American Petroleum Institute

200 Massachusetts Ave. NW
Washington, DC 20001

The MSR™ - Monthly Statistical Report

API Statistics Department & Office of the Chief Economist

Vol. 44 No. 8
Published September 17, 2020
August 2020

Executive Summary

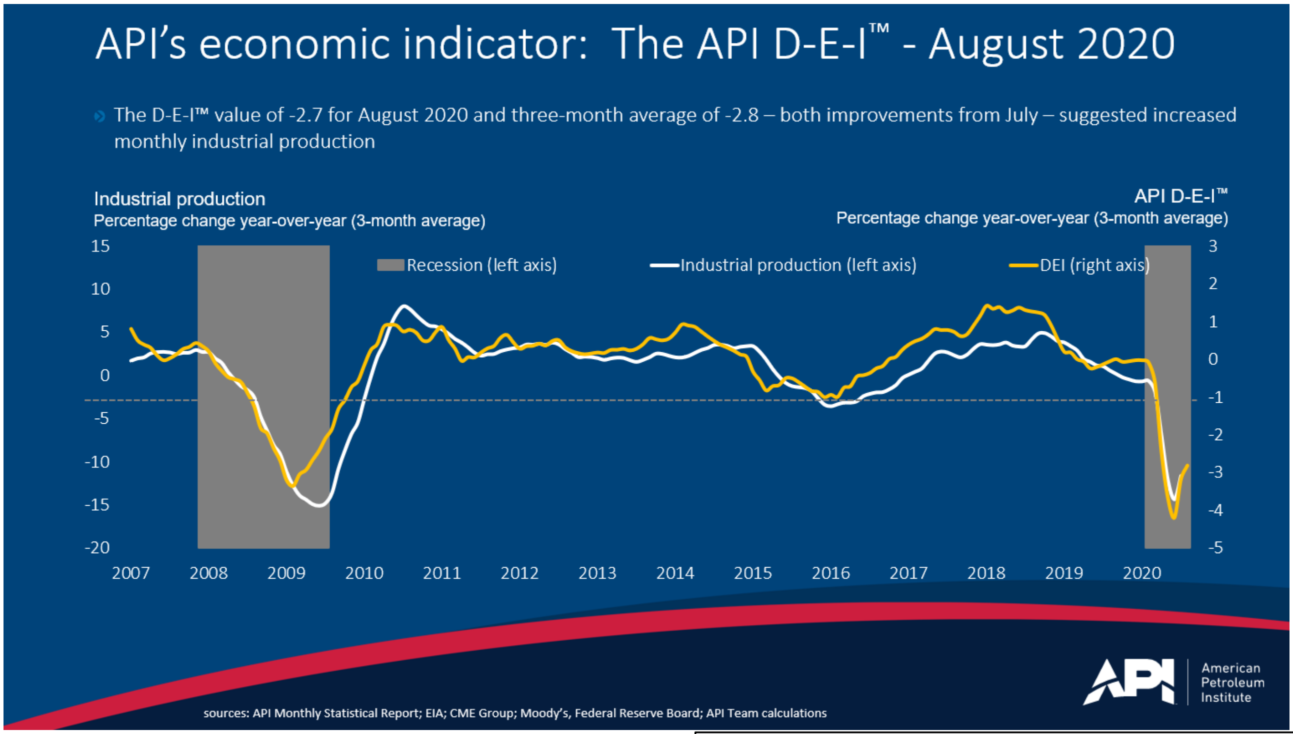
API's primary data on U.S. petroleum markets for August showed that demand increased and supply decreased, while Gulf Coast refineries, petrochemical plants and export terminals coped with seasonal disruptions due to Hurricane Laura. Crude oil and refined product exports still increased during the month, while imports fell. Together these fundamentals contributed to lower crude oil stocks (but higher refined product inventories) and higher prices against an economic backdrop that has broadly improved.

