American Petroleum Institute

200 Massachusetts Ave. NW
Washington, DC 20001

The MSR™ - Monthly Statistical Report

API Statistics Department & Office of the Chief Economist

Vol. 45 No. 11
Published December 16, 2021
November 2021

EXECUTIVE SUMMARY

Heading towards the year's end, U.S. demand for petroleum products has remained solid and steadfast along with the economy.

API's primary data on U.S. petroleum markets for November indicated that demand increased in total and across most refined products. To meet demand growth, refining activity accelerated to its highest capacity utilization rate in three months and, in the process, drew down crude oil inventories to their lowest level for November since 2014. Crude oil inventories fell for the month despite domestic crude oil production that edged up by 0.1 million barrels per day (mb/d) to 11.6 mb/d, its highest since April 2020.

However, as demand still outpaced supply, the U.S. was a petroleum net importer in November of 0.4 mb/d. This marked a reversal of the United States' position as a petroleum net exporter in November 2019 and November 2020. Notably, EIA projects U.S. crude oil net imports could grow by 26% y/y or 0.9 mb/d in 2022, leading the U.S. to be a petroleum net importer next year.

Leading economic indicators strengthened. API's Distillate Economic Indicator™ suggested continued growth of U.S. industrial production and broader economic activity (please see the following chart for details).

CONTENTS

(Click hyperlinks to advance to any section)

Demand

- **U.S. petroleum demand rose to 20.6 mb/d with increases across most refined products solid.**
  - Motor gasoline demand (9.1 mb/d) within 2.1% of its highest of the past 5 years.
  - Trucking drove highest distillate demand (4.1 mb/d) for any month since Nov. 2019.
  - Jet fuel demand (1.5 mb/d) continued to strengthen.
  - Shipping helped to double residual fuel oil demand.
  - Other oils' demand of 5.5 mb/d a record for November.

Prices & Macroeconomy

- **Highest gasoline prices for November since 2012.**
- **Leading indicators suggest continued economic growth.**

Supply

- **Highest U.S. crude oil production (11.6 mb/d) since Apr. 2020.**

International trade

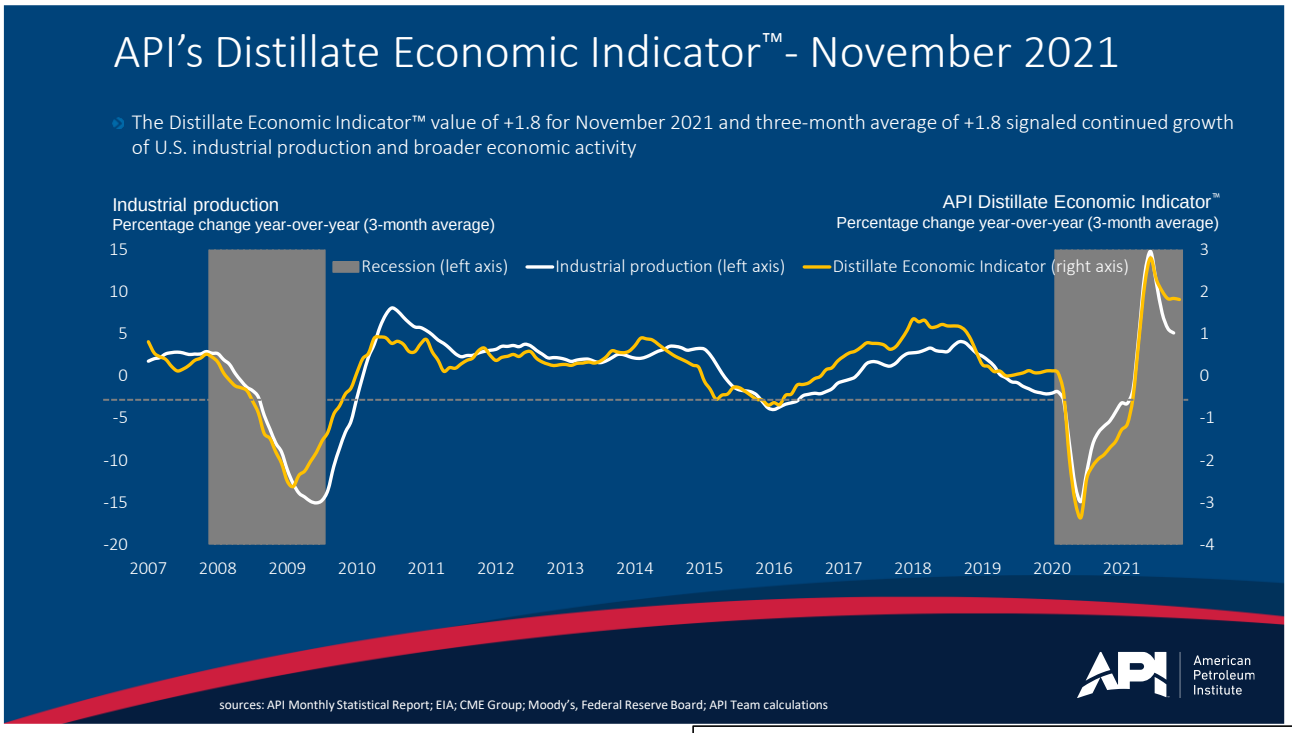
- **U.S. petroleum net imports continued; projected by EIA to persist in 2022.**

