.24	1.26	1.27	1.14	1.11	1.24
Natural Gas Plant Liquids Production	4.01	4.30	4.54	4.54	4.66	4.81	5.00	5.36	5.28	5.32	5.47	5.54	4.35	4.96	5.40
Renewables and Oxygenate Production (e)	1.21	1.22	1.25	1.22	1.18	1.23	1.19	1.20	1.19	1.24	1.22	1.23	1.23	1.20	1.22
Fuel Ethanol Production	1.05	1.04	1.06	1.04	1.01	1.05	1.03	1.03	1.03	1.05	1.05	1.05	1.05	1.03	1.04
Petroleum Products Adjustment (f)	0.21	0.21	0.21	0.22	0.20	0.19	0.23	0.23	0.22	0.24	0.23	0.24	0.21	0.21	0.23
Product Net Imports (c)	-3.13	-3.44	-3.17	-3.91	-3.35	-3.13	-3.66	-4.35	-4.78	-4.86	-4.67	-5.16	-3.41	-3.62	-4.87
Hydrocarbon Gas Liquids	-1.22	-1.53	-1.49	-1.38	-1.33	-1.65	-1.76	-1.98	-2.03	-2.04	-2.07	-2.17	-1.41	-1.68	-2.08
Unfinished Oils	0.39	0.32	0.35	0.28	0.21	0.45	0.29	0.30	0.49	0.61	0.62	0.51	0.33	0.31	0.56
Other HC/Oxygenates	-0.18	-0.15	-0.13	-0.15	-0.13	-0.13	-0.12	-0.10	-0.13	-0.12	-0.12	-0.12	-0.15	-0.12	-0.12
Motor Gasoline Blend Comp.	0.50	0.78	0.66	0.37	0.43	0.85	0.61	0.41	0.43	0.65	0.50	0.45	0.58	0.58	0.51
Finished Motor Gasoline	-0.94	-0.71	-0.72	-1.00	-0.82	-0.61	-0.66	-0.89	-1.13	-1.01	-0.84	-1.19	-0.84	-0.75	-1.04
Jet Fuel	-0.10	-0.10	-0.06	-0.13	-0.08	-0.02	-0.01	0.02	0.02	-0.03	-0.04	-0.03	-0.10	-0.02	-0.02
Distillate Fuel Oil	-0.87	-1.30	-1.14	-1.19	-0.91	-1.31	-1.36	-1.24	-1.45	-1.87	-1.80	-1.57	-1.13	-1.21	-1.67
Residual Fuel Oil	-0.10	-0.14	-0.10	-0.09	-0.08	-0.15	-0.03	-0.06	-0.04	-0.13	-0.04	-0.08	-0.11	-0.08	-0.07
Other Oils (g)	-0.62	-0.61	-0.53	-0.61	-0.64	-0.57	-0.62	-0.81	-0.95	-0.91	-0.88	-0.97	-0.59	-0.66	-0.93
Product Inventory Net Withdrawals	0.41	-0.21	-0.69	0.38	0.34	-0.59	-0.39	0.41	0.37	-0.49	-0.30	0.36	-0.03	-0.06	-0.01
Total Supply	20.23	20.33	20.63	20.60	20.29	20.37	20.72	20.95	20.45	20.67	21.22	21.04	20.45	20.59	20.85
Consumption (million barrels per day)															
Hydrocarbon Gas Liquids	3.22	2.67	2.85	3.22	3.48	2.80	3.00	3.51	3.59	3.12	3.24	3.54	2.99	3.20	3.37
Unfinished Oils	0.13	-0.04	-0.10	0.00	-0.03	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Motor Gasoline	9.01	9.51	9.51	9.25	8.96	9.48	9.49	9.27	8.94	9.49	9.55	9.27	9.32	9.30	9.31
Fuel Ethanol blended into Motor Gasoline	0.91	0.94	0.96	0.94	0.91	0.97	0.94	0.93	0.91	0.97	0.97	0.95	0.94	0.94	0.95
Jet Fuel	1.64	1.73	1.78	1.70	1.65	1.78	1.85	1.83	1.77	1.84	1.89	1.86	1.71	1.78	1.84
Distillate Fuel Oil	4.18	4.13	4.05	4.18	4.28	4.01	3.91	4.18	4.21	4.08	4.18	4.26	4.13	4.09	4.18
Residual Fuel Oil	0.28	0.32	0.34	0.34	0.27	0.23	0.35	0.31	0.28	0.23	0.31	0.28	0.32	0.29	0.27
Other Oils (g)	1.78	2.01	2.22	1.91	1.68	1.95	2.12	1.85	1.65	1.92	2.05	1.84	1.98	1.90	1.86
Total Consumption	20.24	20.33	20.63	20.60	20.29	20.37	20.72	20.95	20.45	20.67	21.22	21.04	20.45	20.59	20.85
Total Petroleum and Other Liquids Net Imports	3.05	2.75	2.67	0.91	0.89	1.02	0.64	-0.25	-0.61	-0.28	-0.30	-1.14	2.34	0.57	-0.58
End-of-period Inventories (million barrels)															
Commercial Inventory															
Crude Oil (excluding SPR)	423.4	414.8	416.1	441.8	459.3	464.4	430.4	449.5	485.8	482.6	470.3	478.1	441.8	449.5	478.1
Hydrocarbon Gas Liquids	139.3	180.8	224.8	188.5	163.0	227.0	269.7	228.0	186.7	235.4	272.4	227.8	188.5	228.0	227.8
Unfinished Oils	98.3	92.6	92.0	85.9	92.0	96.5	93.6	83.0	92.7	92.4	89.9	83.0	85.9	83.0	83.0
Other HC/Oxygenates	30.5	28.8	30.5	31.4	32.8	31.6	33.4	34.7	36.5	35.5	34.3	35.3	31.4	34.7	35.3
Total Motor Gasoline	239.6	240.3	239.7	246.3	236.1	229.8	225.9	235.1	233.3	228.4	223.8	236.2	246.3	235.1	236.2
Finished Motor Gasoline	23.1	24.7	24.8	25.7	21.7	22.4	24.1	24.5	23.7	22.5	23.5	23.8	25.7	24.5	23.8
Motor Gasoline Blend Comp.	216.5	215.6	214.9	220.5	214.4	207.6	201.8	210.6	209.5	205.9	200.3	212.4	220.5	210.6	212.4
Jet Fuel	40.4	40.8	46.9	41.6	41.6	40.1	43.9	41.9	41.9	43.2	44.6	42.6	41.6	41.9	42.6
Distillate Fuel Oil	130.4	120.4	137.1	140.0	132.4	130.4	132.5	137.3	127.4	129.7	134.7	139.7	140.0	137.3	139.7
Residual Fuel Oil	35.0	30.0	28.6	28.3	28.7	30.3	30.0	28.9	31.1	31.3	29.5	28.9	28.3	28.9	28.9
Other Oils (g)	59.3	58.8	56.1	58.7	63.2	57.7	50.8	53.1	58.7	57.4	51.6	53.8	58.7	53.1	53.8
Total Commercial Inventory	1,196	1,207	1,272	1,262	1,249	1,308	1,310	1,291	1,294	1,336	1,351	1,326	1,262	1,291	1,326
Crude Oil in SPR	665	660	660	649	649	645	645	635	634	634	633	630	649	635	630

- = no data available

(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.

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

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

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

SPR: Strategic Petroleum Reserve

HC: Hydrocarbons

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.

Projections: EIA Regional Short-Term Energy Model.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2019

	2018				2019				2020				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2018	2019	2020
Supply (billion cubic feet per day)															
Total Marketed Production	84.93	87.39	91.50	94.79	96.18	97.53	<i>99.07</i>	<i>100.77</i>	<i>100.23</i>	<i>100.23</i>	<i>100.95</i>	<i>100.77</i>	89.69	<i>98.40</i>	<i>100.55</i>
Alaska	1.00	0.92	0.86	0.96	0.96	0.93	<i>0.80</i>	<i>0.95</i>	<i>1.00</i>	<i>0.85</i>	<i>0.79</i>	<i>0.95</i>	0.94	<i>0.91</i>	<i>0.90</i>
Federal GOM (a)	2.57	2.48	2.86	2.77	2.80	2.76	<i>2.75</i>	<i>2.78</i>	<i>2.86</i>	<i>2.81</i>	<i>2.68</i>	<i>2.65</i>	2.67	<i>2.77</i>	<i>2.75</i>
Lower 48 States (excl GOM)	81.37	83.98	87.79	91.05	92.42	93.85	<i>95.52</i>	<i>97.04</i>	<i>96.37</i>	<i>96.57</i>	<i>97.48</i>	<i>97.17</i>	86.08	<i>94.72</i>	<i>96.90</i>
Total Dry Gas Production	79.13	81.17	84.95	88.21	89.42	90.60	<i>91.98</i>	<i>93.52</i>	<i>92.97</i>	<i>92.92</i>	<i>93.54</i>	<i>93.32</i>	83.39	<i>91.39</i>	<i>93.19</i>
LNG Gross Imports	0.33	0.10	0.15	0.26	0.28	0.03	<i>0.17</i>	<i>0.21</i>	<i>0.32</i>	<i>0.18</i>	<i>0.18</i>	<i>0.20</i>	0.21	<i>0.17</i>	<i>0.22</i>
LNG Gross Exports	2.64	2.79	2.95	3.48	4.01	4.55	<i>4.56</i>	<i>5.35</i>	<i>5.88</i>	<i>5.71</i>	<i>6.58</i>	<i>7.35</i>	2.97	<i>4.62</i>	<i>6.38</i>
Pipeline Gross Imports	8.65	7.57	7.43	7.19	8.35	6.73	<i>6.77</i>	<i>7.36</i>	<i>7.96</i>	<i>6.48</i>	<i>6.77</i>	<i>7.51</i>	7.70	<i>7.30</i>	<i>7.18</i>
Pipeline Gross Exports	7.00	6.14	7.04	7.47	7.86	7.15	<i>7.50</i>	<i>8.45</i>	<i>9.53</i>	<i>8.02</i>	<i>8.62</i>	<i>8.65</i>	6.92	<i>7.74</i>	<i>8.70</i>
Supplemental Gaseous Fuels	0.21	0.17	0.19	0.18	0.19	0.16	<i>0.19</i>	<i>0.19</i>	<i>0.19</i>	<i>0.19</i>	<i>0.19</i>	<i>0.19</i>	0.19	<i>0.18</i>	<i>0.19</i>
Net Inventory Withdrawals	18.32	-8.85	-8.23	2.58	16.94	-14.18	<i>-10.38</i>	<i>2.53</i>	<i>16.16</i>	<i>-11.26</i>	<i>-8.96</i>	<i>2.84</i>	0.89	<i>-1.34</i>	<i>-0.32</i>
Total Supply	97.00	71.22	74.50	87.46	103.32	71.64	<i>76.66</i>	<i>90.01</i>	<i>102.18</i>	<i>74.78</i>	<i>76.53</i>	<i>88.05</i>	82.50	<i>85.35</i>	<i>85.37</i>
Balancing Item (b)	0.60	-0.52	-0.41	-1.34	-0.61	-1.43	<i>-0.58</i>	<i>-0.73</i>	<i>0.16</i>	<i>-1.14</i>	<i>-0.07</i>	<i>0.93</i>	-0.42	<i>-0.84</i>	<i>-0.03</i>
Total Primary Supply	97.60	70.70	74.09	86.12	102.71	70.21	<i>76.08</i>	<i>89.28</i>	<i>102.34</i>	<i>73.64</i>	<i>76.46</i>	<i>88.98</i>	82.07	<i>84.51</i>	<i>85.34</i>
Consumption (billion cubic feet per day)															
Residential	25.77	7.97	3.44	17.53	27.11	7.34	<i>3.58</i>	<i>17.47</i>	<i>26.40</i>	<i>7.57</i>	<i>3.65</i>	<i>16.80</i>	13.63	<i>13.82</i>	<i>13.59</i>
Commercial	15.36	6.60	4.58	11.65	16.06	6.32	<i>4.94</i>	<i>11.32</i>	<i>15.39</i>	<i>6.61</i>	<i>4.91</i>	<i>10.64</i>	9.52	<i>9.63</i>	<i>9.38</i>
Industrial	24.30	21.82	21.30	23.41	24.90	21.53	<i>21.39</i>	<i>23.98</i>	<i>25.54</i>	<i>22.58</i>	<i>21.85</i>	<i>24.92</i>	22.70	<i>22.94</i>	<i>23.72</i>
Electric Power (c)	24.91	27.62	37.78	26.04	26.62	27.79	<i>39.03</i>	<i>28.66</i>	<i>26.84</i>	<i>29.35</i>	<i>38.35</i>	<i>28.58</i>	29.11	<i>30.55</i>	<i>30.79</i>
Lease and Plant Fuel	4.55	4.68	4.90	5.08	5.15	5.23	<i>5.31</i>	<i>5.40</i>	<i>5.37</i>	<i>5.37</i>	<i>5.41</i>	<i>5.40</i>	4.81	<i>5.27</i>	<i>5.39</i>
Pipeline and Distribution Use	2.60	1.88	1.97	2.29	2.73	1.87	<i>1.97</i>	<i>2.32</i>	<i>2.65</i>	<i>2.02</i>	<i>2.16</i>	<i>2.51</i>	2.18	<i>2.22</i>	<i>2.34</i>
Vehicle Use	0.12	0.12	0.12	0.12	0.13	0.13	<i>0.13</i>	<i>0.13</i>	<i>0.14</i>	<i>0.14</i>	<i>0.14</i>	<i>0.14</i>	0.12	<i>0.13</i>	<i>0.14</i>
Total Consumption	97.60	70.70	74.09	86.12	102.71	70.21	<i>76.08</i>	<i>89.28</i>	<i>102.34</i>	<i>73.64</i>	<i>76.46</i>	<i>88.98</i>	82.07	<i>84.51</i>	<i>85.34</i>
End-of-period Inventories (billion cubic feet)															
Working Gas Inventory	1,390	2,195	2,950	2,708	1,185	2,460	<i>3,415</i>	<i>3,183</i>	<i>1,713</i>	<i>2,737</i>	<i>3,561</i>	<i>3,300</i>	2,708	<i>3,183</i>	<i>3,300</i>
East Region (d)	229	465	778	659	216	537	<i>847</i>	<i>778</i>	<i>301</i>	<i>630</i>	<i>912</i>	<i>799</i>	659	<i>778</i>	<i>799</i>
Midwest Region (d)	261	459	846	777	242	579	<i>993</i>	<i>876</i>	<i>350</i>	<i>609</i>	<i>965</i>	<i>864</i>	777	<i>876</i>	<i>864</i>
South Central Region (d)	613	845	845	879	519	917	<i>1,061</i>	<i>1,079</i>	<i>737</i>	<i>1,024</i>	<i>1,140</i>	<i>1,167</i>	879	<i>1,079</i>	<i>1,167</i>
Mountain Region (d)	87	140	179	141	63	135	<i>190</i>	<i>154</i>	<i>108</i>	<i>151</i>	<i>193</i>	<i>159</i>	141	<i>154</i>	<i>159</i>
Pacific Region (d)	169	253	263	214	115	259	<i>288</i>	<i>259</i>	<i>181</i>	<i>286</i>	<i>315</i>	<i>276</i>	214	<i>259</i>	<i>276</i>
Alaska	31	33	38	37	30	33	<i>37</i>	<i>37</i>	<i>37</i>	<i>37</i>	<i>37</i>	<i>37</i>	37	<i>37</i>	<i>37</i>

- = no data available

(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>) .

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

LNG: liquefied natural gas.

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

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

Projections: EIA Regional Short-Term Energy Model.

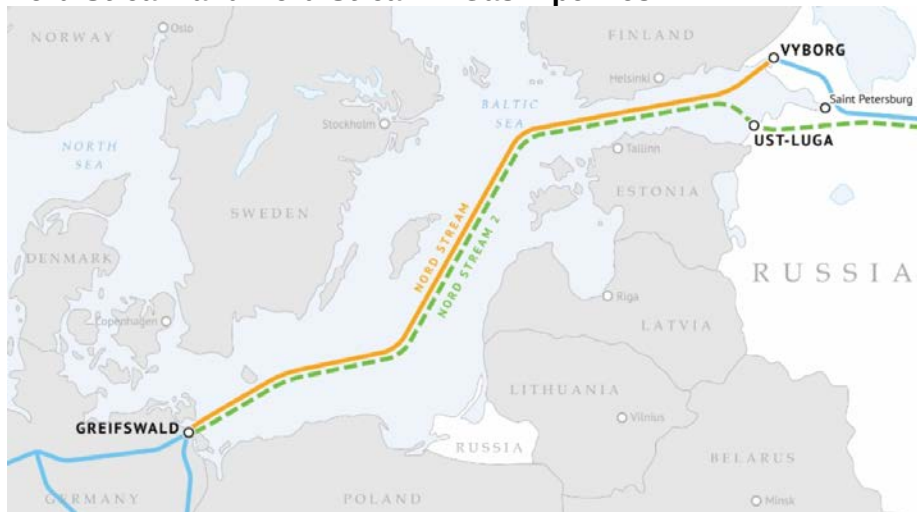
LNG Price Pressures 2020/2021 With Gazprom Adding ~8.9 bcf/d Export Gas Pipeline Capacity Into Europe And China

Posted: Sat March 30, 2019. 11:15am Mountain

The major LNG market factor for 2020 and 2021 is not an LNG event, but an LNG related event – Russia's plans to add ~8.9 bcf/d of export gas pipeline capacity starting in Dec 2019. The LNG market this week was focused on the crashing shoulder season Asian LNG prices following the warmer than normal winter in Asian natural gas markets. And wider seasonal LNG price swings are going to be the norm until there is more gas storage around the world. But there was a much more significant LNG related headline on Thursday that is a huge relief to 2020 LNG prices – the Danish Energy Agency is forcing the ~5.3 bcf/d Nord Stream 2 export pipeline to Europe to evaluate a 3rd potential route thru their seas and their review process will, as normal, including public hearings. Nord Stream 2 will export Russia gas to Germany for connections therefrom, was supposed to be in service at yr-end 2019 and this new 3rd route could delay the in service for potentially 1 year. This is a big relief to 2020 LNG prices as it pushes back ~5.3 bcf/d of new (cheaper than LNG) natural gas into Europe into 2021. Its already tough enough for 2020/2021 LNG prices with Gazprom's Power of Siberia 3.6 bcf/d export gas pipeline to China on target to be in service on Dec 1/2019. The recent Shell LNG Outlook 2019 estimated that global net LNG imports increased by 3.6 bcf/d in 2018. We believe that would have been higher other than high LNG prices saw some switching to coal in Asia and LNG import infrastructure is still being built out. The Nord Stream 2 delay may be a relief to 2020 LNG prices, but the addition of ~8.9 bcf/d natural gas into Europe and China will keep price pressures on spot LNG prices over the next couple years. Plus, this added pipeline connected gas will add to the base natural gas supply, including during shoulder seasons, which should add increased risk to seasonal price swings.

Prior to Thurs, Nord Stream 2 Russia to Germany 5.3 bcf/d pipeline was on track for in service by year end 2019. Gazprom's Nord stream II gas pipeline [\[LINK\]](#) was on schedule to be in service by yr end 2019. It is a 1,200 km export gas pipeline that runs from Russia to Germany across the Baltic Sea. The pipeline enters the Baltic Sea at Ust-Luga area of the Leningrad area and then comes back ashore at Greifswald in NE Germany. Nord Stream 2 is a ~5.3 bcf/d twin of the existing Nord Stream pipeline to bring the combined capacity to ~10.6 bcf/d.

Nord Stream and Nord Stream 2 Gas Pipelines



Source: Gazprom

On Thurs, the Danish Energy Agency said they would need an environmental assessment for a new 3rd alternative Nord Stream 2 route. We were surprised that that this Nord Stream 2 story didn't get attention. Nord Stream 2 has had its approval requests for the pipeline in Danish seas since Jan 2018 for the main route and since Aug 2018 for the requested alternative route. There was no indication that a 3rd potential route would need to be environmentally assessed until Thurs. Needless to say, the request for an environmental assessment for a new 3rd alternative route was a surprise to Gazprom considering its move to in service by yr end 2019. On Thurs, Reuters [\[LINK\]](#), and others similarly, reported that the *"Danish Energy Agency has requested an environmental assessment of a third route option for the Nord Stream 2 gas pipeline in Danish waters, the Russian-led pipeline group said on Thursday. The project already has two pending permit applications with Danish authorities but the agency has now asked it to include a route option in the Danish exclusive economic zone to the south of Bornholm into the environmental assessment, a Nord Stream 2 spokesman said in an email."* TASS news agency reported [\[LINK\]](#) on Nord Stream 2 comments *"The Danish Energy Agency has not rejected either the Southern Corridor or the so-called 'Base Case' in the territorial waters," the spokesperson said. "They have asked us for an additional environmental assessment," he noted. "We have just received this request and will carefully evaluate this," the spokesman said."*

But it sounds like the Danish Energy Agency new environmental assessment process could push back the in service by 1 year. Perhaps the reason why this didn't get much attention is that most just didn't think it would be a big delay. There is some logic there as the area isn't a big area and the 3rd alternative route variation can't be that far away ie. a lot of the work to date by the Danish Energy Agency should be applicable to a nearby 3rd alternative route. However, the subsequent TASS article [\[LINK\]](#) threw cold water on that view as the Danish Energy Agency doesn't know the timeline and also highlighted that the new review will include public hearings. TASS story *"Denmark cannot name timeline for its decision on Nord Stream 2"* wrote *"The Danish Energy Agency will decide on the Nord Stream 2 gas pipeline after environmental impact of the pipeline route in the exclusive economic zone of Denmark is assessed and public hearings are held, head of the agency's press service Ture Falbe-Hansen told TASS."* And *"There are no details regarding a timeline. When the Nord Stream 2 company provides the Danish authorities with an environment impact assessment it has to go through the normal procedure with public hearings etc. A decision from the Danish Energy Agency will depend on this process," Falbe-Hansen added."* And perhaps most significant, *"According to the Danish newspaper Politiken, the completion of the laying of the Nord Stream 2, scheduled for the end of 2019, may be delayed for a year."*

Gazprom's Power of Siberia 3.6 bcf/d export pipeline to China is on track for Dec 1/2019 start. Our March 17, 2019 Energy Tidbits memo noted that week's commitment from Gazprom Chairman to Putin for this Dec 1/2019 start. Gazprom posted a shorthand record of *"Alexey Miller briefs Vladimir Putin on Gazprom's activities in 2018 and plans for 2019"* [\[LINK\]](#). The record is *"Vladimir Putin: How is the Power of Siberia project progressing? Alexey Miller: Power of Siberia is ahead of schedule. On December 1, we will start exporting gas to China from the Chayandinskoye field, which we will bring onstream. The start of gas supplies to China will no doubt become a historic event, as we are entering such an extensive gas market. Last year, gas consumption in China grew by 17.5 per cent, and it is the most dynamic and fast-growing natural gas market in the world. And we see great prospects for Russian gas supplies there."* This is a major global natural gas supply event and one that we have been writing about since our July 4, 2017 blog *"Today's Qatar/Russia Gas Supply Announcements*

Add To The Challenge Facing BC LNG Post The New BC Govt” [\[LINK\]](#). The Power of Siberia natural gas pipeline project will deliver ~3.6 bcf/d to China starting Dec 1, 2019.

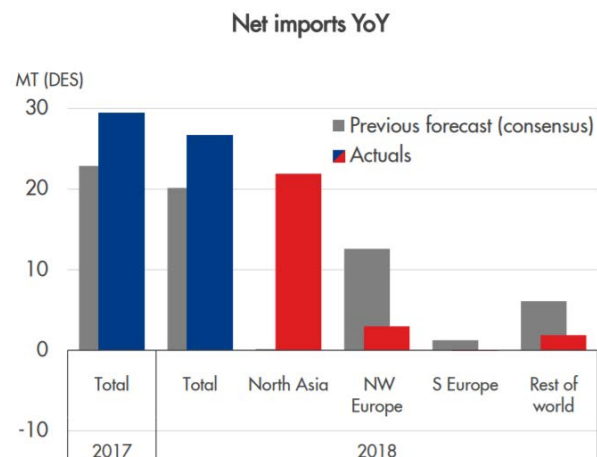
Gazprom Power of Siberia Natural Gas Project



Source: Gazprom

Gazprom's pipelines will put pressure on LNG prices in 2020 and 2021. We should be clear that the weak LNG prices today have been driven by surplus LNG with lower demand from a warmer than normal winter in key Asian countries. And 2018 LNG demand would have been higher, but it was negatively impacted by high LNG prices that drove higher coal power generation in parts of Asia at the cost of LNG and natural gas. And LNG importing infrastructure is still at the early stages of built out in many key Asian markets. Its why we believe the rate of growth in LNG demand will continue accelerate in 2020 and going forward. However, Gazprom's Power of Siberia and Nord Stream 2 will add ~8.9 bcf/d of natural gas pipeline export capacity. Pipeline connected gas will become the effective base supply and push LNG to be a marginal supply, especially because LNG is higher costs. And adding ~8.9 bcf/d of gas supply into Europe and China will be about equal to (or a little less than our expectations) what would have been LNG demand growth in 2020 and 2021. On Feb 25, 2019, Shell released “*Shell LNG Outlook 2019*” [\[LINK\]](#), which included the below graph that shows its estimate that global LNG net imports in 2018 were down ~10% to 27 MT (~3.6 bcf/d).

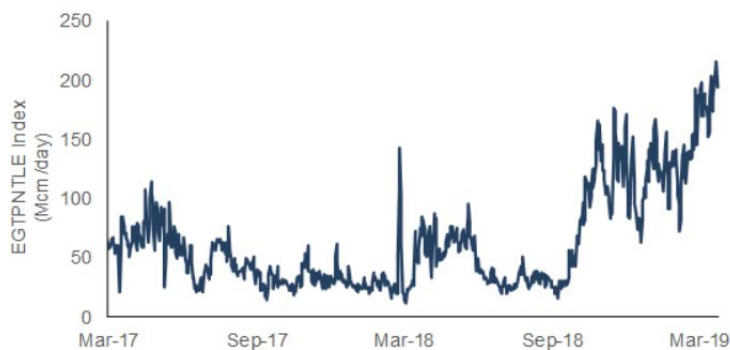
Global Net LNG Imports 2018 vs 2017



Source: Shell

Gazprom's pipeline connected gas supply becomes base supply, even during shoulder seasons, and will increase risk to seasonal price swings. Gazprom's pipeline connected new gas supply effectively becomes base natural gas supply. If it is unseasonably warm in China and they need less gas, they aren't going to stop the pipeline flows, rather they will just redirect an LNG tanker or two other markets. Adding more base gas supply means that there is increasing risk to big price swings. The big headline LNG story this week were LNG spot prices hitting 3 year lows. Bloomberg terminal wrote "Asia's LNG benchmark, the Japan-Korea Marker, has more than halved since the start of the year to \$4.375 per million British thermal units as of March 26. It's fallen to a rare discount to European prices, as U.K. National Balancing Point futures traded at around \$4.50 on Friday, down 44 percent this year in their worst quarter in a decade. U.S. gas futures are down more than 8 percent this year, heading for the worst quarterly loss in two years." We have been warning on this risk because of the mild winter in key parts of Asia. The problem with Asia is that there isn't any significant natural gas storage, so unneeded LNG cargos get redirected to NW Europe. Our Energy Tidbits memo have been highlighting that the best indicator for the winter LNG surplus is YoY increases in net LNG flows in to NW Europe. This is a theme we have highlighted since our Sept 20, 2017 blog "Shell: *Every LNG Cargo That Could Technically Be Produced In This World Has Been Produced And Has Found A Well Paying Customer*" [\[LINK\]](#). NW Europe tends to be a dumping ground for surplus LNG. We have been monitoring NW LNG storage levels and there have been big YoY net LNG inflows into NW Europe. Below is the Bloomberg graph of net LNG flows to NW Europe, which shows the current LNG inflows as of March 22, 2019 were 6.5 bcf/d, which is up 4.9 bcf/d YoY vs 1.6 bcf/d on March 22, 2018.

Net LNG Flows To NW Europe



Source: Bloomberg

Germany Confident of Nord Stream 2 Completion by Year's End
2019-09-12 16:36:13.328 GMT

By Brian Parkin and Vanessa Dezem

(Bloomberg) -- Germany is confident that hitches threatening the Russian-led Nord Stream 2 gas pipeline will be resolved to allow completion of the project on time this year. In a letter to federal lawmakers dated Sept. 6, Deputy Economy and Energy Minister Andreas Feicht said the government expects that Denmark will approve an alternative route for the Baltic pipeline soon. Denmark in 2018 demanded that the stakeholders seek an alternative pipeline route outside its territorial waters, raising the specter of construction delays. The German government "expects the approval process in Denmark to be completed soon permitting operations to start on time," stated the letter, a copy of which was seen by Bloomberg News. Nord Stream 2 proposed two alternative pipeline routes. Snags raised by Denmark are not the only risks to the project, which include potential U.S. sanctions. Germany said its support for the pipeline depends on a successful outcome of gas transit talks between the European Union, Russia and Ukraine.

The targeted date for the opening of the pipeline is Dec. 31, when Gazprom's existing gas-transit contract with the Ukraine expires. German government is confident of a timely transit agreement between Russia and Ukraine, according to Feicht.

Feicht's comments underscore how Chancellor Angela Merkel's government is becoming more vocal in its support for the project after years of parrying queries over its stance toward importing more Russian gas. Germany's plan to exit nuclear and coal power-generation and wean consumers from heating their homes with oil is set to boost demand for gas.

The controversial project carrying Russian natural gas to Germany has divided EU governments, with nations led by Poland concerned about the bloc's increasing dependence on Russian gas. The new link would allow gas to bypass Ukraine on its way to Europe.

[Click here for the latest on Ukraine and Russia gas talks.](#)

In a Sept. 7 opinion column the Die Zeit newspaper, former Finance Minister Wolfgang Schaeuble criticized Germany's record of ignoring the misgivings of its Eastern European partners toward the project.

The stance "wasn't a showpiece of German politics and destroyed the confidence" of its partners, said Schaeuble, who is now president of the lower house of Berlin's federal parliament.

Germany will need considerably more Russian gas in coming years as supplies ebb from the Netherlands, Norway and from its own domestic fields, Klaus-Dieter Borchardt, a deputy director-general responsible for energy policy at the European Commission, said in a speech in Munich on Tuesday. "There can be no doubt about that."

The German government's confidence that the 9.5 billion euro (\$10.5 billion) Nord Stream 2 project will be built on time is "legitimate confirmation that Germany needs access to competitive gas," said project spokesman Jens Mueller on the phone Thursday.

Nord Stream 2 "fulfills all the pre-requisites" for obtaining a license from the Danish government to continue building the pipeline outside its waters, said Mueller.

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Danish section of Nord Stream-2 can be built in five weeks, says Gazprom Chairman

[Business & Economy](#)

June 07, 21:38UTC+3

Alexey Miller recalled that commissioning will also be required and noted the capital costs that are needed to build a gas pipeline, without the cost of financing, have already been financed by 80% Share

ST.PETERSBURG, June 7. / TASS /. The Danish section of the Nord Stream-2 gas pipeline can be built in a maximum of five weeks, regardless of the route, the deadline for issuing a permit and observing the construction schedule has not yet come, Gazprom Chairman Alexey Miller told reporters at the St. Petersburg International Economic Forum on Friday.

"The elections were held in Denmark, the new government is being formed. The section that is in Denmark, it is very short, it is approximately 130 km. That is at most 5 weeks' worth of work. I know this time frame, but I'm not going to tell you, but I can say that it's not today, and it's not tomorrow either," said Miller said, answering the question when is the deadline for Denmark to give its construction permit in order to complete the project by the end of 2019.

Miller noted that it is necessary to bear in mind that commissioning will also be required. At the same time, he noted "the capital costs that are needed to build a gas pipeline, without the cost of financing, have already been financed by 80%. "From the point of view of length, 57.2%, and every day more and more, it's already, nearly two thirds. All our partners who were at the forum have all confirmed their participation," he added.

READ ALSO

At the end of May, Gazprom's deputy head of the foreign economic activity department, Alexey Miroshnichenko said that the company is working on reducing the negative impact of Denmark's position regarding the construction of the Nord Stream-2 gas pipeline and at the same time disputes the requirement of the Danish Energy Agency to submit a third application for its route. "Gazprom, including the project company, is currently working on those possible measures to reduce the negative impact of the situation around Denmark on the overall project implementation schedule. At the same time, I want to note that the project company on April 17 filed an appeal against the decision of Denmark to explore the third route in addition to the two routes already investigated. Therefore, we are working in two directions," said Miroshnichenko.

Earlier, the DEA asked the project operator to include in the environmental assessment of the projects the option of laying the pipeline in the Danish exclusive economic zone south of Bornholm.

The need to find an alternative route to the Nord Stream 2 is due to changes in Danish legislation. In 2017, Denmark adopted amendments to the law on the continental shelf. Under the amended law, Denmark's Foreign Ministry has the rights to reject an application for the construction of a pipeline in the country's territorial waters. As for the proposed alternative option, the construction of the gas pipeline in this case is regulated by the UN Convention on the Law of the Sea, so the Danish Foreign Ministry will no longer be able to block the project.

Nord Stream 2 already has two pending applications with the DEA.

In April 2017, Nord Stream 2 applied for the route based on the guidance received from Danish authorities for the existing Nord Stream Pipeline - this base case route crosses territorial waters to the south of Bornholm.

In January 2018, the amended Danish Continental Shelf Act entered into force with retroactive effect only for the Nord Stream 2 project. The law gave the Danish Minister of Foreign Affairs the right to veto infrastructure projects running through territorial waters on political grounds.

"Such a judgement from the Ministry of Foreign Affairs has now been pending for 16 months. Nord Stream 2 AG has not received any response at all," the company noted.

In August 2018, after eight months without any indication of the timing of the Minister of Foreign Affairs recommendation, Nord Stream 2 was therefore forced to apply for a second, alternative route outside Danish territorial waters, north-west of Bornholm through the Danish EEZ.

According to the operator, "both permitting processes, which included consultations with the public and expert authorities, nationally and internationally (the so-called Espoo procedure), have shown that all technical and environmental prerequisites are fulfilled and a construction permit could be granted for either route.

The Nord Stream 2 project will consist of two gas pipeline lines with a total capacity of 55 billion cubic meters of gas per year from the coast of Russia through the Baltic Sea to Germany. The total capacity of the project is 55 billion cubic meters of gas per year. The cost of construction is estimated at 9.5 billion euros.

The pipeline will bypass transit countries - Ukraine, Belarus, Poland and other Eastern European and Baltic countries through exclusive economic zones and territorial waters of five countries - Russia, Finland, Sweden, Denmark and Germany. Only Denmark has not issued permission for the construction. Nord Stream 2 AG, the project's operator, still expects to get the permit from Denmark by the end of 2019. The sole shareholder of Nord Stream 2 AG is Gazprom. Gazprom's European partners - Wintershall, Uniper, OMV, Engie and Royal Dutch Shell - will finance 50% of the project.

The main shareholder of the company is Andrei Melnichenko, who, through AIM Capital SE, controls 90% of the company's shares, another 10% of the shares are indirectly owned by Dmitry Strezhnev, who previously headed the company.

The 2019 St. Petersburg International Economic Forum is being held on June 6-8. The forum's motto this year is "Creating a Sustainable Development Agenda". The organizer for SPIEF-2019 is the Roscongress Foundation. TASS is a media partner, the official photo hosting agency and the operator of SPIEF's presentation zones with support from multinational firm EY, and the Foreign Investment Advisory Council in Russia.

More:

<http://tass.com/economy/1062797>

Working meeting between Vladimir Putin and Alexey Miller

MESSAGE TO THE MEDIA

September 9, 2019, 15:45

[IR releases](#)[Power of Siberia](#)

A working meeting took place today between Vladimir Putin, President of the Russian Federation, and [Alexey Miller](#), Chairman of the Gazprom Management Committee.

Alexey Miller briefed Vladimir Putin on the Company's preparations for the upcoming autumn/winter period. Particular attention was paid to the issues of gas supplies to foreign markets.

Shorthand record

Vladimir Putin: Mr. Miller, how is your work going? Especially within the country? How do things stand concerning the Company, its scopes of work and plans? What about your relations with your partners, particularly on our large-scale projects?

Alexey Miller: Dear Mr. President,

Our main task at the moment is to prepare for the upcoming autumn/winter period, injecting gas into underground gas storage (UGS) facilities. We need to secure the working gas inventories of 72.2 billion cubic meters in Russian UGS facilities by the start of the withdrawal period.

By the autumn/winter period, we [will ensure](#) that the potential maximum daily deliverability of UGS facilities in the Russian Federation reaches 843.3 million cubic meters of gas. It will be an all-time high for the domestic gas sector.

Before the end of the year, Gazprom will inject at least 11.4 billion cubic meters of gas into European UGS facilities, more than twice as much as last year.

We see that our European partners are injecting gas at a very rapid pace, and our Ukrainian colleagues are trying to follow suit.

Without a doubt, one of the factors behind the large amounts of gas being injected into UGS facilities is the expiration of the contract for gas transit across Ukraine on December 31 this year.

The question of the transit contract is essential, and yet the top-priority question is whether Ukraine will buy Russian gas under a direct contract.

After all, the answer to this question will also tell us what Russian gas transmission capacities Gazprom will have to guarantee in order to supply gas towards Ukraine.

Vladimir Putin: They will have to be maintained and paid for.

Alexey Miller: Indeed.

Of course, it will also give us an understanding of the price level for the end consumer in Ukraine, since if Gazprom enters into a direct contract for gas supplies, the gas price for the end consumer in Ukraine might go down by 25 per cent from the current level.

Nevertheless, I would like to stress that the main question is the supply of gas to the Ukrainian market. It is a matter of bilateral negotiations between Russia and Ukraine.

Vladimir Putin: What about our large-scale projects?

Alexey Miller: Mr. President, regarding this year's largest project – **Power of Siberia** – there is no doubt that natural gas will come from Russia to China on December 1.

It will be a historic event marking the start of gas supplies from the world's biggest gas exporter to the biggest importer. Over the course of 30 years, 1 trillion cubic meters of gas will be delivered to the Chinese market.

China is the most dynamic and fast-growing market in the world. Together with our Chinese partners, we are currently looking into the possibilities of supplying gas to China via other routes.

Vladimir Putin: Which ones?

Alexey Miller: We are considering the possibility of supplying gas via the western route and also via the Far Eastern route from the Sakhalin gas production center.

Vladimir Putin: In this connection, I would like to get back to the topic that has been repeatedly discussed between us and with our Chinese partners, namely the possibility of using the resources of the Irkutsk Region and the Krasnoyarsk Territory.

Please consider the Yamal reserves as well, in order to secure the amounts required to supply gas via the western route towards China across Mongolia.

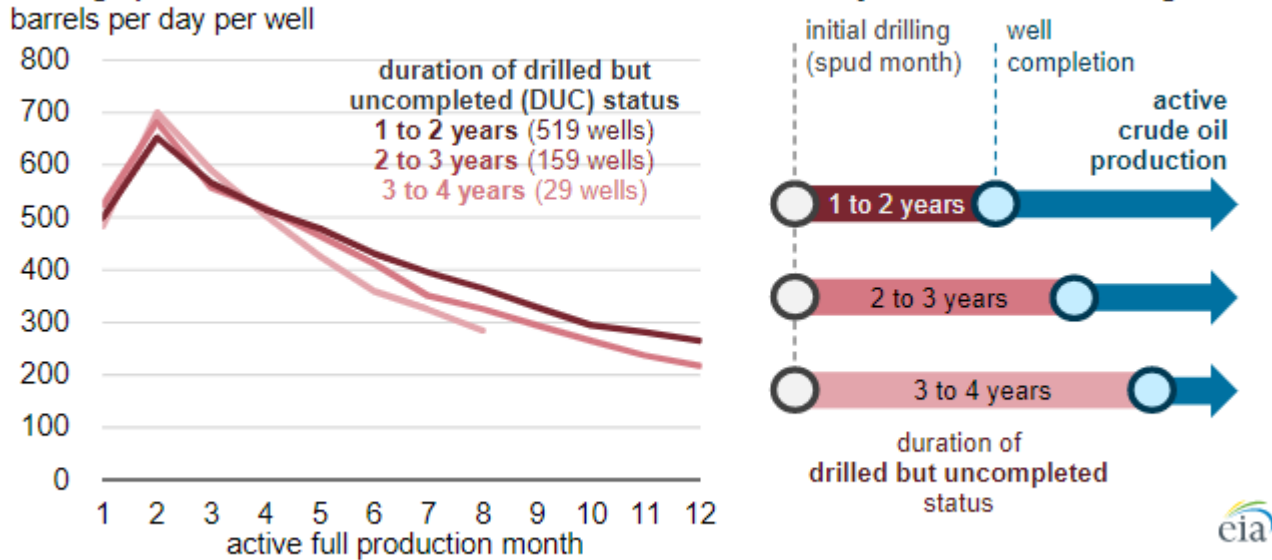
I am aware that there are also some challenges with this route, but a preliminary review has shown that it is feasible, and our Chinese partners are in favor of this option, too.

