energy API
Statistics Department
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USA

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EXECUTIVE SUMMARY

U.S. petroleum demand in October of 20.8 million barrels per day (mb/d) was the strongest for the month since 2006 and a continued reflection of solid economic activity. New U.S. records for the month of October included:

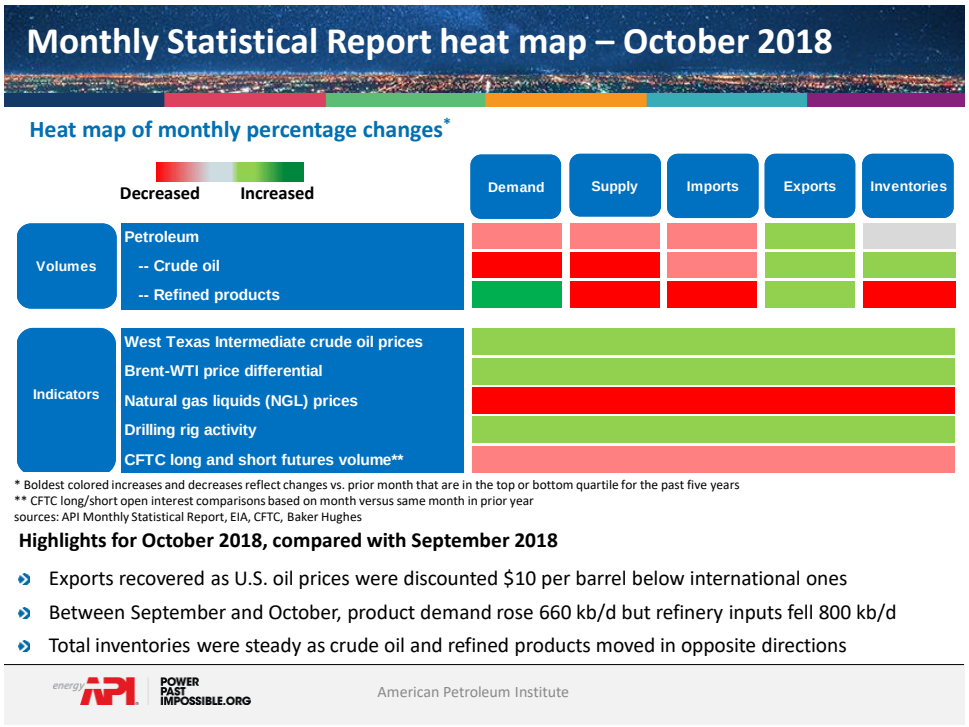
- Demand for gasoline (9.5 mb/d);
- Refining and petrochemical demand for liquid feedstocks, naphtha, and gasoil ("other oils", 5.1 mb/d); and,
- Refinery throughput (16.6 mb/d).

The United States also produced 11.2 mb/d of crude oil and another 4.5 mb/d of natural gas liquids (NGLs) in October, continuing to meet virtually all global oil demand growth so far in 2018. The Energy Information Administration (EIA) separately revised its short-term outlook to project a global oil supply surplus and lower prices for this quarter through 2019. With EIA final data for August (11.3 mb/d for crude oil and 4.6 mb/d for NGLs), the October U.S. production levels were not records but nonetheless reflected strong investment, drilling activity, and output. As supply growth outpaced that of refinery throughput and exports, U.S. crude oil inventories rose 6.3 percent between September and October; this was the biggest monthly accumulation since March 2015.

In October, U.S. petroleum exports (7.6 mb/d) increased for a second consecutive month since a setback in August, when China stopped purchasing U.S. crude oil. However, with U.S. oil prices having remained more than $9.00 per barrel below international levels, the European Union, Japan, Mexico, and Canada in total increased their purchases of U.S. crude oil and refined products by more than $1.0 billion between August and September.