August highlights

- **U.S. petroleum demand – 18.3 million barrels per day (mb/d) – continued to recover.**
- **U.S. crude oil supply edged down to 10.5 mb/d on productivity gains and less drilling activity.**
- **Refinery throughput (14.8 mb/d) slipped, but capacity utilization (79.6%) rose with Hurricane Laura.**
- **Lower U.S. petroleum imports and higher exports returned the U.S. to being a petroleum net exporter.**
- **Crude oil inventories continued to fall while refined product storage reached a record high.**

Economic indicators broadly improved from historically weak levels, including API's D-E-I™ (distillate/diesel economic indicator), the University of Michigan's consumer sentiment index and U.S. employment metrics. Please see the following chart for details.

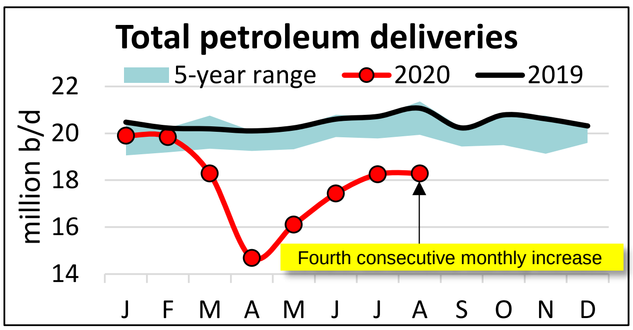
Contents (Click hyperlinks to advance to any section)



Details by section

Demand

Led by motor gasoline, U.S. petroleum demand edged up to 18.3 mb/d in August

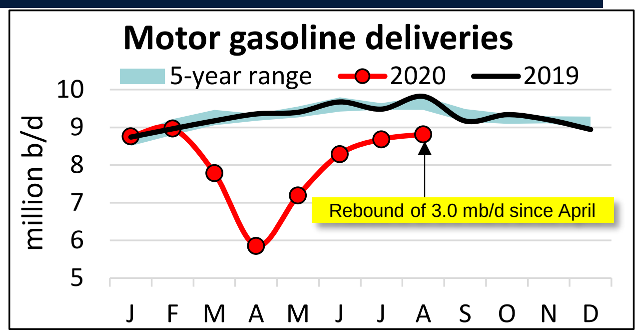


U.S. petroleum demand, as measured by total domestic petroleum deliveries, was 18.3 mb/d in August. This reflected a 0.2% increase from July but a decrease of 13.6% (2.9 mb/d) below August 2019 levels. The rebound since April has amounted to 3.6 mb/d so far with motor gasoline accounting for 82% of the recovery from the COVID-19 pandemic.

Gasoline

Motor gasoline demand of 8.8 mb/d in August

Consumer gasoline demand, measured by motor gasoline deliveries, was 8.8 mb/d in August. This was a monthly increase of 1.5% (0.1 mb/d) but remained 10.4% (1.0 mb/d) below year-ago levels.



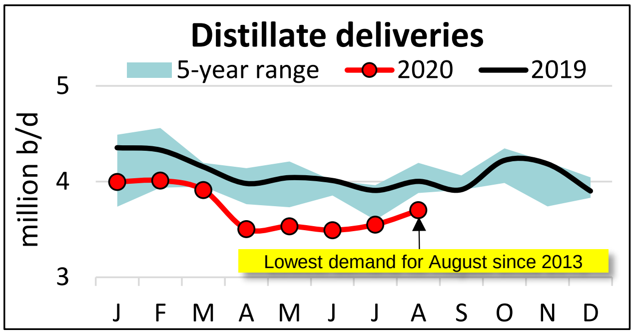
Although gasoline demand rose from July, the deficit versus year-ago levels appeared wider due to lower-than-normal summer driving seasonality.

Low gasoline prices have continued to support demand. The U.S. average conventional gasoline price held steady at $2.27 per gallon in August, down by 16.1% ($0.44 per gallon) from August 2019, according to AAA.

The demand for reformulated-type gasoline that is consumed primarily in urban areas increased by 2.6% m/m in August after three consecutive months of double-digit percentage gains. By comparison, demand for conventional gasoline that is consumed mainly in rural areas increased by 1.0% m/m in August. Both gasoline types were down similarly by about 10% from August 2019 levels.

