

Vol. 45 No. 10  
Published November 18, 2021  
October 2021

## EXECUTIVE SUMMARY

Historically, a combination of demand outpacing supply, low inventories, and high imports has been a recipe for upward pressure on prices. API's primary data on U.S. petroleum markets for October reflected these directions as prices struck their highest levels since 2014 for crude oil and 2008 for natural gas.

Along with the economy, U.S. petroleum demand remained solid in October with the highest gasoline demand for the month since 2017 as well as record refining and petrochemical demand for other oils – intermediate products in refining and petrochemicals – for the month of October.

To meet this solid demand, U.S. refining activity matched its October 2019 capacity utilization rate of 85.8%. Consequently, U.S. crude oil inventories (excluding the Strategic Petroleum Reserve) fell to their lowest for the month since 2014, and U.S. crude oil imports rose by 0.9 million barrels per day year-on-year. In fact, U.S. total petroleum imports of 8.4 mb/d in Oct. exceeded the 8.0 mb/d level for an eighth consecutive month, contributing to the U.S. being a petroleum net importer of 0.4 mb/d in October. EIA projects the U.S. will remain a net importer for 2021 as a whole.

Leading economic indicators presented a dichotomy of industrial strength, but the lowest consumer sentiment in a decade due to the impact of high price inflation. 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 solid at 20.4 mb/d.**
  - Motor gasoline demand (9.3 mb/d) at its highest for October since 2017.
  - Distillate demand sustained at 4.0 mb/d.
  - Jet fuel demand was stable at 1.5 mb/d.
  - Marine shipping sustained residual fuel oil demand.
  - Other oils' demand of 5.3 mb/d a record for October.

### Prices & Macroeconomy

- **Highest gasoline prices for October since 2013.**
- **Leading indicators suggest industrial strength, but lowest consumer sentiment in a decade.**

### Supply

- **U.S. crude oil production rebounded to 11.4 mb/d.**

### International trade

- **U.S. petroleum net imports have persisted.**

### Industry operations

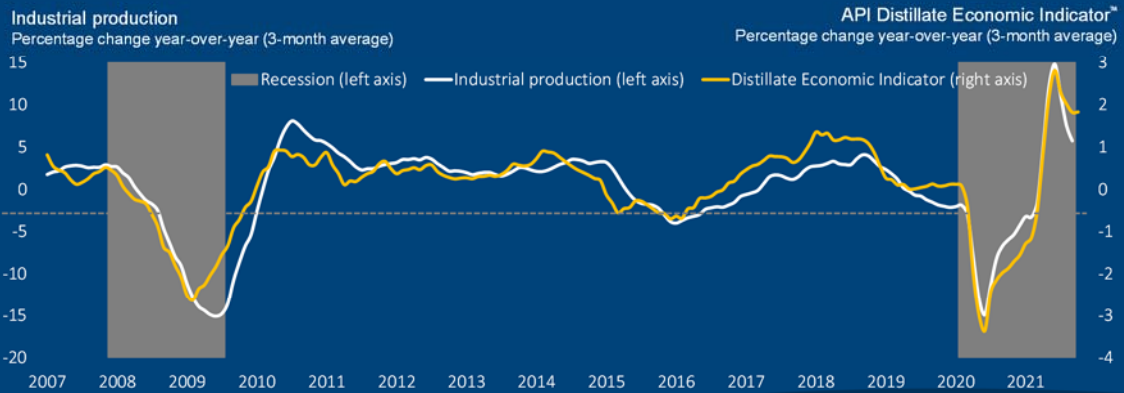
- **Refinery capacity utilization at its Oct. 2019 level.**

### Inventories

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

# API's Distillate Economic Indicator™ - October 2021

The Distillate Economic Indicator™ value of +1.8 for October 2021 and three-month average of +1.8 signaled continued growth of U.S. industrial production and broader economic activity



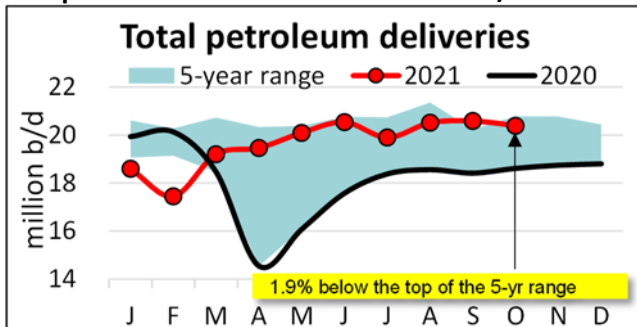
sources: API Monthly Statistical Report; EIA; CME Group; Moody's, Federal Reserve Board; API Team calculations