Industry operations

- **Refinery inputs and capacity utilization increased seasonally but lagged their 2019 levels.**

Inventories

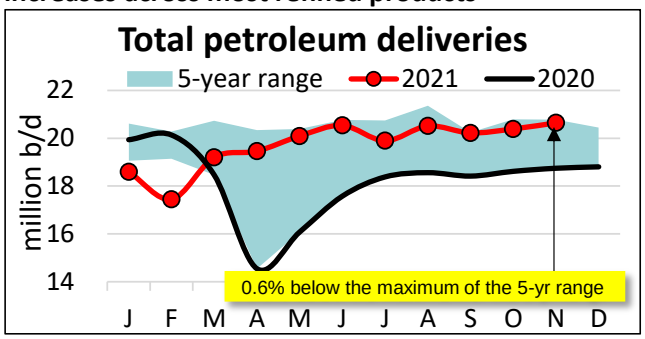
- **Lowest total and crude oil inventories for November since 2014.**



Details by section

Demand

U.S. petroleum demand rose to 20.6 mb/d with increases across most refined products

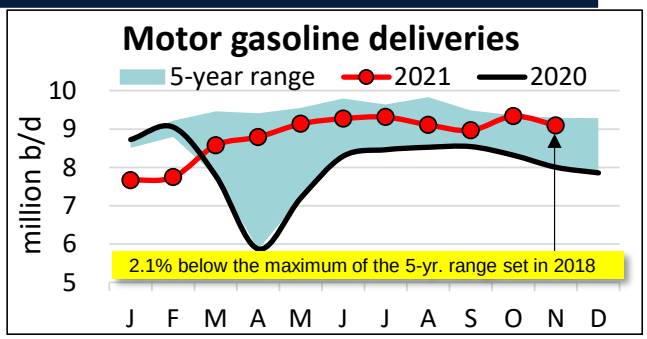


U.S. petroleum demand, as measured by total domestic petroleum deliveries, was 20.6 mb/d in November. This reflected a 1.2% m/m increase from October and was within 0.6% of the top of the five-year range that was set in 2018. The demand for every major refined product other than motor gasoline increased for the month, along with the economy.

Gasoline

Motor gasoline demand (9.1 mb/d) within 2.1% of its highest of the past 5 years

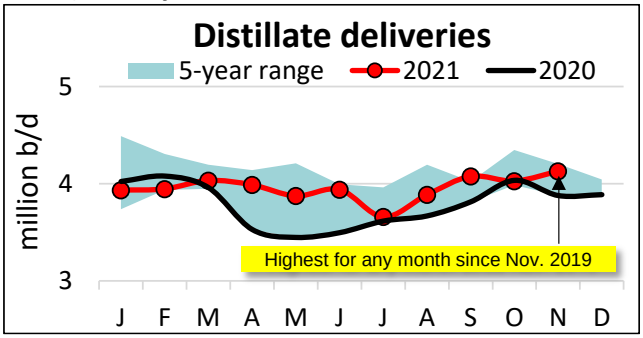
Consumer gasoline demand, measured by motor gasoline deliveries, of 9.1 mb/d in November decreased by 2.6% from October and was within 2.1% of its highest level of the past five years.