Please look into this issue and report to me.

SEPTEMBER 10, 2019

Time between drilling and first production has little effect on oil well production

Average production from North Dakota crude oil wells initially drilled in 2014 through 2017



Source: U.S. Energy Information Administration, based on North Dakota Industrial Commission's Oil and Gas Division

According to North Dakota production data, the length of time that an oil well has been drilled but remains uncompleted—meaning it has not yet started producing—has little effect on its initial production level. Oil wells are sometimes drilled but remain uncompleted for other operational or economic reasons. The North Dakota data provides insights into oil well completion practices.

The drilling and production process of an oil well starts with the initial drilling, or spudding. Once an oil well is drilled, the well must be completed before it can produce hydrocarbons. The completion process involves casing, cementing, perforating, hydraulic fracturing, and other procedures. Some oil wells are completed shortly after drilling is completed, but other wells remain drilled but uncompleted (DUC) for several months or years.

The crude oil drilling and completion processes involve different technologies, equipment, crews, and contracts.

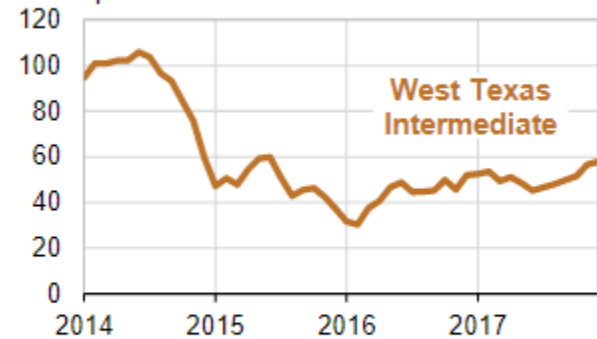
- Drilling is accomplished through multiyear contracts between producers and drilling contractors. During the drilling process, oil wells are spudded and drilled in sequence with single or multiple rigs to maximize the number of wells drilled and minimize the idle transfer time between well locations.
- Completion is executed with short, batch-like contracts to complete a number of wells at the same time.

Wells do not have to be completed as soon as drilling is finished. To efficiently schedule well completions, producers maintain a reasonable number of DUCs for operational flexibility.

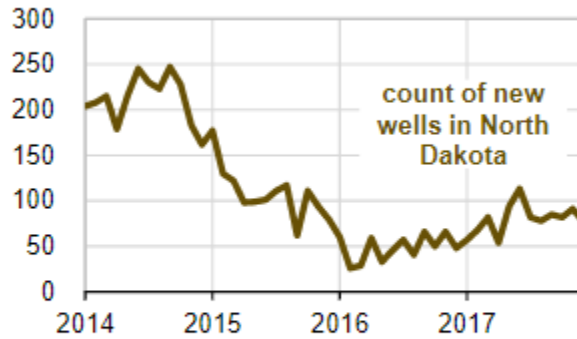
In a lower price environment, aggregate DUC counts increase because some producers postpone completion of their wells for economic reasons. From June 2014 to February 2016, U.S. crude oil benchmark prices declined from more than \$107 per barrel (b) to less than \$27/b. With lower crude oil prices, the number of newly completed wells in North Dakota decreased. Simultaneously, the number of DUC wells increased as the monthly average time to complete a well expanded from about three months to nearly one year. In spite of the lower prices, the average time to drill a new well remained less than two months.

West Texas Intermediate crude oil spot prices and North Dakota new wells (2014-2017)

dollars per barrel

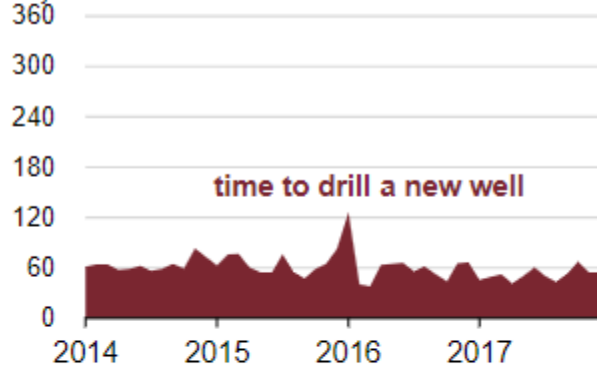


count

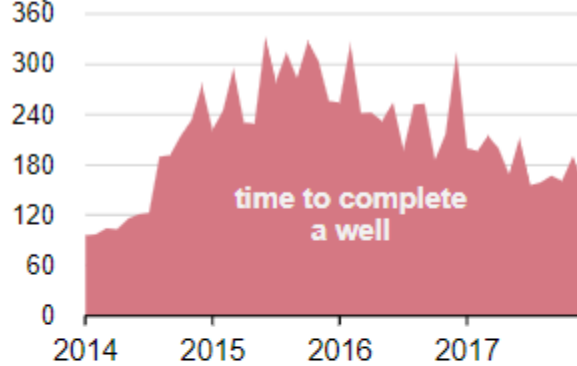


Time to drill and complete new wells in North Dakota (2014-2017)

days



days



As **crude oil prices** fell in the second half of 2014 and remained low in 2015, the **count of new wells drilled in North Dakota** fell.

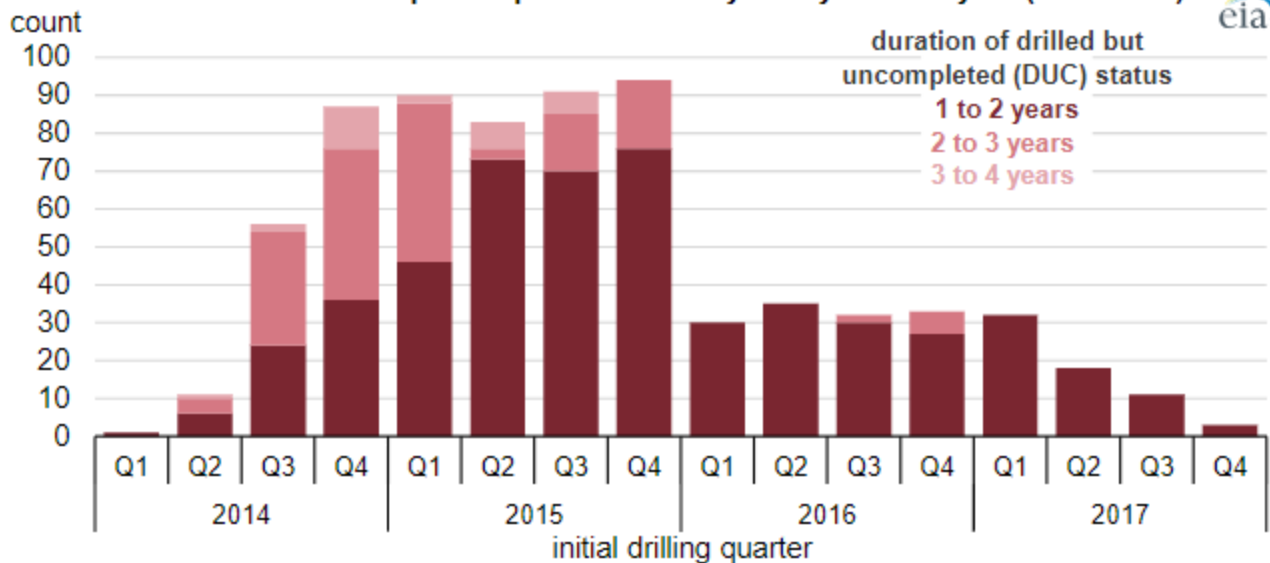
During that time, the **time to drill a new well** remained relatively unchanged, but the **time to complete a well** increased from about three months to nearly a year.



Source: U.S. Energy Information Administration, based on Refinitiv and [North Dakota Industrial Commission's Oil and Gas Division](#)

Between 2014 and 2017, delayed oil well completion in North Dakota created a high inventory of DUCs. From the backlog, 842 oil wells remained uncompleted for at least one year. In the time since crude oil prices started to recover in the second half of 2016, most of those wells (84%) were completed and began producing. Only 135 oil wells that were spudded during those three years still remain in DUC status awaiting completion, as of the end of June 2019. Only seven oil wells that were spudded between 2014 through 2017 have remained in DUC status for more than five years.

Count of new wells with completion processes delayed beyond one year (2014-2017)



Source: U.S. Energy Information Administration, based on [North Dakota Industrial Commission's Oil and Gas Division](#)

Ultimately, the amount of time that a well remains drilled but uncompleted has little effect on its initial production, according to analysis of well-level data from [North Dakota Industrial Commission's Oil and Gas Division](#). North Dakota is home to much of the prolific Bakken play that also spans parts of Montana. As production from the Bakken has increased, North Dakota has become the [third-largest crude oil production area](#) in the United States, behind Texas and the Gulf of Mexico.

Principal contributor: Jozef Lieskovsky, Richard Yan

Tags: [production/supply](#), [Bakken](#), [drilling](#), [North Dakota](#)

Shale Pioneer Papa Sees U.S. Oil Output Growth Missing Forecasts
2019-09-05 10:00:00.4 GMT

By Kevin Crowley

(Bloomberg) -- Shale pioneer Mark Papa sees U.S. oil production growth well below current forecasts as companies spend less capital on drilling and exhaust prime shale areas. Output will grow by about 700,000 barrels a day next year, compared with a "consensus expectation" of 1.2 million barrels a day, Papa said Wednesday at a conference organized by Barclays Plc in New York. The Energy Information Administration sees U.S. production 1 million barrels a day higher in 2020 at 13.3 million a barrels a day.

"We're seeing a lot of difficulties in growing U.S. oil production," Papa said.

Lower oil prices and investor demands for financial discipline are causing companies to reduce drilling but the bigger issue, according to Papa, is that many are running out of sweet spots in the Permian and Eagle Ford areas, forcing them into less efficient zones.

"You need to pay attention to this," Papa said. "In a timeframe of six months to three years it's going to have a profound effect on oil prices."

Papa was speaking in his capacity as CEO of Centennial Resource Development Inc. He's also chairman of Schlumberger Ltd., the world's biggest oil services company, and made his name as a pioneer of the shale industry by building EOG Resources Inc. into one of the world's biggest independent oil producers.

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Carlos Caminada, Catherine Traywick

A Big Plus To Post 2020 Oil If Saudi Is Even Directionally Right That Permian Plateau Is “In A Year Or Two Years Or Four Years”

Posted: July 3, 2019. 4:00pm Mountain

Oil market attention has been on Saudi Arabia's clear messaging to the market that it is prepared to make additional cuts to keep a stable market as this implies they are prepared to keep ceding market share to US shale. Al Falih said “*We're comfortable with where our production level is, we're willing to go either way from where we are today to keep markets balanced*”. But the more significant al Falih comment was “*There will be a plateau for these unconventional resources in the US, the Permian being one of them. is it in a year, or two years or four years, I don't know but certainly its not indefinitely.*” No one is calling for Permian plateau (peak oil) in a year or two and not likely 4. Maybe people didn't see these comments at 3:45am MT or maybe most assumed it was just musings from al Falih. But we think its more than musings because Saudi Arabia is taking a different tactic this time than their normal strategy to get market share – increase oil production, crash oil prices, ruin growth prospects for other oil basins. They want solid oil prices, an increasing oil market share, and strong oil outlook for the mid/long term valuation of Saudi Aramco massive oil reserves for the IPO. And this time, al Falih's comments suggest they believe that, they can regain market share, by letting US shale play out. If Saudi Arabia is even directionally right in Permian reaching plateau (peak oil), it means that Permian and US oil is going to hit peak oil probably at least a few years earlier than expected. This will be very bullish to oil post 2020. Unfortunately, it will likely be impossible to determine if Saudi Arabia is directionally right in 2019 with the increased Permian takeaway in H2/19. But we expect to this call, or at least the confirming nor discounting views to this call, play out over the next 18 months. There is no certainty that Saudi Arabia will be right and it may just be an educated gamble, but it is something that should be at least considered as the thesis of an earlier than expected plateau in US oil seems to fit to the recent Exxon presentation that implies a ~7% decline rate in overall global oil supply. If these two views are right, it's a big plus to post 2020 oil prices. Its not just oil prices, there are multiple implications to differentials, Gulf Coast takeaway, pipeline utilizations, Cdn light oil opportunities, etc. At a minimum, these view should at least give people a reason to at least consider the potential for better post 2020 oil prices.

If al Falih is even directionally right on his Permian call, it's a big plus to post 2020 oil prices. We decide to write this blog because we didn't see the markets focus on Saudi's change in tactics to regain market share and what the implications are to post 2020 oil prices. Saudi Arabia may well be wrong on Permian reaching oil plateau (peak oil) sooner than everyone else expects, but its not musings, they are actually letting that call dictate a change in strategy to regain market share. And if Saudi Arabia is even directionally right, it means the Permian and US shale will be hitting plateau (peak oil) sooner than expected and this will have huge implications to post 2020 oil prices and a range of oil items ie. Gulf Coast infrastructure, Permian pipelines, differentials, etc.

Saudi Energy Minister Al Falih's fulsome answer provides a clearer picture than a sound bite. The CNBC Worldwide Exchange interview with al Falih ran early this morning (345am MT). One of the reasons we like CNBC Worldwide Exchange or other overnight news is that they will play longer portions of interviews than the pre market opening shows that normally only provide shorter snippets. Of course, the exception being when they have an items like a exclusive Warren Buffet interview. For something reporting on the OPEC meetings, this won't happen as all networks will be running sound bites from al Falih. Al Falih said some of these comments in sound bites yesterday post the OPEC+ extension. But as seen over and over, short sound bites do not do present the picture and this morning's more fulsome coverage present the comments in a fuller picture. (i) Do not need to create a market share war and hammer prices to reach their objective. (ii) Prepared to wait out US shale. (ii) Every basin production ultimately peaks and then declines. (iii) Even under stable oil markets/prices, US peak oil plateau and Permian plateau (peak oil) in a year or 2 years or 4 years. (iv) Saudi Arabia will be there when that happens to regain market share. CNBC posted the video at [\[LINK\]](#). Here is the SAF created transcript

Q: How fast do you see the Permian wells draining? Do you think we overestimate the longevity and the life of these wells in West Texas? Al Falih: “*I think it's not just in West Texas. All shale oil wells do decline rapidly, 70% of them, obviously in the US there is a fantastic service industry that keeps on drilling and fracking, completing the wells. So but its going to take a lot more money and resources to keep existing production base because of that decline, and any incremental production requires, of course, a lot more. We will need time to understand the geology and how much can we increase production. But in all cases, just like in any other basin, there will be a*

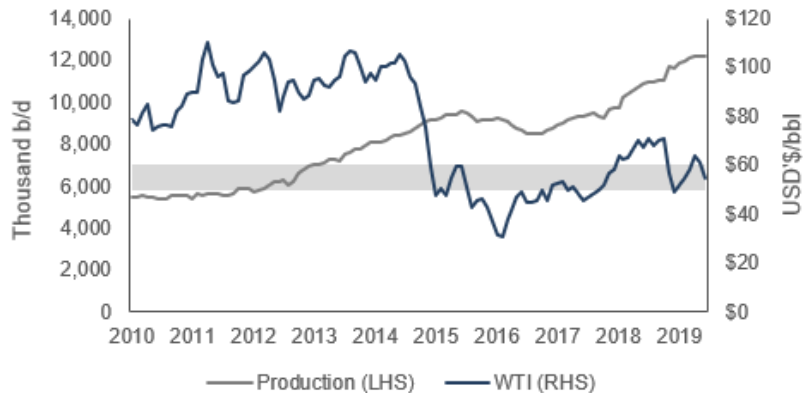
plateau. There will be a plateau for these unconventional resources in the US, the Permian being one of them. is it in a year, or two years or four years, I don't know but certainly its not indefinitely. I think its really an oversimplification to assume that we can extrapolate a straight line forward and assume the same number of rigs that we have that production will continue to increase by a 1 million and a half or so a year. So I see production ultimately plateauing, is it in two or three years or four years, time will tell."

Q: have US oil companies taken on too much debt? Al Falih "well definitely they have not been generating enough cash flow to their investors and I know that, in fact the appetite is for investors to continue putting money into unconventional resources. So the combination of infrastructure which has constrained, a combination of service industry constraints, financial constraints as well as the unknown constraints of geology will ultimately bring us back to reality that there has to be a plateau and ultimate decline. In all cases, we have the conventional resources ready to deploy and step in when its time. We're comfortable with where our production level is, we're willing to go either way from where we are today to keep markets balanced. We're happy to have 23 other countries join us today, not only on the 9 month extension but on a permanent framework to continue to analyze and pre-emptively step in to prevent imbalances from taking place in the future"

Do not need to create a market share war today (crash oil prices) to support Saudi Aramco IPO valuation. Saudi Crown Prince MBS and al Falih have both recently stated the Saudi Aramco IPO is still expected in 2020. We believe that Saudi Arabia needs to have increasing oil market share, near term outlook for stronger stable oil prices to have a chance to support a big Saudi Aramco valuation. Al Falih's new tactic is the biggest difference in their long term strategy. Going into the OPEC/non-OPEC meetings, one of the biggest risks to no OPEC+ extension was the stated Russia concerns about continuing the OPEC+ deal and ceding increasing market share to US shale. Many thought that Russia wouldn't agree to a straight extension and would need some relaxation of their quota. Arguably, the Druzhba problems made it easier for them to agree to stay at reduced levels. However, Russia did come along. But looking at al Falih's comments, its clear that they (rightly or wrongly) believe they can get to their goal without creating a market share war today (and crash prices) like they have done for the last 30 years. They don't feel they have to increase oil production, get oil prices to drop, so that capex and production in the new growth basins loses its ability to attract capital and replace declines as their oil drilling only works at high oil prices. The ability to rein in new basin oil growth was dependent on having low oil prices. Whereas today, they don't believe they need to crash oil prices to rein in new basin oil growth. Rather they are prepared to let US shale oil play out.

Their market share/price crash tactic worked in 2015/2016. This is the biggest difference in their tactics. It was only 4 years ago that oil prices were up \$100, capital was pouring into the E&P sector, and there was growth around the world in high cost basins (ie. oil sands) and also the US shale. Saudi Arabia then went after a market share war that led to oil prices crashing to below US\$30, and no surprise oil growth (apart from projects in execution) stopped. US oil production has just grown from ~5 mmb/d in Sept 2011 to 9.6 mmb/d in June 2015, but then declined by ~1.2 mmb/d in one year to 8.4 mmb/d in July 2016. Saudi's oil market share tactic worked.

US Oil Production Vs WTI Price



Source: Bloomberg

But this time, Saudi Arabia is prepared to take the leadership role (ie. cut again) to keep a stable oil market even if they lose more market share. Saudi Arabia has seen the amazing success of US shale oil in the last three years with growth of ~3.8 mmb/d since July 2016. And al Falih acknowledges it will be giving up market share to the US over the near term. And yet they will still work to keep stable oil markets. This was the common takeaway from the al Falih soundbites yesterday as it should be because he seems pretty clear on this. Al Falih says *"We're comfortable with where our production level is, we're willing to go either way from where we are today to keep markets balanced."* The general view (which we agree with) was that Saudi Arabia continues to stress the importance of stable markets, for both consumers and producers, it plans to keep production around current levels for H2/19 but, if needed to keep oil markets stable, is prepared to cut production further. The closing OPEC/non-OPEC statement [\[LINK\]](#) did not say anything about conformity to voluntary production levels, but one of the themes going into the meeting was that Saudi Arabia was expected other countries (read Nigeria and Iraq) to comply with their targets. As much as al Falih was clear that Saudi Arabia was prepared to cut more to keep market stable, we believe there was also a Saudi reminder to the others that a first step is more countries complying to their targets.

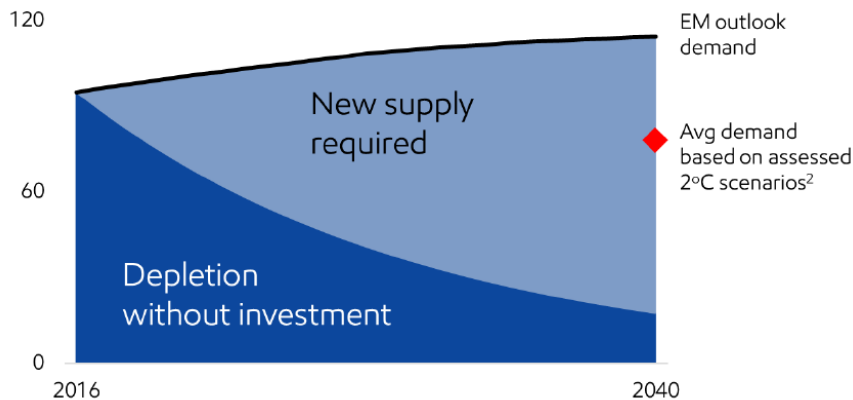
Even under stable markets/prices, Saudi Arabia believe will reach peak oil supply and the Permian will reach plateau (peak oil) in "a year or 2 years or 4 years". Its no secret that Saudi Arabia has been studying shale for the past several years in part due to developing their own unconventional gas resources. But, we believe the primary reason has been to understand the geology and competitive nature of US shale for the short, mid and long term. The interesting aspect of al Falih's comments is that they don't believe low oil prices are needed to stop US growth, rather under stable markets/prices, US shale is near reaching peaking oil supply and then will decline. Al Falih didn't go into details on tier 1 vs tier 2 acreage rather clearly stated twice that US is going to reach plateau (peak oil) soon. Interestingly he chose to highlight the Permian reaching plateau soon. Al Falih said *"There will be a plateau for these unconventional resources in the US, the Permian being one of them. is it in a year, or two years or four years, I don't know but certainly its not indefinitely"*. If markets start to see indications in 2020 that this could play out as Saudi Arabia suggests, it will be a huge positive to Saudi Aramco valuation.

Saudis US peak oil supply view also fits to the Exxon mid/long term view of global oil supply and demand. Perhaps the key reason why al Falih's comments stood out for us was the recent Exxon sellside presentation that included their long term oil supply/demand views. We thought al Falih's comments on an earlier than expected peak oil supply for the Permian (and the US) fits into the big picture challenge for oil supply in the Exxon outlook. Our June 20, 2019 blog *"Exxon's Math Calls For Overall Global Oil Decline Rate of ~7%, A Very Bullish Argument For Post 2020 Oil Prices"* [\[LINK\]](#) said *"We believe Exxon presented a very bullish argument for oil prices beyond 2020 and that it has been overlooked because most readers only flip thru a slide deck and don't listen to or read transcripts of management's spoken words. Exxon's spoken words highlighted one of the forgotten (and perhaps most important) oil supply/demand concerns for post 2020 - the mid term challenge to replace increasing rate of overall global oil declines. And what is eye opening is Exxon's estimated overall global oil decline rate, which is way higher than any we can ever remember seeing. Its impossible to tell*

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from the small oil supply/demand graph in the slide deck, but Exxon's spoken words says long term oil demand is 0.7% per year and then "When you factor in depletion rates, the need for new oil grows at close to 8% per year and new gas at close to 6% per year." Exxon may not specifically say what the global decline rate is, but their math is that the world needs new oil supply to grow annually at close to 8% to meet the 0.7% annual increase in oil demand and offset declines ie. an overall global decline rate of approx. 7%. This is an overall global oil decline rate for OPEC and non-OPEC. This compares to BP's estimate of overall global oil decline rate of 4.5% and we expect most are probably assuming something around 5%, certainly not above 6%. No one should be surprised by the increased decline rate given that high decline US shale and tight oil have increased by ~2.5 mmb/d in the last ~2 years. But an implied ~7% overall global oil decline rate is way higher than expectations. There is a big difference between needing to offset oil declines of ~7 mmb/d vs declines of ~4.5 mmb/d ie. an additional 2.5 mmb/d of new oil supply every year. Even if the implied difference was to 6%, it would still be an additional 1.5 mmb/d of new oil supply and that would also be very bullish for post 2020 oil. We recognize that the 2019/2020 oil supply demand story is the need for OPEC+ to keep cuts thru 2020, but Exxon's math implying ~7% overall global oil decline rate sets up a very bullish view for oil post 2020. We believe the reality to replace oil declines post 2020 is overlooked."

Oil Supply/Demand (moebd)



Source: Exxon US Sellside Conference Presentation June 18, 2019

Incidents at Abqaiq and Khuraais

DHAHRAN, September 14, 2019

TAGS:

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Saudi Aramco emergency crews contained fires at its plants in Abqaiq and Khuraais, as a result of terrorist attacks with projectiles. These attacks resulted in production suspension of 5.7 million barrels of crude oil per day.

After visiting the incident locations, Amin H. Nasser, Saudi Aramco President & CEO, said: “We are gratified that there were no injuries. I would like to thank all teams that responded timely to the incidents and brought the situation under control. Work is underway to restore production and a progress update will be provided in around 48 hours.”

The company will release additional information as it becomes available. For updates, visit our website at www.saudiaramco.com or contact International.media@aramco.com

Media contact information

All media enquiries are handled by Saudi Aramco's Corporate Communications Department, Dhahran, Saudi Arabia.

International: international.media@aramco.com

Domestic: domestic.media@aramco.com

Minister of Energy: Terrorist attacks on "Abqaiq and Khurais" plants have resulted in a temporary halt in production operations; decrease for its customers will be offset by stocks

Sunday 1441/1/16 - 2019/09/15

Jeddah, September 14, 2019, SPA -- Prince Abdulaziz bin Salman bin Abdulaziz, the Minister of Energy, stated that on Saturday 15th of Muharram 1441H corresponding to 14 September 2019, at 3:31 and 3:42 am, several explosions occurred as a result of terrorist attacks in Saudi Aramco plants in Khurais and Abqaiq. They resulted in fires that were controlled.

He pointed out that this terrorist act resulted in the temporary suspension of production operations at Abqaiq and Khurais plants. According to preliminary estimates, these explosions led to the interruption of a quantity of crude oil supplies estimated at 5.7 million barrels, or about 50% of the company's production. Part of the decrease will be compensated for its customers through stocks.

The Minister explained that these explosions have also led to the cessation of the production of associated gas estimated at (2) billion cubic feet per day, used to produce 700 thousand barrels of natural gas liquids, which will reduce the supply of ethane and natural gas liquids by up to about (50%).

As for the local supplies, he stressed that this attack has not resulted in any impact on the supply of electricity and water from fuel, or on the supply of fuel to the local market, nor resulted in any injuries among workers at these sites so far, and the company is still in the process of assessing the implications of this.

He also explained that the company is currently working to recover the lost quantities, and will provide within the next 48 hours updated information.

The Minister of Energy said that this terrorist attack and sabotage is an extension of the recent attacks that targeted oil and civil facilities, pumping stations and oil tankers in the Arabian Gulf. The minister stressed that these attacks are not only aimed at the vital installations of the Kingdom, but also on the global oil supply and its security, and thus pose a threat to the global

economy. It once again highlights the importance of the international community undertaking its role in maintaining energy supplies against all terrorist actors who carry out, support and finance such cowardly acts of sabotage.

--SPA

01:06 LOCAL TIME 22:06 GMT

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<https://twitter.com/wammezz/status/1173022212783247360>



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Wim Zwijnenburg

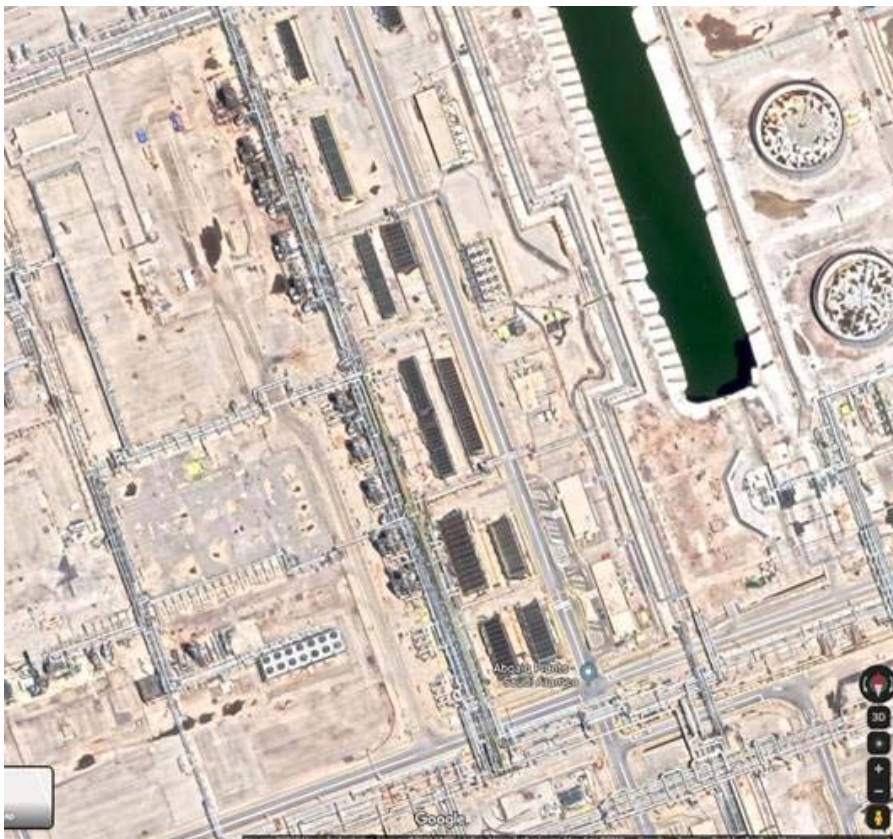
@wammezz



Comparison between September 13 and 14 shows damage at various locations on the [#Abqaiq](#) oil processing plant from alleged [#drone](#)/ missile strikes



GoogleMaps - Abqaiq



Oil Market Highlights

Crude Oil Price Movements

The OPEC Reference Basket (ORB) declined \$5.09, or 7.9%, to average \$59.62/b. Crude oil futures prices also declined in August compared to the previous month. ICE Brent fell \$4.71, or 7.3%, to average \$59.50/b in August, and NYMEX WTI dropped by \$2.70, or 4.7%, to average \$54.84/b. Year-to-date, ICE Brent was \$6.94, or 9.6%, lower compared to the same period last year, averaging \$65.05/b, while NYMEX WTI declined by \$9.31, or 14.0%, to average \$57.12/b over the same period. All crude benchmark structures were in backwardation in August, with Brent and Dubai price structures steepening further. Hedge funds and other money managers slightly raised their net long positions for NYMEX WTI, but cut them for ICE Brent.

World Economy

The global economic growth forecast was revised down to 3.0% for 2019 and to 3.1% for 2020, compared to the previous forecast of 3.1% and 3.2%, respectively, in last month's report. This was triggered by the ongoing slowdown in the US and the Euro-zone, lower-than-expected 1H19 growth in India, rising sovereign debt issues in Argentina, and the continuation of the US-China trade dispute, among other factors. US economic growth was revised down to 2.3% for 2019 and 1.9% for 2020. The forecast for Euro-zone growth in 2019 remains at 1.2%, while 2020 was revised down to 1.1%. Japan's 2019 growth was revised up to 0.9% due to a stronger-than-expected 1H19, although there was a downward revision to 0.3% in 2020. China's 2019 growth forecast remains at 6.2% and is expected to slow to 5.9% in 2020. India's growth forecast was revised down to 6.1% for 2019 and 6.7% for 2020. Brazil's 2019 growth forecast was revised down to 0.8%, but is then projected to reach 1.4% in 2020. After low 1Q19 growth, Russia's growth forecast for 2019 was revised down to 1.1%, and is forecast at 1.2% in 2020.

World Oil Demand

World oil demand in 2019 is expected to grow by 1.02 mb/d, which is 0.08 mb/d lower than last month's projection. The drop can be attributed to weaker-than-expected data in 1H19 from various global demand centres and slower economic growth projections for the remainder of the year. Both OECD and non-OECD demand growth forecasts were revised lower, by 0.03 mb/d and 0.05 mb/d, respectively. In 2020, world oil demand is projected to increase by 1.08 mb/d. This also represents a downward adjustment of 0.06 mb/d from the previous month's assessment, mainly to accommodate changes to the world economic outlook for 2020.

World Oil Supply

Non-OPEC oil supply growth for 2019 was revised up by 10 tb/d from last month's projections to 1.99 mb/d. Upward revisions to oil production from Russia, Kazakhstan, Australia and Canada outpaced a downward revision to the US oil supply forecast. The main drivers for growth in 2019 are the US with growth of 1.8 mb/d, along with Brazil, China, the UK, Australia and Canada. Mexico and Norway are projected to see the largest declines. In contrast, non-OPEC oil supply growth in 2020 was revised down by 136 tb/d from last month's assessment to 2.25 mb/d. This is mainly due to a large downward revision to US oil supply, which is now expected to grow by 1.54 mb/d. The forecast for next year remains subject to many uncertainties, mainly relevant to capital spending discipline and a slowdown in drilling and completion activity in the US. OPEC NGLs production in 2019 and 2020 is expected to grow by 0.07 mb/d and 0.03 mb/d, respectively, to average 4.84 mb/d and 4.87 mb/d. In August, OPEC crude oil production increased by 136 tb/d to average 29.74 mb/d, according to secondary sources.

Product Markets and Refining Operations

Product markets globally witnessed a notable downturn in the naphtha and fuel oil markets in August, although overall market performance was mixed. In the US, product markets suffered significant losses, as all products across the barrel weakened. The sharpest decline was felt at the top and bottom of the barrel, on the back of higher product output in the region, which, in general, placed product prices under pressure over the month. In Europe, middle distillates continued to perform positively supported by healthy demand amid higher product imports over the month. This offset the weakening at the top and bottom of the barrel and

Oil Market Highlights

provided a slight improvement in refining margins. Asian product markets lost ground, affected by a deterioration in high sulphur fuel oil (HSFO) markets, and pressured by weaker fundamentals as buying interest from the bunker sector declined in August, weighing on HSFO prices, and ultimately refining margins.

Tanker Market

Dirty vessel spot freight rates were broadly flat in August as gains in VLCCs were outweighed by declines in average rates for Aframax and Suezmax. A pick up in tonne-mile demand and reduced newbuilding deliveries supported the VLCC market at the start of the month, before slowing activities allowed availability lists to build, capping rates. In the clean tanker market, spot freight rates remained under pressure with declines West of Suez offsetting some improvement East of Suez.

Stock Movements

Preliminary data for July showed that total OECD commercial oil stocks fell by 10.5 mb m-o-m to stand at 2,944 mb. This was 108 mb higher than the same period a year ago, and 36 mb above the latest five-year average. Within the components, crude stocks fell by 41.3 mb m-o-m to stand at 20 mb below the latest five-year average, while product stocks rose by 30.8 mb m-o-m to 55 mb above the latest five-year average. In terms of days of forward cover, OECD commercial stocks declined by 0.1 days m-o-m to stand at 60.9 days, which was 2.2 days above the same period in 2018, but 0.6 days below the latest five-year average.

Balance of Supply and Demand

Demand for OPEC crude in 2019 was revised down from the previous report to stand at 30.6 mb/d, which is 1.0 mb/d lower than the 2018 level. Demand for OPEC crude in 2020 remains unchanged from the previous report, to stand at 29.4 mb/d, around 1.2 mb/d lower than the 2019 level.

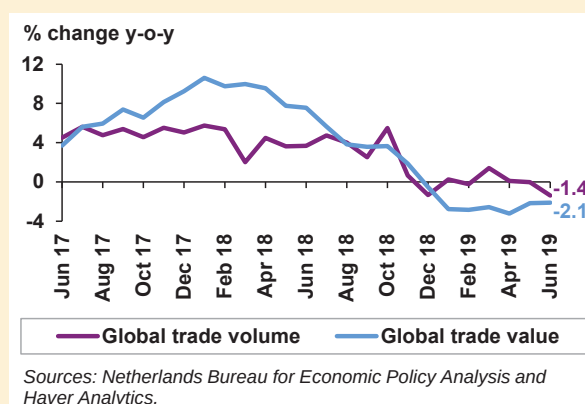
Feature Article

Review of global economic development

After two years of relatively high growth levels, global GDP growth is forecast to stabilize at 3.0% in 2019 and to rise to 3.1% in 2020. This constitutes sound growth with ongoing solid oil demand, given the many uncertainties that derive mainly from the political arena. The trade dispute between the US and China is ongoing, Brexit and a slow-down in Germany loom large in the EU, the sovereign debt crisis in Argentina is dampening Latin American growth, and ongoing structural challenges in India are leading the economy to significantly lower output. Upside to the current forecast could come from an agreement on trade-related issues between the US and its trading partners considering that trade was a substantial support factor for above-average global growth in the past two years (**Graph 1**). Furthermore, a soft Brexit, toning down of geopolitical tensions and stabilization in those economies that face fiscal challenges could also lift growth to a higher level. An important support factor so far this year has been the relatively stable oil market, which continues to benefit from the ongoing efforts under the OPEC-Non-OPEC Declaration of Cooperation (DoC). This has not only been beneficial to oil producing economies, including major OECD economies such as the US and Canada, but also to consumer nations as it provides better visibility in the oil market.

Within the **OECD**, the US economy continues to slow down after last year's support from the large fiscal stimulus measures. Consequently, growth is forecast at 2.3% in 2019, followed by growth of 1.9% in 2020. In the Euro-zone, economic challenges in Germany, political uncertainties in selective countries and Brexit are leading to lower growth, which is forecast at 1.2% for 2019 and 1.1% in 2020. Meanwhile, Japan's growth is forecast as holding up relatively well in 2019 at 0.9%. With the government intending to increase the sales tax in 4Q19 and the economy continuing to be constrained by very low unemployment and high utilization rates in the industrial sector, growth is forecast at 0.3% in 2020.

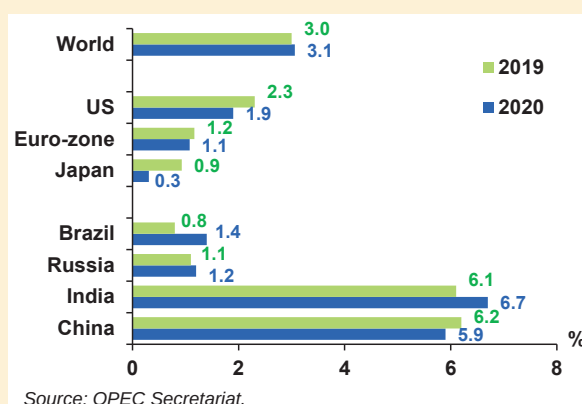
Graph 1: Global trade volume and value



Monetary policies by the G4 central banks have supported growth. The Fed is forecast to lower interest rates at least one more time this year. The ECB may also expand its monetary supply further. Moreover, the BoJ has also indicated ongoing monetary support, while the BoE will likely expand its supply in the case of a worsening Brexit outcome. Importantly, central banks in several emerging and developing markets have lowered interest rates recently in order to support their economies. This ongoing monetary stimulus will still need to be further supported by the right fiscal and general policy mix to foster growth appropriately.

In the **emerging economies**, India has experienced significantly lower-than-expected growth rates for 1H19, amid ongoing structural challenges. While some pick-up in 2H19 is expected, growth rates are forecast to be lower than in past years at 6.1% for 2019 and 6.7% for 2020. China's GDP growth will continue slowing and will additionally be impacted by the ongoing trade dispute with the US. Growth in 2019 is forecast at 6.2%, followed by 5.9% in 2020. Meanwhile, Brazil's growth forecast stands at 0.8% for 2019 and at 1.4% for 2020. This will depend not only on policy actions by the government and commodity price developments, but also on developments in its close trading partner, Argentina. Russia's growth is forecast at 1.1% for 2019 and 1.2% in 2020, also dependent on external and domestic political developments, as well as energy commodity prices.

Graph 2: GDP growth forecast for 2019–2020



Given expectations for global economic growth, world oil demand is forecast at around 1 mb/d in 2019 and 2020. Nevertheless, this is expected to be outpaced by the strong growth in non-OPEC supply. This highlights the shared responsibility of all producing countries to support oil market stability to avoid unwanted volatility and a potential relapse into market imbalance.

World Oil Demand

World oil demand growth for 2019 was revised lower by around 0.08 mb/d, primarily as a result of a slower than expected performance from both the OECD and non-OECD during the 1H19. The downward revision also accounts for the latest economic outlook for 2019 and 2020 oil demand data. World oil demand growth in 2019 is now pegged at 1.02 mb/d, with total global consumption at 99.84 mb/d.