## Details by section

### Demand

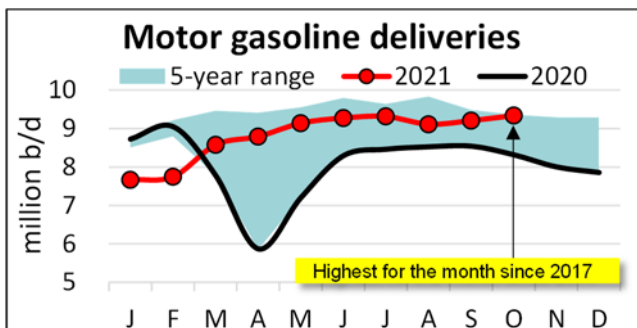
#### U.S. petroleum demand solid at 20.4 mb/d



U.S. petroleum demand, as measured by total domestic petroleum deliveries, was 20.4 mb/d in October. This reflected a 0.9% m/m decrease from September but remained within 1.9% of the top of the five-year range that was set in 2018.

### Gasoline

#### Motor gasoline demand (9.3 mb/d) at its highest for October since 2017

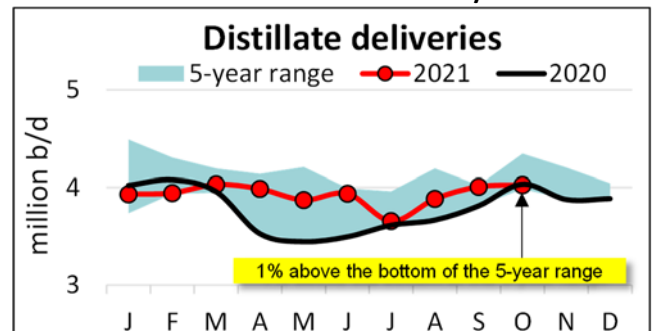


Consumer gasoline demand, measured by motor gasoline deliveries, of 9.3 mb/d in October increased by 1.4% from September and by 0.3% compared with October 2019. In fact, this was the highest demand for the month since 2017.

Deliveries of reformulated-type gasoline (consumed primarily in urban areas) rose by 6.4% m/m to 3.1 mb/d, while those of conventional gasoline (mainly in rural areas) decreased by 0.9% m/m to 6.3 mb/d.

### Distillate Fuel Oil

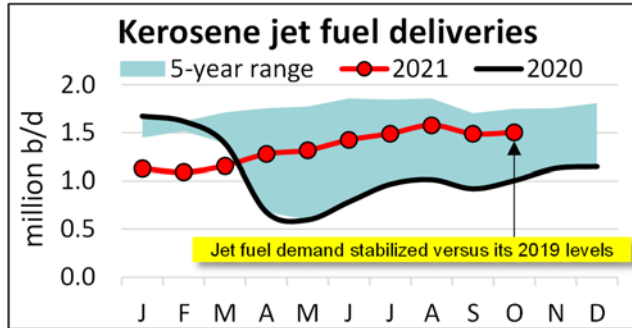
#### Distillate demand sustained at 4.0 mb/d



Distillate deliveries of 4.0 mb/d increased by 0.4% from September but slipped by 4.7% versus those of October 2019. [DAT iQ industry trendlines](#) suggested mixed freight activity with spot loads that fell by 3.3% m/m, but spot freight truck posts rose by 4.2% m/m in October.

### Kerosene Jet Fuel

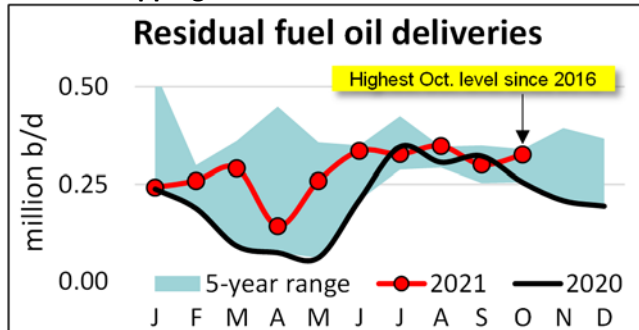
Jet fuel demand was stable at 1.5 mb/d



'K-jet' deliveries rose by 1.1% m/m to 1.5 mb/d in October but remained 12.9% below their Oct. 2019 level. Whereas the gap between demand in 2021 and 2019 had narrowed in each of the past six months, the reading for Oct. 2021 marked a slightly wider difference from Oct. 2019. [Flightradar24](#) high-frequency data suggested that tracked flights decreased by 3.3% m/m in October.