Deliveries of reformulated-type gasoline (consumed primarily in urban areas) fell by 2.9% m/m to 3.0 mb/d, while those of conventional gasoline (mainly in rural areas) decreased by 2.5% m/m to 6.1 mb/d. Reformulated gasoline deliveries exceeded their Nov. 2019 level by 3.7%, suggesting urban demand growth. By contrast, conventional gasoline deliveries trailed their Nov. 2019 level by 3.5%.

Distillate Fuel Oil

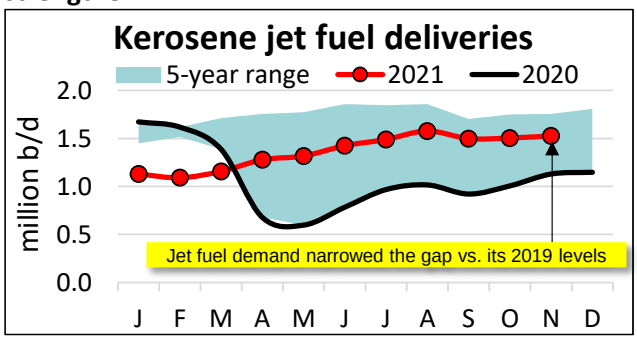
Trucking drove highest distillate demand (4.1 mb/d) for any month since Nov. 2019



Distillate deliveries of 4.1 mb/d increased by 2.5% from October and were the highest for any month since Nov. 2019. DAT iQ industry trendlines suggested that spot freight truck posts rose by 3.6% m/m in November. Meanwhile, U.S. trucking freight rates rose by 36% y/y in October, the largest increase in nearly 30 years.

Kerosene Jet Fuel

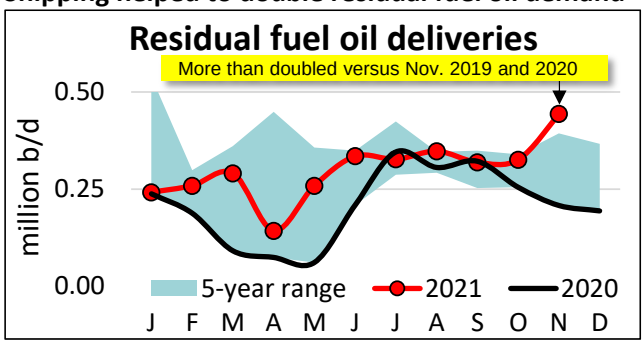
Jet fuel demand (1.5 mb/d) continued to strengthen



'K-jet' deliveries rose by 1.5% m/m to 1.5 mb/d in November. The gap versus its 2019 levels continued to narrow, as the level in Nov. 2021 was 10.8% below that of Nov. 2019, compared with a 12.9% gap last month. The International Air Transport Association (IATA) indicated that international air travel bookings increased in November. However, Flightradar24 high-frequency data suggested that tracked flights decreased by 4.2% m/m for the month.

Residual Fuel Oil

Shipping helped to double residual fuel oil demand

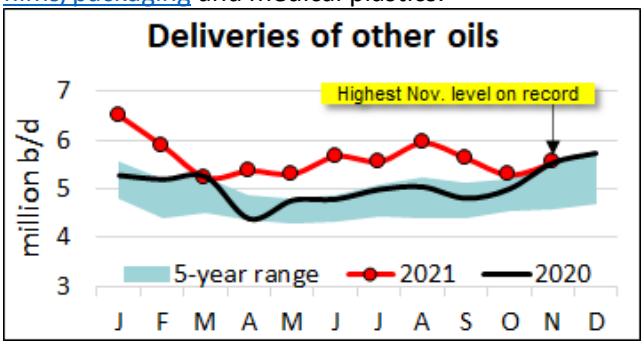


Deliveries of residual fuel oil, which is used in electric power production, space heating, industrial applications and as a marine bunker fuel, were 0.4 mb/d in November, which reflected increases of 36.2% m/m and 113.5% y/y. Strong marine shipping and congested ports have likely supported residual fuel demand.