In the **OECD**, anticipated 2019 oil demand growth has been revised downward by 0.03 mb/d after considering trends from latest available historical information and the most recent economic outlook. Oil demand in 1H19 has been resilient in Americas, but it remained in negative territory in Europe and the Asia Pacific.

OECD America oil demand data implied gains during June with support from industrial and transportation fuels, particularly related to the consumption of NGL/LPG, jet kerosene and diesel fuel. While oil demand growth was revised slightly downward for 1Q19, overall 1H19 oil demand exhibited a healthy performance.

OECD Europe incremental oil demand remains in negative territory for 1H19 and is expected to follow the same declining y-o-y trend for 2H19.

Expectations for the OECD Asia Pacific have been lowered further. This is due to declining activities in the petrochemical industry in Japan and South Korea, with challenges related to international trade leading to less oil requirements.

In the **non-OECD** region, based on the latest available data, oil demand growth in 2019 was adjusted lower by 0.05 mb/d, primarily due to a weaker than expected performance from Other Asia and Middle East in 2Q19. Smaller downward revisions were also seen in Latin America and China.

In Other Asia, oil demand growth in 2019 was adjusted downward by around 0.02 mb/d, mainly reflecting slower-than-expected oil demand in India, as well as various other countries in the region, such as Indonesia, Malaysia and Thailand.

In the Middle East, oil demand in 2019 was revised lower by around 0.02 mb/d, due to economic restructuring plans, including subsidy reductions.

World oil demand growth for 2020 was revised lower by 0.06 mb/d compared to the previous report. This is in light of downward economic revisions to various regions and countries, as well as adjustments to the baseline data. World oil demand growth in 2020 is now anticipated to increase by 1.08 mb/d, with total global consumption reaching 100.92 mb/d.

World oil demand in 2019 and 2020

Table 4 - 1: World oil demand in 2019*, mb/d

	2018	1Q19	2Q19	3Q19	4Q19	2019	Change 2019/18	
							Growth	%
Americas	25.55	25.21	25.66	26.08	26.02	25.75	0.20	0.79
of which US	20.73	20.65	20.86	21.21	21.03	20.94	0.21	1.00
Europe	14.31	13.97	14.18	14.68	14.30	14.28	-0.02	-0.15
Asia Pacific	8.08	8.47	7.67	7.73	8.12	8.00	-0.08	-1.02
Total OECD	47.93	47.65	47.51	48.50	48.44	48.03	0.10	0.21
Other Asia	13.64	13.91	14.02	13.71	14.21	13.96	0.32	2.38
of which India	4.73	5.03	4.79	4.57	5.14	4.88	0.15	3.21
Latin America	6.53	6.36	6.58	6.83	6.49	6.57	0.04	0.62
Middle East	8.12	8.25	7.90	8.47	7.88	8.12	0.00	0.03
Africa	4.33	4.45	4.42	4.36	4.50	4.43	0.10	2.31
Total DCs	32.62	32.97	32.93	33.37	33.07	33.09	0.47	1.43
FSU	4.82	4.75	4.74	5.02	5.11	4.91	0.09	1.82
Other Europe	0.74	0.75	0.71	0.75	0.84	0.76	0.02	2.69
China	12.71	12.63	13.19	12.98	13.43	13.06	0.35	2.73
Total "Other regions"	18.27	18.13	18.64	18.75	19.38	18.73	0.45	2.49
Total world	98.82	98.75	99.08	100.63	100.89	99.84	1.02	1.03
Previous estimate	98.82	98.79	99.25	100.69	100.91	99.92	1.10	1.11
Revision	0.01	-0.03	-0.17	-0.06	-0.02	-0.07	-0.08	-0.08

Note: * 2019 = Forecast.

Totals may not add up due to independent rounding.

Source: OPEC Secretariat.

Table 4 - 2: World oil demand in 2020*, mb/d

	2019	1Q20	2Q20	3Q20	4Q20	2020	Change 2020/19	
							Growth	%
Americas	25.75	25.43	25.84	26.24	26.19	25.93	0.18	0.69
of which US	20.94	20.83	21.00	21.33	21.18	21.09	0.15	0.70
Europe	14.28	13.92	14.15	14.66	14.28	14.25	-0.03	-0.21
Asia Pacific	8.00	8.39	7.58	7.66	8.05	7.92	-0.08	-0.99
Total OECD	48.03	47.73	47.57	48.56	48.52	48.10	0.07	0.14
Other Asia	13.96	14.27	14.38	14.09	14.60	14.33	0.37	2.65
of which India	4.88	5.20	4.94	4.73	5.32	5.05	0.16	3.36
Latin America	6.57	6.44	6.66	6.91	6.56	6.64	0.07	1.14
Middle East	8.12	8.30	7.95	8.55	7.97	8.19	0.07	0.86
Africa	4.43	4.53	4.52	4.46	4.59	4.52	0.09	2.00
Total DCs	33.09	33.54	33.50	34.00	33.72	33.69	0.60	1.83
FSU	4.91	4.83	4.81	5.11	5.19	4.99	0.08	1.65
Other Europe	0.76	0.76	0.72	0.76	0.85	0.77	0.01	1.54
China	13.06	12.91	13.50	13.28	13.77	13.37	0.31	2.37
Total "Other regions"	18.73	18.50	19.03	19.15	19.82	19.13	0.40	2.15
Total world	99.84	99.78	100.10	101.71	102.06	100.92	1.08	1.08
Previous estimate	99.92	99.87	100.33	101.83	102.14	101.05	1.14	1.14
Revision	-0.07	-0.09	-0.23	-0.12	-0.08	-0.13	-0.06	-0.06

Note: * 2019-2020 = Forecast.

Totals may not add up due to independent rounding.

Source: OPEC Secretariat.

OECD

OECD Americas

US

Based on preliminary weekly data, US data for June 2019 implies oil demand gains of around 0.19 mb/d y-o-y, following declines in May 2019. This is in line with a number of main indicators, including the country's solid economic growth and industrial activity, particularly in the petrochemical and oil producing industries. When disaggregating all increments, the gains in oil requirements for June 2019 originated mainly in the industrial and transportation sectors.

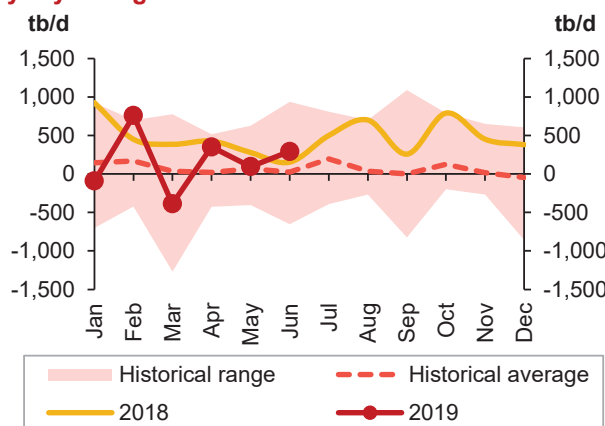
Table 4 - 3: US oil demand, tb/d

	Jun 19	Jun 18	Change 2019/18	
			tb/d	%
LPG	3,353	2,540	813	32.0
Naphtha	215	206	9	4.4
Gasoline	9,691	9,798	-107	-1.1
Jet/kerosene	1,809	1,855	-47	-2.5
Diesel oil	4,556	3,954	602	15.2
Fuel oil	387	249	138	55.2
Other products	1,175	2,394	-1,219	-50.9
Total	21,185	20,996	189	0.9

Sources: US EIA and OPEC Secretariat.

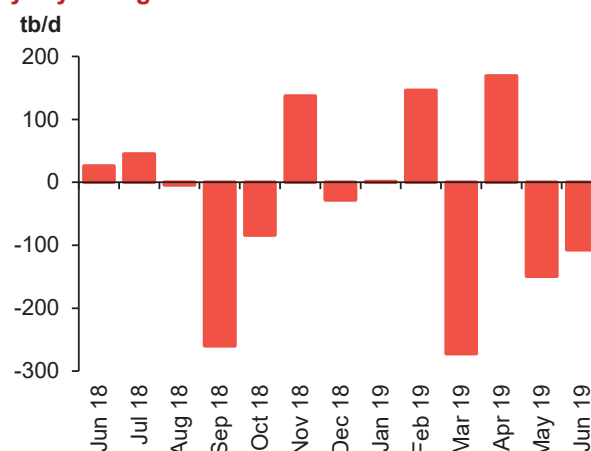
Demand for NGL/LPG grew robustly y-o-y, notably in the petrochemical sector. Growth requirements in jet kerosene were stronger, when compared to the year-to-date (y-t-d) average, albeit as expected for a month in the holiday travel season. Motor gasoline requirements declined for the second consecutive month in June, in line with declining y-o-y vehicles sales and despite the low baseline during the same month in 2018. Developments in gasoline consumption relate to ongoing vehicle efficiency gains, fuel substitution and less mileage as a result of the declining trend in gasoline consumption per capita in the country over the last three years. June 2019 residual fuel oil requirements grew y-o-y amid the low baseline during the same month in 2018. Diesel fuel requirements grew strongly y-o-y in June.

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



Sources: Joint Organisations Data Initiative and OPEC Secretariat.

Graph 4 - 2: US gasoline demand, y-o-y change



Sources: US EIA and OPEC Secretariat.

With available data for eight months of 2019 – monthly data until June and preliminary weekly data for July and August – US oil demand has exhibited solid growth of around 0.2 mb/d. The bulk of the growth has originated in the lighter and middle part of the barrel – NGL/LPG, diesel fuel and jet kerosene. To date, gasoline demand is on a declining trend.

For the rest of 2019 and 2020, US oil demand is expected to be determined by developments in the industrial and transportation sectors, and hence, indirectly by the general economy and international trade-related issues. It is evident that the overall implied risks for future US oil demand development is balanced between the upside and downside. Upside risks originate in projected economic growth of and oil usage in the transportation and industrial sectors, while economy-related concerns, fuel substitution and vehicle efficiencies are the major downside risks.

Mexico

Mexican oil demand remained in negative territory during July 2019, declining sharply by 5.6 % y-o-y. Shrinking demand for the majority of petroleum product categories was only slightly offset by rising diesel fuel requirements. The risks for 2019 and 2020 Mexican oil demand remain slightly skewed to the downside and relate to the country's economy and the degree of fuel substitution.

Canada

In **Canada, oil demand** in June 2019 witnessed a solid y-o-y performance, following a decline in May 2019. This was despite declining demand for the majority of main petroleum product categories. Overall gains were attributed to solid gains in LPG and gasoline demand. Canadian oil demand in 2020 is projected to increase slightly y-o-y, with the risks balanced.

In 2019, **OECD Americas oil demand** is expected to grow 0.20 mb/d, when compared to 2018. In 2020, oil demand y-o-y is projected to increase by 0.18 mb/d.

OECD Europe

The latest available June 2019 data for **OECD Europe** implies a sharp drop in oil demand requirements, following monthly y-o-y declines in February, March and May, as well as on a y-t-d basis. Oil demand losses were attributed to weaker demand for LPG, naphtha and gasoline, although this was partly offset by increasing jet kerosene and gasoline demand. One of the region's main oil demand indicators, passenger car registrations, saw a decline during the first six months of 2019, although this does follow a high historical baseline witnessed in previous years.

Table 4 - 4: Europe Big 4* oil demand, tb/d

	Jul 19	Jul 18	Change 2019/18 tb/d	%
LPG	484	435	49	11.4
Naphtha	591	616	-25	-4.1
Gasoline	1,215	1,207	8	0.7
Jet/kerosene	895	914	-19	-2.1
Diesel oil	3,201	3,172	29	0.9
Fuel oil	210	232	-22	-9.5
Other products	648	703	-55	-7.8
Total	7,244	7,279	-35	-0.5

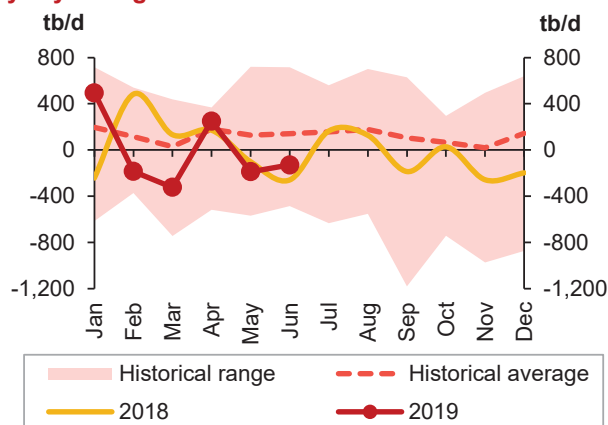
Note: * Germany, France, Italy and the UK.

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

Preliminary July 2019 trends for the **European Big 4 oil consuming countries** imply y-o-y declines. The bulk of losses relate to naphtha, gasoline and jet kerosene requirements; Germany and the UK appear to be in negative oil demand territory, while Italian and French oil demand looks to have expanded y-o-y.

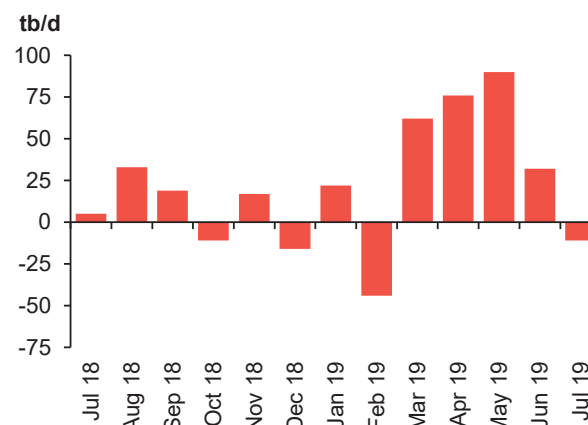
The region's 2019 and 2020 oil demand forecast is weighted by a number of risks, the majority of which may influence oil demand to the downside. The forecasted growth in the economy and the current oil price environment would principally support oil demand; however, unsolved debt-related and geopolitical issues, as well as efficiencies and fuel substitution may substantially reduce oil demand to the downside. Expectations for 2019 and 2020 oil demand in the region are unchanged since last month, but risks are skewed to the downside.

Graph 4 - 3: OECD Europe's oil demand, y-o-y change



Sources: Joint Organisations Data Initiative and OPEC Secretariat.

Graph 4 - 4: UK diesel demand, y-o-y change



Sources: Joint Organisations Data Initiative, UK Department for Business, Energy & Industrial Strategy and OPEC Secretariat.

In 2019, **OECD Europe oil demand** is forecast to fall by 0.02 mb/d y-o-y, while oil demand during 2020 is expected to be 0.03 mb/d lower when compared to 2019.

OECD Asia Pacific

Japan

Preliminary July 2019 data implies that **Japanese oil demand** shrank by 0.13 mb/d y-o-y, following of from declines in five months in the 1H19 and for the whole of 2018. The performance of petroleum products showed a divergence; LPG, gasoline and residual fuel oil requirements remained in the negative, while naphtha, jet kerosene and diesel fuel demand grew y-o-y. The direct use of crude oil and residual fuel oil for electricity generation showed declines y-o-y, as a result of substitution with other primary energy commodities.

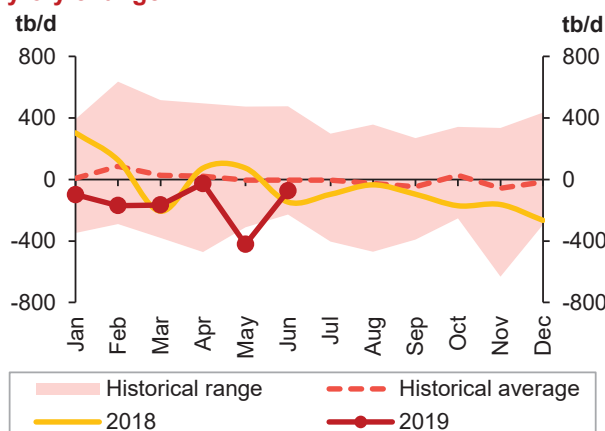
Table 4 - 5: Japan's domestic sales, tb/d

	Jul 19	Jul 18	Change 2019/18	
			tb/d	%
LPG	299	338	-39	-11.5
Naphtha	711	689	22	3.2
Gasoline	870	937	-67	-7.2
Jet/kerosene	311	311	0	0.0
Diesel oil	753	738	15	2.0
Fuel oil	223	264	-41	-15.6
Other products	341	358	-17	-4.7
Total	3,508	3,635	-127	-3.5

Sources: JODI, Ministry of Energy and Trade and Industry of Japan and OPEC Secretariat.

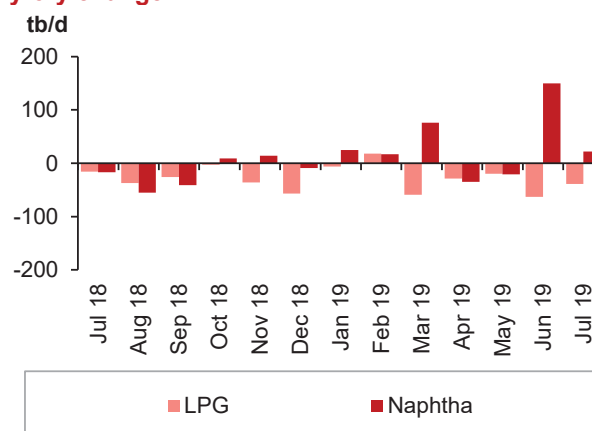
The gloomy outlook for 2019 and 2020 Japanese oil demand remains unchanged. Moreover, risks continue to be skewed to the downside, mainly due to economic forecasts, increasing efficiencies in the road transportation sector, as well as fuel substitution.

Graph 4 - 5: OECD Asia Pacific oil demand, y-o-y change



Sources: Joint Organisations Data Initiative and OPEC Secretariat.

Graph 4 - 6: Japan's LPG and naphtha demand, y-o-y change



Sources: Ministry of Economy Trade and Industry of Japan, Joint Organisations Data Initiative and OPEC Secretariat.

South Korea

In **South Korea**, oil demand in June 2019 decline sharply. The bulk of the losses can be attributed to a stumbling petrochemical industry, which has been significantly impacted by challenges in relation to imported feedstock, as well as the US-China trade dispute. LPG and naphtha requirements fell sharply y-o-y by 5.4% and 7.5%, respectively, while gains in demand for gasoline, jet kerosene and diesel fuel partly offset the overall decline.

World Oil Demand

The outlook for South Korean oil demand during 2019 and 2020 is in positive territory; however, risks are skewed to the downside compared to last month's projections.

Australia

In **Australia**, June 2019 oil demand data implies losses y-o-y, on top of a high historical baseline. The bulk of the declines are seen in demand for diesel fuel, gasoline and residual fuel oil.

OECD Asia Pacific oil demand is projected to decline by 0.08 mb/d in both 2019 and 2020.

Non-OECD

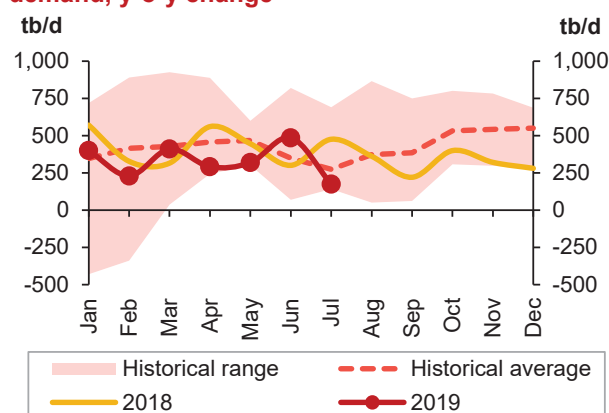
China

Chinese oil demand showed a slower pace of growth, increasing by 0.17 mb/d or 1% during July 2019. The y-t-d average growth, based on Secretariat calculations, stands at 0.32 mb/d, or around 3%. In July 2019, oil demand growth was influenced by rising LPG and jet fuel requirements, while gasoline saw a significant growth slowdown compared to previous months. Declining requirements for diesel fuel and fuel oil offset some of those gains. The increase in LPG requirements can be attributed to the country's expanding petrochemical industry, as LPG grew by more than 0.20 mb/d, or more than 12% y-o-y. Jet fuel rose by 0.04 mb/d, or around 4%, amid a continuation of solid growth in air traffic activities. According to the China National Bureau of Statistics, these increased by 10.4% in July compared to the same month in 2018.

Gasoline demand has started to show signs of a slowdown, in line with declining car sales, according to statistics and analysis of China Association of Automobile Manufacturers (CAAM). In July 2019, China's automobile sales were at 1.90 million units, more than 4% lower than the same month in 2018. Y-t-d figures, with data for seven months, also highlight a significant drop in car sales with total units sold reaching 12.7 million units. This is down by 13% compared to the same period in 2018. In July, gasoline consumption y-o-y grew by 0.02 mb/d.

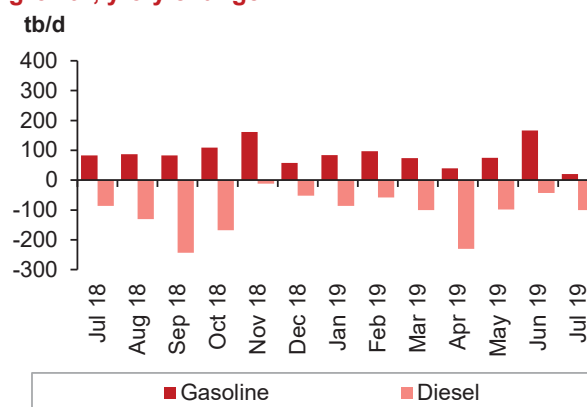
Diesel fuel dipped by around 0.10 mb/d in July, or more than 3% y-o-y, continuing its sluggish performance in 2019. The diesel fuel slowdown is a reflection of weaker manufacturing activities, as well as a reduction in construction and agricultural activities. Fuel oil also decreased during July, losing around 0.03 mb/d from the level recorded in July 2018.

Graph 4 - 7: Changes in China's apparent oil demand, y-o-y change



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

Graph 4 - 8: China's diesel and gasoline demand growth, y-o-y change



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

China's 2019 oil demand outlook is slightly lower than last month, which is mainly a reflection of a possible economic slowdown and the implementation of measures aimed at limiting the consumption of transportation fuels. The healthy petrochemical segment and expansions in refining capacity are considered as factors supporting oil demand during the current year. As for 2020, oil demand for transportation and industrial sectors is projected to continue rising, albeit at a slower pace than the current year, in view of slightly lower GDP growth as compared to 2019. The outlook also assumes a continuation in fuel quality programs targeting fewer emissions, and the continuation of fuel substitution with natural gas and coal. These are all factors that need to be monitored closely.

For 2019, **Chinese oil demand** is anticipated to grow by 0.35 mb/d, while oil demand in 2020 is projected to increase by 0.31 mb/d.

Other Asia

India

In July 2019, **India's oil demand** flipped into positive territory after declining the previous month, increasing by 0.14 mb/d, or more than 3%, y-o-y. This takes y-t-d oil demand growth, with data from January to July, to a modest 0.11 mb/d, compared to more than 0.30 mb/d of growth during the same period in 2018. Total consumption in July 2019 is now pegged at 4.4 mb/d. In terms of products, the y-o-y increase in consumption for LPG, diesel fuel and gasoline, were slightly counterbalanced by drops in naphtha and jet/kerosene.

Table 4 - 6: India's oil demand, tb/d

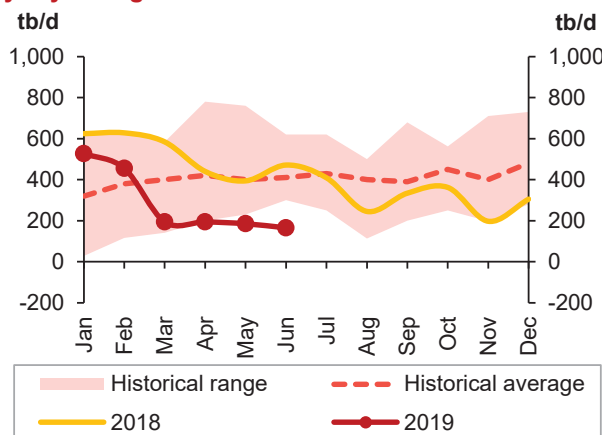
	<u>Jul 19</u>	<u>Jul 18</u>	<u>Change 2019/18</u> <u>tb/d</u>	<u>%</u>
LPG	776	712	64	9.0
Naphtha	379	400	-21	-5.3
Gasoline	683	628	55	8.8
Jet/kerosene	219	245	-26	-10.6
Diesel oil	1,774	1,717	58	3.4
Fuel oil	295	272	22	8.2
Other products	319	331	-12	-3.6
Total	4,444	4,304	140	3.3

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

LPG continued its y-o-y growth in July 2019, increasing by 0.06 mb/d, or 9% y-o-y, with total consumption at around 0.78 mb/d. LPG consumption continues to be driven by the residential sector, in response to governmental policies to expand LPG connections to households. Diesel fuel demand recorded its second highest monthly growth in 2019, with consumption increasing by around 0.06 mb/d y-o-y. This was mostly due to an uptick in infrastructure projects, as well as less rainfall than normal at the start of the monsoon season. Total diesel fuel consumption was at 1.8 mb/d.

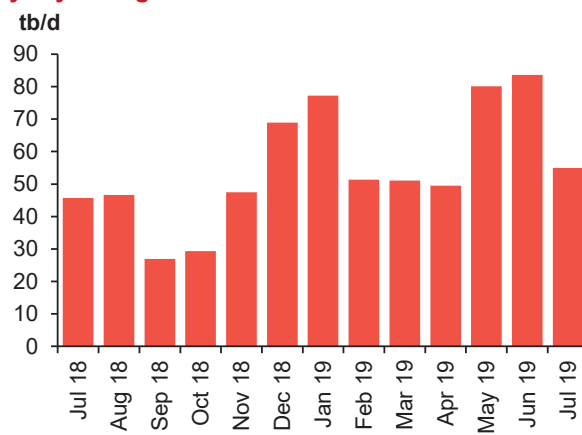
Gasoline demand grew more than 0.06 mb/d y-o-y, or 9%, despite the continued weakness in passenger vehicle sales. In July 2019, passenger vehicle sales data for India's top five manufacturers showed a decline of more than 30% y-o-y. This marks the largest decline in around 20 years. Demand for both naphtha and jet/kerosene dropped by more than 0.02 mb/d, with the latter being impacted by the substitution of other light distillates in households.

Graph 4 - 9: Other Asia's oil demand, y-o-y change



Sources: Joint Organisations Data Initiative and OPEC Secretariat.

Graph 4 - 10: India's gasoline demand, y-o-y change



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

Indonesia

In **Indonesia**, June 2019 data shows a steady increase of around 1.0% y-o-y, almost matching May's growth. Most of the expansion appeared in the lighter part of the barrel, with rising requirements for gasoline, LPG and diesel fuel, while heavy distillates showed moderate increases.

Thailand

Oil demand in **Thailand** recorded marginal y-o-y growth in June 2019. Gains in diesel fuel and gasoline were offset by declines in light distillates – LPG and naphtha – that imply a slowdown in the petrochemical sector.

Other Asia's oil demand growth in 2019 is anticipated to be around 0.11 mb/d lower than the 2018 growth level. In 2020, assumptions are focused on higher GDP growth than the current year and stable retail prices. India is anticipated to be the main contributor to growth, with smaller contributions from Indonesia, Thailand, Pakistan, Vietnam and Singapore. There is anticipated to be a smaller impact of the displacement of oil in the power generation sector, as well as other sectors, compared to previous years. Middle distillates, followed by gasoline, are expected to be the products leading oil demand next year.

Other Asia's oil demand is anticipated to grow by 0.32 mb/d y-o-y in 2019, while in 2020, it is projected to rise by 0.37 mb/d.

Latin America

Brazil

In **Brazil**, total oil demand accelerated during the month of July 2019 after witnessing a monthly y-o-y decline in June.

Product demand grew by just below 0.16 mb/d, or around 6% y-o-y. With this level the y-t-d data indicates oil demand growth of around 0.09 mb/d from January to July 2019. This compares to a decline of around 0.01 mb/d during the same period in 2018. The increased in oil requirements was despite the slower than expected economic activities, compared to last year. The pace of transportation fuel consumption increased in July 2019 with both ethanol and gasoline increasing by 12% and 8%, respectively. This is in line with improving vehicle sales, which showed an increase of around 11% in June and July 2019.

Table 4 - 7: Brazil's oil demand*, tb/d

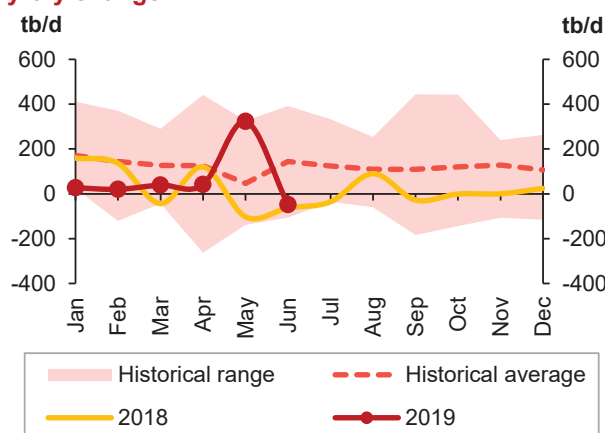
	Jul 19	Jul 18	Change 2019/18	
			tb/d	%
LPG	248	232	16	7.0
Naphtha	147	146	1	0.7
Gasoline	655	609	47	7.7
Jet/kerosene	124	131	-7	-5.4
Diesel oil	1,052	1,011	42	4.1
Fuel oil	80	74	6	8.5
Other products	499	447	52	11.6
Total	2,805	2,648	157	5.9

Note: * = Inland deliveries.

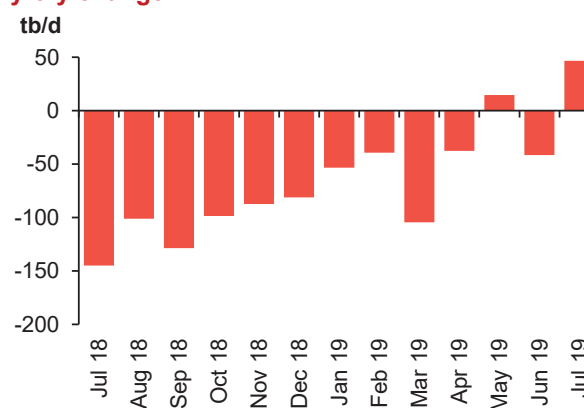
Sources: JODI, Agencia Nacional do Petroleo, Gas Natural e Biocombustiveis and OPEC Secretariat.

Y-t-d data for the two products highlights significant increases of more than 20% for ethanol, while gasoline recruitments exhibit a decline of 5%. This is largely attributed to the retail price difference, which favoured ethanol over gasoline in most months of the year.

Diesel fuel was also higher by 0.04 mb/d y-o-y, amid a slight recovery in industrial activities and improvements in trucking activities. On the other hand, jet/kerosene recorded a decline of around 5% y-o-y.

Graph 4 - 11: Latin America oil demand, y-o-y change

Sources: Joint Organisations Data Initiative and OPEC Secretariat.

Graph 4 - 12: Brazil's gasoline demand, y-o-y change

Sources: Agencia Nacional do Petroleo, Gas e Biocombustiveis of Brazil, Joint Organisations Data Initiative and OPEC Secretariat.

Argentina

In **Argentina**, oil demand continued its weak performance, which is in line with an economic slowdown. June 2019 oil demand growth was lower by 0.05 mb/d or more than 7% y-o-y. This is the tenth consecutive monthly decline and the thirteenth time in the last 14 months. LPG, diesel fuel, gasoline and fuel oil all posted declines.

Looking ahead, uncertainties for 2019 **oil demand growth in Latin America** are currently skewed downward because of economic turmoil in a number of the region's countries. As such, oil demand projections for 2019 have been adjusted lower for the remainder of 2019. In 2020, oil demand growth is anticipated to slightly improve over the 2019 growth levels, driven by expected improving economic activities. Brazil is projected to be the main contributor, with transportation fuels expected to lead oil demand growth, followed by construction and industrial fuels.

Latin American oil demand is expected to rise by 0.04 mb/d in 2019 and by 0.07 mb/d in 2020.

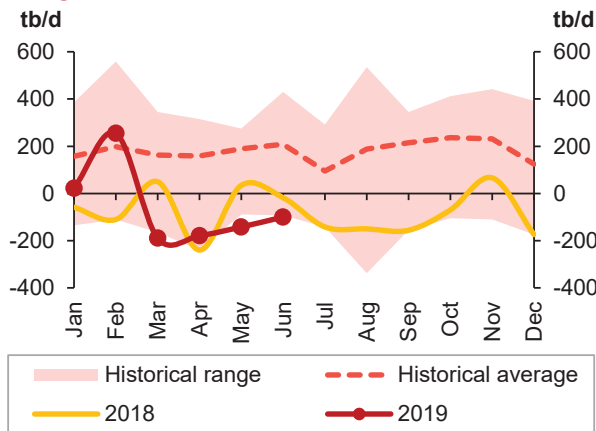
Middle East

Saudi Arabia

In **Saudi Arabia**, oil demand in July returned to growth after four consecutive months of y-o-y declines.

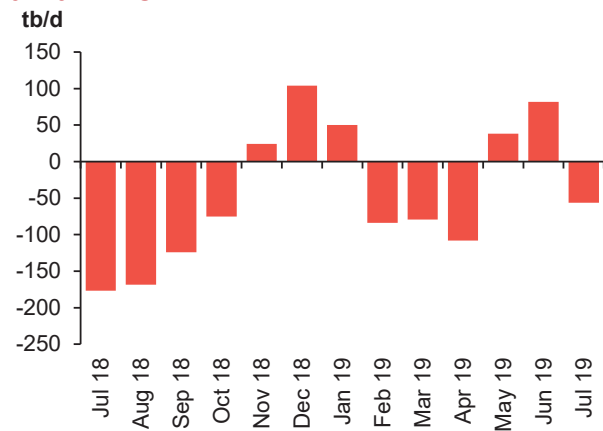
Oil demand increased by 0.13 mb/d during July 2019 with total consumption reaching 2.6 mb/d. However, y-t-d data hints towards a decline of 0.06 mb/d with all products except fuel oil showing y-o-y losses. In July 2019, most of the products saw reasonable increases, with the exception of direct crude oil for burning which declined. Direct crude oil for burning weakened by around 0.05 mb/d, which translates to a drop of more than 10% y-o-y, as displacement programs in the power generation sector continued to impact crude oil demand. Jet fuel was on the rise, registering an increase of more than 0.08 mb/d y-o-y, in line with seasonal norms and ahead of the start of the Hajj season.

Graph 4 - 13: Middle East oil demand, y-o-y change



Sources: Joint Organisations Data Initiative, direct communication and OPEC Secretariat.

Graph 4 - 14: Saudi Arabia's crude direct use, y-o-y change



Sources: Joint Organisations Data Initiative, direct communication and OPEC Secretariat.

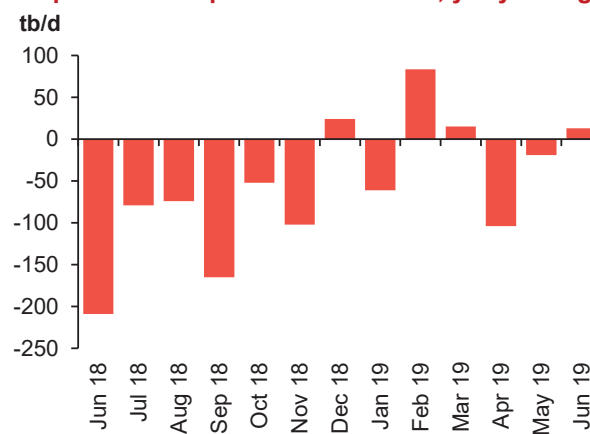
Gasoline also improved in July 2019 after four-consecutive monthly declines. The product posted around 0.03 mb/d of gains, supported by an uptick in driving during the summer holidays. Diesel fuel and fuel oil requirements showed positive momentum in July 2019 as both products increased by around 0.03 mb/d. This is in line with improved industrial activities that promote additional diesel fuel demand and the increases use of air conditioning usage during the summer season, which intensifies fuel oil consumption in the power generation sector.

Iraq

In July 2019, **Iraq's oil demand growth** fell by 0.05 mb/d y-o-y, with total product consumption now pegged at 0.69 mb/d. This is the fourth consecutive monthly decline. Demand for transportation fuels had mixed trends while gasoline and diesel fuel requirements increased y-o-y, jet/kerosene demand fell. The heavy distillates, which include fuel oil and direct crude oil for the purpose of burning, have declined the most during the month of July 2019. Looking forward, uncertainties in oil demand projections are currently tilted downward mainly as a result of economic restructuring programs and geopolitical concerns.

For 2020, Middle East oil demand growth is anticipated to gain momentum over 2019 levels, mainly as a result of assumed improvements in the economy. Saudi Arabia is expected to be the main contributor to growth, with transportation fuels – gasoline and diesel fuel –, petrochemical feedstock, construction fuels and crude oil for direct use anticipated to be the products leading oil demand growth. On the downside, geopolitical concerns may have a negative impact.

Graph 4 - 15: Iraq's crude direct use, y-o-y change



Sources: Joint Organisations Data Initiative, direct communication and OPEC Secretariat.

For 2019, **Middle East oil demand** is projected to increase slightly, while oil demand in 2020 is anticipated to rise by 0.07 mb/d.

World Oil Supply

The **non-OPEC oil supply growth forecast for 2019** was revised up by 10 tb/d from the previous monthly report, representing y-o-y growth of 1.99 mb/d. This slight change is attributed to upward revisions in oil production in Russia, Kazakhstan, Australia and Canada, which outpaced the downward revision in the US oil supply forecast. While oil production in Canada in 2Q19 rose as the government of Alberta eased its mandatory production adjustments, US crude oil output fell for a second straight month in June, on the back of strict capital discipline and lower rig counts, which led to a downward revision in this year's forecast and the next. The main drivers for growth in 2019 are the US with 1.8 mb/d, followed by Brazil, China, the UK, Australia and Canada, while Mexico and Norway are projected to see the largest declines.

The **non-OPEC oil supply growth forecast for 2020** was revised down by 136 tb/d from last month's assessment and is now projected to grow by 2.25 mb/d y-o-y. This change is mainly due to the large downward revision in the US oil supply forecast. The US, Brazil, Norway, Russia, Canada, Kazakhstan and Australia are expected to be the main growth drivers for next year, while Mexico, Indonesia, Egypt, the UK and Colombia are forecast to see the largest declines. The 2020 non-OPEC supply forecast remains subject to many factors: oil price movements; capital spending discipline, particularly in the US; infrastructure debottlenecking in North America; drilling and completion (D&C) costs and level of activities; unplanned outages; delayed start-ups; and the duration of unexpected maintenance.

OPEC NGLs production in 2019 and 2020 is expected to grow by 0.07 mb/d and 0.03 mb/d, respectively, to average 4.84 mb/d and 4.87 mb/d.

In August, **OPEC crude oil production** increased by 136 tb/d to average 29.74 mb/d, according to secondary sources. **Non-OPEC supply, including OPEC NGLs**, rose by 0.70 mb/d m-o-m, to average 69.50 mb/d, up by 1.48 mb/d y-o-y.

As a result, preliminary data indicates that **global oil supply** increased in August by 0.83 mb/d m-o-m to average 99.24 mb/d.

Table 5 - 1: Non-OPEC supply forecast comparison in 2019-2020*, mb/d

Region	2019	Change 2019/18	2020	Change 2020/19
OECD Americas	25.76	1.75	27.28	1.51
OECD Europe	3.78	-0.05	3.95	0.17
OECD Asia Pacific	0.48	0.07	0.55	0.07
Total OECD	30.02	1.76	31.77	1.75
Other Asia	3.46	-0.09	3.43	-0.03
Latin America	5.38	0.18	5.64	0.26
Middle East	3.21	0.00	3.24	0.03
Africa	1.58	0.06	1.60	0.02
Total DCs	13.62	0.15	13.91	0.28
FSU	14.26	-0.03	14.43	0.17
Other Europe	0.12	0.00	0.11	-0.01
China	4.09	0.08	4.09	0.00
Non-OPEC production	62.12	1.96	64.32	2.20
Processing gains	2.28	0.03	2.33	0.05
Non-OPEC supply	64.40	1.99	66.65	2.25

Note: * 2019-2020 = Forecast.