OCTOBER HIGHLIGHTS

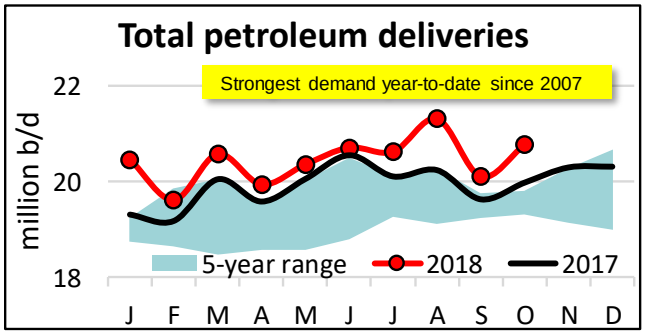
(Click hyperlinks to advance to any section)



Details by section

Demand

U.S. petroleum demand rebounded to 20.8 mb/d in October

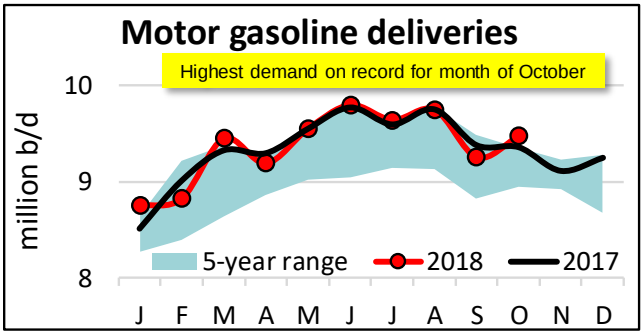


U.S. petroleum demand, as measured by total domestic petroleum deliveries, was 20.8 mb/d in October, which was up by 3.3 percent from September and 3.9 percent compared with October 2017. For the month of October, this was the strongest demand since 2006 and continued to reflect solid economic activity.

Through the first 10 months of the year, petroleum demand remained at its strongest since 2007, averaging 20.4 mb/d and up nearly 0.6 mb/d over the same period in 2017.

Gasoline

Gasoline demand of 9.5 mb/d set a record for October

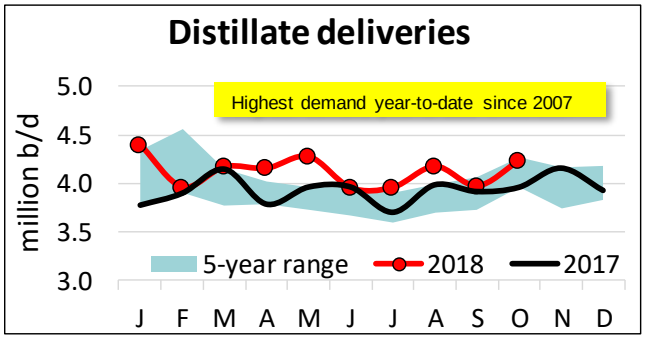


Consumer gasoline demand, measured by total motor gasoline deliveries, was 9.5 mb/d in October, which was the highest on record for the month of October. This represented an increase of 2.4 percent from September and 1.2 percent from October 2017. Notably, this was the first time in the past five years demand rose between September and October.

In October, demand for reformulated-type gasoline, which is consumed primarily in urban areas, increased by 3.0 percent y/y to 3.1 mb/d. By contrast, conventional gasoline is used more in rural areas and increased 0.4 percent y/y to 6.4 mb/d.

Distillate Fuel Oil

Distillate demand year-to-date was the strongest since 2007



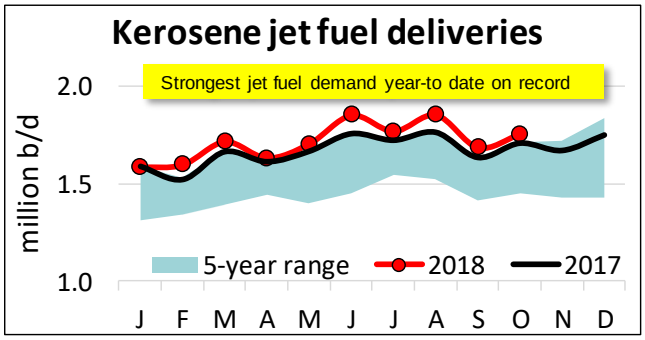
In October, distillate deliveries of 4.2 mb/d increased by 6.5 percent from September and 5.6 percent compared with October 2017. Through the first 10 months of the year, distillate demand was at its highest since 2007.

About 97.0 percent of distillate demand in October 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 8.1 percent y/y in October and reversed declines of the past three months.

The remaining 3.0 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 October, HSD deliveries increased 5.8 percent from September but were 37.1 percent below those of October 2017.