Naphtha, Gasoil, Propane, Propylene "Other Oils"

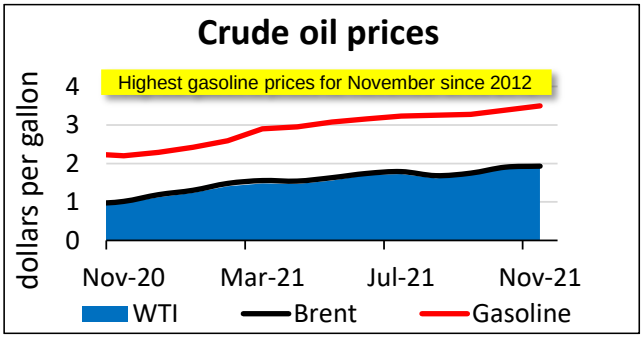
Other oils' demand of 5.5 mb/d a record for Nov.

Deliveries of liquid feedstocks, such as naphtha, gasoil, and propane/propylene ("other oils") used primarily in refining and petrochemical manufacturing, were 5.5 mb/d in November – the highest on record for the month and 2.4% over their Nov. 2019 level. This reflected strong continued refining activity and petrochemical demand for films/packaging and medical plastics.



Prices

Highest gasoline prices for November since 2012



In November, West Texas Intermediate (WTI) crude oil prices decreased by 2.9% m/m to $79.15 per barrel ($1.88 per gallon). Brent crude oil spot prices averaged $83.54 per barrel ($1.99 per gallon), and the Brent-WTI crude oil price differential was $4.39 per barrel, generally reflecting transportation costs.

Crude oil remained the top input cost in making gasoline per EIA. The U.S. average conventional gasoline price was $3.49 per gallon in November, up by 3.2% ($0.11 per gallon) from October, according to AAA. This was the highest gasoline price for the month since November 2012.

Macroeconomy

Leading indicators suggest continued growth

API's Distillate Economic Indicator™, which is based primarily on diesel/distillate supply, demand, and inventories, had a reading of 1.8 in November and a three-month average of 1.8, suggesting that U.S. industrial production and broader economic activity have continued to grow.

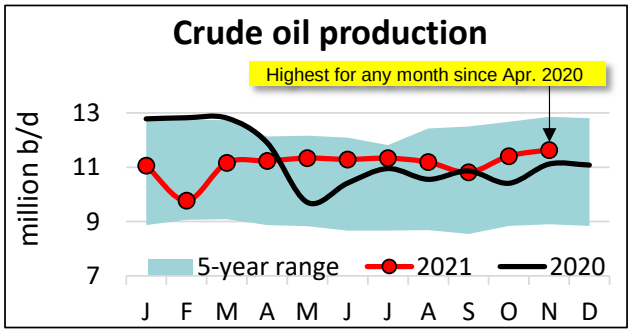
The Institute for Supply Management's manufacturing Purchasing Managers Index (PMI) had a reading of 61.1 in November, a 0.3 percentage point increase from October. Index values above 50.0 suggest an expansion in the overall economy, and the manufacturing PMI exceeded that threshold for a 18th consecutive month. Within the index, measures of new orders, production, employment, and imports increased, while those for supplier deliveries, inventories, prices, backlog of orders and new export orders decreased from October. Thirteen of the 16 manufacturing industries surveyed reported growth in November.

The University of Michigan's consumer sentiment index rebounded by 4.5% m/m to a reading of 70.4 in November. Increased income expectations drove the index higher following a large drop last month related to consumer price inflation concerns.