### Residual Fuel Oil

Marine shipping sustained residual fuel oil demand



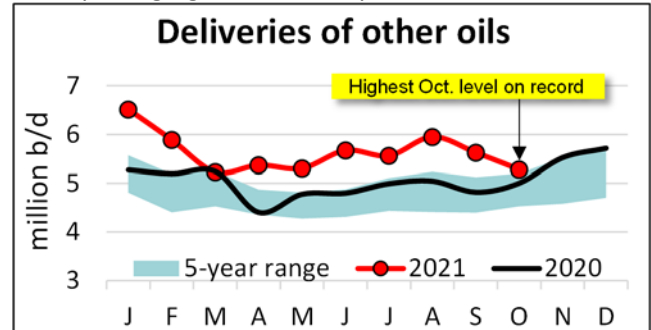
Deliveries of residual fuel oil, which is used in electric power production, space heating, industrial applications and as a marine bunker fuel, were 0.33 mb/d in October, which reflected increases of 8.7% m/m and 27.8% y/y. As we noted last month, the solid demand for residual fuel oil appear to suggest that marine shipping has remained critical amid ongoing supply chain issues.

### Naphtha, Gasoil, Propane, Propylene "Other Oils"

Other oils' demand of 5.3 mb/d a record for October

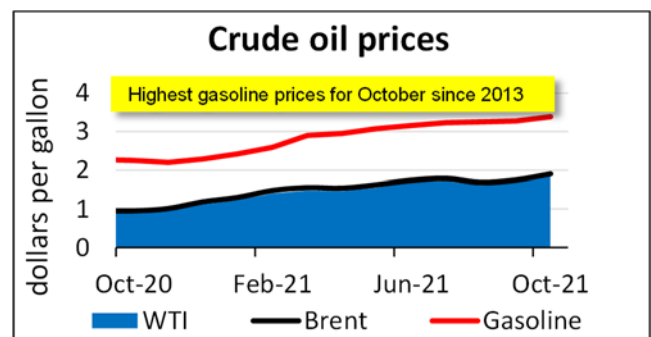
Deliveries of liquid feedstocks, such as naphtha, gasoil, and propane/propylene ("other oils") used primarily in refining and petrochemical manufacturing, were 5.3 mb/d in October – the highest on record for the month and 2.8% over their Oct. 2019 level. This reflected strong continued

refining activity and petrochemical demand for films/packaging and medical plastics.



### Prices

Highest gasoline prices for October since 2013



In October, West Texas Intermediate (WTI) crude oil prices increased by 13.7% m/m to \$81.48 per barrel (\$1.94 per gallon). Brent crude oil spot prices averaged \$83.54 per barrel (\$1.99 per gallon), and the Brent-WTI crude oil price differential narrowed by 27.5% m/m to \$2.06 per barrel, generally reflecting transportation costs.

As crude oil remained the top input cost in making gasoline per [EIA](#), relatively strong crude oil prices corresponded with increased gasoline prices in October. The U.S. average conventional gasoline price was \$3.38 per gallon in October, up by 3.4% (\$0.11 per gallon) from September, according to [AAA](#). This was the highest gasoline price for the month since October 2013.

### Macroeconomy

Leading indicators suggest industrial strength, but lowest consumer sentiment in a decade

API's Distillate Economic Indicator™, which is based primarily on diesel/distillate supply, demand, and inventories, had a reading of 1.8 in October and a three-month average of 1.8, suggesting that U.S.

industrial production and broader economic activity have continued to grow.

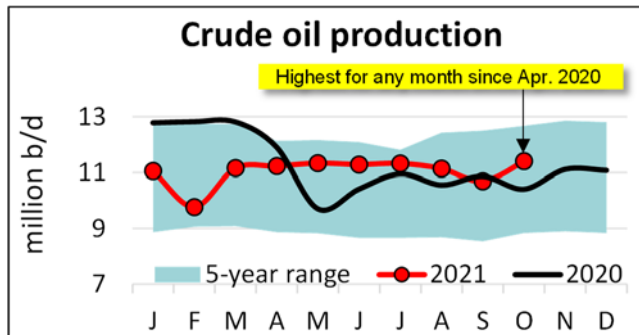
The Institute for Supply Management’s manufacturing Purchasing Managers Index (PMI) had a reading of 60.8 in October, a 0.3 percentage point decrease from September. Index values above 50.0 suggest an expansion in the overall economy, and the manufacturing PMI exceeded that threshold for a 17<sup>th</sup> consecutive month. Within the index, measures of prices, employment, supplier deliveries, inventories and new export orders increased from September. However, the measures of production, the backlog of orders, and imports slowed. Seventeen of the 16 manufacturing industries surveyed reported growth in October.