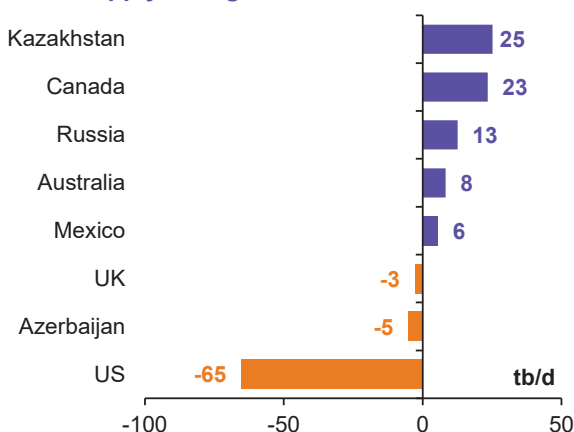
Source: OPEC Secretariat.

Monthly revisions to non-OPEC supply growth forecast

Non-OPEC supply in 2019 is forecast to grow y-o-y by 1.99 mb/d, revised up by 10 tb/d from the previous month's assessment, and is expected to average 64.40 mb/d for the year.

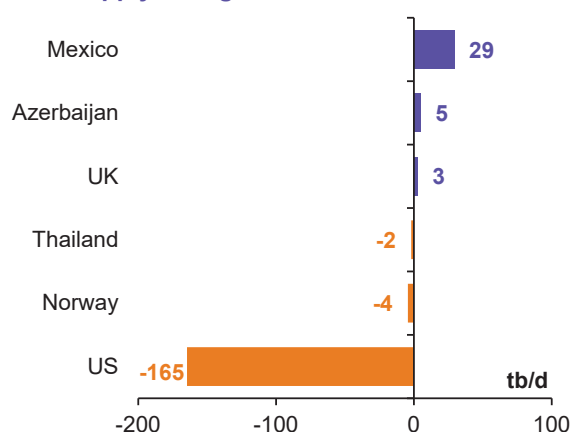
The US supply growth forecast was revised down by 65 tb/d compared to last month's assessment due to lower-than-forecast supply for 2Q19 and downward revisions in the supply forecast for 3Q19 and 4Q19. Canada's oil production was revised up by 23 tb/d on a yearly basis, as production levels in 2Q19 exceeded the supply forecast for the quarter which had been based on the mandatory production cuts by the government of Alberta. In OECD Americas, Mexico's oil supply forecast for 2019 was also revised up by a minor 6 tb/d following indications of good production performance in July. Australia's supply forecast was also revised up by 8 tb/d due to incremental production from new projects. In the FSU, higher oil output in Russia in August led to an upward revision in 3Q19 with supplies now expected to rise by 13 tb/d for 2019. In Kazakhstan, production did not contract as much as previously projected because of reduced maintenance outages (**Graph 5 - 1**).

**Graph 5 - 1: Monthly oil market report
Sep 19/Aug 19 revisions in 2019*
annual supply changes**



Note: * 2019 = Forecast.
Source: OPEC Secretariat.

**Graph 5 - 2: Monthly oil market report
Sep 19/Aug 19 revisions in 2020*
annual supply changes**

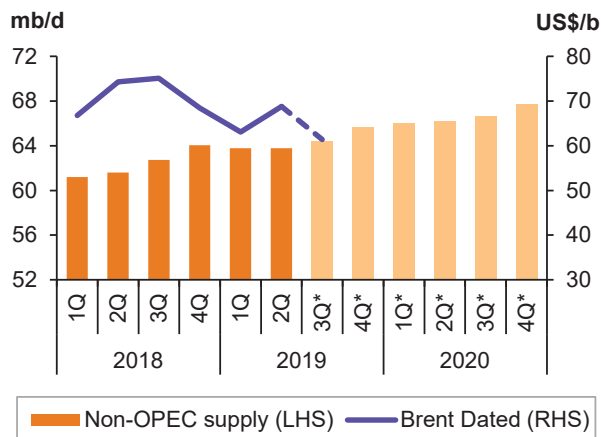


Note: * 2020 = Forecast.
Source: OPEC Secretariat.

Non-OPEC supply in 2020 is forecast to grow by 2.25 mb/d, revised down by 0.14 mb/d from the previous month's assessment, and is expected to average 66.65 mb/d for the year.

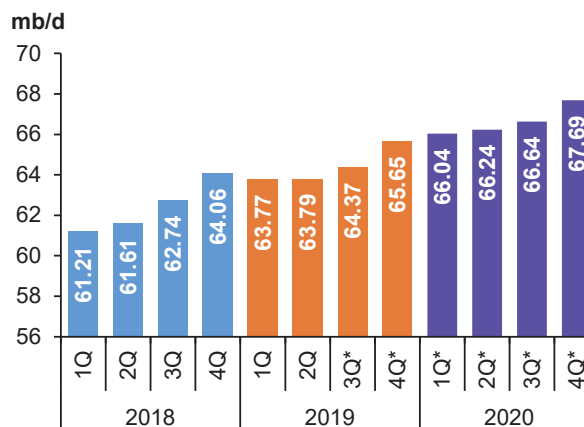
US oil supply accounts for the main downward revision for the next year. This follows the downturn in drilling and completion (D&C) activities in all regions – particularly in the Permian Basin that faced pipeline constraints and a reduction in capital spending, mainly by independent oil companies. The US supply growth forecast was revised down by 165 tb/d to 1.54 mb/d, for an average of 20.03 mb/d in 2020, with a decline projected mainly for crude oil rather than for NGLs. Part of this downward revision is offset by an upward revision of 29 tb/d made for Mexico's oil supply forecast in 2020 (**Graph 5 - 2**).

Graph 5 - 3: Non-OPEC quarterly liquids supply and Dated Brent



Note: * 3Q19-4Q20 = Forecast.
Source: OPEC Secretariat.

Graph 5 - 4: Non-OPEC quarterly oil supply



Note: * 3Q19-4Q20 = Forecast.
Source: OPEC Secretariat.

Non-OPEC oil supply in 2019 and 2020

Table 5 - 2: Non-OPEC oil supply in 2019*, mb/d

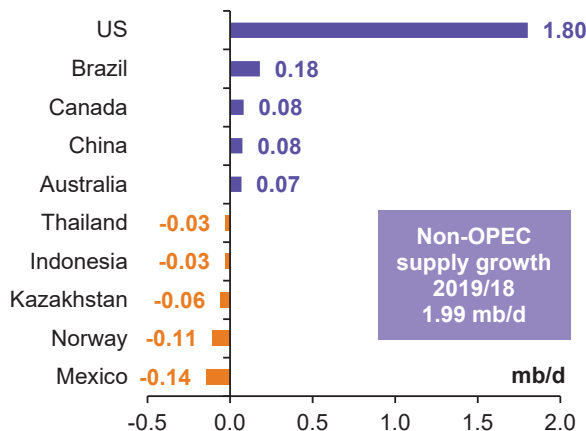
	2018	1Q19	2Q19	3Q19	4Q19	2019	Change 2019/18	
							Growth	%
Americas	24.02	25.01	25.56	25.91	26.56	25.76	1.75	7.27
of which US	16.69	17.78	18.32	18.63	19.24	18.50	1.80	10.81
Europe	3.83	3.84	3.60	3.73	3.95	3.78	-0.05	-1.38
Asia Pacific	0.41	0.43	0.48	0.49	0.51	0.48	0.07	16.75
Total OECD	28.26	29.29	29.64	30.12	31.02	30.02	1.76	6.23
Other Asia	3.55	3.51	3.45	3.45	3.43	3.46	-0.09	-2.60
Latin America	5.19	5.17	5.25	5.48	5.60	5.38	0.18	3.56
Middle East	3.21	3.21	3.22	3.20	3.20	3.21	0.00	-0.07
Africa	1.52	1.54	1.55	1.59	1.62	1.58	0.06	3.89
Total DCs	13.47	13.43	13.47	13.73	13.86	13.62	0.15	1.11
FSU	14.29	14.55	14.16	14.07	14.28	14.26	-0.03	-0.20
of which Russia	11.35	11.53	11.36	11.39	11.34	11.40	0.06	0.51
Other Europe	0.12	0.12	0.12	0.12	0.12	0.12	0.00	-1.15
China	4.02	4.10	4.13	4.05	4.10	4.09	0.08	1.90
Total "Other regions"	18.43	18.77	18.41	18.24	18.50	18.48	0.05	0.25
Total non-OPEC production	60.16	61.49	61.51	62.09	63.37	62.12	1.96	3.25
Processing gains	2.25	2.28	2.28	2.28	2.28	2.28	0.03	1.24
Total non-OPEC supply	62.41	63.77	63.79	64.37	65.65	64.40	1.99	3.18
Previous estimate	62.41	63.77	63.72	64.16	65.88	64.39	1.97	3.16
Revision	0.00	0.00	0.07	0.20	-0.23	0.01	0.01	0.02

Note: * 2019 = Forecast.

Totals may not add up due to independent rounding.

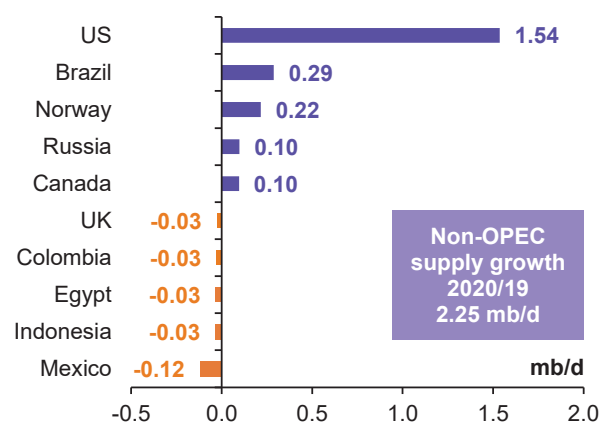
Source: OPEC Secretariat.

Graph 5 - 5: Annual supply changes for selected countries in 2019*



Note: * 2019 = Forecast.
Source: OPEC Secretariat.

Graph 5 - 6: Annual supply changes for selected countries in 2020*



Note: * 2020 = Forecast.
Source: OPEC Secretariat.

Table 5 - 3: Non-OPEC oil supply in 2020*, mb/d

	2019	1Q20	2Q20	3Q20	4Q20	2020	Change 2020/19 Growth	%
Americas	25.76	26.79	27.07	27.48	27.76	27.28	1.51	5.87
of which US	18.50	19.43	20.02	20.23	20.45	20.03	1.54	8.31
Europe	3.78	3.98	3.83	3.85	4.13	3.95	0.17	4.47
Asia Pacific	0.48	0.54	0.53	0.56	0.56	0.55	0.07	15.06
Total OECD	30.02	31.30	31.42	31.90	32.46	31.77	1.75	5.84
Other Asia	3.46	3.42	3.44	3.43	3.44	3.43	-0.03	-0.83
Latin America	5.38	5.62	5.59	5.60	5.74	5.64	0.26	4.81
Middle East	3.21	3.20	3.24	3.25	3.27	3.24	0.03	0.99
Africa	1.58	1.61	1.60	1.59	1.59	1.60	0.02	1.33
Total DCs	13.62	13.85	13.86	13.87	14.04	13.91	0.28	2.08
FSU	14.26	14.33	14.43	14.35	14.63	14.43	0.17	1.21
of which Russia	11.40	11.35	11.50	11.51	11.64	11.50	0.10	0.86
Other Europe	0.12	0.12	0.12	0.11	0.11	0.11	-0.01	-4.97
China	4.09	4.11	4.07	4.07	4.12	4.09	0.00	-0.04
Total "Other regions"	18.48	18.56	18.62	18.53	18.86	18.64	0.16	0.89
Total non-OPEC production	62.12	63.71	63.91	64.31	65.36	64.32	2.20	3.54
Processing gains	2.28	2.33	2.33	2.33	2.33	2.33	0.05	2.37
Total non-OPEC supply	64.40	66.04	66.24	66.64	67.69	66.65	2.25	3.50
Previous estimate	64.39	66.15	66.08	66.69	68.18	66.78	2.39	3.71
Revision	0.01	-0.12	0.16	-0.05	-0.49	-0.13	-0.14	-0.21

Note: * 2019-2020 = Forecast.

Totals may not add up due to independent rounding.

Source: OPEC Secretariat.

OECD

Following robust growth of 2.57 mb/d in 2018, **OECD oil supply in 2019** is forecast to grow by 1.76 mb/d to average 30.02 mb/d, representing a downward revision of 25 tb/d compared to last month's assessment.

For **2020**, yearly growth of 1.79 mb/d is anticipated for OECD oil supply, to average 31.77 mb/d, representing a downward revision of 147 tb/d in y-o-y supply growth compared with last month's assessment. OECD Americas, Europe and Asia Pacific are forecast to grow next year by 1.50 mb/d, 0.17 mb/d and 0.07 mb/d, respectively.

OECD Americas

US

US liquids output in June (excluding processing gains) was steady m-o-m to average 18.36 mb/d, up by 1.98 mb/d y-o-y, while crude oil output dropped by 33 tb/d m-o-m to average 12.08 mb/d, higher by 1.43 mb/d y-o-y. Production of NGLs in June was down by 32 tb/d m-o-m to average 4.81 mb/d, higher by 0.48 mb/d y-o-y. Preliminary data shows that the output of other non-conventional liquids, mainly ethanol, was up in June by 71 tb/d m-o-m to average 1.48 mb/d, higher by 70 tb/d compared to a year ago.

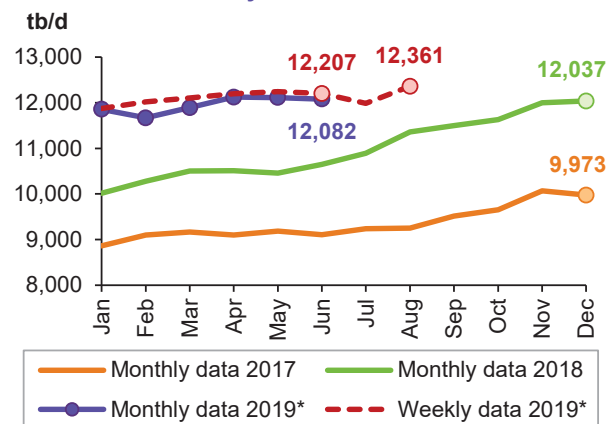
The EIA's latest US monthly production information showed a decrease of 33 tb/d for crude oil production (including lease condensate) to average 12.08 mb/d in June 2019 compared to May, contrary to the weekly data, which would have suggested a m-o-m increase of 127 tb/d. Production in the federal offshore Gulf of Mexico (GoM) was almost flat at 1.91 mb/d.

Table 5 - 4: US crude oil production by state, tb/d

State	May 19	Jun 19	Change Jun 19/May 19
Alaska	4,969	4,982	13
Colorado	1,911	1,909	-2
Oklahoma	899	885	-14
New Mexico	1,367	1,403	36
North Dakota	497	516	19
Federal Offshore - Gulf of Mexico (GoM)	605	547	-58
Texas	474	455	-19
Total US crude oil production	12,115	12,082	-33

Sources: US EIA and OPEC Secretariat.

Graph 5 - 7: US monthly crude oil production in 2017-2019 vs. weekly forecast in 2019



Note: * 2019 = Forecast.

Sources: US EIA and OPEC Secretariat.

In June, crude production in Texas increased by 13 tb/d m-o-m to average 4.98 mb/d. In contrast, oil output in neighbouring New Mexico fell by 14 tb/d to average 0.89 mb/d. Crude and condensate output in Colorado and North Dakota rose by 19 tb/d and 36 tb/d, respectively, to average 0.52 mb/d and 1.4 mb/d. The US crude and condensate production for 1H19 averaged 11.96 mb/d.

Independent oil and gas producers who are active in the US shale industry are cutting spending and pacing their drilling plans for the rest of the year, according to some reports, while peers and oil majors continue to increase production. Investors continue to ask producers to maintain operations within cash flow and boost returns. The unrelenting pressure may be yielding results. The second quarter was the first on record where shale operators achieved positive cash flow — a surplus after paying for capex, Rystad Energy says. Results show that out of 40 US shale oil firms, 35% balanced their spending with cash flows and had an accumulated surplus of \$110mn.

According to independent sources, Pioneer Natural Resources has lowered its 2019 capital expenditure (capex) guidance to \$3.05bn-\$3.25bn from \$3.1bn-\$3.4bn after completing its transition to a pure-play operator focused entirely on the Permian Basin in Texas and New Mexico. Whiting Petroleum, a key operator in North Dakota's Bakken shale, says it is reducing its workforce by 33% in response to volatile prices and natural gas infrastructure constraints. The firm will stick to its full-year capex guidance of \$800mn-\$840mn, but expects spending to fall significantly in the fourth quarter. Concho Resources similarly expects spending to fall in 2H19 as it brings fewer wells on line. It has adjusted down its full-year oil output growth target to 22%-26% for 2019. Concho's second quarter oil production was approximately 206 tb/d, a 44% increase on the year. With regard to the gas production and impact on NGLs output, large gas producers such as Chesapeake, Range Resources and Cabot Oil and Gas will pursue more measured growth. Chesapeake will halt drilling in the Haynesville shale, a gas-bearing formation in eastern Texas and northern Louisiana, and slow development of the Marcellus shale in Pennsylvania and surrounding states to keep output flat.

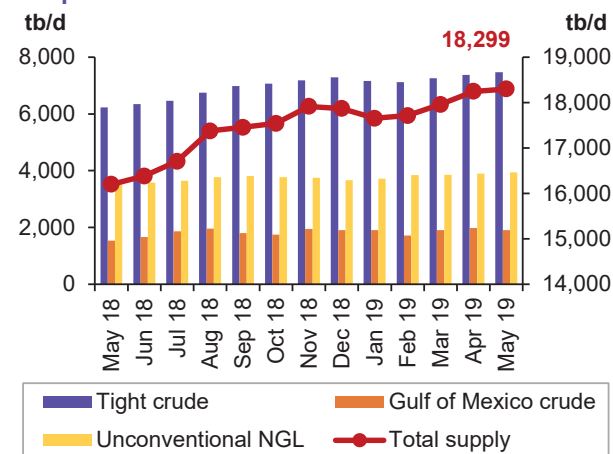
US crude oil production in 2019 is estimated to grow by 1.22 mb/d y-o-y to average 12.21 mb/d. Weak production performance in Texas, New Mexico, Oklahoma and Alaska in June, combined with lower than expected production in the first five months of the year, has necessitated a downward revision of the crude production forecast for 2019 by 0.09 mb/d to average 12.21 mb/d. The share of tight crude, out of the forecast growth of 1.22 mb/d in 2019, is projected at 1.21 mb/d, for an average of 7.71 mb/d. The GoM is projected to grow by 0.12 mb/d in 2019, averaging 1.88 mb/d and conventional crude (non-shale) output is projected to decline by 0.11 mb/d, to average 2.62 mb/d.

A further slowdown in US oil production is likely as shale producers, under pressure from their investors, continue to cut spending, in particular for exploration and production (E&P). 2H19 US crude oil production is projected to average 12.46 mb/d, higher by 0.50 mb/d versus 1H19 and compared to 11.57 mb/d a year earlier. The combination of independent shale oil and gas producers cutting spending and pacing their drilling plans for the rest of the year, and average WTI prices which fell by approximately \$8/b in 1H19 compared to the average price of \$65.13/b in 2018, will weigh on US production. US crude oil growth is forecast to grow by about 1.1 mb/d in 2020, compared to total annual growth of about 1.2 mb/d in 2019.

US crude oil production in 4Q19 is expected to soar, averaging 12.70 mb/d, following the opening of new pipelines leading from the Permian Basin to the US Gulf Coast. Crude output by the end of the year is forecast at 12.85 mb/d and US liquids production is likely to stand at 19.33 mb/d in December 2019.

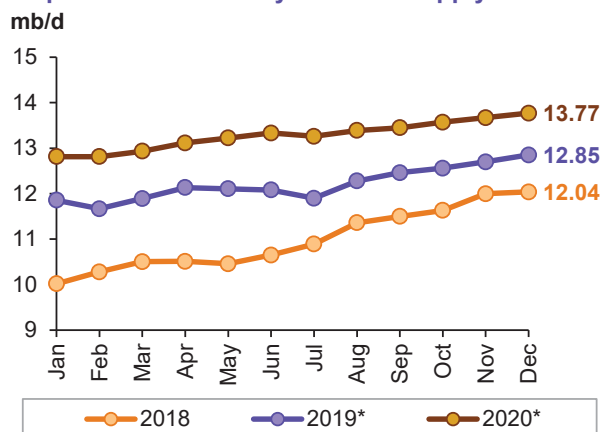
US crude oil production in 2020 is likely to grow only by 1.07 mb/d y-o-y to average 13.28 mb/d, revised down by 0.26 mb/d. Despite the opening of new pipelines from the Permian Basin, overall tight crude growth is forecast at 1.11 mb/d y-o-y for next year to average 8.82 mb/d. The anticipated surge in Permian production will be offset by the need for capital discipline in other regions, particularly those regions with a marginal break-even, which will impact D&C activities leading to a slowdown in y-o-y growth in those areas. Production in the GoM is likely to grow by 0.04 mb/d y-o-y to average 1.92 mb/d. Crude production from conventional reservoirs will decline by 0.08 mb/d y-o-y to average 2.54 mb/d.

Graph 5 - 8: US monthly liquids supply by key component



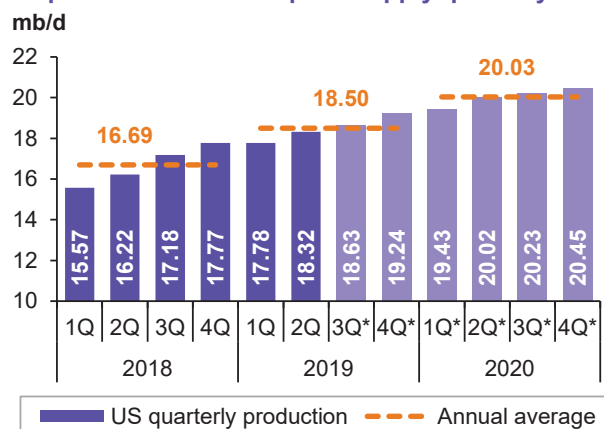
Source: US EIA and OPEC Secretariat.

Graph 5 - 9: US monthly crude oil supply



Note: * 2019-2020 = Forecast.
Source: OPEC Secretariat.

Graph 5 - 10: US total liquids supply quarterly



Note: * 3Q19-4Q20 = Forecast.
Sources: US EIA and OPEC Secretariat.

US liquids supply in 2019 is forecast to average 18.50 mb/d, representing y-o-y growth of 1.80 mb/d. This is down 0.07 mb/d from the previous month's assessment due to lower-than-expected crude output in 2Q19 and the downward revision in the supply forecast for 2H19, particularly for 4Q19.

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

	2017	2018	Change 2018/17	2019*	Change 2019/18	2020*	Change 2020/19
Tight crude	4.96	6.50	1.54	7.71	1.21	8.82	1.11
Gulf of Mexico crude	1.68	1.76	0.08	1.88	0.12	1.90	0.02
Conventional crude oil	2.71	2.73	0.02	2.62	-0.11	2.56	-0.06
Unconventional NGLs	3.02	3.58	0.56	4.11	0.53	4.54	0.43
Conventional NGLs	0.76	0.77	0.01	0.80	0.03	0.83	0.03
Biofuels + Other liquids	1.27	1.35	0.08	1.38	0.02	1.38	0.01
US total supply	14.40	16.69	2.29	18.50	1.80	20.03	1.54

Note: * 2019-2020 = Forecast.

Sources: US EIA, Rystad Energy and OPEC Secretariat.

US liquids supply in 2020 is forecast to average 20.03 mb/d, representing y-o-y growth of 1.54 mb/d. This is down 0.16 mb/d from the previous month's assessment due to downward revision in the supply forecast for the next year, mainly due to higher base declines in the US onshore crude output. It is also lesser y-o-y growth anticipated for the NGLs output at 0.46 mb/d in comparison with the current year. Biofuels and other liquids are also expected to grow in total by 0.01 mb/d to 1.38 mb/d in 2020.

Table 5 - 6: US tight oil production growth, mb/d

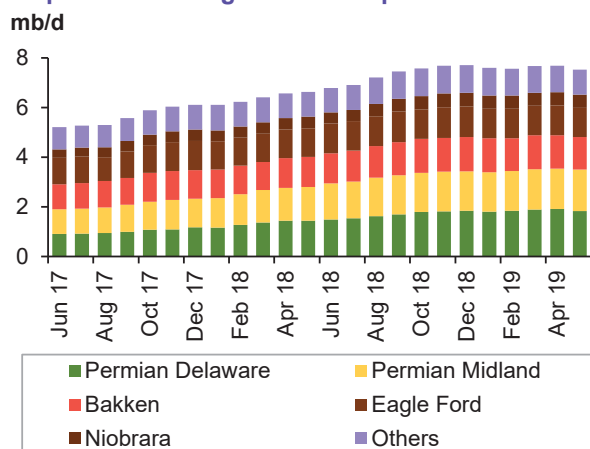
Shale play	2018	Y-o-y	2019*	Y-o-y	2020*	Y-o-y
tb/d	Production	change	Production	change	Production	change
Permian tight	2.80	0.96	3.56	0.76	4.36	0.80
Bakken shale	1.25	0.20	1.45	0.20	1.57	0.12
Eagle Ford shale	1.18	0.09	1.25	0.07	1.30	0.05
Niobrara shale	0.46	0.12	0.54	0.08	0.60	0.06
Other tight plays	0.80	0.17	0.91	0.11	0.99	0.08
Total	6.50	1.54	7.71	1.21	8.82	1.11

Note: * 2019-2020 = Forecast.

Source: OPEC Secretariat.

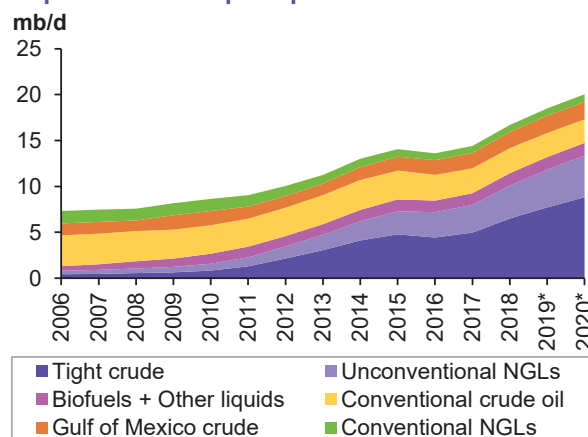
The ramp-up of throughput on two new pipelines — Cactus II and EPIC — is expected to boost crude oil production from the Permian. Roughly 2 mb/d of new pipeline capacity was expected to come online between August and the end of 2019. Reuters reported on 15 August that EPIC Midstream Holdings Inc. began shipping crude oil through its 400 tb/d EPIC interim crude line from the Permian Basin to various terminals in Corpus Christi, Texas, on the US Gulf Coast. EPIC is the second pipeline operator this year to open a major line from the Permian to the Corpus Christi area. It followed the start of initial operations on the Plains All American Pipeline LP's 670 tb/d Cactus II in early August. These two pipelines, with a combined capacity of up to 1.07 mb/d, started operations in August, easing an inland bottleneck by funnelling oil to the South Texas export hub. Permian Basin output rose to 4.35 mb/d in August from 3.91 mb/d in January, according to the US Department of Energy.

Graph 5 - 11: US tight crude output breakdown



Sources: US EIA and OPEC Secretariat.

Graph 5 - 12: US liquids production breakdown



Note: * 2019-2020 = Forecast.

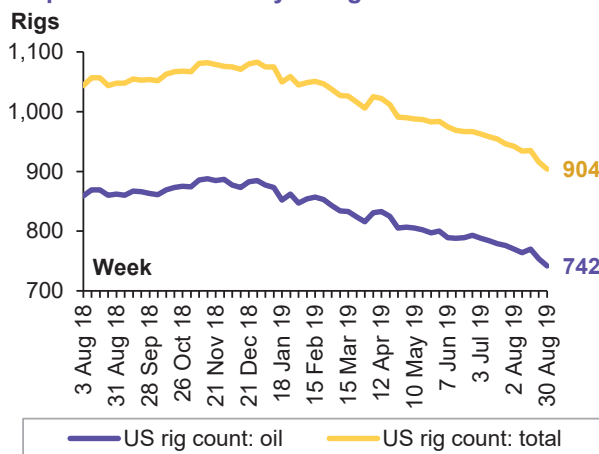
Sources: US EIA, Rystad Energy and OPEC Secretariat.

For 2020, US tight crude and unconventional NGLs are forecast to continue to dominate non-OPEC supply growth but at slower pace compared to 2019. Production in the Permian Basin will surge following infrastructure debottlenecking. However, D&C slowdowns in other regions due to capital discipline and at the same time the higher based decline in all regions will offset the sizable growth in the Permian.

US rigs, wells and drilled-but-uncompleted wells (DUCs)

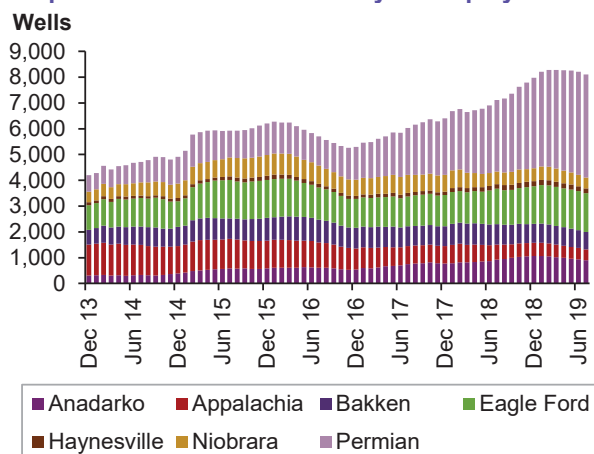
The overall **US rig count** declined by 144 units, or 13.7%, y-o-y to 904 rigs in the week ending 30 August. Out of the active 904 rigs, 876 units were onshore and 28 units were offshore. US oil rigs dropped by 120 units y-o-y to average 742 rigs.

Graph 5 - 13: US weekly oil rig count



Sources: Baker Hughes and OPEC Secretariat.

Graph 5 - 14: US DUCs count by shale play



Sources: US EIA and OPEC Secretariat.

US drillers cut 12 units of **oil rigs** in the week to 30 August, the deepest cut since a week in April, Baker Hughes reported. The total count was down to 742 rigs, from 862 active rigs in the same week a year ago. The oil rig count, an early indicator of future output, has declined over the past eight months as independent exploration and production companies cut spending on new drilling as they focus more on earnings growth instead of increased output. The oil rig count in the Permian Basin stood at 429 rigs in the week ending 30 August, down by 57 units y-o-y, and lower by 5 units w-o-w. In other major basins, the Eagle Ford oil rig count dropped by 11 units y-o-y to 67 rigs, while in Williston and DJ-Niobrara the oil rig count declined by 1 unit each to average 51 and 23 oil rigs, respectively.

With regard to **drilling and completion (D&C)** in all US regions, 1,311 wells were spudded in July, down by 31 wells m-o-m, while 1,411 wells were completed in the same month, according to the EIA's drilling productivity report (DPR).

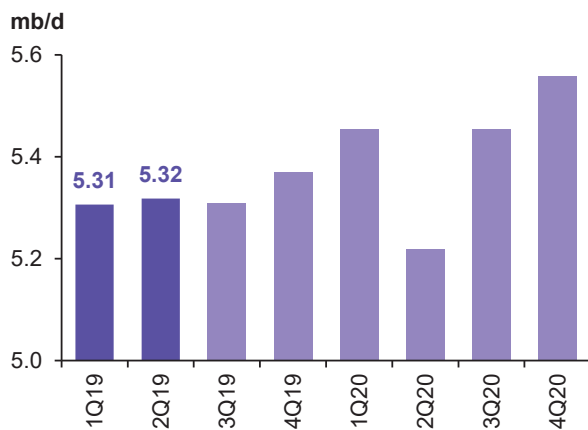
Number of **drilled but uncompleted wells (DUCs)** dropped by 100 wells m-o-m to 8,108 DUCs in July. DUCs count in Permian rose by 9 units m-o-m to 3,999 wells (**Graph 5 - 14**).

Canada

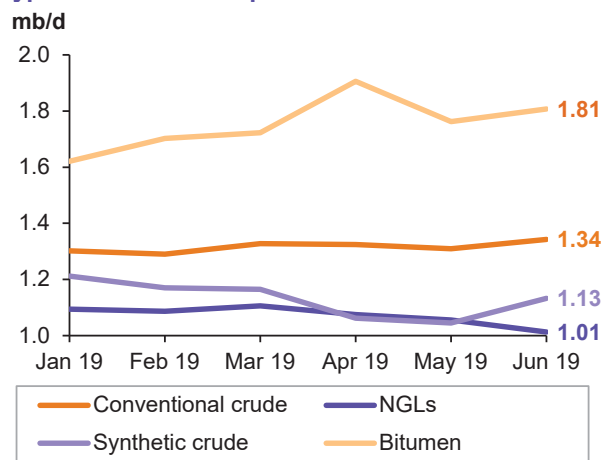
Canadian heavy crude production has faltered since January 2019 under output constraints imposed by the Alberta provincial government to reduce stockpiles that had grown because of limited export capacity. Curtailments led to Western Canada Select prices rising by 15% in 2Q19 versus 1Q19. The Alberta production cuts have decreased from the original 325 tb/d in January 2019 to 175 tb/d for August. This will fall further to 150 tb/d in September. Oil sands output increased to 3.71 mb/d in July and further increases of 25 tb/d for August and September each should bring production to 3.76 mb/d in September.

Canada's liquids supply in May 2019 dropped by 0.20 mb/d m-o-m to average 5.21 mb/d, though it was 0.16 mb/d higher than a year earlier. According to official data, non-conventional oil output decreased by 161 tb/d m-o-m to average 2.85 mb/d in May, though higher by 0.01 mb/d y-o-y. Conventional oil output fell by 15 tb/d to average 1.33 mb/d. NGLs output in May was also down by 20 tb/d to average 1.05 mb/d. Preliminary production data shows that Canadian liquids output recovered in June by 0.13 mb/d to average 5.34 mb/d.

Graph 5 - 15: Canada quarterly liquids supply



Graph 5 - 16: Canada monthly liquids output by type after mandated production cut



Mining production totalled 1.38 mb/d during 2Q19, an increase of 41 tb/d from 1Q19. Suncor was the main driver for the increase, producing 57 tb/d q-o-q of additional volume across all mining operations. The output surge in mining was primarily due to planned turnarounds and maintenance on in-situ assets, leaving mining operations to fill the gap. With regard to the upgraders, utilisation was strong in 2Q19, with Suncor reporting 86% utilisation at its base operation, down from 1Q19 due to planned maintenance, and 93% at Syncrude, which has been plagued by operational issues over the past few quarters. At CNRL's operations, there was an overall decrease in production due to unplanned maintenance at Horizon, and repairs at the Scotford upgrader following the fire in 1Q19. Although oil production in Canada in 2Q19 during upgrader maintenance

dropped by as much as seen in the same period a year earlier, the easing of the mandatory production cuts in Alberta resulted in much higher-than-expected production for the quarter.

The \$20-30/b decline in international oil prices in late 2018 was a shock to Canada's oil trade. Lack of egress capacity and a shutdown of refineries in the US forced the price paid for Western Canada Select (WCS) to fall to nearly \$15 in November. Since then, these refineries have re-opened and international oil prices have rebounded. The price of Western Canada Select has more than made up for lost ground and is now generally above levels seen in 2016-17. This suggests that the impact of the decline in oil prices may not be as sharp for Canada, according to an analysis by Scotiabank in January 2019.

Following the higher-than-expected oil output in 2Q19, compared to the forecast based on Alberta's mandatory production cut, **Canada's oil supply in 2019** was revised up by 23 tb/d to an average of 5.33 mb/d, representing growth of 0.08 mb/d, y-o-y.

For **2020**, Canadian oil production is forecast to grow by 0.1 mb/d to average 5.42 mb/d. Enbridge's Line 3 project has already been pushed to the second half of 2020, with Husky reportedly reducing spending in Western Canada until sufficient pipeline capacity becomes available.

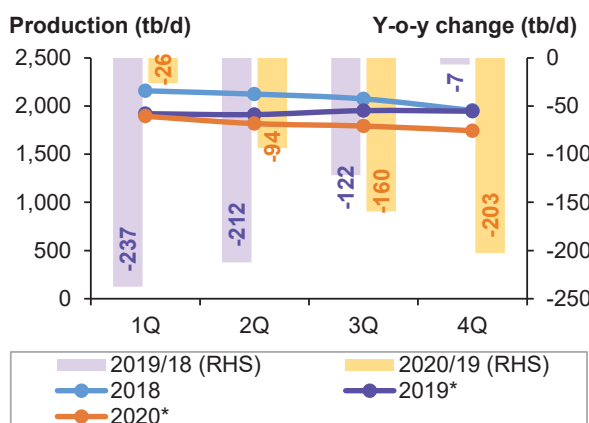
Mexico

Mexico's preliminary average liquids output in July 2019 shows a decline of 20 tb/d m-o-m to average 1.89 mb/d, representing a significant drop of 0.21 mb/d y-o-y. Crude oil production was down by 18 tb/d to average 1.65 mb/d, lower by 170 tb/d y-o-y, while NGLs output fell slightly, by 1 tb/d m-o-m, to 237 tb/d.

Since 2005, when Mexico liquids production peaked at 3.77 mb/d, the output has declined steadily to average 1.91 mb/d in 2Q19. Pemex has begun to implement its planned field development to raise output to 2.6 mb/d in 2024 through operations at 22 oil fields. The company's first target is to again reach the crude oil production level of June 2018 of 1.83 mb/d, by the end of 2019.

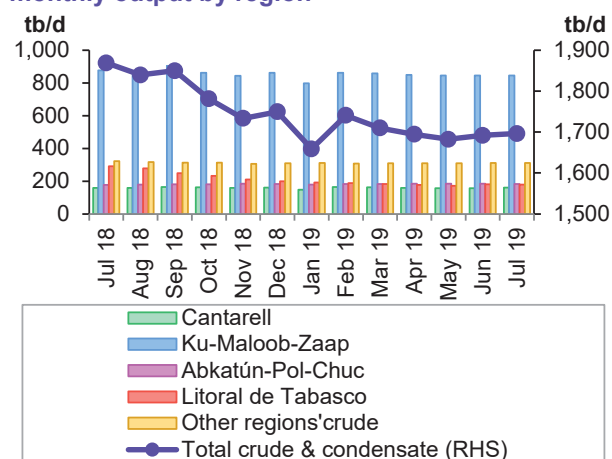
Early last month Mexican contractor Grupo R's newest jack-up rig Cantarell IV spudded the Xikín-32 well, the first offshore drilling programme approved by the new administration of PEMEX Exploration and Production. Xikín is the first of 16 offshore fields PEMEX plans to increase its oil production. Eni has produced its first oil from the Miztón field in the shallow water of Campeche Bay offshore Mexico. Eni is the first international operator to produce oil offshore Mexico following the country's energy reform.

Graph 5 - 17: Mexico's quarterly liquids supply



Note: * 2019-2020 = Forecast.
Source: OPEC Secretariat.

Graph 5 - 18: Mexico's crude and condensate monthly output by region



Sources: Pemex and OPEC Secretariat.

The oil is being transferred through a multiphase subsea pipeline to an onshore reception plant in Sanchez Magallanes and from there to Pemex's San Ramón plant for treatment. Early production started from the Miztón 2 well on the Miztón field in Area 1 in Campeche Bay in early July. This was the initial development from the concession which also contains the Amoca and Tecoalli fields: total in-place resources are estimated at 2.1 billion barrels of oil equivalent (boe) (90% oil). Eni expects the early production phase to deliver up to 15 tb/d of oil with full-field production to begin in early 2021 via an FPSO, building to a peak of

100 tboe/d. Initial production was expected from the Xikin field in August and from additional wells drilled at the mature Xanab, Ayatsil and Mallob oil fields.

Despite the start-up of production in Mexico's new oil fields in 2H19 and following upward revisions in the 3Q19 and 4Q19, liquids supply growth is now forecast to contract by 0.14 mb/d, revised up by 0.01 mb/d, while production remains unchanged to average 1.93 mb/d in 2019.

Mexico's oil supply growth forecast for 2020, despite seeing an upward revision of 0.03 mb/d following the reassessment of future supply based on possible new incremental production, is forecast to decline further by 0.12 mb/d to average 1.81 mb/d.

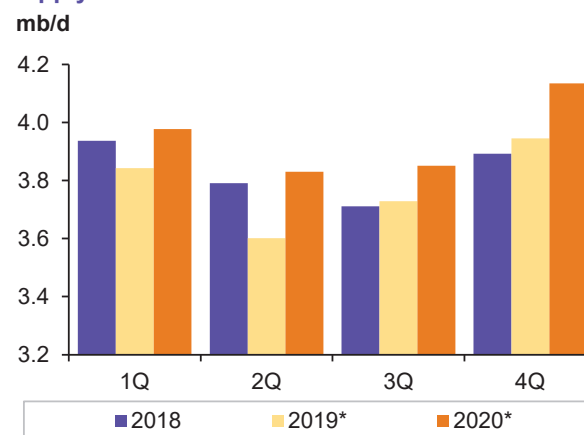
OECD Europe

OECD Europe's preliminary oil supply in July increased by 0.35 mb/d m-o-m to average 3.79 mb/d, but was down by 0.14 mb/d y-o-y. The incremental production was due to higher m-o-m oil output in Norway after fields that were closed for maintenance resumed production.

