energy API
Statistics Department
Monthly Statistical Report
1220 L Street, NW
Washington, DC 20005-4070
USA

Vol. 42 No. 11
Published December 20, 2018
November 2018

EXECUTIVE SUMMARY

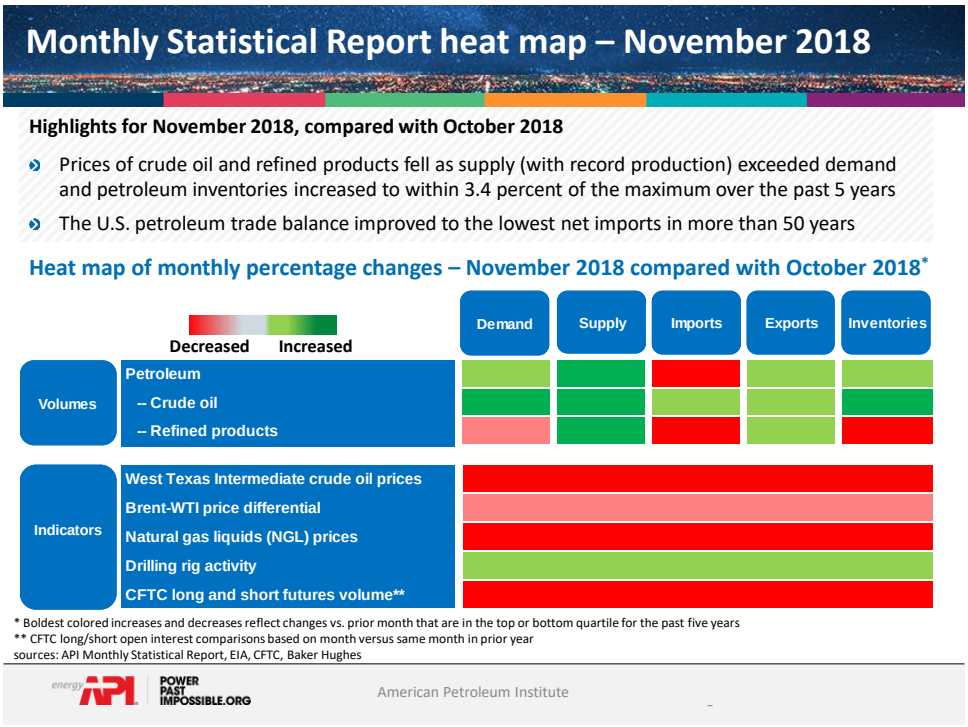
Oil prices fell in November by the 6th most of any month since 1990, with the top three declines all occurring during the Financial Crisis in Q4 2008. Amidst turmoil in global oil markets, however, the U.S. natural gas and oil industry set several new records in November:

- U.S. oil production 11.6 million barrels per day (mb/d) and natural gas liquids (NGL) production (4.8 mb/d);
- Crude oil exports (2.4 mb/d) and lowest petroleum net imports (2.2 mb/d) in more than 50 years;
- Refinery throughput for the month of November (17.3 mb/d) and year-to-date (17.3 mb/d); and,
- Largest crude oil inventory accumulation for the month of November.

With U.S. crude oil production of 11.6 mb/d and output reductions pending by OPEC and Russia, the United States **solidified its position as the world's #1 oil producer**. Since NGLs are a co-product of natural gas production, the record NGL production also ***made the U.S. natural gas industry the world's fourth largest oil producer*** after the U.S., Russia and Saudi Arabia – narrowly edging Iraq for the #4 spot.

Considering U.S. refinery throughput and crude oil exports were at record levels in November, the accumulation of U.S. crude oil inventories was remarkable and underscored how the U.S. energy revolution has continued to be accretive to U.S. energy security and economic growth. Near-term U.S. production growth should continue with drilling activity through Q4 2018 up from that in Q3 2018, but if low oil prices persist some pullback in drilling activity could be expected. However, EIA reports the backlog of drilled but uncompleted wells (DUCs) reached a record high above 8,500 wells in October. Even if drilling activity eases the backlog of completions could take more than six months to work off at the recent pace of 1,300 completions per month, so the U.S. is poised to meet virtually all global oil demand growth in 2019, just as it has in 2018.