The [University of Michigan’s consumer sentiment index](#) fell by 6.8% m/m to a reading of 66.8 in October, its lowest level in a decade. Increased consumer price inflation was the main concern with “higher prices for homes, vehicles, and durables reported more frequently than any other time in more than half a century.”

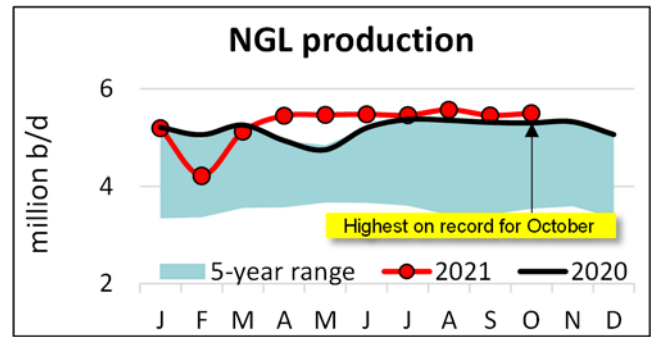
According to the [Bureau of Labor Statistics \(BLS\)](#), the unemployment rate fell by 0.2% to 4.6% in October, and non-farm payrolls increased by a preliminary estimate of 531,000.

**Supply**

**U.S. crude oil production rebounded to 11.4 mb/d**



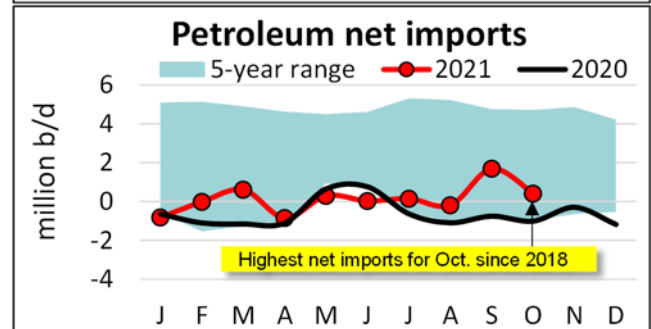
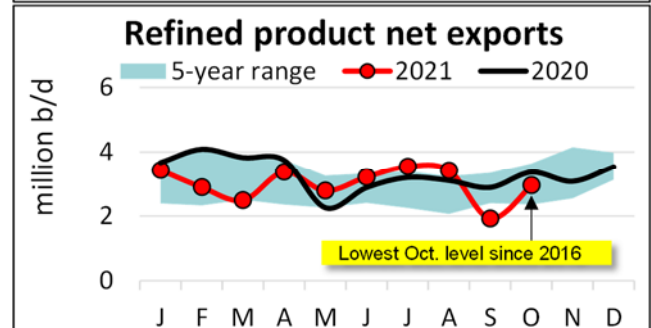
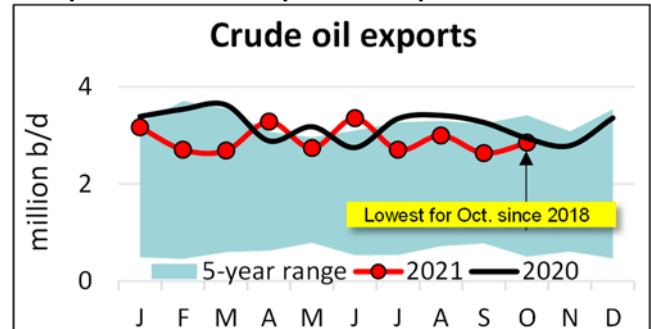
In October, U.S. crude oil production rebounded to 11.4 mb/d following September figures that were impacted by prolonged Gulf Coast shut-ins in the wake of Hurricane Ida. [Baker Hughes](#) reported 439 active oil-directed rigs in October, a 7.8% m/m increase but 38% less than the 708 rigs that ran in October 2019.



By contrast, natural gas-directed drilling fell by one to 99 rigs in October despite spot prices that averaged \$5.51 per million Btu, their highest for the month since 2008. U.S. natural gas liquids production (NGLs) of 5.5 mb/d in October rose by 0.8% m/m and 3.8% y/y.