Kerosene Jet Fuel

Jet fuel demand year-to-date was the highest on record.

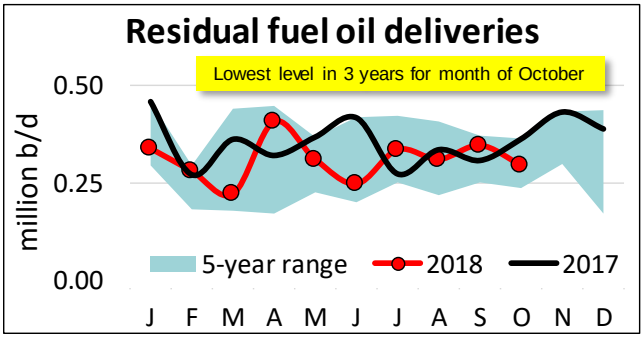


In October, kerosene jet fuel deliveries of nearly 1.8 mb/d increased by 0.4 percent compared with October 2017. This was the second strongest October monthly demand on record. Through the first 10 months of the year, jet fuel demand averaged 1.7 mb/d, the highest on record.

In its latest report, the International Air Transport Association (IATA) reported U.S. domestic air passenger kilometers increased by 6.2 percent in September compared with September 2017. As the pace of growth moderated from stronger levels in prior months, the IATA attributed slowing mainly to hurricane-related travel disruptions in September and less demand stimulation due to low airfares.

Residual Fuel Oil

Residual fuel oil demand and marine shipping slowed in October



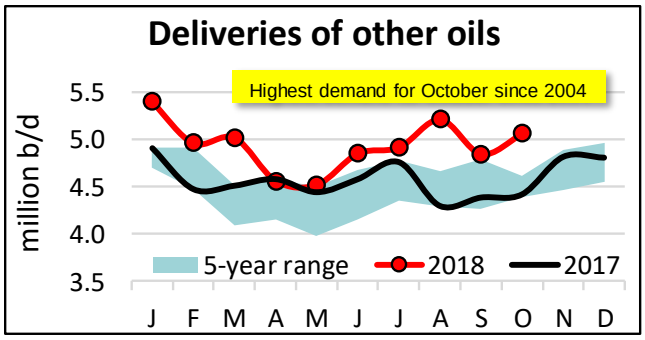
Residual fuel oil is used in electric power production, space heating, marine vessel bunkering and other industrial applications. Residual fuel oil demand was 297 thousand barrels per day (kb/d) in October, a decrease of 14.7 percent from September and 8.0 percent below October 2017.

Marine shipping activity and residual fuel oil demand were supported by U.S. importers' inventory building in advance of the holiday season as well as efforts to beat tariffs with escalation of the China-U.S. trade war. However, marine shipping appeared to slow in October, and the Baltic Dry Index declined by 5.5 percent between September and October.

Other Oils

Refinery and petrochemical feedstock demand rebounded in October to 5.1 mb/d

Refining and petrochemical demand for liquid feedstocks, naphtha, and gasoil ("other oils") was 5.1 mb/d in October, an increase of 3.3 percent



from September and 13.1 percent — nearly 0.5 mb/d— above October 2017. This reflected solid refining and petrochemical activity and generally was consistent solid activity suggested by American Chemistry Council's Chemical Activity Barometer, which increased 3.0 percent y/y in October.