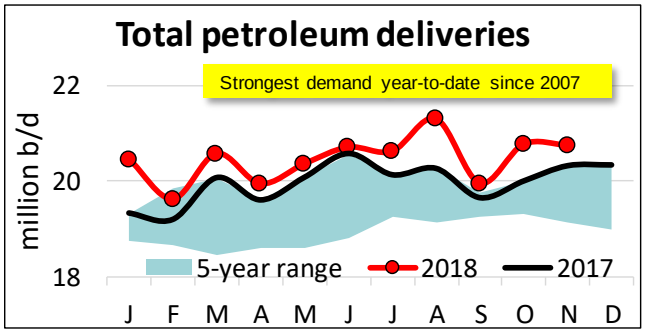
NOVEMBER HIGHLIGHTS (Click hyperlinks to advance to any section)



Details by section

Demand

U.S. petroleum demand 20.7 mb/d in November and strongest year-to-date (20.4 mb/d) since 2007

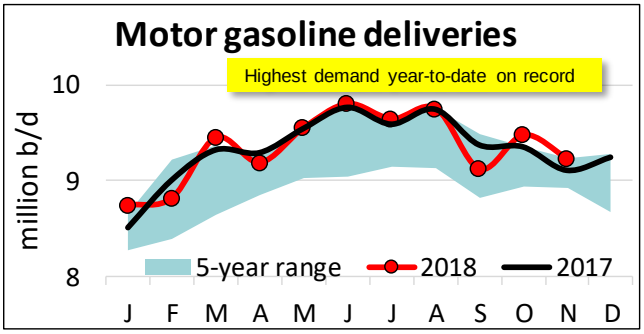


U.S. petroleum demand, as measured by total domestic petroleum deliveries, was 20.7 mb/d in November, which was down 0.1 percent from October but up 2.2 percent compared with November 2017. For the month of November, this was the strongest demand since 2004 and continued to reflect solid economic activity.

Through the first 11 months of the year, petroleum demand remained at its strongest since 2007, averaging 20.4 mb/d and up more than 0.4 mb/d over the same period in 2017.

Gasoline

Record gasoline demand year-to-date through November (9.3 mb/d)

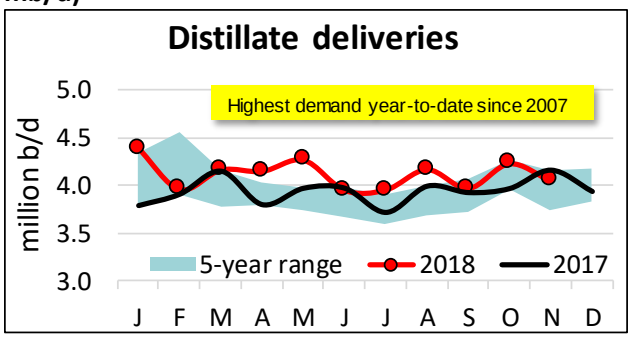


Consumer gasoline demand, measured by total motor gasoline deliveries, was 9.2 mb/d in November. This represented a decrease of 2.6 percent from October but an increase of 1.2 percent over November 2017. Through the first 11 months of the year, gasoline demand averaged 9.3 mb/d, the highest on record for the period.

In November, demand for reformulated-type gasoline, which is consumed primarily in urban areas, increased by 2.5 percent y/y to 3.1 mb/d. By contrast, conventional gasoline is used more in rural areas and increased 0.6 percent y/y to 6.1 mb/d.

Distillate Fuel Oil

Strongest distillate year-to-date since 2007 (4.1 mb/d)



In November, distillate deliveries of 4.1 mb/d decreased by 4.3 percent from October and 2.5 percent compared with November 2017. Through the first 11 months of the year, distillate demand was at its highest since 2007.

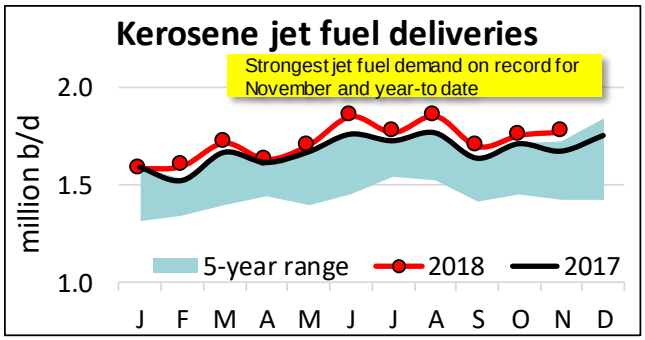
About 96.0 percent of distillate demand in November was for ultra-low sulfur distillate (ULSD), which is driven by road freight transportation activity. The Bureau of Labor Statistics' (BLS) Producer Price Index for freight trucking increased by 8.3 percent y/y in November as strong activity and shortages of truckers continued to raise prices despite low fuel costs.