For **2019**, OECD Europe's oil supply is forecast to see a contraction of 0.05 mb/d to average 3.78 mb/d, following growth of 0.01 mb/d in 2018. The projected increase of 0.06 mb/d for the UK is expected to be offset by production declines in other countries, particularly Norway. North Sea oil production is forecast to see a gradual ramp up from 4Q19 onward, owing to the start-up of the giant Norwegian Johan Sverdrup field.

The outlook for **2020** calls for total growth of 0.17 mb/d y-o-y and average oil supply of 3.95 mb/d. While Norway's output is forecast to grow by 0.22 mb/d, production in the UK and Denmark is projected to decline by 0.03 mb/d and 0.02 mb/d, respectively.

Graph 5 - 19: OECD Europe quarterly liquids supply



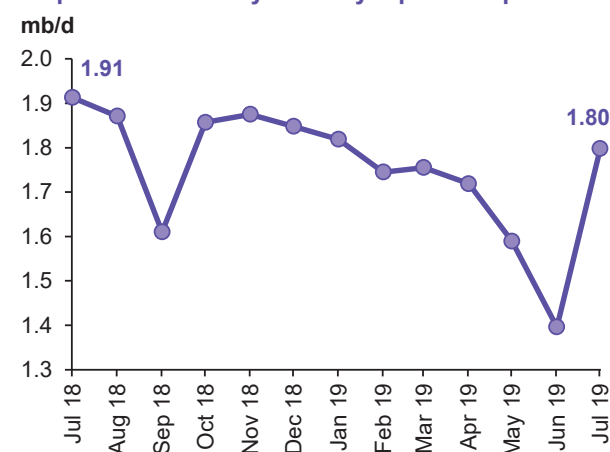
Note: * 2019-2020 = Forecast.
Source: OPEC Secretariat.

Norway

Heavy maintenance in June led to the lowest historical liquids production of 1.40 mb/d since Norway's production peaked in 2001. **Norwegian liquids supply in July** recovered by 0.40 mb/d m-o-m to average 1.80 mb/d, 40 tb/d higher than the NPD's forecast. However, this was lower by 115 tb/d, y-o-y.

Production was affected in the Ekofisk Complex in both Norway and the UK, but was heavier on the Norwegian side because of the three-year cycle of the most intrusive work. The Ekofisk reservoir consists of Cod, Ekofisk, West Ekofisk, Tor, Albuskjell, Eldfisk, Edda and Embla oil fields. The Ekofisk Centre is a vast complex of platforms and structures that also serves as a transportation hub for surrounding fields such as Valhall, Hod, Gyda, Ula, Statfjord, Heimdal, Tommeliten and Gullfaks. The whole complex consists of 29 platforms.

Graph 5 - 20: Norway monthly liquids output



Source: OPEC Secretariat.

Crude oil output in July recovered to average 1.45 mb/d, higher by 391 tb/d m-o-m, while reported NGLs and condensate output averaged 326 tb/d and 25 tb/d, respectively. Natural gas liquids increased every year between 2010 and 2017, but fell by 16 tb/d in 2018 y-o-y to 334 tb/d and are on track to lose another 11 tb/d this year.

Norway's 1H19 production forecast was disappointing due to heavy maintenance, natural declines in mature fields and lack of new production. There was just one new field start up - the Oda field on 16 March 2019. However, production in 2H19 is forecast to grow by 0.14 mb/d compared to 1H19. Aker BP's Skogul field is ready to start up, while three Equinor fields are also scheduled for start-up before year's end. Oil production from Trestakk in the Norwegian Sea,

with recoverable resources estimated at 76 mb of oil, started on 16 July after final testing process, through five tied-back wells to the Åsgard FPSO. Peak production is forecast to be about 44 tb/d of oil, and the field is expected to produce for 12 years, according to Equinor. Utgard field is possibly expected to start up in September and the giant Johan Sverdrup, is expected in October or November. Nevertheless, Norway's total liquids output is expected to contract by 0.11 mb/d to average 1.74 mb/d in 2019. The annual decline rate for liquids supply in 1H19 was 10.7% compared to the same period a year earlier.

For **2020**, Norway's liquids supply growth was revised up by 14 tb/d and is now expected to grow by 0.22 mb/d to average 1.96 mb/d, which is approximately the level of average liquids output in 2017. Johan Sverdrup will account for 50% of the new production. In addition, 20% of the new production will come from the ramp up of the Valhall and Oseberg projects and the start-up of Njord, Yme, and Martin Linge. Maintenance is scheduled for 2Q20 and again for 4Q20.

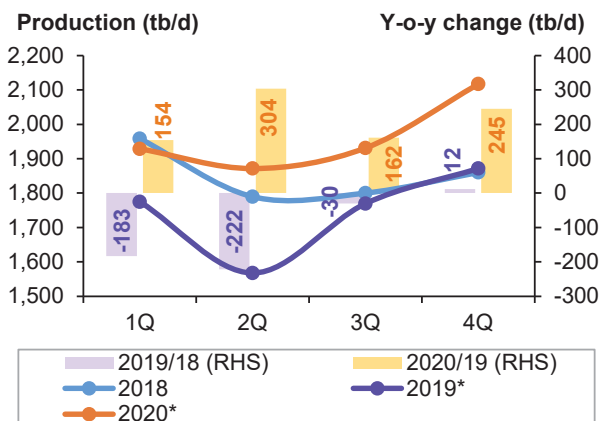
UK

UK crude oil output in July 2019 was down by 50 tb/d to average 0.97 mb/d and was lower by 24 tb/d m-o-m y-o-y. NGLs output rose slightly by 4 tb/d to average 104 tb/d. Consequently, liquids output in July fell m-o-m by 0.05 mb/d to average 1.11 mb/d and was lower by 0.04 mb/d y-o-y.

Equinor began oil production from the Mariner field in the East Shetland basin in the UK North Sea on 15 August 2019. Peak production is expected to reach 70 tb/d with total recoverable oil of 300 mb over the next 30 years. The initial capacity at peak was announced before at 55 tb/d.

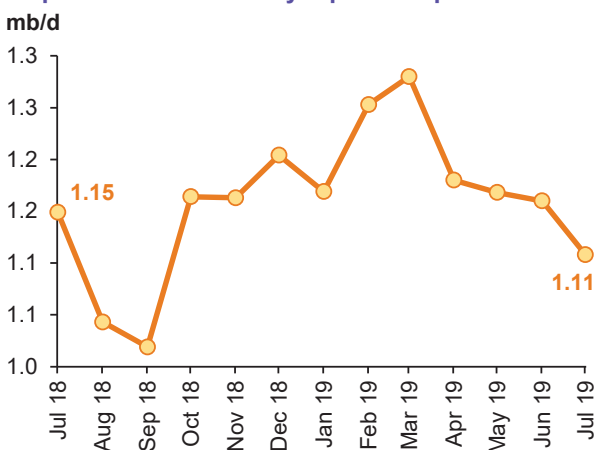
As a result of reduced Forties loading of 0.25 mb/d in August – the consequence of unplanned restrictions on the pipeline system and outages – it is expected that peak oil production will increase with a new heavy crude stream. Mariner has been one of the UK's largest industrial projects in recent years with total investments of over \$7.7 billion.

Graph 5 - 21: Norway's quarterly liquids supply



Note: * 2019-2020 = Forecast.
Source: OPEC Secretariat.

Graph 5 - 22: UK monthly liquids output

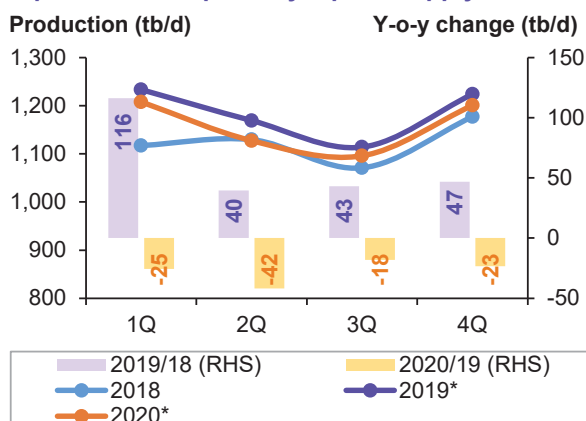


Source: OPEC Secretariat.

For **2019**, UK liquids supply growth is forecast at 0.06 mb/d, a slower pace compared to a year ago at, and remains unchanged m-o-m to average at 1.18 mb/d.

For **2020**, taking into account the growth from new projects – Mariner, Clair, Lancaster and the start-up of Liberator – and expected declines at other fields, UK oil supply is forecast to see an overall contraction of 0.03 mb/d, to average 1.16 mb/d. The main projects in decline include Buzzard, Elgin/Franklin, Golden Eagle Area, Western Isles, Greater Catcher and ETAP. These will account for more than 40% of the total UK decline in 2020. Maintenance is expected to occur in 2Q20 and 3Q20.

Graph 5 - 23: UK quarterly liquids supply



Note: * 2019-2020 = Forecast.
Source: OPEC Secretariat.

OECD Asia Pacific

Preliminary **Australian crude and condensate production** was flat at 0.36 mb/d in July, higher by 0.08 mb/d y-o-y. At the same time, NGLs output rose by 13 tb/d to 62 tb/d, and resulting total liquids production rose y-o-y by 92 tb/d to 424 tb/d, the highest since June 2014, as LNG projects ramped up.

Woodside Energy started the \$1.9-billion Greater Enfield project which produced its first oil through the Ngujima-Yin FPSO offshore Western Australia. The Greater Enfield project was approved in 2016 with plans to develop the Laverda Canyon, Norton over Laverda, and Cimatti oil accumulations through a 31-km subsea tieback to the Ngujima-Yin FPSO, located over the Vincent field, 50 km offshore Exmouth.

The project scope included a major refit of the Ngujima-Yin FPSO, which was completed at the Keppel Tuas Shipyard in Singapore. The FPSO returned to waters off the North West Cape on 5 May 2019, and production from the Vincent wells resumed on 4 July 2019.

The installation of subsea infrastructure has been completed, with all 12 development wells now also complete. Woodside is targeting annual production of about 100 mboe in 2020.

Developing Countries (DCs)

Total Developing Countries' (DCs) oil supply for 2019 is expected to grow by 0.15 mb/d y-o-y to average 13.62 mb/d, unchanged from the previous assessment. Latin America and Africa are forecast to see y-o-y growth of 0.18 mb/d and 0.06 mb/d, respectively reaching averages of 5.38 mb/d and 1.58 mb/d. While oil production in Other Asia will decline by 0.09 mb/d y-o-y to average 3.46 mb/d, mainly in Indonesia (-0.03 mb/d), Thailand (-0.03 mb/d), Vietnam (-0.02 mb/d), India (-0.02 mb/d) and Malaysia (-0.02 mb/d), while oil production in the Middle East is expected to remain unchanged y-o-y at 3.21 mb/d.

Table 5 - 7: Developing countries' liquids supply, mb/d

	1Q	2Q	3Q	4Q	Yearly	Change Y-o-y
2018	13.45	13.53	13.40	13.51	13.47	0.08
2019*	13.43	13.47	13.73	13.86	13.62	0.15
2020*	13.85	13.86	13.87	14.04	13.91	0.28

Note: * 2019-2020 = Forecast.

Source: OPEC Secretariat.

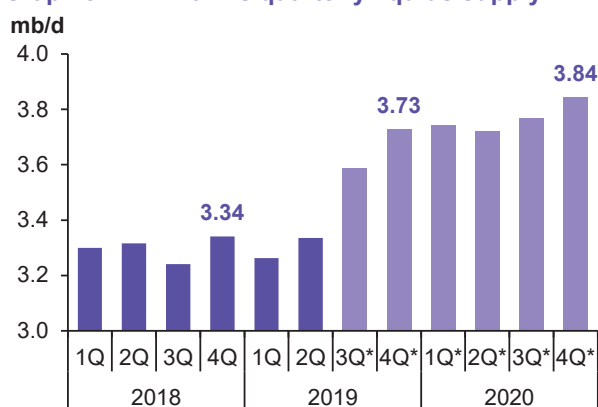
For **2020**, oil supply in DCs is expected to increase by 0.28 mb/d to average 13.91 mb/d, unchanged m-o-m, driven by higher production in Brazil.

Latin America

Brazil

Following heavy maintenance leading to a decline of 174 tb/d in June 2019m-o-m, **Brazil's crude and condensate output** rose by 218 tb/d compared to the previous month to average 2.775 mb/d in July. This not only compensated for the decline in June, but also led to higher output of 44 tb/d compared to May 2019, because of incremental production from the Búzios field in the Santos Basin. Oil output from the Santos pre-salt region led the crude growth, rising to a record high of 1.73 mb/d, up by 0.28 mb/d y-o-y, of which 0.26 mb/d was produced in Búzios. July crude production was up by 200 tb/d y-o-y.

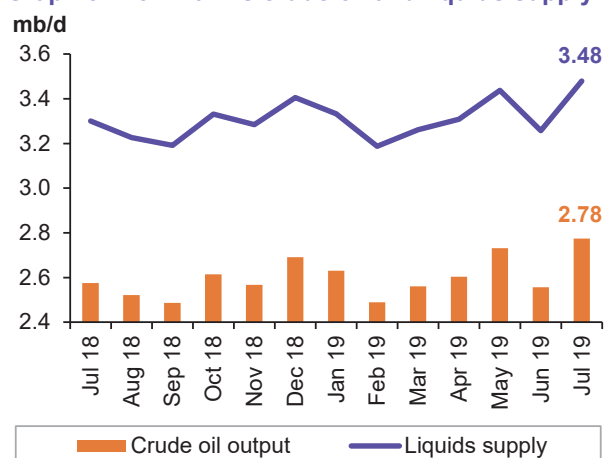
Graph 5 - 24: Brazil's quarterly liquids supply



Note: * 3Q19-4Q20 = Forecast.

Sources: National Agency of Petroleum, Natural Gas and Biofuels; and OPEC Secretariat.

Graph 5 - 25: Brazil's crude oil and liquids supply



Source: OPEC Secretariat.

Brazilian state-run oil company Petrobras posted a long-awaited production boost in July after a disappointing June, as it ramped up production in the promising offshore pre-salt region. Previously, Petrobras had reported the production of 2.76 mb/d of oil equivalent in July, up from 2.63 mb/d in 2Q19 and hitting a record of 3 mb/d of oil equivalent on 28 July. Output of NGLs in July was also up by a slight 2 tb/d to average 99 tb/d, while biofuels output was unchanged m-o-m at 603 tb/d. In terms of total liquids, oil supply in July averaged 3.48 mb/d, an increase of 0.22 mb/d m-o-m, higher by 0.18 mb/d y-o-y.

Crude oil output is projected to grow by between 0.32-0.36 mb/d in 2H19 vs 1H19. This expectation is based on approved production plateau in P-74 FPSO at full capacity and rising oil output in P-75 by 32 tb/d in July. It also assumes full planned production to materialise in the Búzios and Lula fields. Moreover, the P-68 FPSO is also expected to start production from the Berbgao/Sururu oil field by the end of this year. If all this planned production materializes, Brazil's liquids supply in **2019** is forecast to grow by 0.18 mb/d y-o-y to average 3.48 mb/d, unchanged from the previous month's assessment.

For 2020, y-o-y growth of 0.29 mb/d for an average of 3.77 mb/d is forecast, also unchanged from last month's assessment. More than 80% of the estimated additional output from new projects is expected to come from the Búzios (x-Franco), Lara and Lula. This will be partially offset by a forecast 0.12 mb/d of natural decline, more than half of which will be due to mature fields such as Parque das Baleia, Marlim Sul (South), Roncador, Mero (Libra NW) and Marlim Leste.

FSU

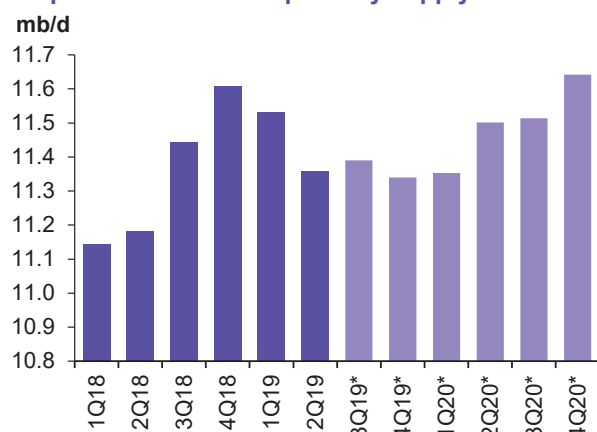
FSU oil supply in 2019 is forecast to see a contraction of 0.03 mb/d y-o-y to average 14.26 mb/d, revised up from last month's assessment. Russia's oil supply is expected to increase by 0.06 mb/d y-o-y to average 11.40 mb/d, while oil output is likely to decline in Kazakhstan, Azerbaijan and FSU others by 0.06 mb/d, 0.01 mb/d and 0.02 mb/d, respectively.

For **2020**, FSU oil supply is forecast to grow by 0.17 mb/d y-o-y and average 14.43 mb/d. Oil production in Russia is expected to rise by 0.10 mb/d to average 11.50 mb/d, assuming that production remains adjusted to 11.34 mb/d in 1Q20. The idea of opening up Russia's Arctic offshore to non-state firms – Rosneft and Gazprom – reportedly remains on the agenda, with plans for legislation defining new rules on access to remaining undistributed reserves. Oil supply in Kazakhstan is likely to grow by 0.09 mb/d, while remaining unchanged in Azerbaijan compared to 2019 and falling by 0.02 mb/d in FSU others.

Russia

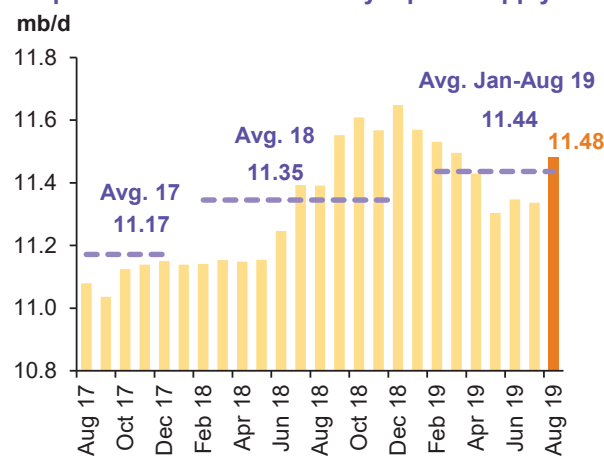
Russian liquids supply in August 2019 rose by 0.14 mb/d m-o-m to average 11.48 mb/d, up by 0.09 mb/d y-o-y. This followed debottlenecking of production restrictions due to contamination in the Druzhba pipelines. Production ramp-ups from the Rosneft-operated fields that opened last year, such as Russkoye, Srednebotuobinskoye phase-2 and Tagulskoye, as well as Lukoil's Filanovsky phase-2 and also Gazprom Neft-operated Novoportovskoye phase-2, have been the main sources of new incremental output in 2019 that could also offset parts of natural declines in mature fields. Rosneft's crude and condensate production in August rose by 1.68% y-o-y to average 3.99 mb/d. The other Russian majors saw production decline compared to a year earlier. Russia's main priority in the upstream sector is to develop new projects over the next five years to compensate for declines in mature fields.

Graph 5 - 26: Russia's quarterly supply forecast



Note: * 3Q19-4Q20 = Forecast.
Source: OPEC Secretariat.

Graph 5 - 27: Russia's monthly liquids supply



Sources: Nefta Compass and OPEC Secretariat.

The August 2019 production level has necessitated the 3Q19 to be revised up to 11.39 mb/d. Taking this into account, **Russia's oil supply in 2019** is forecast to grow by 0.06 mb/d to average 11.40 mb/d. For **2020**, growth of 0.10 mb/d is anticipated to average 11.50 mb/d.

Caspian

Kazakhstan

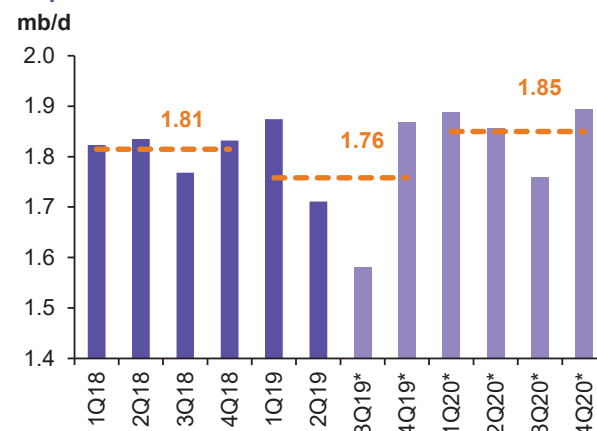
Kazakhstan's liquids output in July was down marginally by 0.01 mb/d m-o-m to average 1.89 mb/d, higher y-o-y by 0.05 mb/d. Crude oil output was flat at 1.62 mb/d, according to direct communication.

However, oil production in 2H19 is expected to be lower by 0.07 mb/d compared to 1H19 because of seasonal maintenance in August and September in the Tengiz field. Oil output from Tengiz and the Karachaganak oil fields in July was reported at 0.6 mb/d and 0.24 mb/d, respectively.

Average crude oil output from the Kashagan field produced by the North Caspian Operating Consortium (NCOC) rose by 9 tb/d m-o-m to average 354 tb/d in July, higher by 0.07 mb/d y-o-y. The NCOC plans to boost production in Kashagan through gas injection in order to ramp up production to as high as 470 tb/d.

Oil supply in Kazakhstan is expected to decline by 0.06 mb/d to average 1.76 mb/d in **2019**, revised up by 25 tb/d, while it is forecast to grow by 0.09 mb/d y-o-y to average 1.85 mb/d in **2020**, mainly as a result of the Kashagan ramp-up.

Graph 5 - 28: Kazakhstan's quarterly liquids output



Note: * 3Q19-4Q20 = Forecast.

Source: OPEC Secretariat.

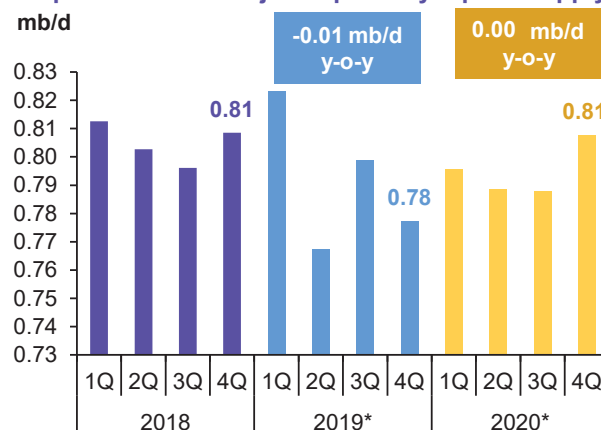
Azerbaijan

Azerbaijan's liquids output in July increased by 0.01 mb/d m-o-m to average 0.80 mb/d. Crude oil output was up by 9 tb/d m-o-m to average 696 tb/d. Oil production in 3Q19 is likely to remain at 0.80 mb/d as maintenance ended in BP's platform in 2Q19. However, maintenance is planned for another BP platform in Western Chirag in October 2019.

For **2019**, oil supply in Azerbaijan, following a downward revision by 20 tb/d in 4Q19, is expected to average 0.79 mb/d, representing a contraction of 0.01 mb/d.

For **2020**, production is forecast to remain unchanged, averaging 0.79 mb/d.

Graph 5 - 29: Azerbaijan's quarterly liquids supply



Note: * 2019-2020 = Forecast.

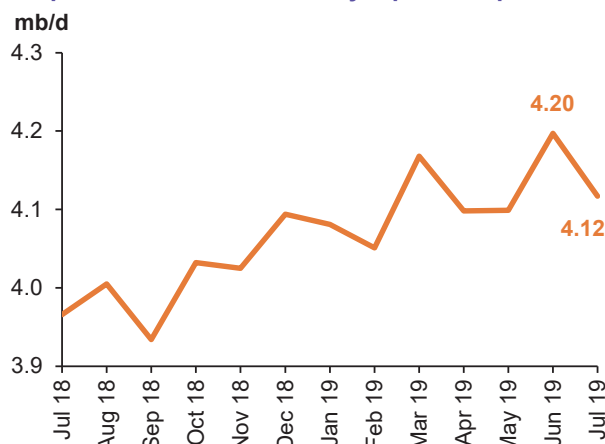
Source: OPEC Secretariat.

China

China's liquids production in July 2019, following m-o-m growth of 0.10 mb/d in June, declined by 0.08 mb/d to average 4.12 mb/d, according to official data. This was up by 0.15 mb/d y-o-y. Crude oil production in July fell by 82 tb/d m-o-m to 3.84 mb/d, which was higher by 104 tb/d y-o-y. Year-to-date average growth of 0.05 mb/d was driven by incremental production in Xinjiang province, where production has risen since the beginning of the year. Preliminary August production data indicates marginal decline of 0.05 mb/d following Typhoon Lekima. China's liquids production in **2019** is expected to grow by 0.08 mb/d to average 4.09 mb/d, unchanged from the previous month's assessment. This assessment assumes maintenance and possible flooding in 3Q19 may impact oil output by a maximum of 0.08 mb/d q-o-q, for an anticipated average of 4.05 mb/d.

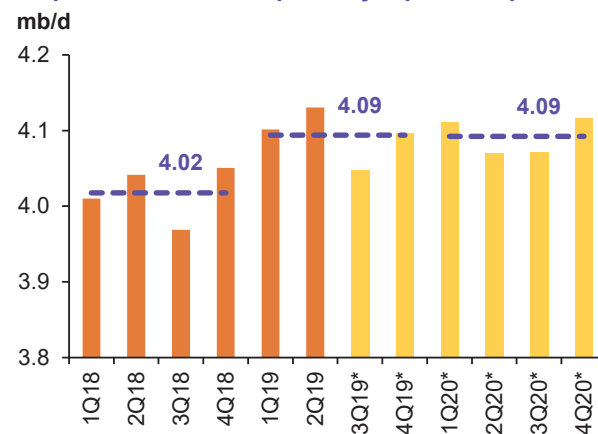
For **2020**, oil production in China is forecast to remain stagnant at 4.09 mb/d. Following the government policy of increasing domestic crude oil production capacity, CNPC and Sinopec signed a joint research framework agreement in July to facilitate collaboration in upstream exploration in the Tarim, Sichuan and Junggar Basins. However, oil production in the next years will depend on foreign investor spending in the upstream sector amid the US-China trade dispute.

Graph 5 - 30: China's monthly liquids output



Source: OPEC Secretariat.

Graph 5 - 31: China's quarterly liquids output

Note: * 3Q19-4Q20 = Forecast.
Source: OPEC Secretariat.

OPEC NGLs and non-conventional oils

OPEC NGLs and non-conventional liquids in 2019 are forecast to grow by 0.07 mb/d to average 4.84 mb/d, unchanged from last month's assessment.

Preliminary production data in August 2019 showed steady output, averaging 4.84 mb/d, compared to a month earlier, with a remarkable decrease of 0.20 mb/d y-o-y.

For 2020, the preliminary forecast indicates minor growth of 0.03 mb/d to average 4.87 mb/d.

Graph 5 - 32: OPEC NGL and non-conventional liquids output

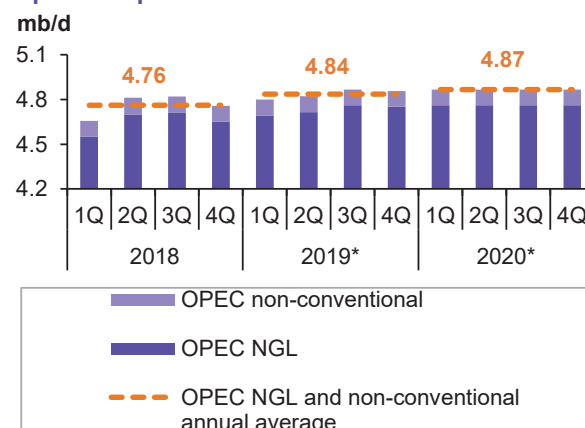
Note: * 2019-2020 = Forecast.
Sources: OPEC Secretariat.

Table 5 - 8: OPEC NGL + non-conventional oils, mb/d

	2018	2019	Change 19/18	1Q20	2Q20	3Q20	4Q20	2020	Change 20/19
Total OPEC	4.76	4.84	0.07	4.87	4.87	4.87	4.87	4.87	0.03

Note: 2019-2020 = Forecast.

Source: OPEC Secretariat.

OPEC crude oil production

According to secondary sources, total **OPEC-14 preliminary crude oil production** averaged 29.74 mb/d in August, higher by 136 tb/d m-o-m. Crude oil output increased mostly in Saudi Arabia, Nigeria, Iraq and the UAE, while it declined mainly in Venezuela, Iran, I.R., Libya, Kuwait and Algeria.

Table 5 - 9: OPEC crude oil production based on secondary sources, tb/d

	<u>2017</u>	<u>2018</u>	<u>4Q18</u>	<u>1Q19</u>	<u>2Q19</u>	<u>Jun 19</u>	<u>Jul 19</u>	<u>Aug 19</u>	<u>Aug/Jul</u>
Algeria	1,047	1,042	1,055	1,026	1,019	1,005	1,027	1,016	-11
Angola	1,634	1,505	1,496	1,443	1,420	1,403	1,395	1,394	-1
Congo	252	317	318	326	334	337	325	318	-7
Ecuador	530	519	517	526	529	527	535	537	1
Equatorial Guinea	133	125	114	115	114	115	121	120	-1
Gabon	200	187	188	209	210	221	204	206	2
Iran, I.R.	3,813	3,553	2,982	2,725	2,407	2,260	2,218	2,194	-24
Iraq	4,446	4,550	4,669	4,631	4,702	4,713	4,736	4,779	43
Kuwait	2,708	2,745	2,774	2,715	2,694	2,674	2,670	2,653	-17
Libya	811	951	1,056	965	1,154	1,118	1,078	1,056	-21
Nigeria	1,658	1,718	1,739	1,736	1,781	1,808	1,780	1,866	86
Saudi Arabia	9,954	10,311	10,749	10,019	9,769	9,829	9,687	9,805	118
UAE	2,916	2,986	3,236	3,066	3,063	3,070	3,074	3,085	11
Venezuela	1,911	1,354	1,191	975	776	785	755	712	-43
Total OPEC	32,014	31,864	32,084	30,478	29,972	29,865	29,605	29,741	136

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

Source: OPEC Secretariat.

Table 5 - 10: OPEC crude oil production based on direct communication, tb/d

	<u>2017</u>	<u>2018</u>	<u>4Q18</u>	<u>1Q19</u>	<u>2Q19</u>	<u>Jun 19</u>	<u>Jul 19</u>	<u>Aug 19</u>	<u>Aug/Jul</u>
Algeria	1,059	1,040	1,067	1,027	1,017	1,006	1,032	1,019	-13
Angola	1,632	1,473	1,434	1,421	1,424	1,418	1,259	1,328	69
Congo	263	323	326	343	340	337	338	..	..
Ecuador	531	517	516	529	531	531	541	550	9
Equatorial Guinea	129	120	112	108	114	114	111	106	-5
Gabon	210	193	206	214	225	225	224	..	..
Iran, I.R.	3,867	..	..	..	..	..	..	..	..
Iraq	4,469	4,410	4,460	4,540	4,565	4,600	4,620	4,650	30
Kuwait	2,704	2,737	2,755	2,712	2,681	2,643	2,652	2,605	-47
Libya	..	..	..	..	..	..	..	..	..
Nigeria	1,536	1,602	1,631	1,689	1,721	1,802	1,827	1,905	78
Saudi Arabia	9,959	10,317	10,790	10,053	9,752	9,782	9,580	9,789	209
UAE	2,967	3,008	3,285	3,055	3,050	3,046	3,068	3,065	-3
Venezuela	2,035	1,510	1,470	1,289	1,045	1,047	906	933	27
Total OPEC	..	..	..	..	..	..	..	..	..

Notes: .. Not available.

Totals may not add up due to independent rounding.

Source: OPEC Secretariat.

Stock Movements

Preliminary data for July showed that **total OECD commercial oil stocks** fell by 10.5 mb m-o-m to stand at 2,944 mb, which was 108 mb higher than the same time one year ago, and 36 mb above the latest five-year average. Within the components, crude stocks fell by 41.3 mb m-o-m to stand at 20 mb below the latest five-year average, while product stocks rose by 30.8 mb m-o-m to remain 55 mb above the latest five-year average. In terms of **days of forward cover**, OECD commercial stocks fell by 0.1 days m-o-m in July to stand at 60.9 days, which was 2.2 days above the same period in 2018, but 0.6 days below the latest five-year average.

Preliminary data for August showed that **US total commercial oil stocks** fell by 9.7 mb m-o-m to stand at 1,299.1 mb, which was 67.6 mb above the same period a year ago and 73.3 mb higher than the latest five-year average. Within the components, crude stocks fell by 16.0 mb, while product stocks rose by 6.2 mb m-o-m.

OECD

Preliminary data for July showed that **total OECD commercial oil stocks** fell by 10.5 mb m-o-m, reversing the build of the last three months, to stand at 2,944 mb, which is 108 mb higher than the same time one year ago and 36 mb above the latest five-year average.

Within the components, crude stocks fell by 41.3 mb, while product stocks rose by 30.8 mb m-o-m. It should be noted that the overhang of total OECD commercial oil stocks has been reduced by around 265 mb since the 'Declaration of Cooperation' began at the end of December 2016.

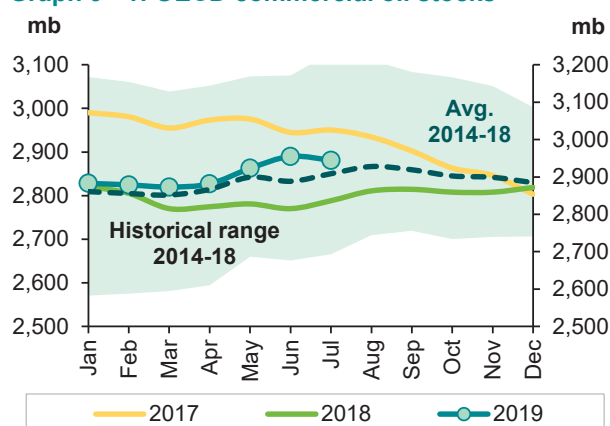
Within the regions, OECD Asia Pacific witnessed stocks builds, while OECD Americas and Europe registered stocks draws.

OECD **commercial crude stocks** fell by 41.3 mb m-o-m in July, ending the month at 1,427 mb, which is 14 mb above the same time a year ago and 20 mb below the latest five-year average. Compared with the previous month, OECD Americas and OECD Europe fell by 29.9 mb and 13.0 mb, respectively, while crude stocks in OECD Asia Pacific rose by 1.5 mb.

In contrast, OECD **total product inventories** rose by 30.8 mb m-o-m in July to stand at 1,517 mb, which is 94 mb above the same time a year ago and around 55 mb above the latest five-year average. Within the OECD regions, product stocks in OECD Americas rose by 26.9 mb, and OECD Asia Pacific and Europe stocks rose by 3.4 mb and 0.5 mb m-o-m, respectively.

In terms of **days of forward cover**, OECD commercial stocks fell by 0.1 days m-o-m in July to stand at 60.9 days, which is 2.2 days above the same period in 2018, but 0.6 days below the latest five-year average. Within the regions, OECD Americas was 0.5 days above the latest five-year average to stand at 61.0 days in July. OECD Europe's stocks were 1.4 days below the latest five-year average to finish the month at 65.8 days. OECD Asia Pacific stocks were 3.2 days below the latest five-year average to stand at 51.3 days.

Graph 9 - 1: OECD commercial oil stocks



Sources: Argus Media, Euroilstock, IEA, METI, OPEC Secretariat and US EIA.

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

	May 19	Jun 19	Jul 19	Change Jul 19/Jun 19	Jul 18
Crude oil	1,476	1,468	1,427	-41.3	1,413
Products	1,447	1,487	1,517	30.8	1,424
Total	2,923	2,955	2,944	-10.5	2,836
Days of forward cover	60.4	60.9	60.9	-0.1	58.7

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

Sources: Argus Media, Euroilstock, IEA, METI, OPEC Secretariat and US EIA.

OECD Americas

OECD Americas total commercial stocks dropped by 2.9 mb m-o-m in July to settle at 1,588 mb, which was 110 mb above a year ago, and 70 mb above the latest five-year average. Within the components, crude stocks fell by 29.9 mb, while product stocks rose by 26.9 mb m-o-m.

Commercial crude oil stocks in OECD Americas fell by 29.9 mb m-o-m in July to stand at 795 mb, which is 39.9 mb higher than the same time a year ago, and 19.6 mb above the latest five-year average. This drop could be attributed to higher refinery runs combined with lower US crude imports.

In contrast, **total product stocks** in OECD Americas rose by 26.9 mb m-o-m in July to stand at 793 mb, which is 69.7 mb above the same time one year ago and 50.1 mb above the latest five-year average. Lower consumption, combined with higher crude refinery output in the region, were behind the product stock build.

OECD Europe

OECD Europe's total commercial stocks fell by 12.5 mb m-o-m in July, ending the month at 961 mb, which is 3.5 mb less than the same time a year ago and 5.6 mb lower than the latest five-year average. Crude stocks fell by 13.0 mb, while products rose by 0.5 mb.

OECD Europe's **commercial crude stocks** fell by 13.0 mb m-o-m in July, ending the month at 413 mb, which is 22.9 mb below a year earlier and 7.7 mb lower than the latest five-year average. The drop was driven by higher refinery throughput in the region.

In contrast, OECD Europe's **commercial product stocks** rose slightly by 0.5 mb m-o-m to end July at 548 mb, which is 19.5 mb above the same time a year ago and 2.1 mb above the latest five-year average. The build came on the back of lower consumption in the region.

OECD Asia Pacific

OECD Asia Pacific's total commercial oil stocks rose by 4.9 mb m-o-m in July to stand at 396 mb, which is 1.8 mb above a year ago, but 28.9 mb below the latest five-year average. Within the components, crude and product stocks rose m-o-m by 1.2 mb and 2.3 mb, respectively.

OECD Asia Pacific's **crude inventories** rose by 1.5 mb m-o-m to end July at 219 mb, which was 2.8 mb lower than one year ago and 32 mb below the latest five-year average.

OECD Asia Pacific's **total product inventories** rose by 3.4 mb m-o-m to end July at 177 mb, which was 4.6 mb higher than the same time a year ago and 3.1 mb above the latest five-year average.

US

Preliminary data for August showed that **US total commercial oil stocks** fell by 9.7 mb m-o-m to stand at 1,299.1 mb, which was 67.6 mb, or 5.5%, above the same period a year ago, and 43.4 mb, or 3.5%, higher than the latest five-year average. Within the components, crude stocks fell by 16.0 mb, while product stocks rose by 6.2 mb m-o-m.

US **commercial crude stocks** fell in August to stand at 423.0 mb, which is 16.1 mb, or 4.0%, above the same time last year, and 0.9 mb, or 0.2%, above the latest five-year average. The drop came on the back of higher refinery throughput which rose by 490 tb/d m-o-m to average 18.2 mb/d. Inventories in Cushing, Oklahoma, also fell by more than 7.0 mb to end July at 40.1 mb.

Total product stocks in August rose by 6.2 mb m-o-m to stand at 876.1 mb, which is 51.5 mb, or 6.2%, above the level seen at the same time in 2018, and 42.5 mb, or 5.1%, above the latest five-year average. Within products, propylene and other unfinished products witnessed stock builds, while gasoline, distillates and residual fuel saw stock draws.

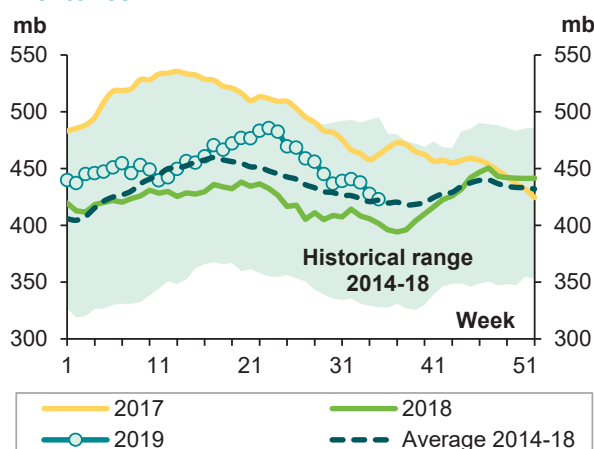
Gasoline stocks fell in August by 5.6 mb m-o-m to settle at 229.6 mb, which was 6.5 mb, or 2.8%, lower than levels seen at the same time last year, but 4.8 mb, or 2.2%, above the latest five-year average. This monthly decrease came on the back of higher demand.