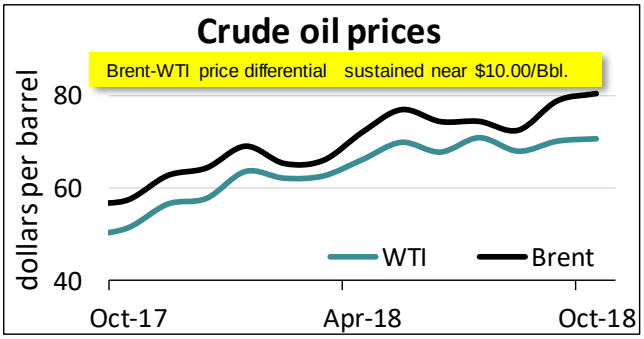
Prices

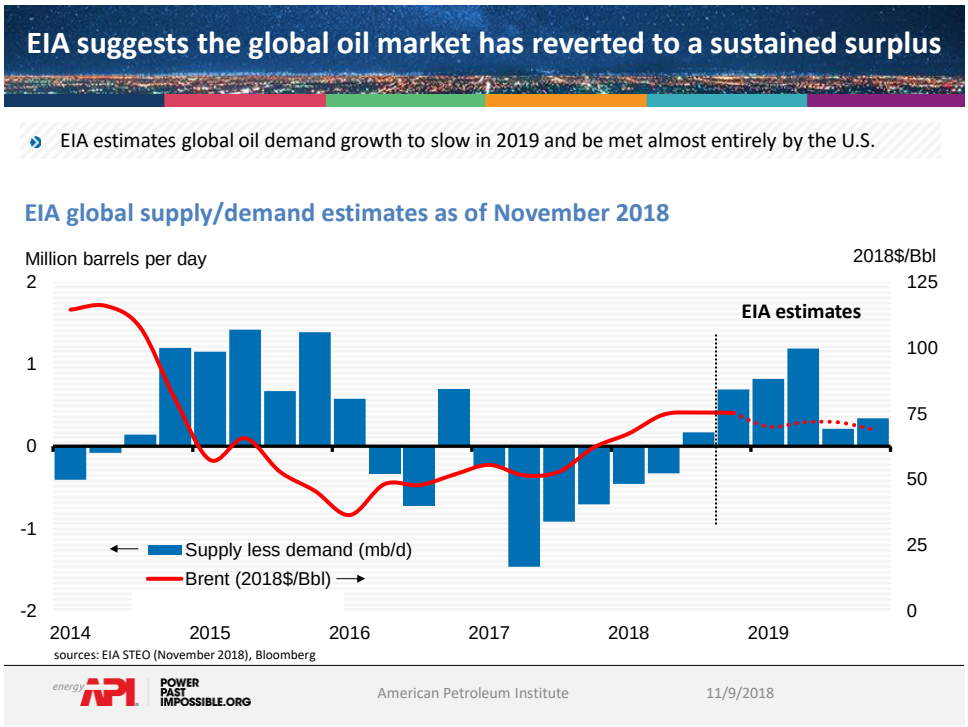
EIA projected an oil market surplus, lower prices

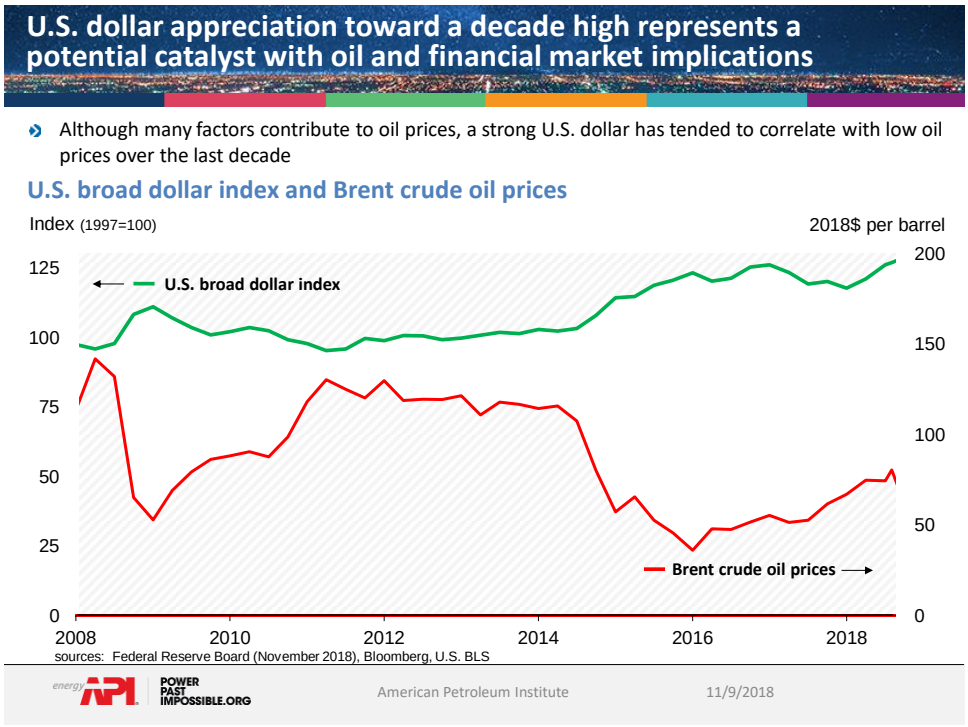
In early November, the EIA revised its view of a balanced global oil market and projected a surplus for three quarters beginning in Q4 2018. The change mainly appeared to reflect lower expectations for the oil supply impact due to re-imposition of sanctions on Iranian oil, as the U.S. administration granted waivers.