The remaining 4.0 percent of distillate demand was high sulfur distillate fuel (HSD), which is a heating fuel in the residential and commercial sectors and a marine fuel when blended to upgrade heavy fuel oil. In November, HSD deliveries rose by 31.8 percent from October but were 25.6 percent below those of November 2017.

Kerosene Jet Fuel

Jet fuel demand records for November (1.8 mb/d) and year-to-date (1.7 mb/d).

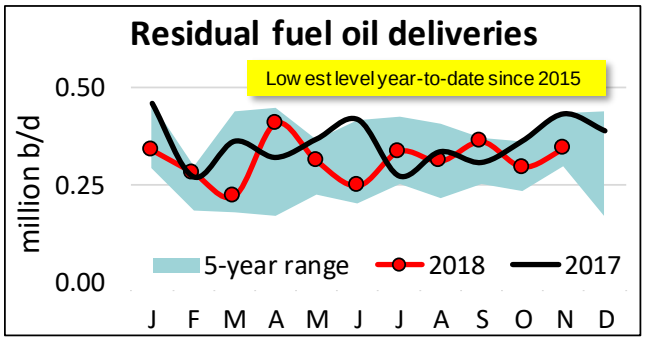
In November, kerosene jet fuel deliveries of nearly 1.8 mb/d increased by 0.9 percent compared with October and 5.3 percent versus November 2017. This was the strongest jet fuel demand on record for the month of November, and it also set a record of 1.7 mb/d year-to-date through the first 11 months of the year.



In its latest report, the International Air Transport Association (IATA) reported U.S. domestic air passenger kilometers increased by 4.2 percent in October compared with October 2017. As the pace of growth continued to moderate from stronger levels in prior months, IATA noted demand for air travel is strong heading into the holiday travel season. They highlighted trade frictions as well as global political and economic uncertainties as concerns, but noted the recent easing of fuel prices is a welcome development for air travelers.

Residual Fuel Oil

Residual fuel oil demand lowest year-to-date since 2015 (0.3 mb/d)



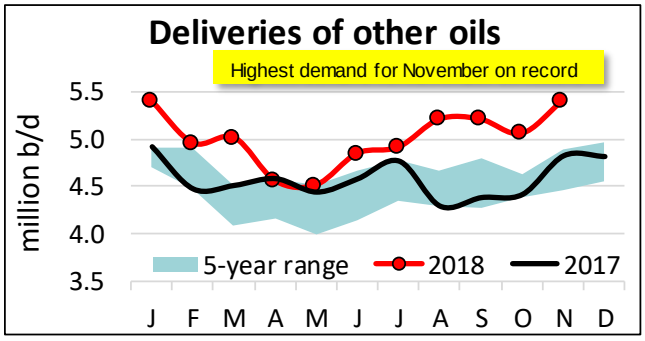
Residual fuel oil is used in electric power production, space heating, marine vessel bunkering and other industrial applications. Residual fuel oil demand was 344 thousand barrels per day (kb/d) in November, an increase of 15.8 percent from October but 12.7 percent below November 2017. Year-to-date through November, residual fuel oil demand is at its lowest since 2015.

As a heating fuel, demand was seasonally strong with EIA reporting temperatures in November were the coldest for the month in four years. By contrast, marine shipping activity appeared to slow

in November, and the Baltic Dry Index declined by 22.8 percent between October and November.