Distillate Fuel Oil

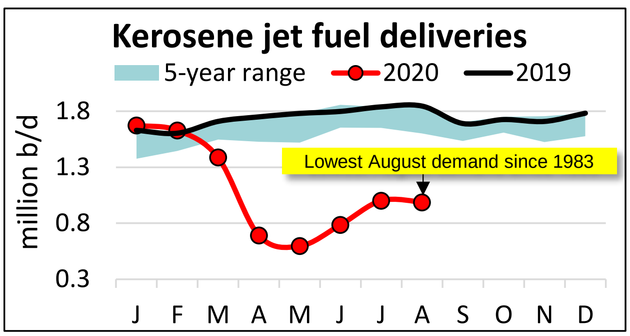
Increased trucking activity supported distillate / diesel demand in August



In August, distillate deliveries of 3.7 mb/d rose by 4.2% from July but were down by 8.1% y/y (0.3 mb/d). This was consistent with DAT iQ industry trendlines showing increased spot trucking loads.

Kerosene Jet Fuel

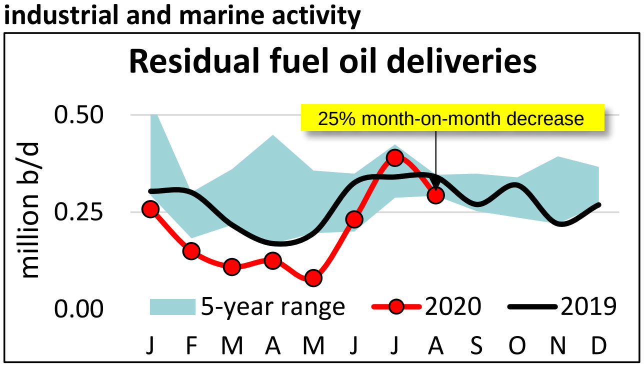
Jet fuel deliveries declined marginally in August and remained historically weak



'K-Jet' deliveries of 1.0 mb/d in August fell by 1.5% m/m in August and remained down by 46.4% from August 2019 – the most adversely impacted fuel due to the COVID-19 pandemic. The relatively slow recovery in jet fuel deliveries has been consistent with weakened reported flight activity and passenger demand per Flightradar24 and TSA.

Residual Fuel Oil

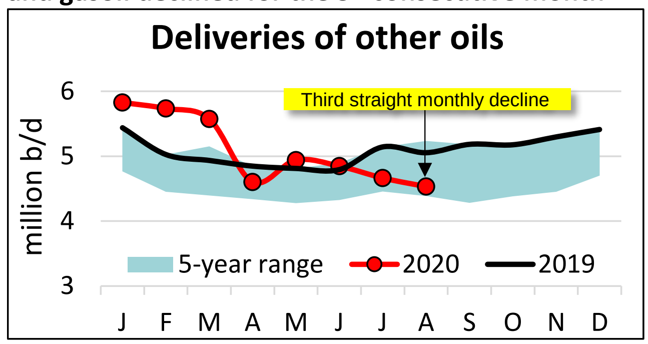
Residual fuel oil consumption declined with weak industrial and marine activity



Deliveries of residual fuel oil, which is used in electric power production, space heating, industrial applications and as a marine bunker fuel, fell to 0.3 mb/d in August. This marked decreases of 24.6% m/m and 10.6% y/y, respectively, consistent with weak industrial activity and lower marine demand due to IMO 2020 implementation compounded by the effects of the COVID-19 pandemic.