**International trade**

**U.S. petroleum net imports have persisted**



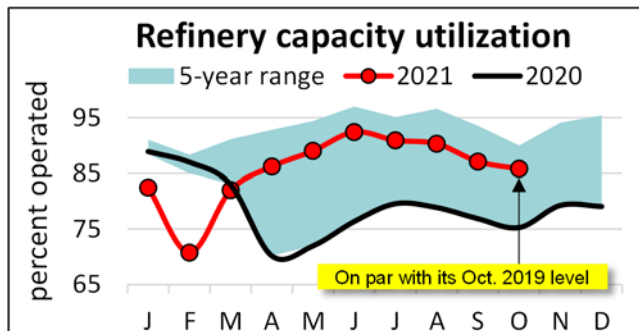
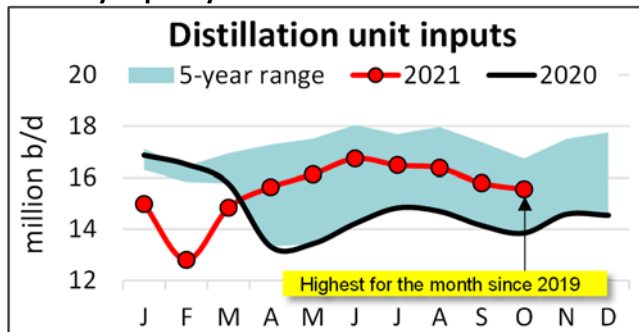
In October, U.S. crude oil exports were at their lowest level for the month since 2018. At the same time as the Brent-WTI crude oil price differential

narrowed, U.S. refined product net exports in October were at their lowest level for the month since 2016, and total U.S. petroleum imports of 8.4 mb/d in Oct. exceeded 8.0 mb/d for an eighth consecutive month as needed to meet demand. By comparison, total U.S. petroleum total exports were 8.0 mb/d in October, the lowest for the month since 2017.

On balance, the U.S. remained a petroleum net importer of 0.4 mb/d in October, and [EIA](#) projects the U.S. will remain a net importer for 2021 as a whole.

**Industry operations**

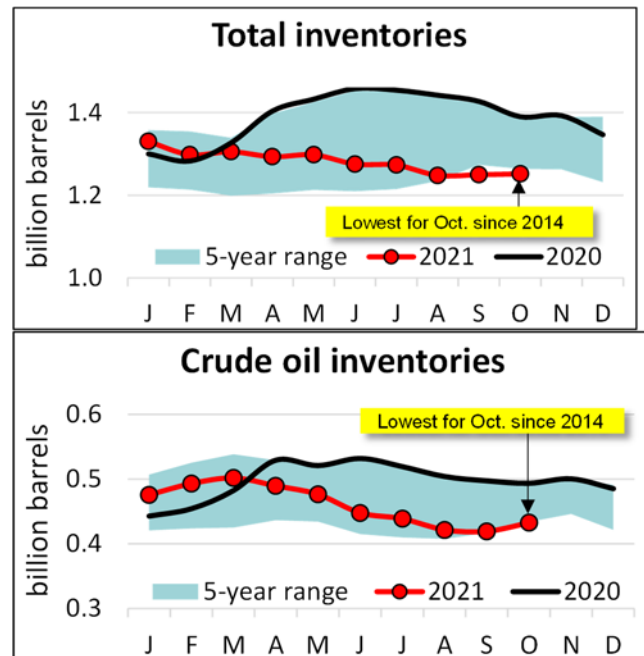
**Refinery capacity utilization at its Oct. 2019 level**



U.S. refinery throughput was 15.6 mb/d in October, which was a seasonal decrease of 1.5% from September and implied a capacity utilization rate of 85.8% – equal to its level in Oct. 2019.

**Inventories**

**Lowest crude oil and total inventories for October 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 October to 1.25 billion barrels. Within the total, U.S. crude oil inventories rose by 3.2% m/m to 432.7 million barrels. However, both crude oil and total inventories were at their lowest levels for the month of October since 2014.