Other Oils

Record refinery and petrochemical feedstock demand for November (5.4 mb/d)

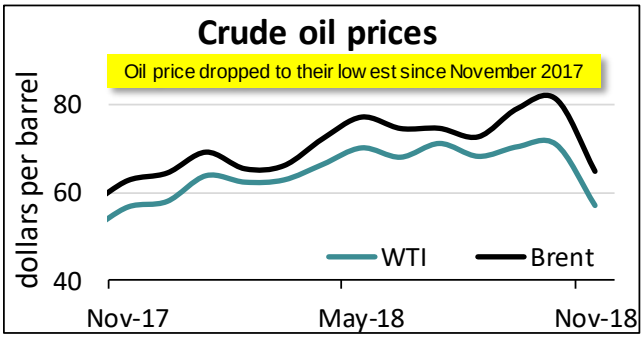


Refining and petrochemical demand for liquid feedstocks, naphtha, and gasoil ("other oils") was 5.4 mb/d in November, an increase of 6.9 percent from October and 9.0 percent — nearly 0.5 mb/d— above November 2017. This reflected solid refining and petrochemical activity that appeared relatively stronger than suggested by American Chemistry Council's Chemical Activity Barometer, which decreased in November by 0.8 from October and increased 1.4 percent compared with November 2017.

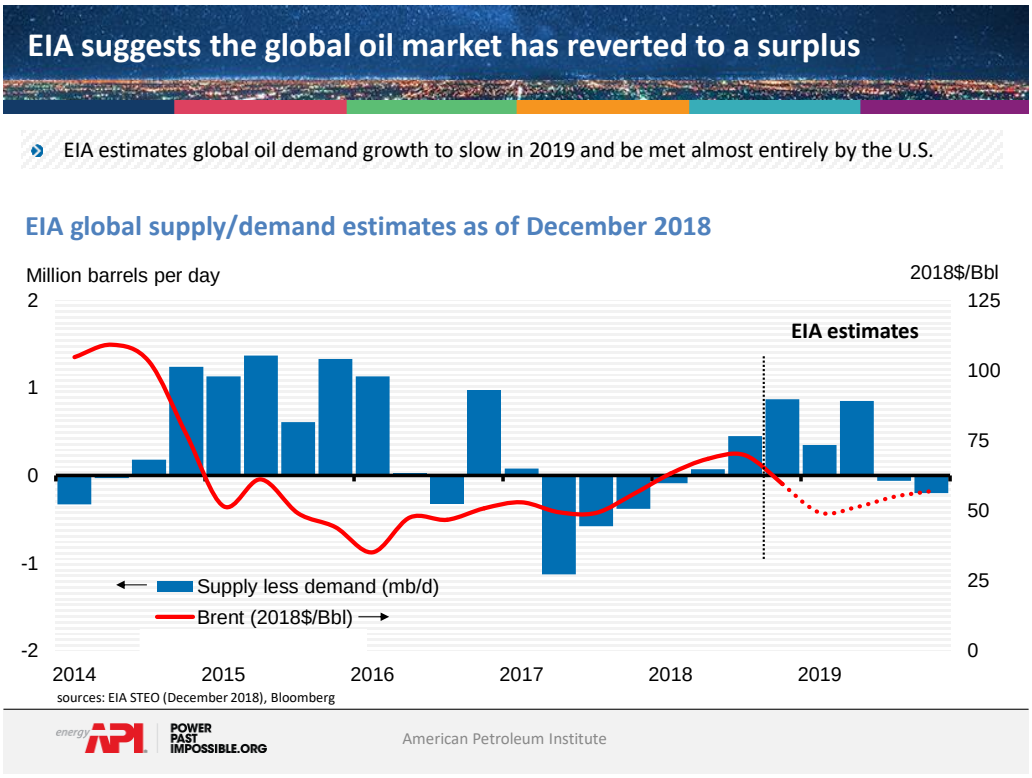
Prices

November – largest oil price decreases (20 percent) since December 2014

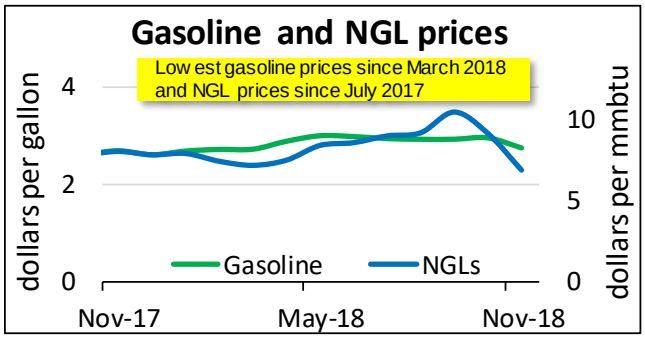
In early December, EIA revised its view of a projected a global oil market surplus to be balanced by the latter half of 2019, as Russia and OPEC agreed to cut 1.2 mb/d of output. The deal came in the wake of sudden oil price decreases.