Distillate stocks also fell by 3.9 mb m-o-m in August to end the month at 133.5 mb, which was 1.5 mb, or 1.1%, above the same period a year ago, albeit 10.7 mb, or 7.4%, below the latest five-year average. The stock draw could be attributed to higher apparent demand.

Residual fuel stocks decreased by 1.8 mb m-o-m to end August at 30.1 mb, which was 2.3 mb, or 8.1%, above the same time a year ago, but 5.2 mb, or 14.8%, lower than the latest five-year average.

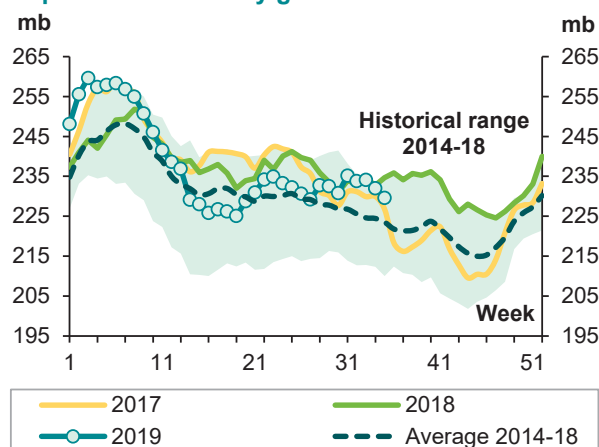
Jet fuel stocks were slightly down by 0.1 mb m-o-m to stand at 42.6 mb in August, which was 0.9 mb, or 2.0%, higher than the same time a year ago, and 1.9 mb, or 4.6%, above the latest five-year average.

Graph 9 - 2: US weekly commercial crude oil inventories



Sources: US EIA and OPEC Secretariat.

Graph 9 - 3: US weekly gasoline inventories



Sources: US EIA and OPEC Secretariat.

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

	Jun 19	Jul 19	Aug 19	Change Aug 19/Jul 19	Aug 18
Crude oil	468.5	438.9	423.0	-16.0	406.9
Gasoline	230.6	235.2	229.6	-5.6	236.1
Distillate fuel	126.8	137.5	133.5	-3.9	132.0
Residual fuel oil	28.6	31.8	30.1	-1.8	27.8
Jet fuel	39.4	42.7	42.6	-0.1	41.8
Total products	838.9	869.9	876.1	6.2	824.6
Total	1,307.4	1,308.8	1,299.1	-9.7	1,231.5
SPR	644.8	644.8	644.8	0.0	660.0

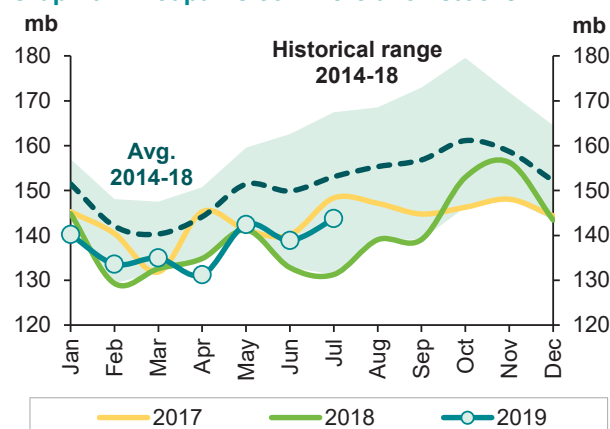
Sources: US EIA and OPEC Secretariat.

Japan

In Japan, total commercial oil stocks rose by 4.9 mb m-o-m in July to settle at 143.7 mb, reversing the previous month's draw. The level was 12.5 mb, or 9.5%, higher than one year ago, but 9.3 mb, or 6.1%, below the latest five-year average. Within the components, crude and product stocks rose m-o-m by 1.5 mb and 3.4 mb, respectively.

Japanese commercial crude oil stocks rose by 1.5 mb m-o-m in July to stand at 83.7 mb, which was 8.9 mb, or 12.0%, above the same period a year ago, but 7.9 mb, or 8.6%, below the latest five-year average. The build was driven mainly by higher crude imports, which rose by around 290 tb/d m-o-m to average 3.0 mb/d. The slight m-o-m rise in crude runs by 64 tb/d m-o-m limited further builds.

Graph 9 - 4: Japan's commercial oil stocks



Sources: Ministry of Economic, Trade and Industry of Japan and OPEC Secretariat.

Japan's total product inventories rose by 3.4 mb m-o-m to end July at 60.1 mb, which is 3.5 mb, or 6.3%, higher than the same month last year, but 1.4 mb, or 2.3%, below the latest five-year average. Within products, gasoline, naphtha and distillate stocks experienced builds, while residual fuel oil saw a stock draw.

Distillate stocks rose by 2.8 mb m-o-m for the third consecutive month to stand at 26.7 mb in July. This was 1.2 mb, or 4.6%, higher than the same time a year ago, but 0.8 mb, or 3.0%, lower than the latest five-year average. Within the distillate components, kerosene and gasoil rose by 27% and 10.2% m-o-m, respectively. The builds in all components were driven by higher output amid lower domestic sales. In contrast, jet fuel oil stocks fell by 11.2% m-o-m, driven by higher domestic sales.

Gasoline stocks rose by 0.2 mb m-o-m to stand at 9.7 mb in July, which is 0.3 mb, or 3.4%, higher than a year ago, yet 0.5 mb, or 4.9%, lower than the latest five-year average. The build was mainly driven by higher gasoline output, which increased by 8.0% from the previous month. Higher domestic sales, which increased by 10.2%, limited a further build in gasoline stocks.

By contrast, **total residual fuel oil stocks** fell by 0.2 mb m-o-m in July to stand at 12.4 mb, which was 0.2 mb, or 1.3%, above the same period a year ago, and 1.4 mb, or 10.1%, lower than the latest five-year average. Within the components, fuel oil A and fuel B.C stocks fell m-o-m by 2.0% and 1.2%, respectively. The fall in both products was driven by higher domestic sales.

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

	May 19	Jun 19	Jul 19	Change Jul 19/Jun 19	Jul 18
Crude oil	85.5	82.1	83.7	1.5	74.7
Gasoline	9.9	9.5	9.7	0.2	9.4
Naphtha	11.2	10.7	11.3	0.6	9.4
Middle distillates	22.7	23.9	26.7	2.8	25.5
Residual fuel oil	13.1	12.6	12.4	-0.2	12.2
Total products	56.9	56.7	60.1	3.4	56.5
Total**	142.4	138.9	143.7	4.9	131.3

Note: * At the end of the month.

** Includes crude oil and main products only.

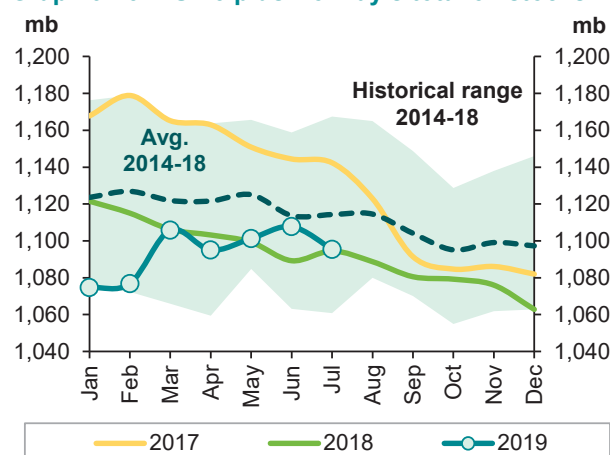
Sources: Ministry of Economy, Trade and Industry of Japan and OPEC Secretariat.

EU plus Norway

Preliminary data for July showed that **total European commercial oil stocks** fell by 12.5 mb m-o-m to stand at 1,095.3 mb, which was 0.8 mb, or 0.1%, above the same time a year ago, yet 19 mb, or 1.7%, lower than the latest five-year average. Within the components, crude stocks fell by 13.0 mb, while products stocks rose slightly by 0.5 mb.

European **crude inventories** fell in July to stand at 481.2 mb, which is 9.3 mb, or 1.9%, lower than the same period a year ago, and 7.8 mb, or 1.6%, lower than the latest five-year average. The drop was driven by higher refinery throughput in the EU-16 countries, which rose by 690 tb/d to stand at 10.37 mb/d.

Graph 9 - 5: EU-15 plus Norway's total oil stocks



Sources: Argus, Euroilstock and OPEC Secretariat.

In contrast, total European **product stocks** rose by 0.5 mb m-o-m, ending July at 614.1 mb, which is 10.1 mb, or 1.7%, higher than the same time a year ago, but 11.2 mb, or 1.8%, lower than the latest five-year average. Within products, distillate stocks witnessed builds, while gasoline, residual fuel and naphtha experienced stock draws.

Distillate stocks rose by 1.7 mb m-o-m in July for the second consecutive month to stand at 407.6 mb, which was 7.7 mb, or 1.9%, higher than the same time last year, albeit 11.7 mb, or 2.8%, below the latest five-year average.

In contrast, **gasoline stocks** fell by 0.2 mb m-o-m in July for the fifth consecutive month to stand at 112.5 mb, which was 4.7 mb, or 4.4%, higher than the same time a year ago, and 3.0 mb, or 2.7%, above the latest five-year average.

Residual fuel and naphtha stocks also dropped in July by 0.6 mb and 0.4 mb m-o-m, respectively. At 63.2 mb, residual fuel stood at 2.0 mb, or 3.1%, lower than the same time one year ago, and 8.1 mb, or 11.3%, below the latest five-year average. Naphtha stocks ended July at 30.8 mb, which was 0.3 mb, or 1.0%, lower than last year's July level but 5.6 mb, or 22%, higher than the latest five-year average.

Table 9 - 4: EU-15 plus Norway's total oil stocks, mb

	May 19	Jun 19	Jul 19	Change Jul 19/Jun 19	Jul 18
Crude oil	488.7	494.2	481.2	-13.0	490.6
Gasoline	114.8	112.7	112.5	-0.2	107.8
Naphtha	31.7	31.2	30.8	-0.4	31.1
Middle distillates	402.7	405.8	407.6	1.7	399.8
Fuel oils	63.4	63.8	63.2	-0.6	65.2
Total products	612.6	613.6	614.1	0.5	604.0
Total	1,101.3	1,107.8	1,095.3	-12.5	1,094.5

Sources: Argus, Euroilstock and OPEC Secretariat.

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

Singapore

At the end of July, **total product stocks in Singapore** fell by 4.2 mb m-o-m for the third consecutive month to stand at 39.5 mb, which is 0.8 mb, or 2.0%, below the same period a year ago. All product categories experienced drops when compared to the previous month.

Light distillate stocks fell by 1.8 mb m-o-m to end July at 10.0 mb, which was 5.2 mb, or 34.2%, below the same period a year ago. This fall may have been driven by higher exports from the hub.

Middle distillate and fuel oil stocks fell in July by 0.5 mb and 1.9 mb, m-o-m, respectively. At 10.4 mb, middle distillates stood at 0.3 mb, or 3.0%, higher than the same time one year ago. Fuel oil stocks ended July at 19.1 mb, which was 4.1 mb, or 27%, higher than last year's July level, and is the lowest inventory level recorded since October 2018.

ARA

Total product stocks in ARA rose by 1.0 mb m-o-m in July to settle at 48.6 mb, which was 5.7 mb, or 13.3%, above the same time a year ago. Within products, the picture was mixed; gasoline and gasoil experienced stock builds, while fuel oil and jet oil witnessed stock draws.

Gasoline and gasoil stocks rose by 0.4 mb and 1.2 mb m-o-m in July to stand at 10.6 mb and 22.4 mb, respectively. Gasoline stocks were 2.4 mb, or 29%, above last year's level. Gasoil stocks were 4.0 mb, or 22%, higher than last year's level.

Both **fuel oil stocks and jet oil** fell in July by 0.3 mb each m-o-m, ending the month at 7.6 mb and 6.2 mb, respectively. Fuel oil stocks were 0.3 mb, or 3.8%, lower than the same month last year, while jet oil stocks were 0.8 mb, or 14.8%, higher than the same time a year ago.

Fujairah

During the week ending 2 September 2019, **total oil product stocks in Fujairah** rose by 0.74 mb w-o-w to stand at 19.90 mb, according to data from FEDCom and S&P Global Platts. At this level, total oil stocks were 2.41 mb higher than the same time a year ago. Within products, light and middle distillates witnessed stock draws, while heavy distillates registered a stock build.

Light distillate stocks fell by 0.41 mb w-o-w to stand at 6.09 mb, which was 0.2 mb higher than a year ago at the same time. **Middle distillate** stocks fell by 0.14 mb to stand at 1.96 mb, which was 2.1 mb lower than the same time one a year ago. In contrast, **heavy distillates** rose by 1.29 mb w-o-w to stand at 11.85 mb, which was 4.3 mb higher than in the same week in 2018.

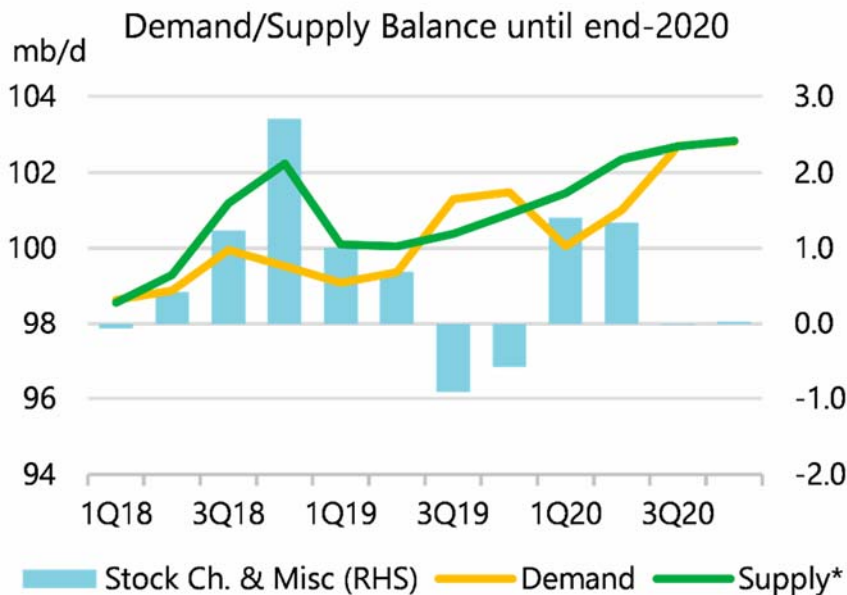
Oil Market Report: 12 September 2019

Highlights

- Our 2019 and 2020 global oil demand growth forecasts are unchanged at 1.1 mb/d and 1.3 mb/d, respectively. Growth was 0.5 mb/d in 1H19 and fell as low as 0.2 mb/d in June. For 2H19, we assume no further deterioration in the economic climate and in trade disputes. Oil demand growth will be significantly higher helped by a comparison versus a low base in 2H18, lower oil prices versus a year ago and additions to petrochemicals capacity. July data show y-o-y growth of 1.3 mb/d.
- A post-hurricane rebound in the US raised global oil supply by 530 kb/d in August to 100.7 mb/d. US expansion, plus big gains from Norway and Brazil, is set to boost non-OPEC growth from 1.9 mb/d this year to 2.3 mb/d in 2020. The non-OPEC surge will cut the need for OPEC crude to 28.3 mb/d in 1H20, 1.4 mb/d below the group's August output. Compliance with the OPEC+ agreement fell to 116% in August. In June, the US overtook Saudi Arabia to become the world's top oil exporter..
- The recent fall in global refining activity bottomed out in July, and throughput is set to return to y-o-y growth in 4Q19. Increased activity may depress refining margins from their current levels which are the highest for 2019. Preparations for the International Maritime Organisation's new fuel emission standards are likely to offer support through stronger pricing for compliant fuels. We believe that, overall, the IMO regulations will be introduced with relatively little disruption.
- OECD commercial stocks increased by 1.5 mb in July to 2 931 mb, and stood 19.7 mb above the five-year average. Stocks in terms of days of forward demand rose by 0.1 days to 60.5 days, which is 1 day below the average. Preliminary data for August show inventories falling in US and Europe, while stocks increased in Japan. Floating storage of crude oil rose by 7.9 mb in August to 66.1 mb due to an increase of numbers of tankers storing crude oil in Iran.
- ICE Brent and NYMEX WTI are currently trading at \$61/bbl and \$56/bbl, respectively, having risen from seven month lows in early August. They are both about 20% below year-ago levels. US prices were boosted as new pipelines to transport crude from the Permian Basin came online and contributed to a narrowing of the WTI-Brent differential. Middle distillate cracks have strengthened ahead of the new IMO shipping fuel regulations.

Taking a breather

The oil market focus recently has been on demand as growth weakens amidst uncertainty around the global economy, and particularly trade. In this Report, we maintain our growth estimate for 2019 at 1.1 mb/d, even though June data show that demand increased year on year by less than 0.2 mb/d. For the second half of 2019 we retain the view that with oil prices currently about 20% lower than a year ago there will be support for consumers. Early data for July suggest that global demand grew by 1.3 mb/d y-o-y.



*OPEC crude output held steady at 29.7 mb/d from August 2019.

In recent weeks, tensions in the Middle East Gulf have eased and oil industry operations appear to be normal. The major political event that has taken place is a personnel change in Saudi Arabia with the appointment as energy minister of Prince Abdulaziz bin Salman, who is a well-known and experienced figure. An early event for him is a meeting of the OPEC+ agreement monitoring committee that takes place in Abu Dhabi as we publish this Report. To date, support for the agreement rate has been high, but ahead of the meeting data for August show the compliance rate slipping to 116 per cent. In August, three major countries Russia, Nigeria and Iraq, produced 0.6 mb/d more than their allocations. Saudi Arabia, on the other hand, produced 0.6 mb/d less than allowed, and it is clearly the lynchpin of the whole deal. A reminder to the producers that competition for market share is getting tougher comes from preliminary data showing that in June the US momentarily overtook Saudi Arabia and Russia as the world's number one gross oil exporter.

Our balances for 2H19 imply a stock draw of 0.8 mb/d, based on the assumption of flat OPEC production, stronger demand growth and weaker non-OPEC supply growth. However, this is only really a breather: the 2H19 non-OPEC growth, although modest by recent standards at “only” 1.3 mb/d, is measured against the high base set by the enormous production surge seen this time last year. So far in 2019, US crude oil production growth has stalled with June output only 45 kb/d higher than in December. Even so, output is still growing strongly on an annual basis, rising this year by 1.25 mb/d, with 1 mb/d of growth to come in 2020. In Norway, long awaited projects are coming on stream earlier than expected and may ramp up to peak production ahead of schedule. Oil production in Brazil is growing fast, reaching 3 mb/d in August, 0.4 mb/d higher than just two months earlier.

While the relentless stock builds we have seen since early 2018 have halted, this is temporary. Soon, the OPEC+ producers will once again see surging non-OPEC oil production with the implied market balance returning to a significant surplus and placing pressure on prices. The challenge of market management remains a daunting one well into 2020.

Finally, in January the International Maritime Organisation’s new marine fuel regulations are being introduced. In *Oil-2019: Analysis and Forecast to 2024*, published in March, we concluded that markets will be generally prepared for the shift, assuming a certain initial level of non-compliance. In this *Report*, we have looked at the latest developments in demand and refining and we reaffirm our view of a relatively smooth start for the new rules. In line with this view, markets are not currently signalling significant increases in diesel prices, but this is an issue that will be monitored closely.

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

	4Q	3Q	2Q	1Q	4Q	3Q	2Q	1Q		
	2020	2020	2020	2020	2019	2019	2019	2019	2020	2019
	Demand									
Total Demand	102.8	102.7	101.0	100.1	101.5	101.3	99.4	99.1	101.6	100.3
Total OECD	48.8	48.9	47.5	47.6	48.5	48.5	46.9	47.5	48.2	47.9
Americas	26.1	26.3	25.7	25.2	25.9	26.0	25.4	25.3	25.9	25.7
Europe	14.4	14.7	14.2	14.0	14.3	14.8	14.0	13.9	14.3	14.2
Asia Oceania	8.3	7.8	7.5	8.4	8.3	7.7	7.5	8.3	8.0	7.9
Non-OECD countries	54.0	53.8	53.6	52.5	53.0	52.8	52.4	51.6	53.5	52.5
FSU	5.0	5.1	4.9	4.7	5.0	5.1	4.8	4.6	4.9	4.9
Europe	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
China	13.9	13.9	14.0	13.3	13.6	13.5	13.7	13.0	13.8	13.5
Other Asia	15.2	14.5	14.8	15.0	14.7	14.1	14.3	14.5	14.9	14.4
Americas	6.5	6.5	6.4	6.3	6.4	6.5	6.3	6.2	6.4	6.4
Middle East	8.1	8.7	8.3	8.0	8.1	8.6	8.2	8.1	8.3	8.3
Africa	4.4	4.3	4.4	4.4	4.3	4.2	4.3	4.3	4.4	4.3
	Supply									
Total Supply	n/a	n/a	n/a	n/a	n/a	n/a	100.1	100.1	n/a	n/a
Non-OPEC	67.5	67.4	67.1	66.2	65.7	65.1	64.4	63.9	67.0	64.8
Total OECD	30.8	30.3	30.1	29.8	29.3	28.3	28.1	27.9	30.3	28.4
Americas	26.4	26.1	25.8	25.6	25.3	24.7	24.5	24.0	26.0	24.6
Europe	3.8	3.7	3.7	3.7	3.5	3.2	3.2	3.5	3.7	3.3
Asia Oceania	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.4	0.6	0.5
Non-OECD	31.5	31.5	31.6	31.6	31.5	31.3	31.0	31.4	31.6	31.3
FSU	14.6	14.6	14.6	14.7	14.6	14.5	14.4	14.8	14.6	14.6
Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	3.9	3.9	3.9	3.9	3.9	3.9	4.0	3.9	3.9	3.9
Other Asia	3.1	3.1	3.2	3.2	3.2	3.2	3.3	3.3	3.2	3.3
Americas	5.1	5.1	5.1	5.0	5.0	4.8	4.6	4.5	5.1	4.7
Middle East	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
Africa	1.5	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.5	1.4
Processing Gains	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.4	2.3
Total OPEC	n/a	n/a	n/a	n/a	n/a	n/a	35.6	36.2	n/a	n/a
Crude	n/a	n/a	n/a	n/a	n/a	n/a	30.0	30.7	n/a	n/a
Natural gas liquids	5.6	5.6	5.6	5.6	5.5	5.5	5.6	5.6	5.6	5.6
	Inventory Changes									
Total stock change	n/a	n/a	n/a	n/a	n/a	n/a	0.7	1.0	n/a	n/a
Total OECD	n/a	n/a	n/a	n/a	n/a	n/a	0.5	0.2	n/a	n/a
Industry	n/a	n/a	n/a	n/a	n/a	n/a	0.6	0.1	n/a	n/a
Government	n/a	n/a	n/a	n/a	n/a	n/a	-0.1	0.1	n/a	n/a
Float storage/oil										
in transit	n/a	n/a	n/a	n/a	n/a	n/a	-0.5	-0.3	n/a	n/a
Misc. to balance	n/a	n/a	n/a	n/a	n/a	n/a	0.7	1.1	n/a	n/a
Call on OPEC crude and stock change *	29.7	29.7	28.4	28.3	30.3	30.6	29.4	29.6	29.0	30.0

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

Source: Bloomberg

IEA OMR OPEC Aug 2019 Production Vs Quota Cut Levels							
OPEC (thousand bpd)	Reference Production	Voluntary Adjustment	Voluntary Production Level	IEA OMR For Aug 2019	Aug Less Quota	IEA OMR For July 2019	Aug Less July
Algeria	1,057	-32	1,025	1,020	-5	1,030	-10
Angola	1,528	-47	1,481	1,350	-131	1,340	10
Congo	325	-10	315	340	25	340	0
Ecuador	524	-16	508	540	32	540	0
Equatorial Guin	127	-4	123	120	-3	120	0
Gabon	187	-6	181	220	39	220	0
Iraq	4,653	-141	4,512	4,810	298	4,780	30
Kuwait	2,809	-85	2,724	2,640	-84	2,670	-30
Nigeria	1,738	-53	1,685	1,840	155	1,800	40
Saudi Arabia	10,633	-322	10,311	9,750	-561	9,650	100
UAE	3,168	-96	3,072	3,060	-12	3,070	-10
OPEC Quota	26,749	-812	25,937	25,690	-247	25,560	130
Iran				2,190		2,230	-40
Libya				1,060		1,090	-30
Venezuela				800		810	-10
Total OPEC				29,740		29,690	50
Note: Totals may not add due to rounding			Note: Bloomberg shows rounded total 29,900				
Source: IEA Oil Market Report Sept 2019, Bloomberg							

IEA REPORT WRAP: Daunting 2020 Surplus; U.S. Top Oil Exporter

2019-09-12 08:33:55.58 GMT

By Stephen Voss

(Bloomberg) -- Summary including stories from IEA's monthly Oil Market Report that was published at 10am Paris time

Thursday:

* IEA says OPEC+ faces 'daunting' oil market surplus in 2020

** IEA made no changes to 2019, 2020 global oil demand growth estimates

** World oil demand to grow 1.1m b/d this year, 1.3m b/d next year

** Non-OPEC supply growth seen at 1.9m b/d this year, 2.3m b/d next year

** Call-on-OPEC crude in 1H20 seen 28.3m b/d, or 1.4m b/d below August output

* Click here for summary of key IEA supply/demand forecasts

* OPEC group crude production grew 50k b/d m/m in August to 29.74m b/d

** See Table

* OPEC's August crude output nudges up from 5-year low: IEA

** Saudi production +100k b/d in August; to 9.75m b/d from 9.65m b/d in July

** The next biggest monthly b/d changes were: Iran -40k, Nigeria +40k

** OPEC-11 (excluding Iran, Libya, Venezuela) rose 130k b/d to 25.69m b/d

** Which meant OPEC-11 compliance with agreed cuts deteriorated in August

** Overall OPEC+ accord compliance fell to 116% in August, from

130% in July

* U.S. briefly beat Saudi Arabia in June to become world's top oil exporter

* China's apparent oil demand increases 300k b/d in July

* India oil demand growth estimate 3rd time in 2019 by IEA

* Refining runs growth into 2020 seen buoyed partly by IMO

* IMO 2020 transition set to be smoother than expected, IEA says

* Table: IEA world oil supply and demand forecasts by quarter

* NOTE: OPEC and its non-OPEC allies agreed in early July to extend for a further 9 months their combined supply cut of ~1.2m b/d that had started in January. OPEC's portion was ~800k b/d; for more news on OPEC policy, see NI OPEC

* NOTE: OPEC published its own monthly report on Wednesday. U.S. EIA's monthly Short-Term Energy Outlook was published Tuesday

--With assistance from Amanda Jordan, Jack Wittels, Firat Kayakiran, Kristian Siedenburger, Ann Koh, Saket Sundria, Alex Longley, Rakteem Katakey and Dhvani Pandya.

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OPEC+ Faces 'Daunting' Oil Market Surplus in 2020, IEA Says

2019-09-12 08:00:00.21 GMT

By Alex Longley

(Bloomberg) -- As OPEC and its allies meet in Abu Dhabi, the IEA said it faces a significant challenge in managing the market into 2020.

Demand for the group's crude in the first half of 2020 will be 1.4 million barrels a day below its August output as production surges from their competitors, including the U.S. Though an increase in stockpiles has taken a pause for now, growth in other countries, including Brazil and Norway means that 2020 could see a significant increase in oil stockpiles and pressure on prices. As an illustration of the challenge OPEC is facing, the U.S. briefly overtook Saudi Arabia as the world's largest oil exporter in June.

A committee of OPEC+ members is meeting in Abu Dhabi on Thursday to discuss compliance with output cuts that are due to expire in March. Though Russia said earlier this week that deeper cuts are currently off the agenda, the International Energy Agency's balances suggest the group's current production levels won't be enough to prevent a return to inventory builds next year.

"The challenge of market management remains a daunting one well into 2020," the agency said in its monthly report. "Soon, the OPEC+ producers will once again see surging non-OPEC oil production with the implied market balance returning to a significant surplus and placing pressure on prices."

Supply from outside the Organization of Petroleum Exporting Countries will grow by 1.3 million barrels a day in the second half of the year, after an “enormous production surge” over the same period last year. That will be followed by a 2.3 million barrel a day increase in 2020.

“While the relentless stock builds we have seen since early 2018 have halted, this is temporary,” the IEA said.

Much of the growth continues to come from the expansion of U.S. output, but there are several projects elsewhere also boosting the figure. Norway’s giant Johan Sverdrup field will come online before the end of the year and produce 440,000 barrels a day by the middle of 2020, while seven new production units have started in Brazil since the end of last year, the IEA said.

The agency retained its oil demand growth forecast of 1.1 million barrels a day this year as the market continues to be whipsawed by the trade war between the U.S. and China. Consumption increased by just 200,000 barrels a day in June, meaning world oil demand growth averaged 450,000 barrels a day in the first half.

Those figures should rebound to 2 million barrels a day in the fourth quarter, driven in part by lower prices. For that to happen though, there needs to be no further deterioration in the economic climate or trade disputes, the agency said.

As demand has wavered, competition for market share both within and outside of OPEC has heated up. While Saudi Arabia has slashed production well below its quota under the output-cut agreement, not all producers have been as compliant. Russia, Iraq and Nigeria pumped 600,000 barrels a day more than their allocations.

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Christopher Sell, Rakteem Katakey

IEA World Oil Supply/Demand Key Forecasts

2019-09-12 08:00:00.6 GMT

By Kristian Siedenburg

(Bloomberg) -- World oil demand 2020 fcast was revised to 101.6m b/d from 101.7m b/d in Paris-based Intl Energy Agency’s latest monthly report.

* 2019 world demand was revised to 100.3 from 100.4m b/d

* Demand growth in 2020 est. 1.3% y/y or 1.3m b/d

* Non-OPEC supply 2020 was unrevised at 67m b/d

* Call on OPEC crude 2020 was revised to 29m b/d from 29.1m b/d

* Call on OPEC crude 2019 was unrevised at 30m b/d
** OPEC crude production in Aug. rose by 50k b/d on the month to 29.74m b/d
* Detailed table: FIFW NSN PXPHLSDWX2PU <GO>
* NOTE: Fcasts based off IEA's table providing one decimal point

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

2019-09-12 08:00:00.3 GMT

By Kristian Siedenburg

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

*T

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| Aug. | July | Aug.

=====

| 2019 | 2019 | MoM

Total OPEC | 29.74 | 29.69 | 0.05

Total OPEC11 | 25.69 | 25.56 | 0.13

Algeria | 1.02 | 1.03 | -0.01

Angola | 1.35 | 1.34 | 0.01

Ecuador | 0.54 | 0.54 | 0.00

Congo | 0.34 | 0.34 | 0.00

Equatorial Guinea | 0.12 | 0.12 | 0.00

Gabon | 0.22 | 0.22 | 0.00

Iraq | 4.81 | 4.78 | 0.03

Kuwait | 2.64 | 2.67 | -0.03

Nigeria | 1.84 | 1.80 | 0.04

Saudi Arabia | 9.75 | 9.65 | 0.10

UAE | 3.06 | 3.07 | -0.01

Iran | 2.19 | 2.23 | -0.04

Libya | 1.06 | 1.09 | -0.03

Venezuela | 0.80 | 0.81 | -0.01

*T

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

OPEC11 excludes Iran, Libya and Venezuela.

SOURCE: International Energy Agency

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OPEC's August Oil Output Nudges Up From Five-Year Low, IEA Says

2019-09-12 08:00:00.7 GMT

By Amanda Jordan

(Bloomberg) -- OPEC pumped 29.74m b/d of crude in August, up 50k b/d from July, as Saudi Arabia, Iraq and Nigeria boosted output, the IEA says in its monthly report.

* Nonetheless, OPEC supply was down 2.4m b/d from a year earlier

* Saudi Arabia accounted for the largest m/m production

increase, with supply rising 100k b/d to 9.75m b/d

** That's still 560k b/d below its OPEC+ target

* Supply from U.A.E. slipped 10k b/d to 3.06m b/d; production in Kuwait fell 30k b/d to 2.64m b/d, an 8-year low

* Iraqi output rose 30k b/d to a record 4.81m b/d as volumes from southern oil fields expanded

* Production in Iran fell 40k b/d to 2.19m b/d, around a 30-year low

* Nigerian output rose 40k b/d to 1.84m b/d, the highest since 2015

* Libyan supply slid 30k b/d to 1.06m b/d on an outage at the El Sharara field

* Production in Algeria slipped to 1.02m b/d; Angolan output edged up to 1.35m b/d

* Supply in Venezuela continued to dwindle, shrinking 10k b/d to 800k b/d

* NOTE: OPEC+ ministers are in Abu Dhabi for Thursday's meeting of the Joint Ministerial Monitoring Committee. Deeper output cuts aren't on the agenda, but there's mounting concern about the strength of fuel demand amid slowing economic growth

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China's Apparent Oil Demand Increases 300K B/d in July: IEA

2019-09-12 08:01:00.797 GMT

By Ann Koh and Saket Sundria

(Bloomberg) -- China's apparent oil demand increased 300k b/d in July from a year earlier, led by gains in middle distillates and LPGs, according to a monthly report released Thursday by the IEA.

* Avg oil consumption is forecast to increase by 493k b/d in 2019

** Jet fuel and kerosene consumption +6.7% y/y, biggest growth among oil products

** Gasoline and LPGs including ethane are each forecast to grow +4.9% y/y
** Residual fuel oil demand seen falling 9.6% y/y
* Oil demand in developed Asian countries is expected to fall 110k b/d in 2019; demand expected to grow by 65k b/d in 2020
** Demand fell a further 120k b/d in July after declining in May and June
** Warmer than usual weather and slowing economic activity resulted in 285k b/d decline in demand in 1H19
** Gasoline consumption has declined while naphtha demand returned to growth following the end of cracker maintenance

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IEA Cuts India Oil Demand Growth Estimate for Third Time in 2019

2019-09-12 08:04:40.961 GMT

By Dhvani Pandya

(Bloomberg) -- The International Energy Agency cut its 2019 estimate for Indian oil demand growth to 180k b/d, in monthly report released Thursday.

* IEA cut its 2019 projection to 210k b/d in June and was predicting 240k b/d of oil-demand growth in April; demand growth was 200k b/d in 2017 and 2018

* Agency forecasts Indian oil consumption to increase by 225k b/d in second half of 2019, after growing at 135k b/d in the first half

* Vehicle sales fell 41% y/y in August, the 10th straight monthly drop

* Diesel demand growth was 50k b/d in 1H 2019, down from 105k b/d in 1H 2018; gasoline consumption rose by 60k b/d y/y in 1H 2019, the same as 1H 2018

* READ: India August Oil Products Consumption Lowest Since November

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IEA Sees Growth in Refining Runs Into 2020 Buoyed Partly by IMO

2019-09-12 08:00:00.28 GMT

By Bill Lehane and Firat Kayakiran

(Bloomberg) -- Global refining runs are set to increase y/y in the fourth quarter, partly supported by IMO rules that will tighten shipping fuel specs from the start of next year, the IEA says in monthly report.

* Runs will rise by 1.4m b/d y/y in 4Q to 83.7m b/d

** Growth in throughput will be robust next year, accelerating to 1.4m b/d in 2020 from 300k this year

* In non-OECD nations, 4Q runs are forecast to drop 335k b/d due to increased maintenance

** Non-OECD runs are forecast to rise by just under 300k b/d this year, which would mark the weakest rate in IEA records dating back to 2004

* On margins, IEA says sour crude refining margins in Europe declined in August on stronger Urals differentials and sharp drops in high-sulfur fuel oil cracks, which fell to lowest since March 2018

* In U.S. Midwest refining margins declined by \$6-\$8/bbl m/m as runs reached record monthly rates

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IMO 2020 Transition Set to Be Smoother than Expected, IEA Says

2019-09-12 08:01:41.864 GMT

By Jack Wittels

(Bloomberg) -- The start of IMO 2020 implementation is likely to be smoother than previously expected, according to the IEA's monthly Oil Market Report.

* Overall bunker fuel demand growth expected to be "sluggish" in 2020

** Demand to rise by 3.7% in 2020 vs 0.4% in 2019, but this is mainly due to the lower density of marine gasoil relative to fuel oil, meaning more fuel is needed to produce the same amount of energy

** 2.5k scrubbers to be installed by the end of this year, consuming 510k b/d of HSFO; almost 4k by end 2020, consuming total 820k b/d HSFO

* Higher refinery capacity but lower runs -- because of falling oil demand growth -- mean the average complexity of plants that

will be operating will be higher

**** NOTE:** More complex refineries are better at upgrading crude oil into more valuable products like middle distillates

* Healthy U.S. light tight oil production forecast suggests more low-sulfur crude; most shale grades can yield IMO 2020 compliant fuel oil without additional processing

* Oil products stock build of 2m b/d implied for 1Q 2020, potentially allowing market to meet incremental bunker demand and also store fuel or components

* Still, supply of marine fuels seen stretched in 2Q as demand ramps up while runs seasonally decline

* Possibility of supply crunch shifts to April 1, 2020

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Cooperation and commitment more essential than ever- JMMC

No 9/2019

Abu Dhabi, UAE

12 Sep 2019

Following its 16th Meeting, which took place on 12 September 2019, in Abu Dhabi, the United Arab Emirates, the Joint Ministerial Monitoring Committee (JMMC) has underscored the critical need for continued commitment to the 'Declaration of Cooperation' (DoC) in support of oil market stability on a sustainable basis.

Conformity with the voluntary production adjustments remains high, 136% in the month of August. However, the JMMC reemphasized the core principles underpinning the DoC, namely, equity, fairness and transparency, and urged all participating countries to intensify their efforts in pursuit of full and timely conformity with their voluntary production adjustments.

All participating countries present, particularly those who are yet to reach full conformity with their adjustments, were unequivocal in providing steadfast assurances of their determination to achieve at least 100% conformity for the remainder of the year. Those countries who have over-conformed also reiterated their voluntary contribution. Resultantly, overall conformity will be brought to record levels.

The JMMC observed the recent decline in OECD commercial stock levels, particularly in the US, although they remain above the five-year average. It was also noted that all major benchmarks are now in backwardation.

Furthermore, the Committee analyzed the range of critical uncertainties facing the global economy in 2019 and 2020, including trade-related tensions, monetary policies and other macroeconomic factors.

The JMMC urged continued vigilance in monitoring oil market conditions ahead of the Ministerial Meetings in early December.

Despite this challenging backdrop, the DoC partnership continues to serve as a beacon of dependability and consistency in the global oil market, thereby providing reassurances for producers, consumers and global economy.

In light of these macroeconomic uncertainties, the JMMC agreed that enhanced cooperation and dialogue are more important than ever. For this reason, it underscored its commitment to the historic 'Charter of Cooperation,' which was signed at the 6th OPEC and non-OPEC Ministerial Meeting on 2 July 2019. This unique initiative offers a platform to facilitate dialogue among the participating countries, aimed at promoting oil market stability, cooperation in technology and other areas, for the benefit of oil producers, consumers, investors and the global economy.

The JMMC expressed its appreciation for the excellent logistical arrangements and thanked His Excellency, Suhail Mohamed Al Mazrouei, Minister of Energy and Industry of the UAE, for again hosting the JMMC, as well as commending all officials and representatives from the UAE who were involved in organizational matters.

The next meeting of the JMMC is scheduled to take place on 4 December 2019 at the OPEC Secretariat in Vienna, Austria.

https://www.spglobal.com/platts/en/market-insights/latest-news/oil/091319-analysis-iran-builds-50-mil-barrel-oil-armada-as-exports-plunge?utm_source=hootsuite&utm_medium=twitter&utm_term=plattsoil&utm_content=f7703334-4fa7-4152-bed3-c69b0705dd7b&utm_campaign=hootsuitepost

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Analysis: Iran builds 50 mil barrel oil armada as exports plunge

- Author **Eklavya Gupte**
- Editor **James Burgess**

Almost 50 mil barrels of oil on water

Aug oil shipments fall below 500,000 b/d

Efforts grow to ease US-Iran tensions

London — Iran's armada of tankers holding unsold oil has grown, with volumes climbing to three-year highs as US sanctions and a lack of buyers continue to squeeze the OPEC member's crude sales and exports.