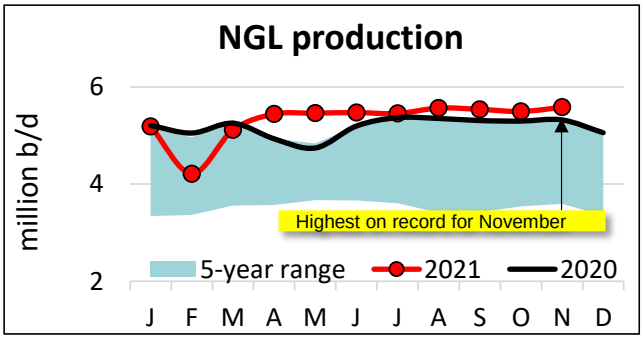
According to the Bureau of Labor Statistics (BLS), the unemployment rate fell by 0.4% to 4.2% in November, and non-farm payrolls increased by a preliminary estimate of 210,000.

Supply

Highest U.S. crude oil production (11.6 mb/d) since Apr. 2020



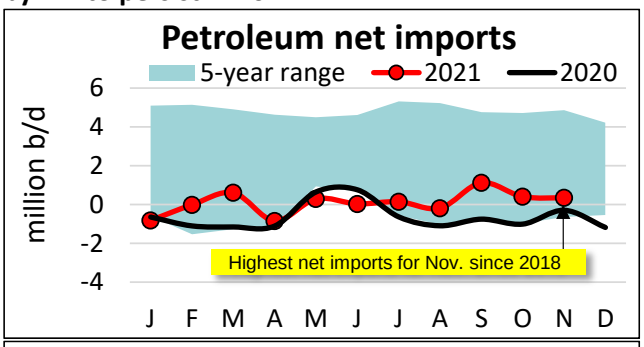
U.S. crude oil production grew by 0.2 mb/d to 11.6 mb/d in November. This was the highest production since April 2020 but remained down by 1.3 mb/d compared with Nov. 2019. Baker Hughes reported 460 active oil-directed rigs in November, a 4.2% m/m increase but 29.5% less than the 652 rigs that ran in November 2019.

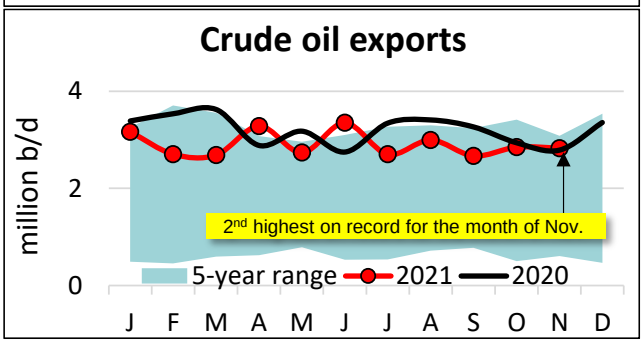


By contrast, natural gas-directed drilling rose by three (4.2% m/m) to 102 rigs in November despite spot prices that fell by 8.3% m/m to $5.05 per million Btu, which was still the highest for the month since 2008. U.S. natural gas natural gas liquids production (NGLs) of 5.6 mb/d in November rose by 1.6% m/m and 4.9% y/y.

International trade

U.S. petroleum net imports continued; projected by EIA to persist in 2022





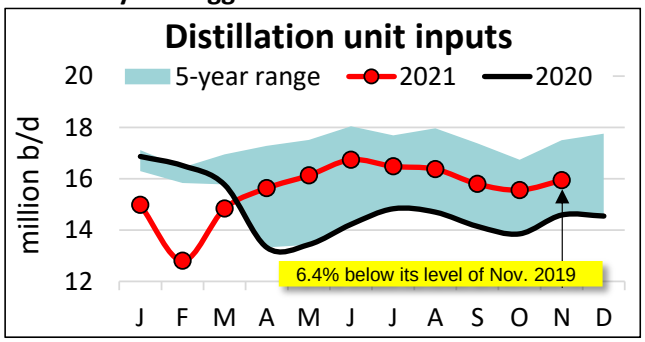
The U.S. was a petroleum net importer, as it has been for six of the past seven months, in November of 0.4 mb/d. This reversed the United States' position as a petroleum net exporter in November 2019 and November 2020.