Domestic WTI crude oil prices averaged $56.96 per barrel in November, a decrease of $13.79 per barrel from October. By comparison, international Brent crude oil prices averaged $64.75 per barrel, down $16.28 (or 20%) from October. These are the largest declines since December 2014, when strong U.S. production growth and OPEC's reluctance to reduce output led to lower prices.



The difference between Brent and WTI crude oil prices narrowed to $7.79 per barrel in November from $10.28 per barrel in October, as strong domestic oil production continued to cushion U.S. consumers from higher international prices.



According to EIA, crude oil has remained the top input cost to produce gasoline. As WTI crude oil prices fell, the average U.S. gasoline price decreased to $2.74 per gallon from $2.94 per gallon in October and, according to AAA reports, continued to decline to $2.38 per gallon as of December 15, which was nearly identical to the 20 percent decline in oil prices between October and November.

Natural gas liquids (NGL) prices averaged $6.88 per million Btu (MMBtu) in November, which as a decrease of 24.7 percent from October. According to Bloomberg, each of the constituent NGL prices decreased in October from September.

Macroeconomy

U.S. economic indicators have not (yet) reflected growing global uncertainties

The November decrease in oil prices was initially spurred by an alleviation of concerns about supply as Iranian sanctions were re-imposed. However, toward the end of November, global economic growth concerns, keyed by international trade frictions, moved to the front and center with reports of slowing in Europe and China. Emerging market uncertainties were compounded International Monetary Fund (IMF) interventions in Argentina, Pakistan, Ghana, San Marino and possibly soon South Africa. Collectively these economic and financial uncertainties have reverberated through global equity markets, with growing expectations for a volatile 2019.

U.S. equity markets have experienced volatility recently with, for example, the S&P 500 Index down more than 10 percent so far in Q4 2018. However, U.S. leading economic indicators have not yet registered material concerns slower economic growth.

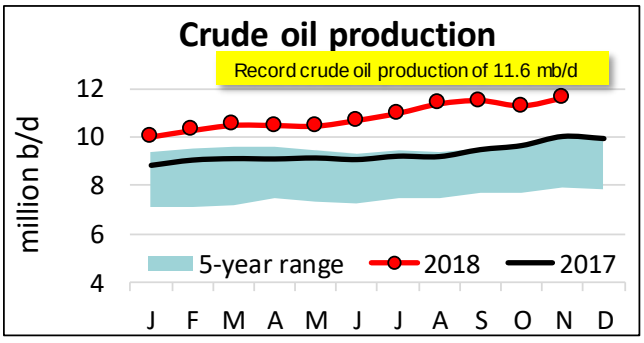
The University of Michigan's consumer sentiment index held steady at 97.5 as of early December, no change from the final reading for November. The survey reported that, so long as job and income growth are strong, rising prices and interest rates should not cause substantial cutbacks in consumer spending. As of early December, however, they also noted consumer concerns over negative news about future job prospects.

Other leading economic indicators pointed toward continued improvement in business conditions. The Institute for Supply Management's Purchasing Managers Index (PMI) registered 59.3 in November, which was an increase of 1.6 percentage points from a reading of 57.7 in October. Any value above 50.0 suggests an expansion. New orders, production activity, and employment expanded. Growth occurred in 13 of the 18 manufacturing sectors surveyed, the same as in October.

Labor markets remained tight as the unemployment rate held steady at 3.7 percent in November for the third consecutive month, according to the Bureau of Labor Statistics (BLS). Although U.S. non-farm payrolls grew by 155,000 in November, this fell short of consensus expectations.