Iran's oil tankers are now holding almost 50 million barrels of oil at sea, the highest since early January 2016, just before US then-President Barack Obama's administration and its Western allies agreed a nuclear pact with Iran and lifted key oil sanctions.

This compares with around 40 million barrels of floating storage in July and up from around 15-20 million in May, according to Platts estimates.

These volumes are being closely watched in the oil market as efforts to get US President Donald Trump to meet his Iranian counterpart, Hassan Rouhani, grow, with a potential softening towards oil sanctions.

Iran resorted to floating storage for its crude under the previous Western sanctions on its oil which ran from 2011 to 2016. In early 2016, Iran accumulated almost 55 million-60 million barrels of crude and condensates, according Platts and independent estimates.

US-Iran tensions

Trump has said he might be willing to **meet with Rouhani**, though Rouhani insists any meeting would require the lifting of US sanctions as a precondition.

Iran has asked French President Emmanuel Macron to convince Washington to issue new waivers, or arrange a credit line backed by Iran's oil sale revenues.

A relaxing of sanctions would mean a prompt unloading of these floating barrels at a time when the market could face a substantial oil glut amid slowing oil demand growth.

RBC Capital Markets Global Head of Commodity Strategy Helima Croft said the **sudden firing** of US National Security Advisor John Bolton could be a catalyst for a material de-escalation in tensions with Iran that could bring back around 700,000 b/d of Iranian oil, possibly by Q1 2020.

S&P Global Platts Analytics, however, does not expect that any breakthrough in US-Iranian tensions that would lead to significant supply increases in the very near term.

"We are comfortable with our forecast for crude and condensate exports to be capped at 400,000-450,000 b/d through the second half of 2019, and below 400,000 b/d in 2019," Platts Analytics, Chief Geopolitical Advisor Paul Sheldon said.

Bulging storage

A bulk of the oil in floating storage is condensates, rather than crude, shipping and trading sources say. The majority of these volumes lie off Iran's main oil terminals -- Kharg Island, Assaluyeh and Soroosh.

Iran's tankers are also storing oil off the coast of the UAE, near the bunkering hub of Fujairah. Sources also said a handful of Iranian VLCCs in Southeast Asia are also storing oil, with some occasionally carrying out ship-to-ship transfers onto smaller tankers.

All these tankers are owned by the state-run National Iranian Tanker Company and its subsidiaries. NITC operates the world's second-largest fleet of VLCCs. Representatives at NITC and Iran's oil ministry were unavailable for comment.

Inland Iranian storage is also growing sharply, according to sources, after Washington let limited sanctions waivers expire early May.

Data from geospatial analytics startup Ursa showed that Kharg Island's crude inventories increased by 73% between late April and mid-June.

"There was not a lot of spare room left to place additional barrels, so inventories since have not built further, but nonetheless the levels remain quite high," Ursa energy analyst Geoffrey Craig said.

Exports slide further

Iranian oil shipments in August continued to languish at just over a fifth of the level a year before.

Iranian crude oil and condensate exports, which averaged about 1.98 million b/d in August, have fallen by just over 1.5 million b/d in the past year.

Shipments of Iranian oil fell to 424,452 b/d in August from 509,226 b/d in July and 549,730 b/d in June, data from shipping sources and provisional tanker tracking showed. The bulk of this oil continues to flow to China and Syria.

Tehran's vast shipping networks are also feeling the pinch of the crippling sanctions.

Last week, the US sanctioned an Iranian oil shipping group, including 11 oil tankers and former Iranian oil minister Rostam Ghasemi, for a scheme that is moving oil to Syria and other countries.

-- Eklavya Gupte, eklavya.gupte@spglobal.com

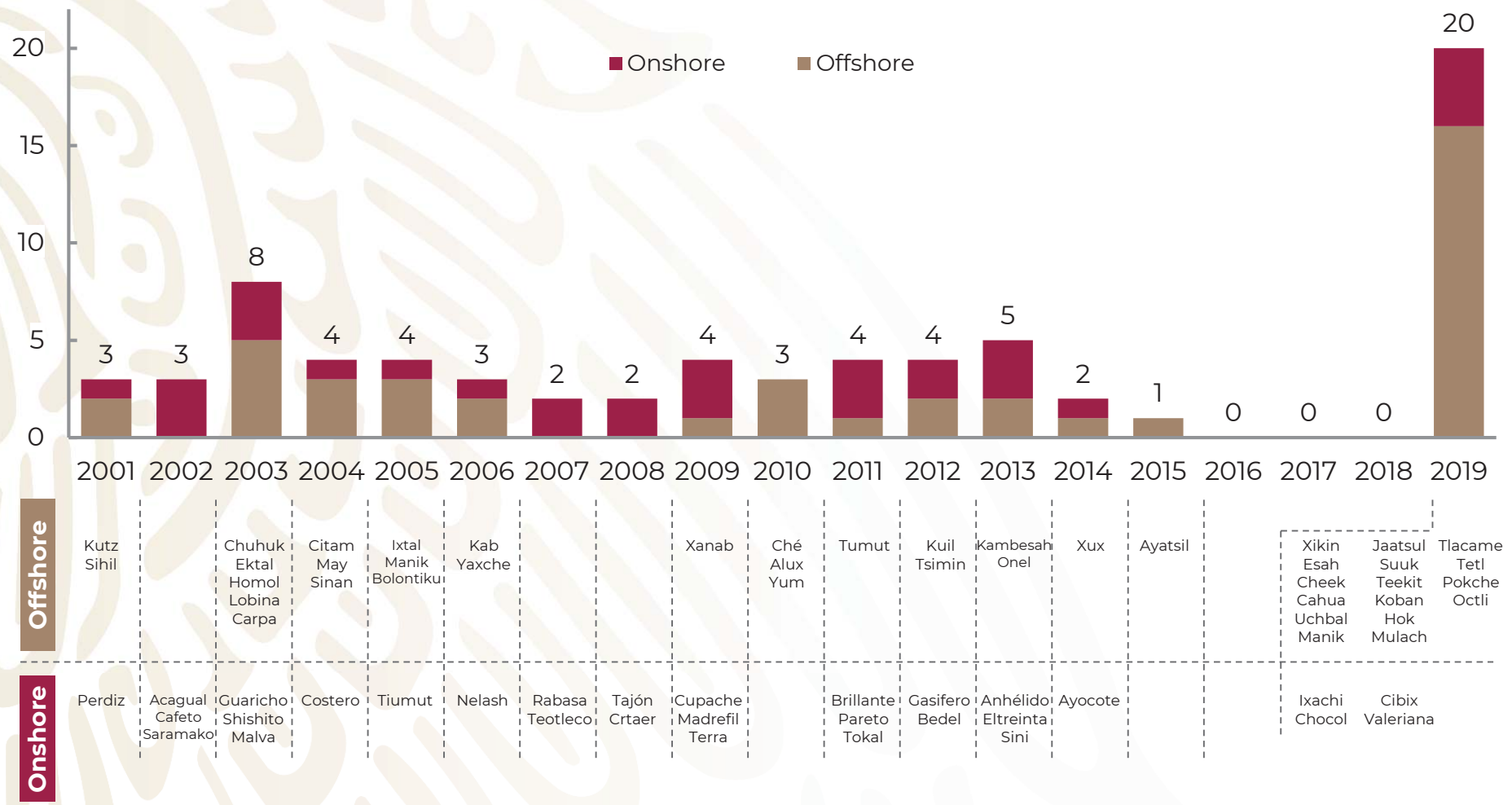
-- Edited by James Burgess, newsdesk@spglobal.com

Reversing the Declining Crude Oil Production Trend



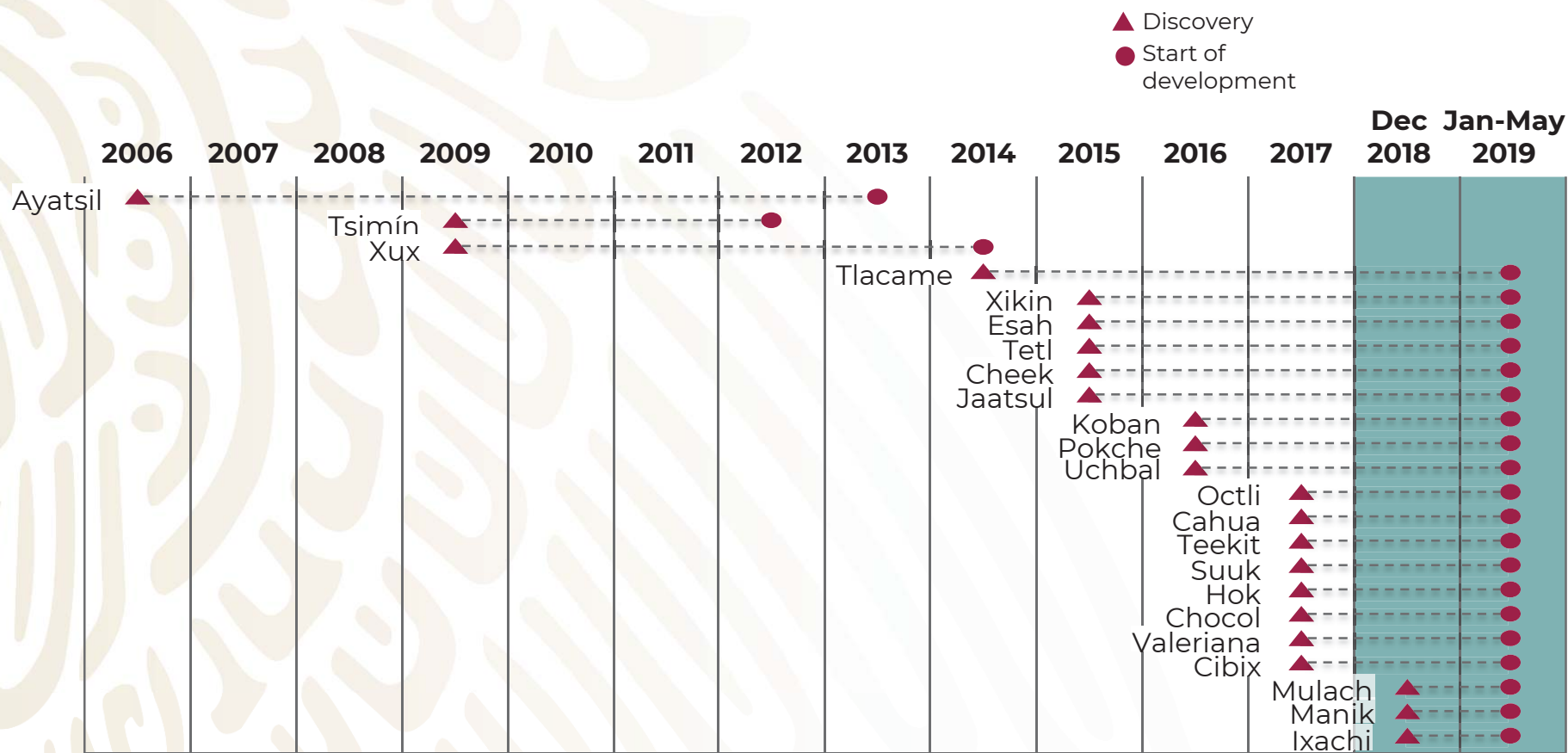
In the past three years PEMEX **did not invest in new fields development** in order to reverse the decline in crude oil production

Development of 20 New Fields will Boost Production in 2019



In only one year, PEMEX will invest in 20 new developments, the same number previously achieved in one decade

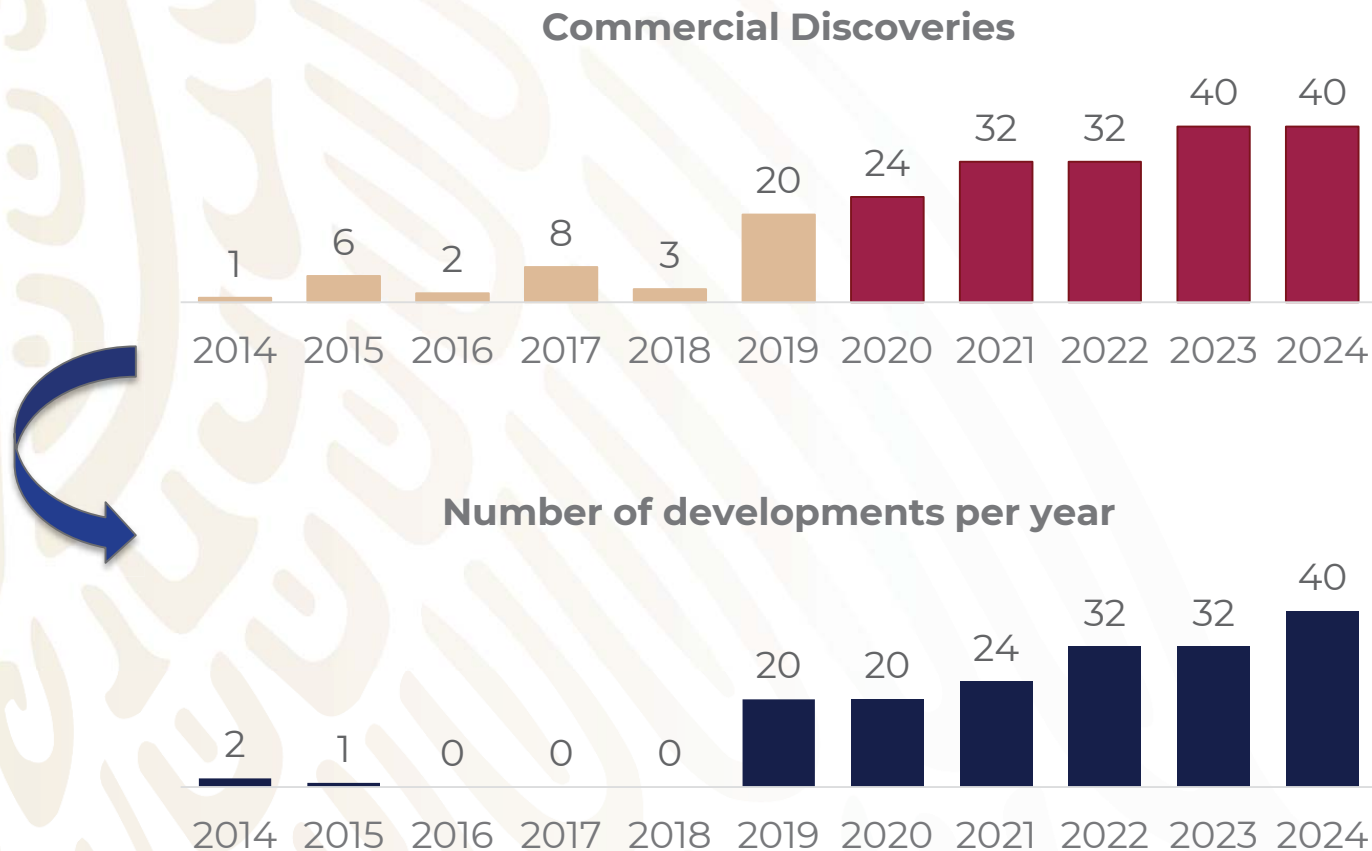
From December 2018, Authorization of New Fields Development has been Shortened from 3 Years to Less than 3 Months on Average



The development of 20 new fields is already in execution

Increase in Exploration Activities

Increase in exploration activities will lead to new commercial discoveries that will be part of the 20 to 40 new fields per year

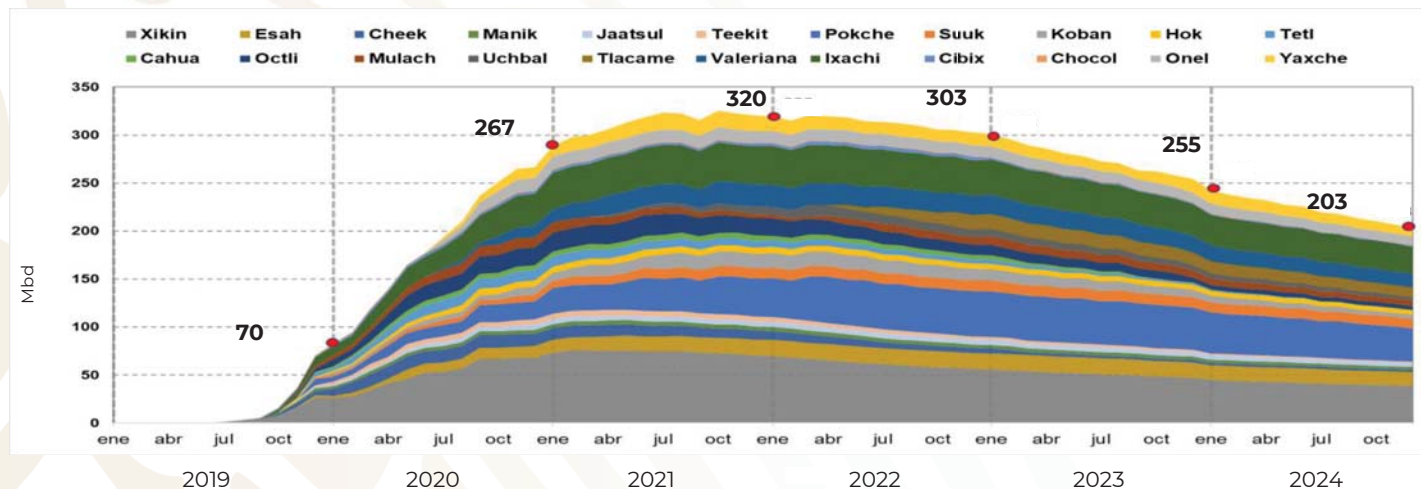


Sources: Pemex. Estimated figures.

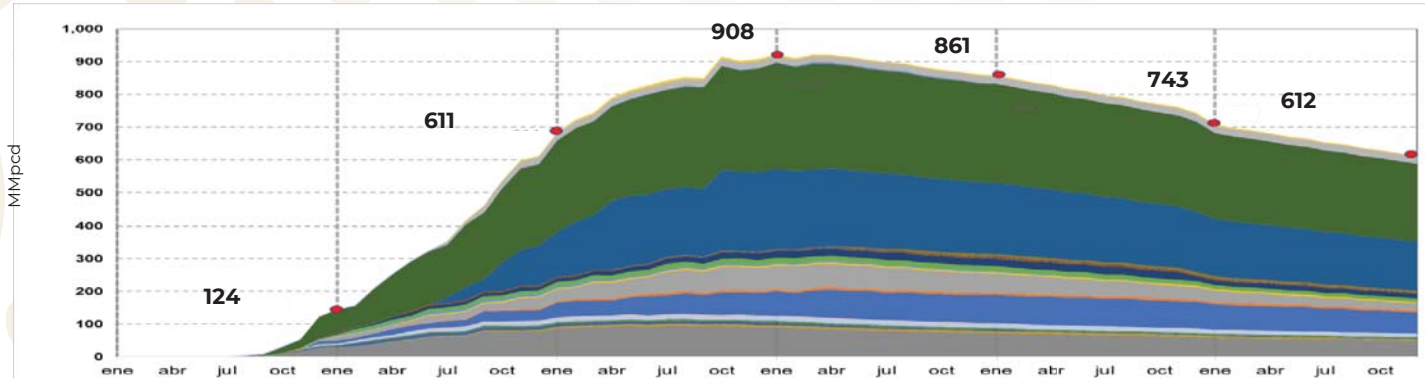
Production Forecast of the 22 New Fields that Started in 2019

Production of new developments is expected to reach 70 Mbd in December 2019.

Oil



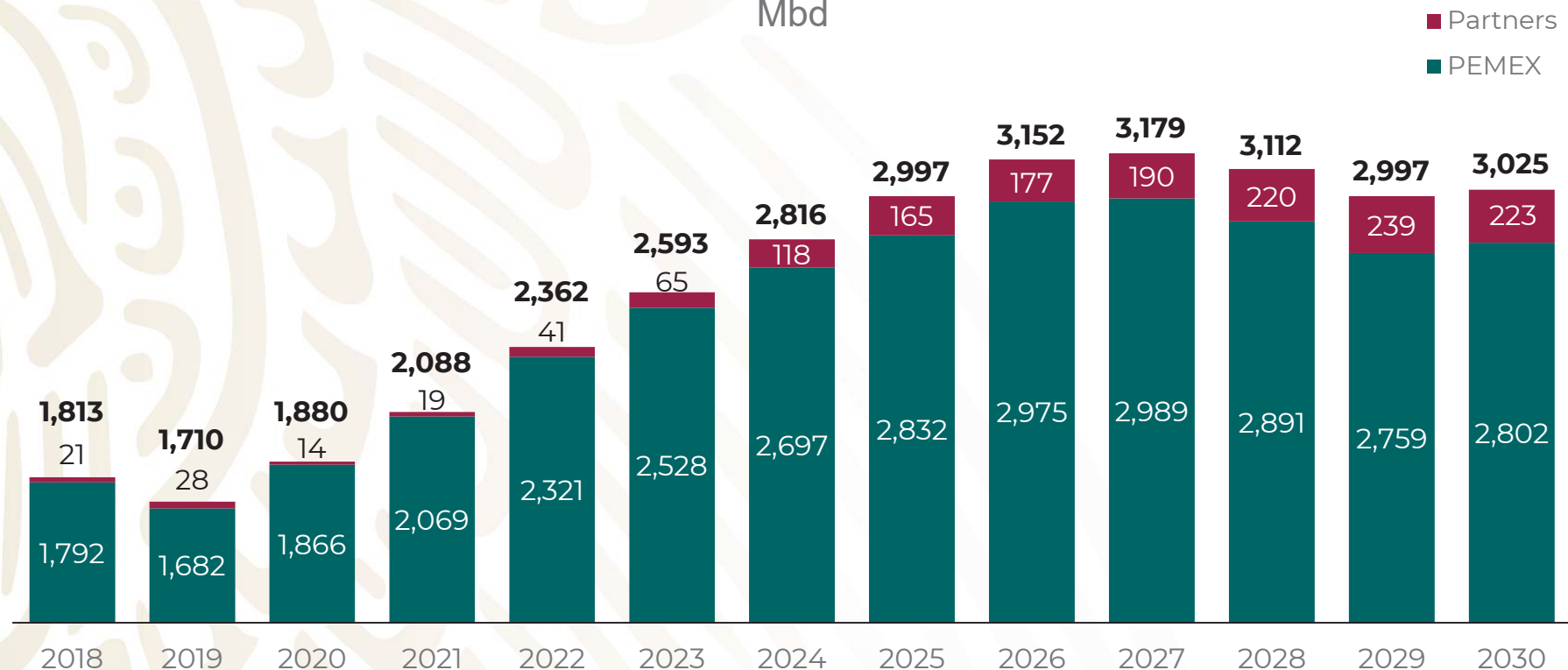
Gas



Sources: Pemex. Estimated figures.

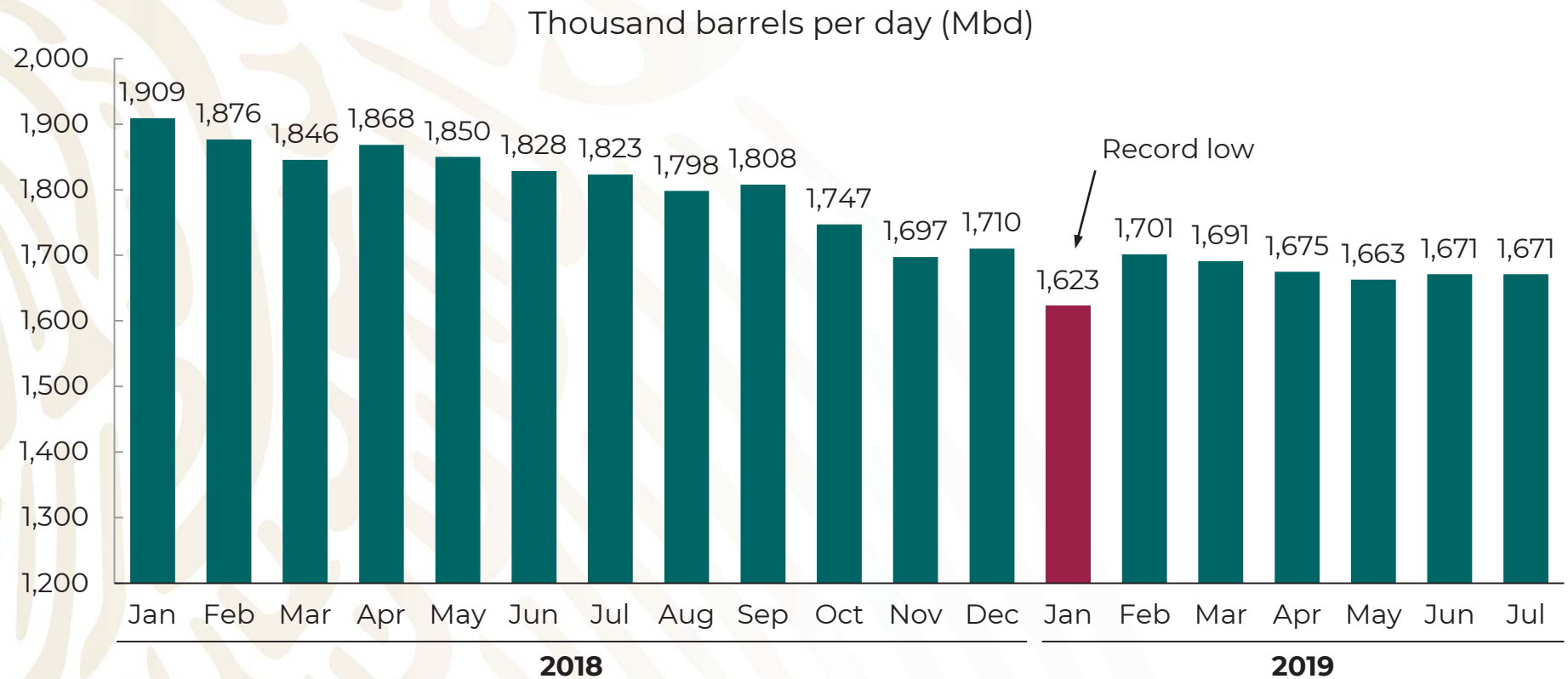
Operational Projections 2018-2030

Crude Oil Production Mbd



Note: Considers Ek-Balam's production operated by PEMEX but owned by the Mexican Government. Under the exploration contract signed in 2017, the Federal Government will retain 70.5% of the operating profits and will pay Pemex Exploration and Production the remaining 29.5%

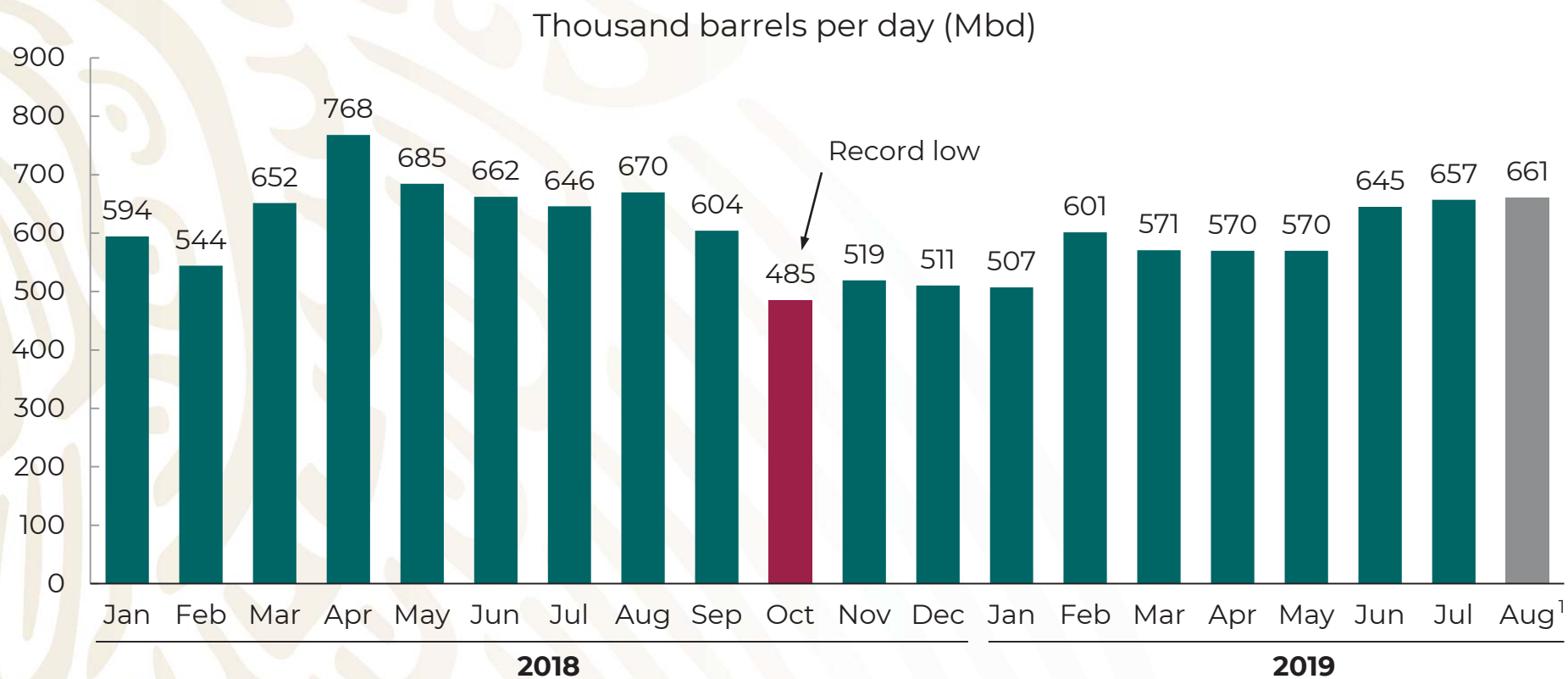
Total Crude Oil Production, 2018-2019¹



Year	Average production (Mbd)
2018	1,813
2019 ²	1,671

1. Crude oil production (PEMEX and commercial partners). Does not include condensates.
2. As of July 31, 2017

Crude Oil Processing, 2018-2019



Year	Crude oil processing average (Mbd)
2018	612
2019	589

1. Estimated crude oil processing.

TMX Is Needed Even More Now, Mexico Oil Production Looks To Be Returning To Growth And More Exports To US Gulf Coast

Posted: Tuesday July 30, 2019. 8:00am MT

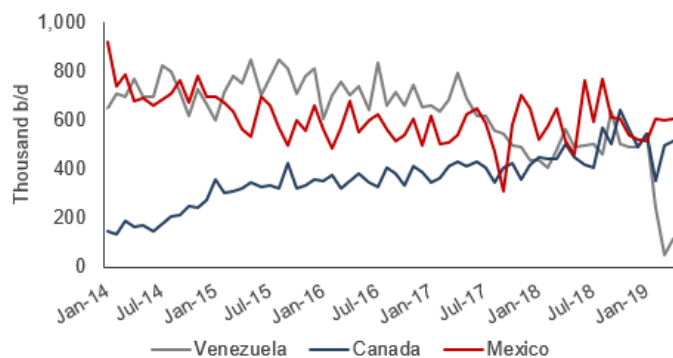
Mexico's national oil company, Pemex, reported Q2 results on Friday. The Q2 results were nothing spectacular with flat production, but the Q2 call was good with mgmt. providing detailed commentary on production, refining and development projects. The detailed comments provide support that Mexico's oil production looks to be bottoming, a return to modest oil production growth should start by year end 2019, and refineries are running at higher capacity. This means that Mexico should begin to turn around one key trend that directly impacts Cdn oil – Mexico's oil exports to US PADD 3 Gulf Coast should stop declining and begin to increase. PADD 3 is Mexico's primary oil export market and increasing to Mexico oil production should directly lead to increased oil exports to PADD 3. Canada has filling part of the gap created by Mexico and Venezuela declining oil exports to PADD 3, so any increased Mexico oil production will turn into a direct threat to Cdn volumes being railed to the Gulf Coast. And any increasing competition for PADD 3 refiners has the potential to push back on (widen) WCS differentials. It is why we believe TMX is needed even more now.

Waiting on word when TMX will start full construction. We haven't seen any recent official updates or comment to the press from Trans Mountain executives or Liberal cabinet ministers as to when full construction will start on Trans Mountain Expansion Project (TMX). The latest comments from Trans Mountain have been from their spokesperson in the Sherwood Park News (Edmonton area) July 26 story *"No start date yet but Trans Mountain is ready for construction"* [\[LINK\]](#). Trans Mountain spokesperson Hounsell noted that TMX is advising communities that they are getting closer to construction. They reported *"Despite the project moving forward again, Hounsell couldn't give an exact start date on when we'll actually see shovels hit the ground. "We're optimistic that we will have shovels in the ground this fall," she said. "There are some areas, a lot of NEB processes related to the landowners and things we need to do getting the regulatory requirements for that, but areas like the Edmonton terminal, we're expecting to be able to get going with the terminals in Edmonton and Burnaby the soonest."* In other words, its still not clear when they will start full construction.

There is an increasing risk that TMX misses this construction season. Its July 30 and the clock is ticking to start TMX full construction. We haven't seen any official updates as to when the latest date for full construction start to not miss the construction season. The last update we saw was in the June 28, 2019 letter to the National Energy Board [\[LINK\]](#), which asked the NEB to *"Allow construction at (1) the Westridge Marine Terminal ("WMT"), (2) the Burnaby Mountain Tunnel Portal located in the WMT ("Westridge Portal"), (3) the Burnaby Terminal, and (4) the Edmonton Terminal (collectively, the "Terminal Work") to commence on August 5, 2019. The Terminal Work will be entirely located on land owned by Trans Mountain and it needs to commence by August 5 to avoid seasonal restrictions"*. We don't know how hard the Aug 5 date was, but the reality is that the last start date for full construction has to be soon.

Canada has been increasing heavy/medium oil exports to US Gulf Coast with Mexico/Venezuela declines. Mexico and Venezuela have both had declining oil production and crude oil exports to their primary market – PADD 3 Gulf Coast refineries. For Venezuela its been declining oil production and the latest crash in exports to PADD 3 has been from US sanctions. Venezuela isn't expected to resume oil exports to PADD 3 unless the US removes its sanctions, which probably doesn't happen until there is regime change. Mexico's declining exports to PADD 3 has been directly due its declining oil production. Canada has been the big winner with increasing exports to PADD 3.

US PADD 3 Gulf Coast Crude Oil Imports Canada, Mexico and Venezuela

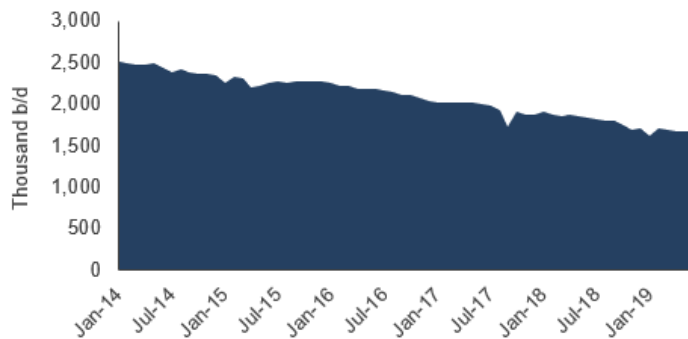


Venezuela has remained at zero since Apr due to US sanctions

Source: EIA

Support for Mexico's oil bottoming in Q2 = US PADD 3 Gulf Coast imports from Mexico should stop declining. We thought the Pemex Q2 call on Friday was significant because we may finally be seeing Pemex actions/plans to support that Mexico oil production has bottomed and will be returning to oil growth as we exit 2019. It looks like their focus on low hanging fruit is working. Q2 oil production was flat each month at ~1.670 mmb/d, and basically flat to Q1. But different than prior earnings calls, mgmt. gave a very detailed explanation of what they have been doing on the existing production base and what they are doing to give near term oil production growth. The one thing that surprised us was that it's almost hard to believe that Pemex hadn't been doing these basic maintenance activities. They are getting more out of the existing production base and it seems like they are just doing what all operators do in terms of picking low hanging production operations items. For example, Pemex said *"Production during the second quarter has been successfully maintained, thanks to specific actions aimed at managing the natural decline of production, some of these include the implementation of more rigorous systematized process for integrated reservoir management, the intensified monitoring and follow-up particularly in wells of the primary production assets, to increase operational efficiency and continuity of produced wells and production facilities. And finally, increased maintenance works focused on base production such as cleanups, stimulations and optimizations of producing wells."* This is oil 101. There were more comments on specific areas.

Pemex Mexico Oil Production



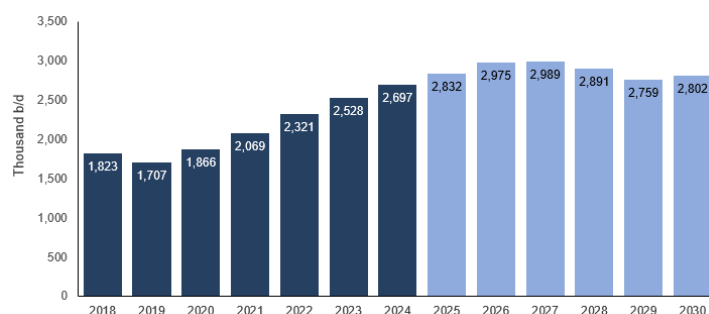
Source: Bloomberg

Support for return to modest oil growth = increasing US PADD 3 Gulf Coast oil imports from Mexico. On the Q2 call, mgmt. also provided a detailed commentary on how, post AMLO, they shifted to development drilling of land/shallow water low E exploration and what looks like offsetting or even prior known smaller plays. The focus is on drilling these plays that can also be tied in quickly. It's shifting capex away from big high impact. Pemex said *"beginning in 2019, we will increase and intensify exploration activities in onshore and shallow water basins and in areas adjacent to producing fields. To this end, we plan to drill approximately 50 exploration wells, which represent more than doubled those drill in 2018."*

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We will be focusing on wells located in low-risk areas adjacent to producing fields as well as from terrestrial areas to ensure sustainability in the short medium and long terms. At the same time, we will be intensifying secondary recovery -- implementation of secondary recovery processes in order to increase the recovery factor and reserves in mature fields. Secondly to boost hydrocarbon production via the following strategies, the accelerated development of discoveries which includes the 20 new fields that have been described previously and in our presentations and the two complementary developments in this fields of Onel and Yaxche. Accelerated development of remaining for -- [ph] exploitation fields of have already been producing before this year. By increasing the drilling of development wells, and well covers and finally to increase the recovery factor in mature field as well as reactivate the production of non-associated gas by a private sector participation through the integrated service contracts for exploration and extraction.” There were more comments on specific projects to support the near term development additions.

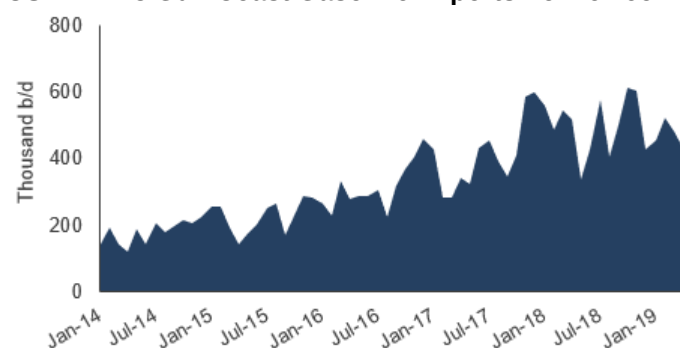
Pemex 5 Yr Plan 2019 – 2023 Crude Oil Production Forecast



Source: Pemex

Support for refinery capacity increases = reduced demand for US petroleum product exports to Mexico. Another takeaway from the Q2 call was on refining capacity improvements, which, like oil, sounded like Refining 101 work on maintaining refineries. Pemex said “you can see on the graph that during the second quarter of 2019 crude oil processing at the National Refining System average 595,000 barrels per day, marking in 90,000 barrels per day increase has compared to the last quarter of 2018. It should be noted, that by the end of June 2019 crude oil processing averaged 645,000 barrels per day. This recovery has been achieved due to an intensive maintenance strategy and processing plants, which we started to implement in January 2019. During the first half of this year, we carried out repairs at six refineries of the national refining system. This repair program allowed to the stabilization of processing levels.”