Domestic WTI crude oil prices averaged $71.00 per barrel in October, which was an increase of $0.77 per barrel from September. By comparison, international Brent crude oil prices averaged $80.47 per barrel, up $1.61 from September. With excess supply, EIA projects Brent crude oil prices will fall by more than 8.0 percent over the next year.

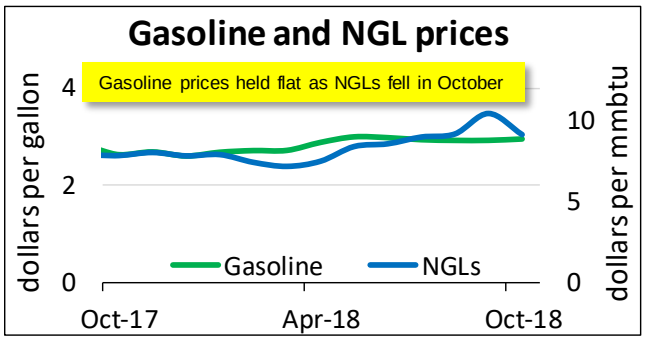
The difference between Brent and WTI crude oil prices widened to $9.47 per barrel in October from $8.66 per barrel in September, as strong domestic oil production continued to cushion U.S. consumers from rising global prices.







Although this trend has not held strictly so far in 2018, another potential shock absorber for oil prices has historically been an inverse relationship between crude oil and the strength of the U.S. dollar, which recently neared its highest levels in a decade. Oil is priced in U.S. dollars globally, so when the U.S. dollar appreciates versus other currencies, oil and refined products have historically become relatively more expensive in local currency terms for free market economies around the world, other things being equal. Consequently, by economic fundamentals, higher prices in local currency terms typically correspond with lower international demand and, ultimately, crude oil prices.



EIA shows crude oil has remained the top input cost to produce gasoline. As WTI crude oil prices in October were almost identical to those from July, the average U.S. gasoline price remained steady around $2.90 per gallon for four consecutive months, according to AAA reports. U.S. oil and gasoline price volatility have been muted by strong domestic oil production and refining activity.

Natural gas liquids (NGL) prices averaged $9.14 per million BTU (MMBtu) in October, which was a decrease of 12.5 percent from September. According to Bloomberg, each of the constituent NGL prices decreased in October from September. Notably, ethane prices at Mt. Belvieu fell more than 14 percent m/m in October.

Macroeconomy

Solid economic indicators continued to underpin energy demand

In October, indicators of the business climate, consumer sentiment, and employment conditions remained solid – so much so that financial markets began to price in further interest rate increases, and the S&P 500 Index declined by 7.0 percent in October.

Despite financial market volatility, the University of Michigan's consumer sentiment index reported consumer income expectations have broadly

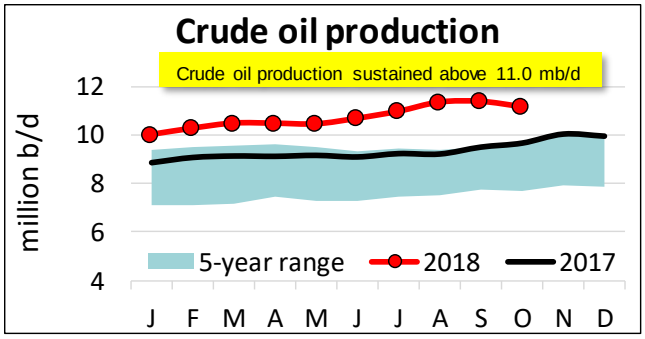
improved, and consumers anticipate continued robust growth in employment as well as rising inflation and higher interest rates. Consequently, the University of Michigan's consumer sentiment index decreased to 98.3 as of early November from a final reading of 98.6 in October.