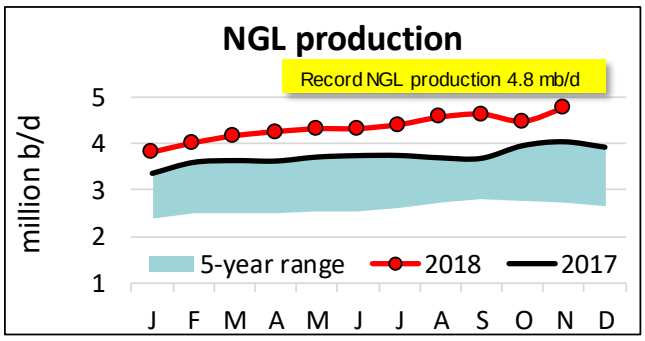
Supply

Record U.S. oil (11.6 mb/d) and NGL production (4.8 mb/d)



U.S. crude oil production of 11.6 mb/d in November marked the highest monthly output on record and the fourth consecutive month above 11.0 mb/d. By comparison, Russia ran a close second with production of 11.4 mb/d that is expected to come down 0.2 mb/d with its new agreement with OPEC, and Saudi Arabia's production reportedly was 10.7 mb/d in December and expected to fall 0.5 mb/d starting next month.

The rise in U.S. production has been consistent with Baker Hughes' reported increases in U.S. oil drilling activity, which increased to an average of 877 oil-targeted rigs in Q4 2018 from 863 oil rigs in Q3 2018. Although some pullback in rigs should be expected with current lower oil prices, EIA reports the backlog of drilled but uncompleted wells (DUCs) reached a record high above 8,500 wells in October, so even if drilling activity eases the backlog of well completions could take more than six months to work off at the recent pace of 1,300 completions per month. Said differently, U.S. oil production is poised to power into 2019.

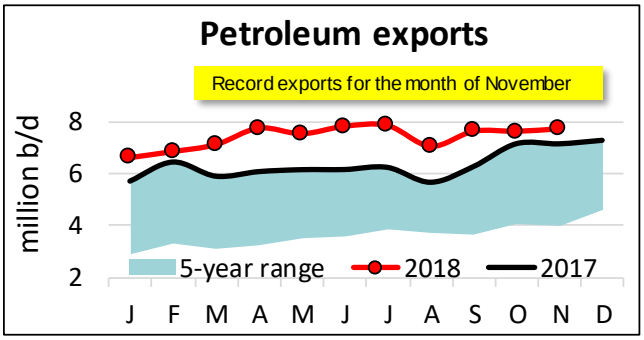


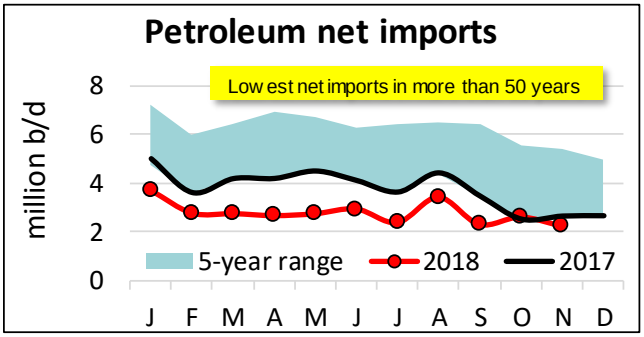
Natural gas liquids (NGL) production, a co-product of natural gas production, reached 4.8 mb/d in November, which also was the highest on record for any month. To place this accomplishment in perspective, U.S. the natural gas industry has now edged Iraq to become the world's fourth largest oil producer.

International trade

Record crude oil exports (2.4 mb/d) propel the U.S. to a new low in petroleum net imports (2.2 mb/d)

As U.S. crude oil exports rose to a record 2.4 mb/d, total U.S. petroleum exports climbed to 7.7 mb/d and were second only to those in June and July 2018, before China ceased its purchases from the U.S.. For the U.S. petroleum net trade balance, November marked another milestone as U.S. net imports fell to 2.2 mb/d.

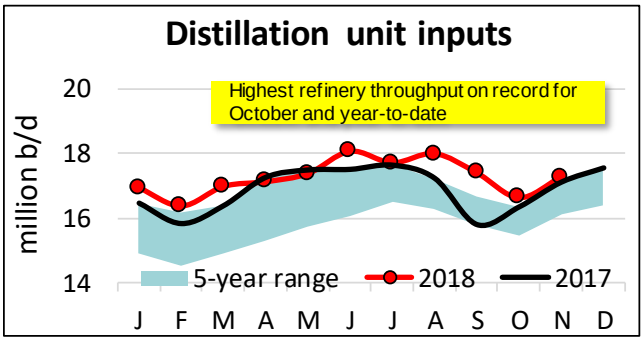




Monitoring the latest data on country-specific shifts in international trade through October showed China purchased no U.S. crude oil for the third consecutive month. However, Mexico, Brazil, South Korea, Canada, Chile and India more than picked up the slack by increasing their U.S. petroleum purchases more than $2 billion between September and October.