US PADD 3 Gulf Coast Gasoline Exports To Mexico

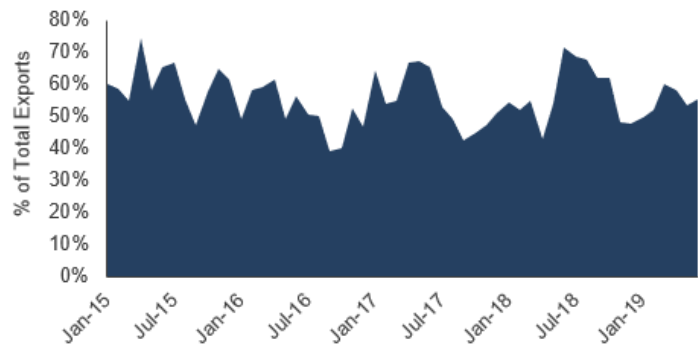


Source: EIA

Makes TMX even more important as increasing Mexico oil production = increasing US PADD 3 Gulf Coast oil imports from Mexico. US PADD 3 Gulf Coast refineries have always been the primary market for Mexico oil exports. Pemex may not send all incremental oil export barrels to PADD 3, but we would expect to see at least 50% of any increased Mexico oil

production to end up as increased oil exports to PADD 3. And any increased competition for Cdn heavy/medium crude in the Gulf Coast has the potential to push back on (widen) WCS differentials.

Mexico Crude Oil Exports To US As % Of Total Crude Oil Exports



Source: Pemex

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S&P Dow Jones Indices Announces Changes to the S&P/TSX Composite Index

NEWS PROVIDED BY

S&P Dow Jones Indices LLC.

Sep 13, 2019, 17:15 ET

TORONTO, Sept. 13, 2019 /CNW/ - S&P Dow Jones Indices ("S&P DJI") today announces the rebalancing results for the S&P/TSX Composite Index.

The following changes will be effective prior to the open of trading on **Monday, September 23, 2019**.

S&P/TSX COMPOSITE INDEX – September 23, 2019			
	COMPANY	GICS SECTOR	GICS SUB-INDUSTRY
ADDED	Ballard Power Systems Inc (TSX: BLDP)	Industrials	Electrical Components & Equipment
ADDED	Equitable Group Inc (TSX: EQB)	Financial	Thrifts & Mortgage Finance
ADDED	Seabridge Gold Inc (TSX: SEA)	Materials	Gold
ADDED	Silvercorp Metals Inc (TSX: SVM)	Materials	Silver
ADDED	Wesdome Gold Mines Ltd (TSX: WDO)	Materials	Gold
DELETED	Birchcliff Energy (TSX: BIR)	Energy	Oil & Gas Exploration & Production
DELETED	Ensign Energy Services (TSX: ESI)	Energy	Oil & Gas Drilling
DELETED	Kelt Exploration Ltd (TSX: KEL)	Energy	Oil & Gas Exploration & Production
DELETED	Nuvista Energy Ltd (TSX: NVA)	Energy	Oil & Gas Exploration & Production
DELETED	NexGen Energy Ltd (TSX: NXE)	Energy	Coal & Consumable Fuels
DELETED	Precision Drilling Corporation (TSX: PD)	Energy	Oil & Gas Drilling
DELETED	Peyto Exploration & Development Corp (TSX: PEY)	Energy	Oil & Gas Exploration & Production
DELETED	Sierra Wireless Inc (TSX: SW)	Information Technology	Communications Equipment
DELETED	TORC Oil & Gas Ltd (TSX: TOG)	Energy	Oil & Gas Exploration & Production
DELETED	CannTrust Holdings Inc (TSX: TRST)	Healthcare	Pharmaceuticals
DELETED	Western Forest Products Inc (TSX: WFE)	Materials	Forest Products

For more information about S&P Dow Jones Indices, please visit www.spdji.com

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provider in the world. Since Charles Dow invented the first index in 1884, S&P DJI has become home to over 1,000,000 indices across the spectrum of asset classes that have helped define the way investors measure and trade the markets.

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<http://www.standardandpoors.com>



Dan Tsubouchi @Energy_Tidbits · 5h

Oil mkt focus is 5.7 mmb/d Saudi suspension, when Abqaiq back to normal. Pompeo tweet (Iran denies) stays in my mind (didn't think Iran wanted war). Saudi still investigating, but how can Saudi/allies do nothing if Iran (not Houthi proxy) directly did it as Pompeo implies? #OOTT



Javad Zarif @JZarif

Having failed at "max pressure", @SecPompeo's turning to "max deceit"

US & its clients are stuck in Yemen because of illusion that weapon superiority will lead to military victory.

Blaming Iran won't end disaster. Accepting our April '15



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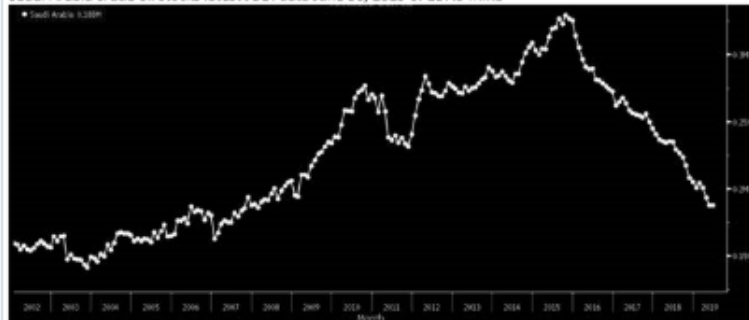
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Dan Tsubouchi @Energy_Tidbits · 14h

Added info f/ Saudi energy minister Abdulaziz: will release oil stocks to help compensate f/ 5.7 mmb/d suspension, lose ~700,000 b/d of NGLs due to shut in of ~2 bcf/d of associated natural gas. JODI data Saudi has 187.9 mmb crude stocks at June 30. #OOTT [spa.gov.sa/viewfullstory....](https://spa.gov.sa/viewfullstory...)

Saudi Arabia crude oil stocks latest JODI data June 30, 2019 of 187.9 mmb



Source: Bloomberg, JODI



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Dan Tsubouchi @Energy_Tidbits · 16h

Saudi Aramco's 1st update Abqaiq/Khuras drone attack: "production suspension of 5.7 mmb/d", working underway to restore production, progress update in about 48 hrs. oil should be up big on Monday. #OII #OOTT



Incidents at Abqaiq and Khuras
saudiaramco.com

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Dan Tsubouchi @Energy_Tidbits · Sep 14

Oil up big on Monday. No Aramco status yet. Reuters" Two sources close to the matter said 5 million barrels per day of crude production had been impacted — close to half of the kingdom's output or 5% of global oil supply" #Oil #OOTT



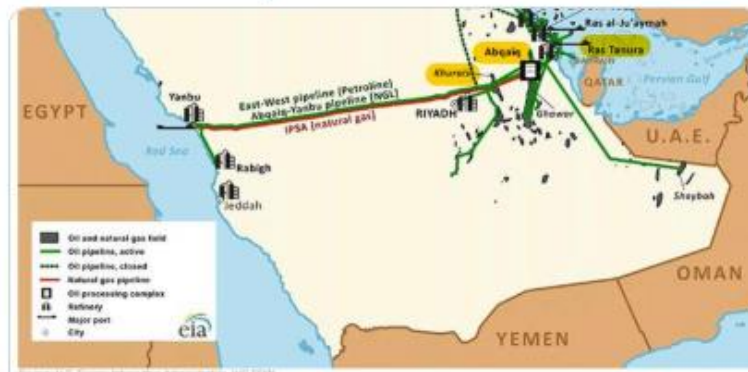
Houthi drones hit Saudi oil heartland, sources say crude flows...
Yemen's Iran-aligned Houthi group on Saturday attacked two plants at the heart of Saudi Arabia's oil industry, including the world's biggest ...
reuters.com

1 3 14

SAF

Dan Tsubouchi @Energy_Tidbits · Sep 14

... EIA estimates 33 mmb oil storage tanks at Ras Tanura (Saudi's major oil export terminal ~50 miles away) vs 3.4 mmb/d oil tanker loading capacity ie. 10 days. Bloomberg JODI data shows total Saudi oil stocks of 187.9 mm at June 30. #Oil #OOTT eia.gov/beta/international/



Source: U.S. Energy Information Administration, IHS EDIN

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SAF

Dan Tsubouchi @Energy_Tidbits · Sep 14

No Aramco status yet. Video isn't perfect, but hard to believe there won't be an interruption. If so, potentially Very big to oil. EIA "Most of the oil produced in the country is processed at Abqaiq before export or delivery to refineries" #Oil #OOTT ...



Drones hit 2 Saudi Aramco oil facilities, causes fires
Drone attacks claimed by Yemen's Houthi rebels have caused fires at two major facilities run by Saudi ...
youtube.com

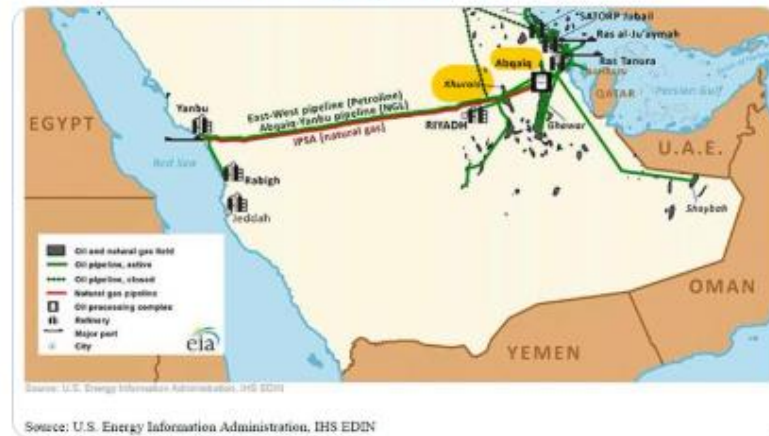
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Dan Tsubouchi @Energy_Tidbits · Sep 14

Oil going up! KSA confirms drone strike at Abqaiq (largest oil processing facility ~7mmb/d) and Khurais oil field (1.45 mmb/d light oil). No reports yet of operations impact. Reminds all Aramco facilities are in reach of Houthi long range drones #OOTT #Oil spa.gov.sa/viewfullstory....



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SAF

Dan Tsubouchi @Energy_Tidbits · Sep 13

Recall Feb 24/2006, al Qaeda attack Abqaiq, 2 pick up trucks with suicide bombers, tried to drive thru a side gate at the Abqaiq oil facility, security guards opened fire, bombers detonated their bombs, did not cause any major damage to Abqaiq. Yet WTI spiked \$3.43/b #Oil #OOTT

Excerpt from

Base Prospectus dated 1 April 2019

SAUDI ARABIAN OIL COMPANY

Global Medium Term Note Programme

Crude Infrastructure

The Company's principal fields are located in close proximity to each other within the Central and Eastern Provinces of the Kingdom. An extensive pipeline network connects the Company's fields, processing plants and other facilities. The crude oil, condensate, natural gas and NGLs the Company produces travels through its pipelines to multiple facilities for processing into refined products or to domestic customers or export terminals. For example, the Company can send crude oil to any of its domestic refineries or directly to export terminals.

In particular, the Company's East-West pipeline is critical in linking oil production facilities in the Eastern Province with Yanbu' on the west coast, and providing flexibility to export from the east and west coast of the Kingdom. In 2018, the East-West pipeline transported an average of 2.1 million barrels per day of crude oil. The capacity of the East-West pipeline is expected to increase from 5.0 million barrels per day to 6.5 million barrels per day in 2023. In addition, the Abqaiq facility processes a significant amount of the Company's daily produced crude oil. The Abqaiq facility is the Company's largest oil processing facility and the largest crude oil stabilisation plant in the world. The Abqaiq facility processed approximately 50% of the Company's crude oil production for the year ended 31 December 2018. Moreover, the Company operates four crude terminals with a

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Dan Tsubouchi @Energy_Tidbits · Sep 13

AP reporting "explosion and fire" at Saudi major oil processing facility Abqaiq in east KSA fire under control, online videos incl "sound of gunfire in the background". No word yet f/ Aramco. Any Abqaiq interruption will send oil up big on Mon #Oil #OOTT



Yemen's Houthi rebels launch drones on 2 big Saudi oil sites
DUBAI, United Arab Emirates (AP) — Yemen's Houthi rebels launched drone attacks on the world's largest oil processing facility in Saudi Arabi...
apnews.com

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12



SAF

Dan Tsubouchi @Energy_Tidbits · Sep 13

New Pemex slide deck reinforces Mexico is on track for increasing oil production starting in 2020 ie. more medium/heavy oil exports to Gulf Coast refineries and more competition for Cdn medium/heavy. See SAF 07/30 blog on Mexico's return to growth. #OOTT [safgroup.ca/research/artic...](https://safgroup.ca/research/article...)



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Dan Tsubouchi @Energy_Tidbits · Sep 13

No one should be surprised to see the announced changes to S&P/TSX Composite Index, effective open of trading on Mon Sept 23. Deletions incl 5 E&P (Birchcliff, Kelt, Nuvista, Peyto and TORC) and 2 service (Ensign and Precision). #NatGas #OOTT [newswire.ca/news-releases/...](https://www.newswire.ca/news-releases/)

	(TSX:BBQ)		
DELETED	Ensign Energy Services (TSX:ESI)	Energy	Oil & Gas Drilling
DELETED	Kelt Exploration Ltd (TSX:KEU)	Energy	Oil & Gas Exploration & Production
DELETED	Nuvista Energy Ltd (TSX:NVA)	Energy	Oil & Gas Exploration & Production
DELETED	NexGen Energy Ltd (TSX:NXE)	Energy	Coal & Consumable Fuels
DELETED	Precision Drilling Corporation (TSX:PD)	Energy	Oil & Gas Drilling
DELETED	Peyto Exploration & Development Corp (TSX:PEV)	Energy	Oil & Gas Exploration & Production
DELETED	Sierra Wireless Inc (TSX:SW)	Information Technology	Communications Equipment
DELETED	TORC Oil & Gas Ltd (TSX:TOG)	Energy	Oil & Gas Exploration & Production
DELETED	CannTrust Holdings Inc (TSX:TRST)	Healthcare	Pharmaceuticals
DELETED	Western Forest Products Inc (TSX:WEF)	Materials	Forest Products

🗨️ 3 ❤️ 2 ↗️ ||



Dan Tsubouchi @Energy_Tidbits · Sep 12

Worth noting, Platts est HSFO consumption by scrubbers is likely higher than expected. Yr end 2019, 2,400 scrubbers and 600,000 b/d HSFO. Yr end 2020, >3,500 scrubbers extrapolated would be 875,000 b/d HSFO. #OOTT

 **Dave Ernsberger** @DaveErnsberger · Sep 9

Latest on scrubber watch: you can expect there to be 2,400 scrubbers in place on January 1, allowing the consumption of 600,000 b/d of HSFO. By the end of 2020, look for more than 3,500 scrubbers. #plattsAPPEC

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SAF

Dan Tsubouchi @Energy_Tidbits · Sep 12

Bloomberg: Shale Cheerleader Sheffield lowers Permian growth to ~0.6-0.7 mmb/d f/ next few yrs, was 1 mmb/d. See SAF July 3 blog A Big Plus To Post 2020 Oil If Saudi Is Even Directionally Right That Permian Plateau Is "In A Year Or 2 Years Or 4 Yrs" #OOTT [safgroup.ca/research/artic...](https://safgroup.ca/research/article...)

SAF GROUP

Blog Summary

A Big Plus To Post 2020 Oil If Saudi Is Even Directionally Right That Permian Plateau Is "In A Year Or Two Years or Four Years"

Posted: July 3, 2019, 4:00pm Mountain

Oil market attention has been on Saudi Arabia's clear messaging to the market that it is prepared to make additional cuts to keep a stable market as this implies they are prepared to keep ceding market share to US shale. Al Falih said "We're comfortable with where our production level is, we're willing to go either way from where we are today to keep markets balanced". But the more significant al Falih comment was "There will be a plateau for these unconventional resources in the US, the Permian being one of them, is it in a year, or two years or four years, I don't know but certainly its not indefinitely". No one is calling for Permian plateau (peak oil) in a year or two and not likely 4. Maybe people didn't see these comments at 3:45am MT or maybe most assumed it was just musings from al Falih. But we think its more than musings because Saudi Arabia is taking a different tactic this time than their normal strategy to get market share – increase oil production, crash oil prices, ruin growth prospects for other oil basins. They want solid oil prices, an increasing oil market share, and strong oil outlook for the mid/long term valuation of Saudi Aramco massive oil reserves for the IPO. And this time, al Falih's comments suggest they believe that, they can regain market share, by letting US shale play out. If Saudi Arabia is even directionally right in Permian reaching plateau (peak oil), it means that Permian and US oil is going to hit peak oil probably at least a few years earlier than expected. This will be very bullish to oil post 2020.



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SAF

Dan Tsubouchi @Energy_Tidbits · Sep 12

For those not on their laptop. EIA Weekly Gas Storage data just out: For week ending Sept 6/19, storage +78 bcf vs +81 bcf expectations, storage now +393 bcf YoY, 8 weeks to go for Nov 1. #NatGas ir.eia.gov/ngs/ngs.html

for week ending September 6, 2019 | Released: September 12, 2019 at 10:30 a.m. | Next Release: September 18, 2019

Working gas in underground storage, Lower 48 states

[Summary text](#) [CSV](#) [JSON](#)

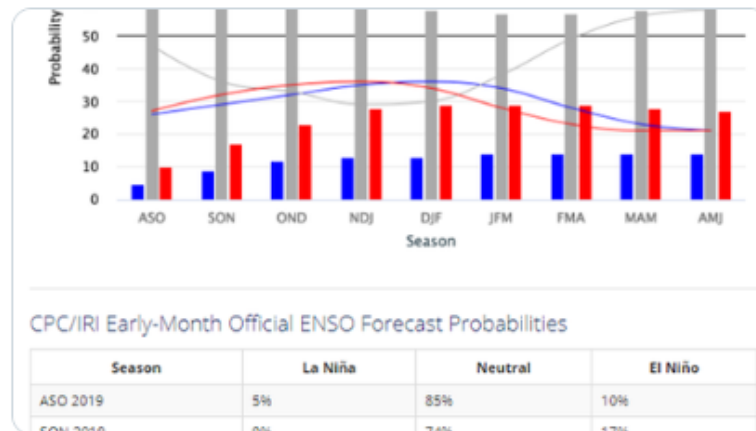
Region	Stocks billion cubic feet (Bcf)				Historical Comparisons			
	09/06/19	08/30/19	net change	implied flow	Year ago (09/06/18)		5-year average (2014-18)	
					Bcf	% change	Bcf	% change
East	739	714	25	25	676	9.3	756	-2.2
Midwest	864	827	37	37	729	18.5	848	1.9
Mountain	183	177	6	6	185	10.9	191	-4.2
Pacific	275	276	-1	-1	249	10.4	303	-9.2
South Central	958	947	11	11	805	19.0	997	-3.9
Salt	199	197	2	2	182	9.3	251	-20.7
Nonsalt	759	749	10	10	623	21.8	746	1.7
Total	3,019	2,941	78	78	2,626	15.0	3,096	-2.5





Dan Tsubouchi @Energy_Tidbits · Sep 12

New El Nino forecast: Increasing probability for neutral, not El Nino. ASO: 85% (was 67%) neutral, supports continued hurricane conditions. DJF, 58% (was 53%) neutral, El Nino 29%, better chance for normal winter, El Nino tends to be warm. #NatGas #OOTT cpc.ncep.noaa.gov/products/analy...



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Dan Tsubouchi @Energy_Tidbits · Sep 12

Thx Bloomberg IEA OMR wrap: 2.5k scrubbers by yr end 2019 consuming 510k b/d of HSFO, almost 4k yr end 2020 consuming total 820k b/d HSFO. Reminds scrubber install capacity limits means scrubber increase/HSFO consumption keeps increasing after IMO 2020 starts Jan 1, 2020. #OOTT

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Dan Tsubouchi @Energy_Tidbits · Sep 12

IEA OMR "Floating storage of crude oil rose by 7.9 mb in August to 66.1 mb due to an increase of numbers of tankers storing crude oil in Iran" ie. ~250,000 b/d Iran to floating storage. Iran 2.190 mmb/d in Aug means oil is being snuck out somewhere. #OOTT iea.org/oilmarketrepor...

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Dan Tsubouchi @Energy_Tidbits · Sep 12

IEA OMR, negative takeaway, no reduction to oil demand growth rates, ~1.4 mmb/d lesser call on OPEC in H1/20 vs OPEC Aug prod, will need deeper for longer OPEC cuts. much more in this weekend's Sept 15 SAF Energy Tidbits iea.org/oilmarketrepor...

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Dan Tsubouchi @Energy_Tidbits · Sep 12

Surprised experienced Birol wasn't more precise on his "about 1 mmb/d of growth" for 2019 oil demand growth Mon comment. IEA OMR today "Our 2019 and 2020 global oil demand growth forecasts are unchanged at 1.1 mb/d and 1.3 mb/d, respectively". #OOTT iea.org/oilmarketrepor...

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SAF

Dan Tsubouchi @Energy_Tidbits · Sep 11

NY Times "He shrugged when asked if he would consider easing the sanctions to secure a meeting with Iran. "We'll see what happens," Mr. Trump said" Still think more likely play is not object to France \$15b LC deal to add 0.7 mmb/d Iran exports #Oil #OOTT



Trump Leaves Open Possibility of Easing Iranian Sanctions to Spur Nucle...
Asked whether he would consider relaxing the penalties if that would ease the path to a meeting, President Trump said, "We'll see what ...
[nytimes.com](#)

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SAF

Dan Tsubouchi @Energy_Tidbits · Sep 11

For those not near their screen, EIA weekly oil inventory numbers. total of oil, gasoline and distillates in line. won't drive up price, but should be generally supportive of price, WTI currently +\$0.10 to \$57.50. #OOTT

Oil/Products Inventory Sept 6: EIA Vs EIA Expectations And Vs API

(million barrels)	EIA	Expectations	API
Oil	-6.91	-2.90	-7.23
Gasoline	-0.68	-1.00	-4.46
Distillates	2.70	-0.90	0.62
	-4.89	-4.80	-11.07

Note: There was no change to SPR oil stocks for Sept 6 week

Source EIA, Bloomberg

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Dan Tsubouchi @Energy_Tidbits · Sep 11

OPEC Sept MOMR plus + minuses: OPEC +136,000 b/d in Aug to 29.74 mmb/d, OPEC 158,000 below quota, US oil growth revised -65,000 b/d in 2019 and -165,000 b/d in 2020, oil demand growth revised -80,000 b/d in 2019 and -60,000 b/d in 2020, OECD stocks +36 mmb v 5 yr ave.

#Oil #OOTT

OPEC (thousand bpd)	Reference Production	Voluntary Adjustment	Voluntary Production Level	OPEC MOMR Secondary Sources For July 2019	OPEC MOMR Secondary Sources For Aug 2019	Aug Less Quota	Aug Less July
Algeria	1,057	-32	1,025	1,027	1,016	-9	-11
Angola	1,528	-47	1,481	1,395	1,394	-87	-1
Congo	325	-10	315	325	318	3	-7
Ecuador	524	-16	508	535	537	29	2
Equatorial Guinea	127	-4	123	121	120	-3	-1
Gabon	187	-6	181	204	206	25	2
Iraq	4,653	-141	4,512	4,736	4,779	267	43
Kuwait	2,809	-85	2,724	2,670	2,653	-71	-17
Nigeria	1,738	-53	1,685	1,780	1,866	181	86
Saudi Arabia	10,633	-322	10,311	9,687	9,805	-506	118
UAE	3,168	-96	3,072	3,074	3,085	13	11
OPEC Quota Countries	26,749	-812	25,937	25,554	25,779	-158	225
Iran				2,218	2,194		-24
Libya				1,078	1,056		-22



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Dan Tsubouchi @Energy_Tidbits · Sep 10

Should be other key investors, in addition to Saudi wealthy families, to drive Aramco IPO success who might be less sensitive to IPO pricing. Perhaps as part of broader relationship building with KSA, how about sovereign wealth funds? #OOTT

swfinstitute.org/fund-rankings/...

Rank	Profile	Type	Total Assets (\$)	Region	Link
1	Norway Government Pension Fund Global	Sovereign Wealth Fund	\$1,108,170,000,000	Europe	https://www.gpffund.no/
2	China Investment Corporation	Sovereign Wealth Fund	\$941,411,000,000	Asia	http://www.cic.gov.cn/
3	Abu Dhabi Investment Authority	Sovereign Wealth Fund	\$868,680,000,000	Middle East	http://www.adia.ae/en/2019/09/09/
4	Rothschild Investment Authority	Sovereign Wealth Fund	\$802,000,000,000	Middle East	http://www.rii.ae/en/2019/09/09/
5	Hong Kong Monetary Authority Investment Portfolio	Sovereign Wealth Fund	\$808,380,000,000	Asia	http://www.hkma.gov.hk/eng/inter/inter.htm
6	Qatar Investment Authority	Sovereign Wealth Fund	\$840,000,000,000	Asia	http://www.qia.qa/en/
7	Norwegian Council for Social Security Fund	Sovereign Wealth Fund	\$437,900,000,000	Asia	http://www.sif.no/en/2019/09/09/
8	SAIF Investment Company	Sovereign Wealth Fund	\$417,544,700,480	Asia	http://www.saif.gov.cn/en/
9	Tamworth Holdings	Sovereign Wealth Fund	\$378,180,000,000	Asia	http://www.tamworth.com.au/en/2019/09/09/
10	Public Investment Fund	Sovereign Wealth Fund	\$300,000,000,000	Middle East	http://www.pif.gov.sa/en/2019/09/09/
11	Qatar Investment Authority	Sovereign Wealth Fund	\$300,000,000,000	Middle East	http://www.qia.qa/en/
12	Investment Corporation of Dubai	Sovereign Wealth Fund	\$228,370,000,000	Middle East	http://www.icd.ae/en/2019/09/09/
13	Mubadala Investment Company	Sovereign Wealth Fund	\$228,034,000,000	Middle East	http://www.mubadala.com/en/
14	Alima Investment Corporation	Sovereign Wealth Fund	\$171,600,000,000	Asia	http://www.alima.com/en/
15	Aljazeera Fund	Sovereign Wealth Fund	\$168,000,000,000	Asia and Pacific	http://www.aljazeera.com/en/
16	Norwegian Development Fund of Iran	Sovereign Wealth Fund	\$11,000,000,000	Middle East	http://www.norwegianfundofiran.no/en/
17	Albion Investment Management Corporation	Sovereign Wealth Fund	\$8,280,000,000	North America	http://www.albioninvestments.com/en/
18	Barclays Real Estate	Sovereign Wealth Fund	\$7,344,000,000	Asia	http://www.barclaysrealestate.com/en/
19	Norway Global Fund	Sovereign Wealth Fund	\$68,000,000,000	Europe	http://www.norwayglobalfund.no/en/
20	Alaska Permanent Fund Corporation	Sovereign Wealth Fund	\$68,000,000,000	North America	http://www.alaska.gov/en/

Source: Sovereign Wealth Fund Institute <https://www.swfinstitute.org/fund-rankings/sovereign-wealth-fund>



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Dan Tsubouchi @Energy_Tidbits · Sep 10

... Venezuela. Easy to blame Bolton f/ failure. Bolton viewed architect based on an optimistic view Guaido could quickly push out Maduro, but that stalled 6 mths ago. Any easing on 3 countries is potential negative to oil, especially Venezuela f/ heavy oil into Gulf Coast. #OOTT



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Dan Tsubouchi @Energy_Tidbits · Sep 10

... Iran. Still other anti Iran in admin, but Bolton was strongest vs Iran and against Rouhani meeting or any easing. Iran too smart to get trapped into Trump playbook of talking without some sanction relief. But does Macron see opening to have US not object to \$15b LC? #OOTT ...



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Dan Tsubouchi @Energy_Tidbits · Sep 10

Can Trump now blame Bolton for lack of success and shift or even ease on Venezuela, Iran and Houthis? If removing the hawk eases policy, potential negative to oil. Houthis, will US move on recent reports to start Houthi talks to reluctantly drag Saudi into peace talks? #OOTT ...

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Dan Tsubouchi @Energy_Tidbits · Sep 10

As expected, new EIA Short Term Energy Outlook Sept reduces oil demand growth forecasts. This month 2019 is +0.89 mmb/d YoY and 2020 is +1.40 mmb/d YoY. Aug STEO for 2019 was +1.00 mmb/d YoY and 2020 +1.43 mmb/d YoY. #OOTT [eia.gov/outlooks/steo/...](https://eia.gov/outlooks/steo/)

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Dan Tsubouchi @Energy_Tidbits · Sep 10

Support for ABS signaling a longer and deeper OPEC+ cut is needed? CNBC clip: ABS emphasizes need for OPEC consensus, "consensus building does take time, and does take effort" "for a common path and common course" #Oil #OOTT [cnbc.com/video/2019/09/...](https://www.cnbc.com/video/2019/09/10/saudi-energy-minister-trade-tensions-are-not-yet-trade-wars.html)

Saudi Energy Minister Prince [Abdulaziz](#) On Consensus Building in OPEC

CNBC 5:19 min video clip. <https://www.cnbc.com/video/2019/09/10/saudi-energy-minister-trade-tensions-are-not-yet-trade-wars.html>

SAF created transcript of Questions and ABS answers.

Interviewer: "In our discussions before this session, you talked about your role as a consensus builder. How are you going to bring that to OPEC discussions, in terms of how you see your role in leading the kingdom in these discussions?"

ABS: "Very easy, I was privileged twice. I learned consensus building from OPEC, actually. The 30 some, 32 years of OPEC, it is bound to teach you a good lesson. A fundamental lesson. Being a small country, a small producer, not *small in size* or in terms of sheer respect, but in terms of small contribution to supply. Or being large. Actually, OPEC decisions are made by consensus. So, it's a good compromise, it's a healthy compromise, because it allows participants to have a sense of ownership. And yes, it may take time and it may take effort, consensus building does take time, and does take effort, and does take a lot of mental energy to try to convince and persuade others for a common path and common course. The beauty of it, is if you have the ability to convince, and you are convinced with what you have, I think if you have that argument, if you have that logic I think you could be convincing to the others. If you are not, you should allow the others to convince you of something else. Because otherwise, that sense of ownership would not be amplified, and I cannot think of an alliance of anything or I cannot even think of anything that you need to attend with a group of even individuals, that they cannot congregate toward a common approach for how they could attend to this. Be it OPEC or elsewhere, be it at the G20, G7, any forum, and any collaborative work the notion of consensus building is a prerequisite."

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Dan Tsubouchi @Energy_Tidbits · Sep 10

Japan LNG contract spot price Aug \$5.30, -51% YoY, but up f/ July \$4.70. Continues to reflect weak LNG markets that were driven by the poor start to LNG demand from a warm Asian winter in the face of increasing global #LNG supply. Need a cold Asia winter meti.go.jp/english/stats...

LNG Contract Base Spot Price in Japan \$/mmbtu		2014	2015	2016	2017	2017/2016	2018	2018/2017	2019	2019/2018
Jan		\$10.20	\$7.10	\$8.40	18.3%		\$11.00	31.0%	\$8.30	-24.5%
Feb		\$7.60	\$6.60	\$8.50	30.8%		\$10.60	24.7%	\$7.50	-29.2%
Mar	\$10.30	\$8.00	n/a	\$6.30	n/a		\$8.80	39.7%	\$6.40	-27.3%
Apr	\$16.00	\$7.60	\$4.20	\$5.70	35.7%		\$9.10	59.6%	\$5.20	-42.9%
May	\$14.80	n/a	\$4.10	\$5.70	39.0%		\$8.20	43.9%	\$5.40	-34.1%
June	\$13.80	\$7.60	n/a	n/a	n/a		\$9.30	n/a	\$5.50	-40.9%
July	\$11.80	\$7.90	\$5.80	\$5.60	-3.4%		\$10.00	78.6%	\$4.70	-53.0%
Aug	\$11.40	\$8.10	n/a	\$5.80	n/a		\$10.70	84.5%	\$5.30	-50.5%
Sept	\$13.20	\$7.40	\$5.70	\$6.90	n/a		\$10.60	53.6%		
Oct	\$15.30	\$7.60	\$6.10	\$8.20	34.4%		\$10.70	30.5%		
Nov	\$14.40	\$7.40	\$7.00	\$9.00	28.6%		\$10.80	20.0%		
Dec	\$11.60	\$7.40	\$8.00	\$10.20	27.5%		\$9.20	-9.8%		

Source: Japan Ministry of Economy, Trade and Industry

Source: Japan Ministry of Economy, Trade and Industry

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Dan Tsubouchi @Energy_Tidbits · Sep 10

Additional ~162,000 b/d on average to hit Gulf Coast markets in Oct/Nov. US DOE allocated 9.875 mmb awards f/ SPR for Oct/Nov delivery: Phillips 66 3.9 mmb. Motiva (Saudi Arabia) 2.675 mmb. Shell 2.2 mmb. Marathon 1.1 mmb #Oil #OOTT energy.gov/fe/articles/de...



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Dan Tsubouchi @Energy_Tidbits · Sep 10

Support for #Oil. FT: Aramco plans to float 1% on Tadawul in 2019, CEO "very soon" + Bloomberg, KSA wants to raise 1- 2% f/ wealthy families incl some w/Nov 2017 anti corruption purge relatives = Aramco IPO coming soon at higher than expected price. #OOTT



Saudi Aramco chief says IPO to happen 'very soon'
Amin Nasser reiterates oil giant's primary listing will be in Riyadh
ft.com



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Dan Tsubouchi @Energy_Tidbits · Sep 9

Saudi Arabia Energy Minister Prince Abdulaziz bin Salman at World Energy Congress Sept 9, 2019

CNBC 4:42 min video clip. <https://www.cnbc.com/video/2019/09/09/saudi-energy-minister-opec-relations-have-evolved.html?>

SAF created transcript of ABS answer to question on how do you assess where OPEC+ is? ABS "Without being in a way turning a negative evaluation to the previous attempts, but this time around is different - different in quality, different in size, and different in the sense of perpetuity. In the many attempts that we have done, which were successful, but they were temporary in nature. They were there to attend to a specific issue, a specific time that when that issue is attended to, and over time, things go back to where they were before. And only at times of crisis, either way by the way, either due to a situation of lack of demand, this and that, people forget that producers are to share responsibility to attend to periods of shortages either driven by unexpected growth in demand, or even as a result of some sort of supply crisis, caused by many factors. It could be hurricanes, it could be wars, it could be lack of investment as a result of lower prices for a long period of time. In 98, I was visiting with friends in the US and I still believe I have a record of the discussion we had and I told those friends of mine that lower oil prices is the very recipe for higher oil prices. It turned out I was correct. I only bring it because I was correct. But in reality that's the nature of investment. I think the maturity that we got into as producers got us into OPEC+. The maturing that we got with our other party, the consumer, got us to create the IEA. The International Energy charter is also another pillar for a meaningful way, a meaningful discussion, a meaningful platform for the producers and consumers to not only interact, but also to find a meaningful way on how they can get together, to attend to issues that are relevant to the notion of stability and sustainability. Without which, we will be each and everyone of else will be acting alone, and I think the fundamental lesson that we all learned, being a producer country or consumer or even an international oil company or even a state owned company, this industry has to have the institutions





Dan Tsubouchi @Energy_Tidbits · Sep 9



Saudi Arabia Energy Minister Prince Abdulaziz bin Salman at World Energy Congress Sept 9, 2019

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SAF Dan Tsubouchi @Energy_Tidbits · Sep 9

Positive to #Oil Saudi energy minister Abdulaziz signaling longer OPEC+ deal w/ deeper cuts? CNBC clip, "this time around is different - different in quality, different in size, and different in the sense of perpetuity" "were temporary in nature" #OOTT [cnbc.com/video/2019/09/...](https://www.cnbc.com/video/2019/09/09/saudi-energy-minister-opec-relations-have-evolved.html?)

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Dan Tsubouchi @Energy_Tidbits · Sep 9



Positive to #Oil Saudi energy minister Abdulaziz signaling longer OPEC+ deal w/ deeper cuts? CNBC clip, "this time around is different - different in quality, different in size, and different in the sense of perpetuity" "were temporary in nature" #OOTT [cnbc.com/video/2019/09/...](https://www.cnbc.com/video/2019/09/09/saudi-energy-minister-opec-relations-have-evolved.html?)



Saudi energy minister: OPEC+ relations have evolved
The maturity we reached as producers got us to OPEC+, says Prince Abdulaziz bin Salman, the new Saudi energy minister.
[cnbc.com](https://www.cnbc.com)

SAF

Dan Tsubouchi @Energy_Tidbits · Sep 9

Best sign Step 1 Aramco IPO (\$50b on Tadawul) is coming soon at higher than expected price? Bloomberg: KSA approached some of the wealthiest Saudi families (incl some w/ relatives in Nov 2017 anti corruption purge) to become anchor investors in IPO. #OOTT



Saudi Arabia Said to Tap Kingdom's Richest to Anchor Aramco IPO
Saudi Arabia held discussions with some of the kingdom's wealthiest families about becoming anchor investors in Aramco's mammoth stake ...
[bloomberg.com](https://www.bloomberg.com)

SAF

Dan Tsubouchi @Energy_Tidbits · Sep 9

No specifics yet, but messaging f/ new Saudi energy minister Prince Abdulaziz @ WEC is one of reassuring #Oil markets. Bloomberg: Abdulaziz "I think fundamentally Saudi Arabia's energy policy is resting on few pillars. The pillars don't change" More snippets to come today. #OOTT



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SAF

Dan Tsubouchi @Energy_Tidbits · Sep 9

IEA Exec Director Birol to Bloomberg TV @ WEC today, reducing 2019 oil demand to "about 1 mmbd of growth" due to economy, US/China, Brexit in Sept 12 OMR. Was +1.1 mmb/d, energy agencies tend to take down demand in steps, not 1 shot, so likely more in Oct OMR #OOTT #Oil



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Dan Tsubouchi @Energy_Tidbits · Sep 6

As expected, continue to see analysts lower oil demand growth/price forecasts post Labor Day, UBS is latest, now 2020 demand growth +0.9 mmb/d YoY. Expect EIA STEO (Sept 10), IEA OMR (Sept 12), OPEC MOMR (Sept 11) to lower oil demand forecasts in Sept monthly reports. #Oil #OOTT

YoY Increase In World And China Oil Demand - EIA, IEA and OMR									
	EIA STEO Aug 2019			IEA OMR Aug 2019			OPEC MOMR Aug 2019		
	Total mmb/d	YoY mmb/d	China YoY	Total mmb/d	YoY mmb/d	China YoY	Total mmb/d	YoY mmb/d	China YoY
Q1/18	99.14			98.60			97.93		
Q2/18	99.59			98.90			98.18		
Q3/18	100.47			100.00			99.48		
Q4/18	100.41			99.50			99.72		
2018	99.91			99.30			98.82		
Q1/19	99.79	0.65	0.48	99.10	0.50	0.30	98.79	0.86	0.35
Q2/19	100.29	0.70	0.57	99.70	0.80	0.70	99.25	1.07	0.35
Q3/19	101.54	1.07	0.57	101.30	1.30	0.40	100.69	1.21	0.35
Q4/19	101.98	1.57	0.55	101.40	1.90	0.60	100.91	1.19	0.36
2019	100.91	1.00	0.55	100.40	1.10	0.50	99.92	1.10	0.35
Q1/20	101.26	1.47	0.55	100.10	1.00	0.30	99.87	1.08	0.29
Q2/20	101.79	1.50	0.46	101.10	1.40	0.20	100.33	1.08	0.32
Q3/20	103.04	1.50	0.44	102.80	1.50	0.40	101.83	1.14	0.31
Q4/20	103.25	1.27	0.48	102.70	1.30	0.20	102.14	1.23	0.35
2020	102.34	1.43	0.47	101.70	1.30	0.30	101.05	1.13	0.32

Notes: OPEC MOMR Aug did not provide quarter splits for 2018, estimated based on OPEC MOMR June splits
Source: EIA Short Term Energy Outlook Aug 2019, IEA Oil Market Report Aug 2019, OPEC Monthly Oil Market Report Aug 2019

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Dan Tsubouchi @Energy_Tidbits · Sep 8

Our weekly SAF Sept 8, 2019 Energy Tidbits memo was just posted our SAF Group website. This 32-pg energy research piece expands upon and covers many more items than tweeted this week. See the research section of the SAF website. #Oil #NatGas #OOTT safgroup.ca/research/trend...

SAF GROUP

Energy Tidbits

Sept 8, 2019

Produced by: Dan Tsubouchi

Will al Falih Out/Prince Abdulaziz In As Saudi Energy Minister Mean Any Change In Oil Market Balancing Approach?

Welcome to new Energy Tidbits memo readers. We are continuing to add new readers to our Energy Tidbits memo and energy blogs. The focus and concept for the memo was set in 1999 with input from PMs, who were looking for research (both positive and negative items) that helped them shape their investment thesis to the energy space, and not focusing on day to day trading. Our priority was and still is to not just report on events, but 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/guidance. Our target is to write on 48 to 50 weekends per year and to send out by noon mountain time.

This week's memo highlights:

1. Waiting on Saudi signals if there will be any shift in Saudi oil policy with Al Falih out, Prince Abdulaziz in as Saudi

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