Naphtha & Gasoil "Other Oils"

Refining and petrochemical demand for naphtha and gasoil declined for the 3rd consecutive month

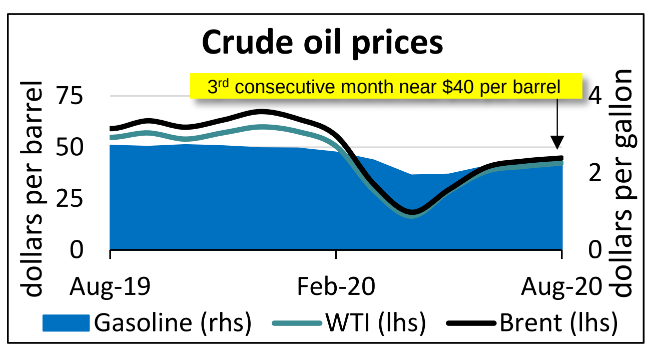


Deliveries of liquid feedstocks, such as naphtha and gasoil ("other oils") used in refining and petrochemical manufacturing, were 4.5 mb/d in August. This was a decrease of 2.8% m/m which likely was hampered by Gulf Coast petrochemical activity having slowed at month-end in preparation for Hurricane Laura. Although the deliveries were down 9.7% y/y, they remained nearly 25% of total U.S. petroleum demand.

Prices

Benchmark crude oil, natural gas and liquids prices were volatile but rose in August

In August, West Texas Intermediate (WTI) crude oil prices rose to $42.34 per barrel, which was a decrease of 22.8% y/y but stable near $40 per barrel for the third consecutive month.



By comparison, Brent crude oil spot prices averaged $44.74 per barrel in August and sustained a Brent-WTI price differential of $2.40 per barrel in August.

In futures markets, expectations for higher oil prices have remained uncertain but still bullish, as WTI price futures at the end of August reflected a $1.60 per barrel monthly increase for September 2021 delivery per data from CME Group.

Macroeconomy

Leading economic indicators broadly improved

API's economic indicator, The D-E-I™, which is based primarily on diesel/distillate supply, demand and inventories, had a reading of -2.7 in August and a three-month average reading of -2.8, which historically has corresponded with slower year-on-year changes in U.S. industrial production. However, the three-month average rose from -4.3 in July, suggesting relative improvement and a monthly acceleration in economic activities.

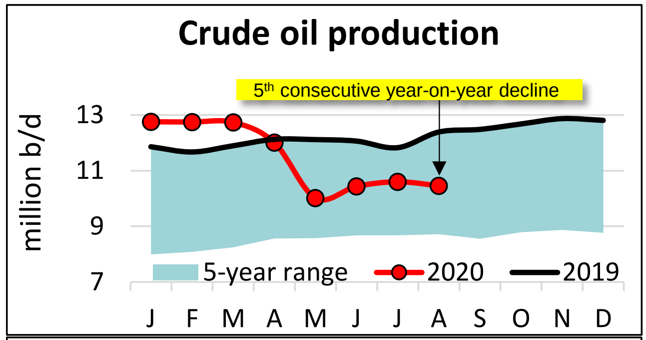
The Institute for Supply Management's Purchasing Managers Index (PMI), came in with a reading of 56.0 in August. Index values above 50.0 suggest an expansion. Production and new orders rose. Export sales grew, raw materials inventories decreased, and prices increased. Among the 18 manufacturing industries covered, 15 reported expansions in August.

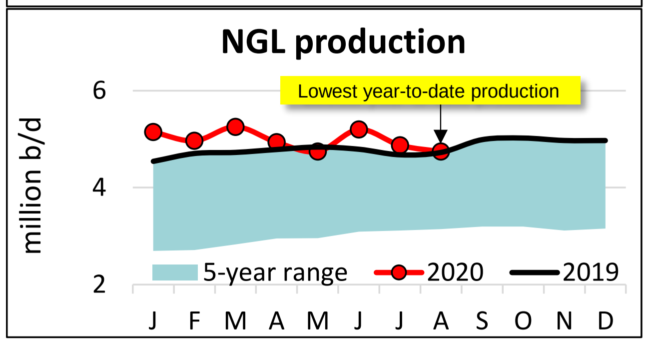
Furthermore, consumer sentiment continued its improvement, while remaining at historically weak levels in August per the University of Michigan's consumer sentiment index. Since a reading of 101.0 in February, the index fell as low as 71.8 in April and rebounded to 74.1 in August. The survey noted that consumers were slightly more optimistic about future economic and personal finance expectations. However, the survey also indicated a continued weakness in buying conditions - even with low interest rates - and highlighted a need for additional fiscal policies.