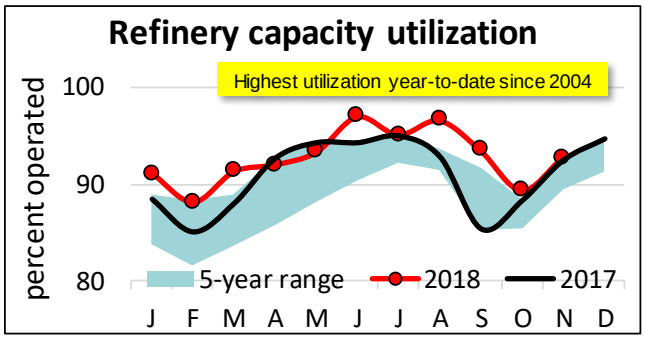
Industry operations

Record refinery throughput for November (17.3 mb/d) and year-to-date (17.3 mb/d)



U.S. refineries set new records for the month of November with throughput of 17.3 mb/d and year-to-date averaging 17.3 mb/d. Refinery capacity utilization of 92.7 percent was at its highest in 14

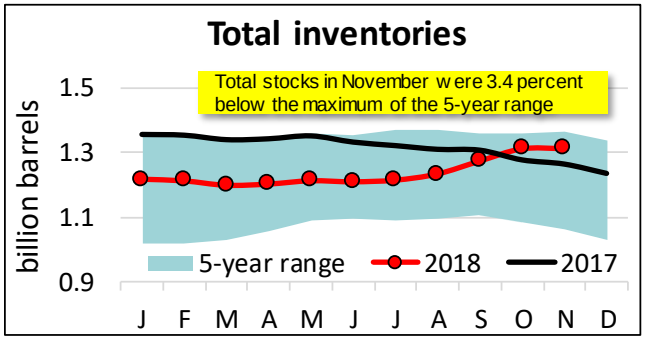
years, both for the month of November and year-to-date through the first 11 month of the year

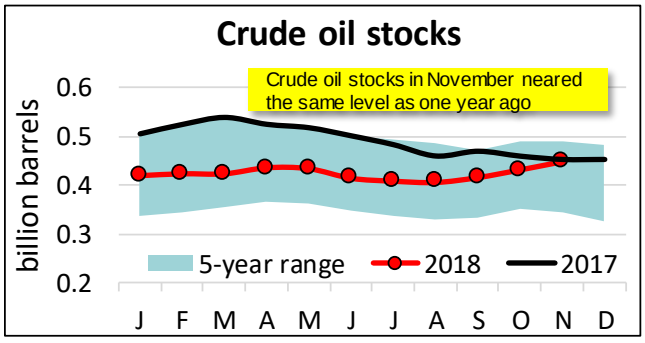


Inventories

Record U.S. crude oil accumulation for November drove petroleum inventories higher.

In November, total petroleum inventories were 1.31 billion barrels, which was an increase of 0.1 percent from October and 3.9 percent over November 2017. The increase was attributable to that in U.S. crude oil inventories, which rose 3.6 percent between October and November as refined product inventories fell. This was the largest accumulation of crude oil on record for the month of November.