Other leading economic indicators pointed toward continued expansion in business conditions The Institute for Supply Management's Purchasing Managers Index (PMI) registered 57.7 in October, which was a decrease of 2.1 percentage points from September and 3.6 percentage points from August. 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, two fewer than in September.

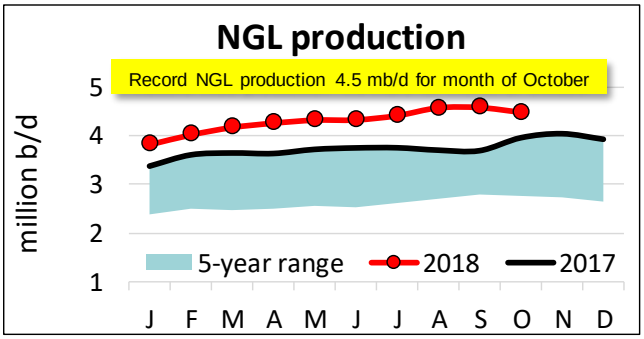
Labor markets remained tight. U.S. non-farm payrolls grew by 250,000 in October, while the unemployment rate held steady at 3.7 percent in October for the second consecutive month, according to the Bureau of Labor Statistics (BLS).

Supply

Strong U.S. oil (11.2 mb/d) and NGL production (4.5 mb/d) continued in October



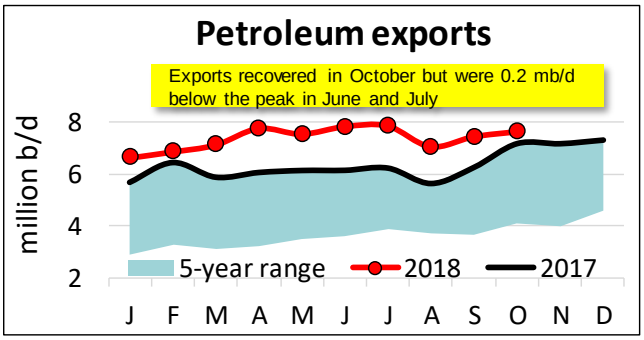
U.S. crude oil production of 11.2 mb/d in October marked a record for the month of October and, with revision to past estimates, the third consecutive month of production over 11.0 mb/d. The rise in production has been consistent with Baker Hughes' reported increases in U.S. oil drilling activity, which increased to an average of 863 oil-targeted rigs in Q3 2018 from 843 in Q2 2018. As of the first week of November, U.S. oil-targeted drilling accelerated to 874 rigs, which positioned the U.S. for further supply gains.



Natural gas liquids (NGL) production, a co-product of natural gas production, reached 4.5 mb/d in October, which was a record for the month. Through the first 10 months of the year, NGL production has averaged a record 4.2 mb/d and increased by nearly 0.6 mb/d above the same period one year ago.

International trade

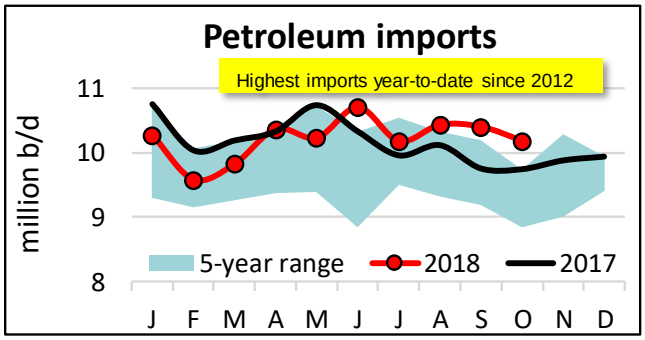
U.S. petroleum exports rebounded to 7.6 mb/d and imports rose



U.S. petroleum exports continued to rebound for a second consecutive month in October. U.S. petroleum exports were 7.6 mb/d in October, which was an increase of 0.2 mb/d from September and 0.5 mb/d above October 2017. The increase was attributable to crude oil, as refined product exports remained flat between September and October.