**ESTIMATED UNITED STATES PETROLEUM BALANCE<sup>1</sup>**  
(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	October			Year-to-Date		
	2021 <sup>2</sup>	2020	% Change	2021 <sup>3</sup>	2020	% Change
<b>Disposition:</b>						
Total motor gasoline.....	9,336	8,316	12.3	8,823	8,074	9.3
Finished reformulated.....	3,061	2,535	20.7	2,813	2,473	13.8
Finished conventional.....	6,275	5,781	8.5	6,011	5,601	7.3
Kerosene-jet.....	1,505	1,006	49.6	1,348	1,064	26.7
Distillate fuel oil.....	4,027	4,036	(0.2)	3,929	3,766	4.3
≤ 500 ppm sulfur.....	3,991	4,035	(1.1)	3,910	3,736	4.7
≤ 15 ppm sulfur.....	3,957	4,028	(1.8)	3,871	3,724	3.9
> 500 ppm sulfur.....	36	2	1,700.0	19	30	(36.7)
Residual fuel oil.....	326	255	27.8	283	209	35.4
All other oils (including crude losses).....	5,281	5,051	4.6	5,214	4,863	7.2
Reclassified <sup>4</sup> .....	(85)	(50)	na	88	93	na
Total domestic product supplied.....	20,390	18,614	9.5	19,685	18,069	8.9
Exports.....	8,010	8,389	(4.5)	8,358	8,512	(1.8)
Total disposition.....	28,400	27,002	5.2	28,043	26,581	5.5
<b>Supply:</b>						
Domestic liquids production						
Crude oil (including condensate).....	11,410	10,413	9.6	11,053	11,319	(2.4)
Natural gas liquids.....	5,497	5,297	3.8	5,296	5,172	2.4
Other supply <sup>5</sup> .....	1,010	1,076	(6.1)	1,091	1,009	8.1
Total domestic supply.....	17,917	16,787	6.7	17,440	17,500	(0.3)
Imports:						
Crude oil (excluding SPR imports).....	6,211	5,293	17.3	6,053	5,922	2.2
From Canada.....	3,570	3,429	4.1	3,673	3,562	3.1
All other.....	2,641	1,864	41.7	2,380	2,360	0.9
Products.....	2,204	2,082	5.8	2,455	1,979	24.1
Total motor gasoline (incl. blend.comp).....	706	586	20.5	884	589	50.1
All other.....	1,498	1,496	0.1	1,571	1,390	13.0
Total imports.....	8,415	7,376	14.1	8,508	7,900	7.7
Total supply.....	26,332	24,162	9.0	25,948	25,400	2.2
Stock change, all oils.....	(2,068)	(2,840)	na	(2,095)	(1,181)	na
<b>Refinery Operations:</b>						
Input to crude distillation units.....	15,558	13,846	12.4	15,560	14,755	5.4
Gasoline production.....	9,728	9,252	5.1	9,498	8,721	8.9
Kerosene-jet production.....	1,325	819	61.8	1,276	1,002	27.3
Distillate fuel production.....	4,666	4,205	11.0	4,602	4,769	(3.5)
Residual fuel production.....	230	147	56.5	208	196	5.9
Operable capacity.....	18,128	18,386	(1.4)	18,122	18,717	(3.2)
Refinery utilization <sup>6</sup> .....	85.8%	75.3%	na	85.9%	78.8%	na
Crude oil runs.....	15,068	13,445	12.1	15,034	14,228	5.7

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<sup>1</sup>**  
(Daily average in thousands of 42 gallon barrels)

	October 2021	September 2021	October 2020	% Change From	
				Month Ago	Year Ago
<b>Stocks (at month-end, in millions of barrels):</b>					
Crude oil (excluding lease & SPR stocks).....	432.7	419.4	493.9	3.2	(12.4)
Unfinished oils.....	91.5	88.5	80.3	3.4	13.9
Total motor gasoline.....	216.4	226.4	227.6	(4.4)	(4.9)
Finished reformulated.....	0.0	0.0	0.0	0.1	(52.6)
Finished conventional.....	17.1	18.6	25.2	(8.1)	(32.0)
Blending components.....	199.3	207.8	202.4	(4.1)	(1.5)
Kerosene-jet.....	40.1	42.9	37.6	(6.5)	6.5
Distillate fuel oil.....	126.1	131.6	156.2	(4.2)	(19.3)
≤ 500 ppm sulfur.....	117.7	123.5	147.4	(4.7)	(20.2)
≤ 15 ppm sulfur.....	120.2	120.2	144.2	0.0	(16.6)
> 500 ppm sulfur.....	8.4	8.1	8.8	3.7	(4.8)
Residual fuel oil.....	29.0	28.8	31.2	0.7	(7.1)
All other oils.....	315.6	311.7	362.9	1.2	(13.0)
Total all oils.....	1,251.4	1,249.3	1,389.9	0.2	(10.0)