According to the Bureau of Labor Statistics (BLS), non-farm payrolls increased by 1.4 million, and the unemployment rate fell to 8.4% in August from 10.2% in July, indicating a resumption of economic activity along with recovery from the COVID-19 pandemic.

Supply

Productivity gains amid less drilling drove U.S. crude oil production of 10.5 mb/d





In August, U.S. crude oil production was 10.5 mb/d, a decrease of 1.4% (0.1 mb/d) from revised July data amid less drilling activity. Oil-directed drilling activity (178 rigs in August) fell to its lowest levels since November 2001 per Baker Hughes. However, drilling productivity rose to record highs among most producing basins per EIA.

Similarly, U.S. natural gas liquids (NGLs), which are co-products with natural gas production, decreased by 2.6% m/m (0.1 mb/d) to 4.7 mb/d. Natural gas related NGLs production has held up relatively well through the COVID-19 pandemic.

International trade

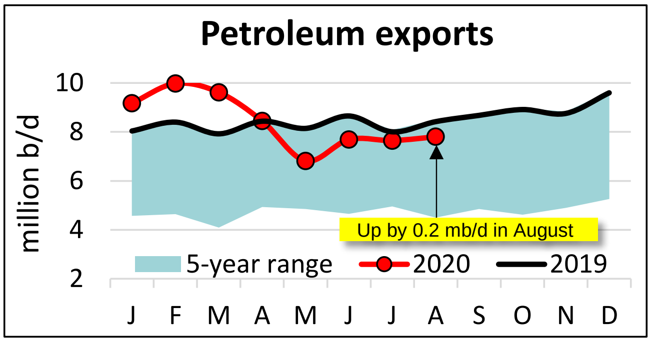
U.S. a petroleum net exporter in August on lower imports and higher exports

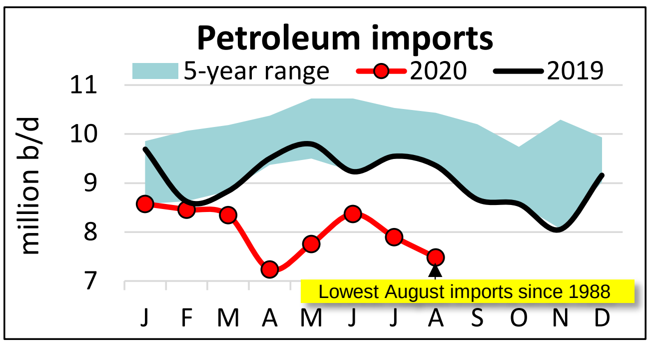
Following three months of petroleum net imports, the U.S. returned to being a net exporter in August by a small margin.

Specifically, the U.S. imported 7.5 mb/d of crude oil and petroleum products in August. This was a decrease of 5.3% m/m (0.4 mb/d) from July, with

EIA weekly data suggesting that imports from Saudi Arabia fell to their lowest levels since 2010.

By contrast, U.S. exports of crude oil and refined products totaled 7.8 mb/d, implying U.S. petroleum net exports of 0.3 mb/d in August. Gross exports rose by 2.0% (0.2 mb/d) from July but were down by 7.5% (0.6 mb/d) compared with August 2019. Within the exports, 4.8 mb/d was refined products, which increased by 1.9% m/m, and the remaining 3.0 mb/d was crude oil that rose by 0.1 mb/d m/m to a record for the month of August.