Monitoring the latest data on country-specific shifts in international trade through September showed China and Hong Kong purchased no U.S. crude oil for the second consecutive month. However, as U.S. oil prices remained nearly $10 per barrel below international ones, the European Union, Japan, Mexico, and Canada in total increased their purchases of U.S. crude oil and refined products by

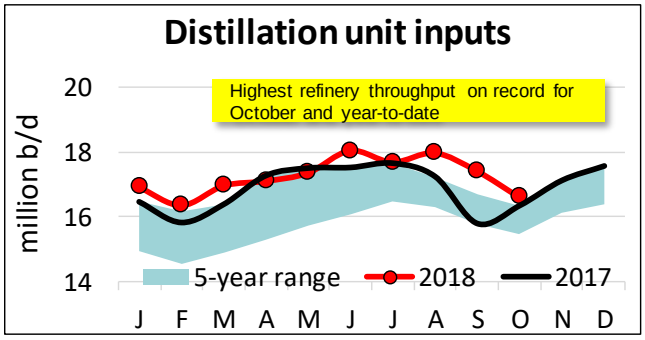
more than $1.0 billion between August and September.



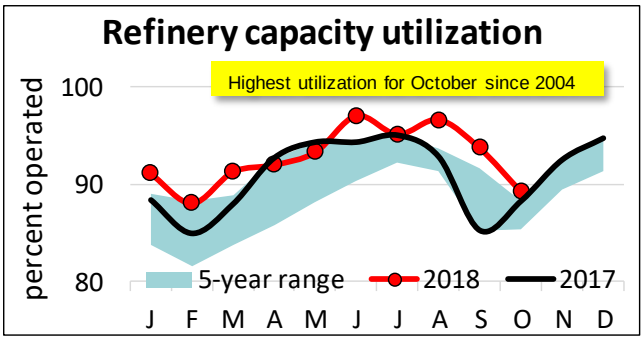
U.S. petroleum imports have also risen. In October, the U.S. imported 10.2 mb/d of crude oil and refined products, which was an increase of 0.4 mb/d or 4.5 percent y/y. Roughly 70 percent of the increased imports was refined products needed to meet U.S. demand despite strong continued domestic refining throughput.

Industry operations

Record refinery throughput for October (16.6 mb/d) and year-to-date (17.3 mb/d)



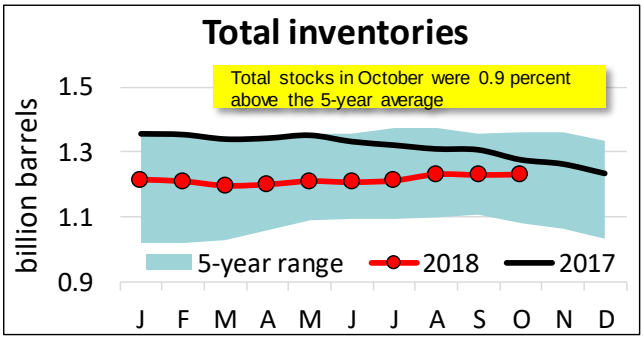
U.S. refineries set a new record for the month of October with gross inputs of 16.6 mb/d and ran at their highest percent of capacity operated (89.3 percent) for the month since 2004. Through the first 10 months of the year, refinery throughput of 17.3 mb/d is the highest on record.

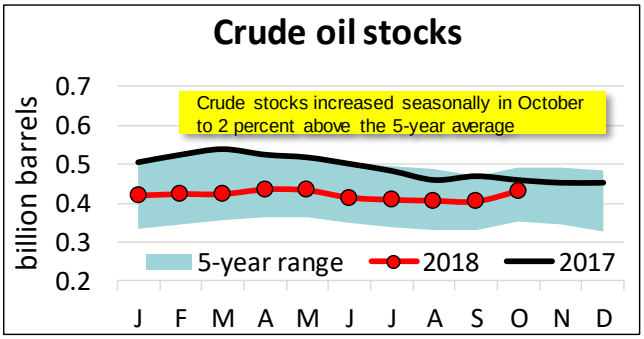


Inventories

U.S. crude oil stocks led petroleum inventories higher in October

In October, total petroleum inventories were 1.24 billion barrels, which was an increase of 0.1 percent from September but 2.8 percent below October 2017. The increase was attributable to that in U.S. crude oil inventories, which rose 6.3 percent between September and October; this was the biggest monthly accumulation since March 2015.