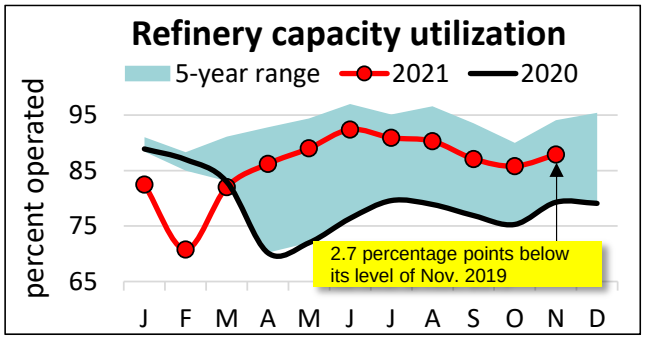
Within the total, U.S. crude oil imports of 6.2 mb/d were steady from October but notably up by 0.7 mb/d versus Nov. 2020. Meanwhile, U.S. crude oil exports of 2.8 mb/d were at their second-highest level on record for the month.

EIA projects the U.S. to be a petroleum net importer in 2022 and that U.S. crude oil net imports could grow by 26% y/y or 0.9 mb/d.

Industry operations

Refinery inputs and capacity utilization increased seasonally but lagged their 2019 levels

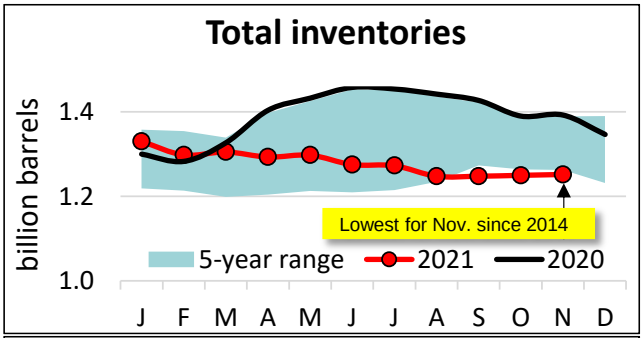


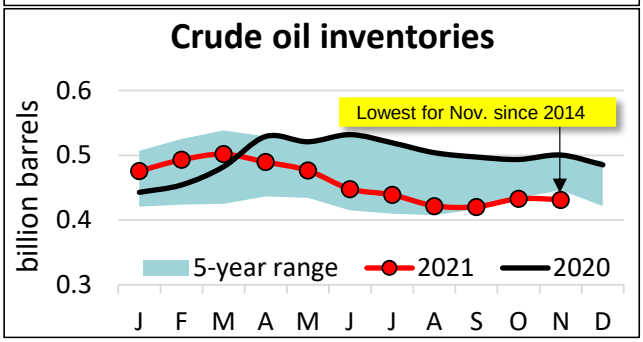


U.S. refinery throughput was 15.9 mb/d in November, which was a seasonal increase of 2.5% from October and implied a capacity utilization rate of 87.9%. Both refinery throughput and capacity utilization for November lagged their respective levels from Nov. 2019.

Inventories

Lowest total and crude oil inventories for November since 2014





U.S. total petroleum inventories, including crude oil and refined products (but excluding the Strategic Petroleum Reserve) increased by 0.2% m/m in November to 1.25 billion barrels. Within the total, U.S. crude oil inventories fell by 0.3% m/m to 431.3 million barrels. Crude oil and total petroleum inventories were both at their lowest levels for the month of November since 2014.