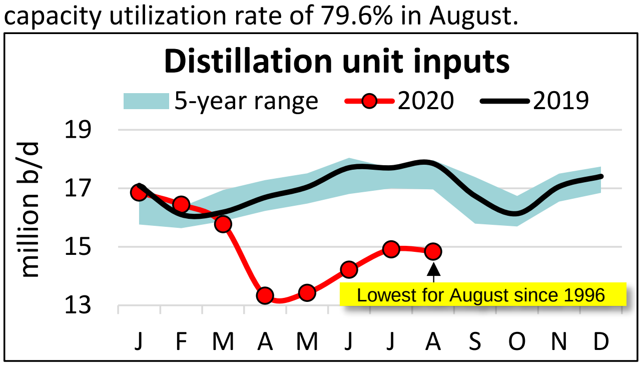


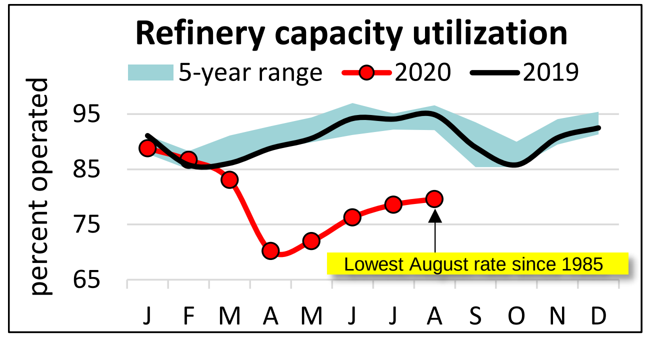


Industry operations

Seasonally low refinery activity has shown resiliency through hurricane season

U.S. refinery throughput of 14.8 mb/d implied a capacity utilization rate of 79.6% in August.

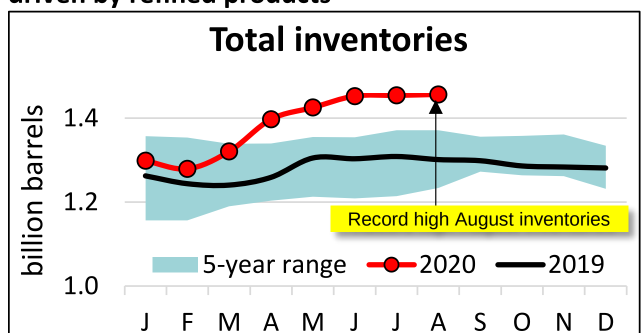


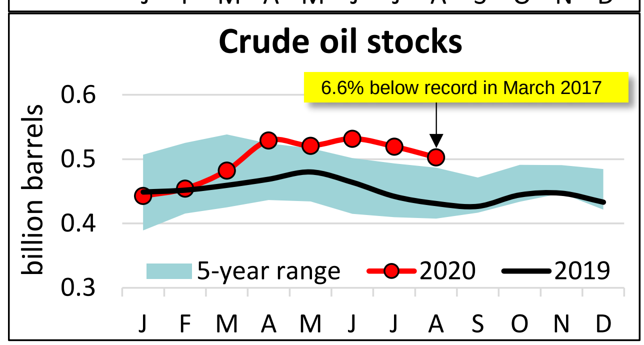


Refinery throughput decreased by 0.5% m/m while capacity utilization rose by 1.0 percentage point, as operable crude distillation unit capacity decreased in August. Approximately 13% of U.S. refining capacity was temporarily shut-in due to Hurricane Laura affecting the Gulf Coast.

Inventories

Petroleum inventories climb higher in August driven by refined products





U.S. total petroleum inventories, including crude oil and refined products but excluding the Strategic Petroleum Reserve were 1.46 billion barrels in August. This was the highest month on record since 1956, increasing 0.2% from July and, notably, 13.2% since the onset of COVID-19 in March.
Within the total, crude oil stocks of 502.8 million fell by 3.3% m/m and stand 6.6% m/m below the record in March 2017.