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

Disposition and Supply	October			Year-to-Date		
	2018[2]	2017	% Change	2018[3]	2017	% Change
Disposition:						
Total motor gasoline	9,473	9,357	1.2	9,333	9,348	(0.2)
Finished reformulated	3,110	3,020	3.0	3,138	3,098	1.3
Finished conventional	6,363	6,337	0.4	6,209	6,250	(0.7)
Kerosene-jet	1,758	1,751	0.4	1,718	1,664	3.2
Distillate fuel oil	4,234	4,011	5.6	4,101	3,909	4.9
≤ 500 ppm sulfur	4,124	3,836	7.5	3,950	3,746	5.5
≤ 15 ppm sulfur	4,115	3,834	7.3	3,938	3,739	5.3
> 500 ppm sulfur	110	175	(37.1)	151	163	(7.4)
Residual fuel oil	297	323	(8.0)	313	338	(7.4)
All other oils (including crude losses)	5,060	4,473	13.1	4,930	4,596	7.3
Reclassified[4]	(54)	74	na	15	30	na
Total domestic product supplied	20,768	19,990	3.9	20,410	19,885	2.6
Exports	7,609	7,086	7.4	7,305	6,068	20.4
Total disposition	28,377	27,076	4.8	27,715	25,954	6.8
Supply:						
Domestic liquids production						
Crude oil (including condensate)	11,152	9,703	14.9	10,601	9,112	16.3
Natural gas liquids	4,480	4,020	11.4	4,246	3,664	15.9
Other supply[5]	1,214	1,231	(1.4)	1,249	1,205	3.7
Total domestic supply	16,846	14,954	12.7	16,097	13,981	15.1
Imports:						
Crude oil (excluding SPR imports)	7,812	7,681	1.7	7,927	8,031	(1.3)
From Canada	3,539	3,364	5.2	3,703	3,437	7.7
All other	4,273	4,317	(1.0)	4,224	4,594	(8.1)
Products	2,371	2,060	15.1	2,266	2,166	4.6
Total motor gasoline (incl. blend.comp)	501	495	1.2	703	677	3.8
All other	1,870	1,565	19.5	1,563	1,489	5.0
Total imports	10,183	9,741	4.5	10,193	10,197	(0.0)
Total supply	27,029	24,695	9.5	26,290	24,178	8.7
Stock change, all oils	(1,348)	(2,381)	na	(1,424)	(1,776)	na
Refinery Operations:						
Input to crude distillation units	16,615	16,343	1.7	17,347	16,871	2.8
Gasoline production	10,240	10,129	1.1	10,044	9,912	1.3
Kerosene-jet production	1,720	1,611	6.8	1,810	1,697	6.7
Distillate fuel production	4,941	4,972	(0.6)	5,107	4,952	3.1
Residual fuel production	377	442	(14.7)	413	434	(5.0)
Operable capacity	18,600	18,497	0.6	18,586	18,574	0.1
Refinery utilization[6]	89.3%	88.4%	na	93.3%	90.8%	na
Crude oil runs	16,306	16,061	1.5	17,008	16,542	2.8

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)

	October 2018	September 2018	October 2017	% Change From Month Ago	% Change From Year Ago
Stocks (at month-end, in millions of barrels):					
Crude oil (excluding lease & SPR stocks)	430.8	405.1	459.7	6.3	(6.3)
Unfinished oils	92.2	89.6	90.7	2.9	1.7
Total motor gasoline	226.5	235.3	215.9	(3.7)	4.9
Finished reformulated	0.0	0.0	0.0	(0.1)	(20.0)
Finished conventional	22.9	24.7	23.1	(7.3)	(0.9)
Blending components	203.6	210.6	192.8	(3.3)	5.6
Kerosene-jet	42.4	46.8	41.8	(9.4)	1.4
Distillate fuel oil	124.8	135.6	130.1	(8.0)	(4.0)
≤ 500 ppm sulfur	114.1	127.3	119.9	(10.4)	(4.8)
≤ 15 ppm sulfur	110.5	124.0	112.8	(10.9)	(2.0)
> 500 ppm sulfur	10.7	8.3	10.5	28.9	2.3
Residual fuel oil	29.5	28.3	30.0	4.2	(1.5)
All other oils	284.9	289 R	304.1	(1.4)	(6.3)
Total all oils	1,231.1	1229.7 R	1,272.2	0.1	(3.2)