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

Disposition and Supply	November			Year-to-Date		
	2021[2]	2020	% Change	2021[3]	2020	% Change
Disposition:						
Total motor gasoline	9,092	8,001	13.6	8,826	8,067	9.4
Finished reformulated	2,973	2,430	22.3	2,821	2,469	14.3
Finished conventional	6,119	5,571	9.8	6,005	5,598	7.3
Kerosene-jet	1,527	1,130	35.1	1,365	1,070	27.6
Distillate fuel oil	4,129	3,879	6.4	3,953	3,776	4.7
≤ 500 ppm sulfur	4,085	3,862	5.8	3,934	3,747	5.0
≤ 15 ppm sulfur	4,073	3,861	5.5	3,900	3,736	4.4
> 500 ppm sulfur	44	17	158.8	19	29	(34.5)
Residual fuel oil	444	208	113.5	300	209	43.5
All other oils (including crude losses)	5,539	5,477	1.1	5,212	4,918	6.0
Reclassified[4]	(87)	48	na	86	89	na
Total domestic product supplied	20,644	18,743	10.1	19,742	18,129	8.9
Exports	8,039	7,913	1.6	8,378	8,459	(1.0)
Total disposition	28,683	26,655	7.6	28,119	26,587	5.8
Supply:						
Domestic liquids production						
Crude oil (including condensate)	11,633	11,121	4.6	11,121	11,301	(1.6)
Natural gas liquids	5,583	5,321	4.9	5,330	5,185	2.8
Other supply[5]	1,062	1,118	(5.0)	1,093	1,019	7.3
Total domestic supply	18,278	17,560	4.1	17,544	17,505	0.2
Imports:						
Crude oil (excluding SPR imports)	6,232	5,570	11.9	6,094	5,890	3.5
From Canada	3,650	3,714	(1.7)	3,697	3,575	3.4
All other	2,582	1,856	39.1	2,397	2,315	3.6
Products	2,160	2,045	5.6	2,386	1,985	20.2
Total motor gasoline (incl. blend.comp)	679	549	23.7	843	585	44.1
All other	1,481	1,496	(1.0)	1,543	1,399	10.3
Total imports	8,392	7,616	10.2	8,480	7,875	7.7
Total supply	26,670	25,176	5.9	26,024	25,380	2.5
Stock change, all oils	(2,013)	(1,480)	na	(2,096)	(1,207)	na
Refinery Operations:						
Input to crude distillation units	15,943	14,580	9.3	15,590	14,740	5.8
Gasoline production	9,670	8,884	8.8	9,509	8,735	8.9
Kerosene-jet production	1,407	1,061	32.6	1,289	1,008	28.0
Distillate fuel production	4,848	4,522	7.2	4,624	4,747	(2.6)
Residual fuel production	258	153	68.6	210	193	9.3
Operable capacity	18,131	18,386	(1.4)	18,123	18,688	(3.0)
Refinery utilization[6]	87.9%	79.3%	na	86.0%	78.9%	na
Crude oil runs	15,468	14,124	9.5	15,070	14,219	6.0

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 2021	October 2021		November 2020	% Change From Month Ago	% Change From Year Ago
Stocks (at month-end, in millions of barrels):						
Crude oil (excluding lease & SPR stocks)	431.3	432.7		500.8	(0.3)	(13.9)
Unfinished oils	88.8	91.5		80.2	(3.0)	10.7
Total motor gasoline	216.5	216.4		266.3	0.0	(18.7)
Finished reformulated	0.0	0.0		0.0	(0.1)	(62.8)
Finished conventional	18.5	17.1		25.0	8.2	(26.0)
Blending components	198.0	199.3		241.2	(0.7)	(17.9)
Kerosene-jet	37.0	40.1		37.7	(7.7)	(1.8)
Distillate fuel oil	124.5	126.1		157.2	(1.3)	(20.8)
≤ 500 ppm sulfur	116.4	117.7		148.6	(1.1)	(21.7)
≤ 15 ppm sulfur	113.5	120.2		145.2	(5.6)	(21.8)
> 500 ppm sulfur	8.1	8.4		8.6	(3.6)	(6.0)
Residual fuel oil	27.9	29.0		31.1	(3.8)	(10.4)
All other oils	325.8	314.0	R	319.1	3.8	2.1
Total all oils	1,251.8	1,249.8	R	1,392.3	0.2	(10.1)