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

Disposition and Supply	August 2020[2]	August 2019	August % Change	Year-to-Date 2020[3]	Year-to-Date 2019	Year-to-Date % Change
Disposition:						
Total motor gasoline	8,811	9,834	(10.4)	8,041	9,379	(14.3)
Finished reformulated	2,907	3,235	(10.1)	2,505	3,060	(18.1)
Finished conventional	5,904	6,599	(10.5)	5,537	6,319	(12.4)
Kerosene-jet	987	1,841	(46.4)	1,092	1,746	(37.4)
Distillate fuel oil	3,701	4,029	(8.1)	3,712	4,121	(9.9)
≤ 500 ppm sulfur	3,687	4,002	(7.9)	3,682	4,038	(8.8)
≤ 15 ppm sulfur	3,667	4,001	(8.3)	3,662	4,028	(9.1)
> 500 ppm sulfur	14	28	(50.0)	31	83	(62.7)
Residual fuel oil	294	329	(10.6)	205	273	(24.9)
All other oils (including crude losses)	4,534	5,021	(9.7)	4,714	4,987	(5.5)
Reclassified[4]	(37)	103	na	83	41	na
Total domestic product supplied	18,290	21,158	(13.6)	17,848	20,546	(13.1)
Exports	7,805	8,438	(7.5)	8,389	8,231	1.9
Total disposition	26,095	29,596	(11.8)	26,237	28,778	(8.8)
Supply:						
Domestic liquids production						
Crude oil (including condensate)	10,454	12,425	(15.9)	11,461	12,017	(4.6)
Natural gas liquids	4,745	4,766	(0.4)	4,982	4,737	5.2
Other supply[5]	990	1,149	(13.8)	977	1,148	(14.9)
Total domestic supply	16,189	18,340	(11.7)	17,419	17,901	(2.7)
Imports:						
Crude oil (excluding SPR imports)	5,251	6,944	(24.4)	6,019	7,029	(14.4)
From Canada	3,333	3,793	(12.1)	3,549	3,850	(7.8)
All other	1,918	3,151	(39.1)	2,469	3,179	(22.3)
Products	2,228	2,442	(8.8)	1,993	2,361	(15.6)
Total motor gasoline (incl. blend.comp)	718	906	(20.8)	586	855	(31.5)
All other	1,510	1,537	(1.7)	1,407	1,505	(6.5)
Total imports	7,479	9,387	(20.3)	8,012	9,389	(14.7)
Total supply	23,668	27,727	(14.6)	25,431	27,291	(6.8)
Stock change, all oils	(2,427)	(1,869)	na	(807)	(1,487)	na
Refinery Operations:						
Input to crude distillation units	14,837	17,833	(16.8)	14,970	17,079	(12.3)
Gasoline production	9,314	10,437	(10.8)	8,607	10,093	(14.7)
Kerosene-jet production	905	1,924	(53.0)	1,061	1,798	(41.0)
Distillate fuel production	4,831	5,266	(8.3)	4,879	5,160	(5.4)
Residual fuel production	215	410	(47.6)	209	381	(45.3)
Operable capacity	18,639	18,808	(0.9)	18,845	18,808	0.2
Refinery utilization[6]	79.6%	94.8%	na	79.4%	90.8%	na
Crude oil runs	14,395	17,297	(16.8)	14,448	16,676	(13.4)

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)

	August 2020	July 2020		August 2019	% Change From Month Ago	% Change From Year Ago
Stocks (at month-end, in millions of barrels):						
Crude oil (excluding lease & SPR stocks).........	502.8	519.7		430.1	(3.3)	16.9
Unfinished oils..	84.4	90.5		94.7	(6.7)	(10.9)
Total motor gasoline...	233.9	246.1		230.4	(5.0)	1.5
Finished reformulated..................................	0.0	0.0		0.0	0.0	20.0
Finished conventional..................................	24.0	23.6		23.0	1.7	4.2
Blending components..................................	209.9	222.5		207.3	(5.7)	1.3
Kerosene-jet...	39.5	39.4		43.2	0.3	(8.5)
Distillate fuel oil...	179.5	180.9		135.6	(0.8)	32.3
≤ 500 ppm sulfur...	170.9	171.8		125.4	(0.5)	36.3
≤ 15 ppm sulfur.......................................	167.6	163.7		121.6	2.4	37.8
> 500 ppm sulfur...	8.6	9.1		10.3	(5.5)	(16.1)
Residual fuel oil..	36.3	36.8		28.8	(1.4)	26.1
All other oils...	380.4	341.0	R	343.5	11.6	10.7
Total all oils..	1,456.8	1,454.4	R	1,306.3	0.2	11.5