ESTIMATED UNITED STATES PETROLEUM BALANCE[1]
(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	November			Year-to-Date		
	2018[2]	2017	% Change	2018[3]	2017	% Change
Disposition:						
Total motor gasoline	9,223	9,110	1.2	9,334	9,349	(0.2)
Finished reformulated	3,143	3,065	2.5	3,126	3,091	1.1
Finished conventional	6,080	6,045	0.6	6,221	6,258	(0.6)
Kerosene-jet	1,774	1,685	5.3	1,723	1,672	3.0
Distillate fuel oil	4,053	4,157	(2.5)	4,116	3,918	5.0
≤ 500 ppm sulfur	3,908	3,963	(1.4)	3,968	3,754	5.7
≤ 15 ppm sulfur	3,893	3,962	(1.7)	3,954	3,748	5.5
> 500 ppm sulfur	145	195	(25.6)	148	164	(9.8)
Residual fuel oil	344	394	(12.7)	313	336	(6.8)
All other oils (including crude losses)	5,408	4,919	9.9	4,947	4,584	7.9
Reclassified[4]	(55)	41	na	(3)	34	na
Total domestic product supplied	20,747	20,307	2.2	20,429	19,895	2.7
Exports	7,704	7,144	7.8	7,350	6,162	19.3
Total disposition	28,451	27,451	3.6	27,780	26,057	6.6
Supply:						
Domestic liquids production						
Crude oil (including condensate)	11,580	10,103	14.6	10,672	9,167	16.4
Natural gas liquids	4,764	4,106	16.0	4,273	3,697	15.6
Other supply[5]	1,252	1,285	(2.6)	1,245	1,207	3.2
Total domestic supply	17,596	15,494	13.6	16,190	14,071	15.1
Imports:						
Crude oil (excluding SPR imports)	7,880	7,674	2.7	7,889	7,999	(1.4)
From Canada	3,220	3,363	(4.3)	3,672	3,430	7.0
All other	4,660	4,311	8.1	4,218	4,568	(7.7)
Products	2,037	2,202	(7.5)	2,257	2,156	4.7
Total motor gasoline (incl. blend.comp)	337	508	(33.7)	683	661	3.3
All other	1,700	1,694	0.4	1,574	1,496	5.2
Total imports	9,917	9,876	0.4	10,146	10,155	(0.1)
Total supply	27,513	25,370	8.4	26,336	24,226	8.7
Stock change, all oils	(938)	(2,081)	na	(1,443)	(1,832)	na
Refinery Operations:						
Input to crude distillation units	17,252	17,127	0.7	17,276	16,823	2.7
Gasoline production	10,184	10,220	(0.4)	10,057	9,940	1.2
Kerosene-jet production	1,727	1,671	3.4	1,803	1,694	6.4
Distillate fuel production	5,202	5,362	(3.0)	5,116	4,989	2.5
Residual fuel production	410	408	0.5	413	432	(4.5)
Operable capacity	18,602	18,505	0.5	18,587	18,567	0.1
Refinery utilization[6]	92.7%	92.6%	na	92.9%	90.6%	na
Crude oil runs	16,911	16,840	0.4	16,930	16,497	2.6

1. Total supply, i.e., production plus imports adjusted for net stock change is equal to total disposition from primary storage. Total disposition from primary storage less exports equals total domestic products supplied. Information contained in this report is derived from information published in the API *Weekly Statistical Bulletin* and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2. Based on API estimated data converted to a monthly basis.

3. Data for most current two months are API estimates. Other data come from U.S. Energy Information Administration (including any adjustments).

4. An adjustment to avoid double counting resulting from differences in product classifications among different refineries and blenders.

5. Includes unaccounted-for crude oil, withdrawals from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol, and downstream blending of ethanol.

6. Represents "Input to crude oil distillation units" as a percent of "Operable capacity".

R: Revised. **na:** Not available.

ESTIMATED UNITED STATES PETROLEUM BALANCE[1]
(Daily average in thousands of 42 gallon barrels)

	November 2018	October 2018	November 2017	% Change From Month Ago	% Change From Year Ago
Stocks (at month-end, in millions of barrels):					
Crude oil (excluding lease & SPR stocks)	446.6	430.8	453.1	3.7	(1.4)
Unfinished oils	92.6	92.2	87.5	0.4	5.8
Total motor gasoline	227.9	226.5	224.9	0.6	1.3
Finished reformulated	0.0	0.0	0.1	0.3	(18.0)
Finished conventional	23.5	22.9	23.6	2.6	(0.3)
Blending components	204.4	203.6	201.3	0.4	1.5
Kerosene-jet	37.7	42.4	41.2	(11.1)	(8.4)
Distillate fuel oil	124.8	124.8	133.4	0.0	(6.4)
≤ 500 ppm sulfur	113.9	114.1	122.9	(0.2)	(7.3)
≤ 15 ppm sulfur	110.5	110.5	116.0	0.0	(4.8)
> 500 ppm sulfur	10.9	10.7	10.5	1.9	3.7
Residual fuel oil	29.7	29.5	29.8	0.7	(0.3)
All other oils	351.7	363.8 R	292.2	(3.3)	20.3
Total all oils	1,311.0	1310.0 R	1,262.0	0.1	3.9