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January 2022

### EXECUTIVE SUMMARY

API's industry data for January showed a combination of solid demand and a rebound in oil production, but also reduced domestic refining activities and international exports. Highlights:

- **Solid U.S. petroleum demand (19.8 mb/d) edged up by 0.2% y/y versus January 2022 to its highest for the month since 2020.**
- **Production of crude oil rose by 0.3 mb/d m/m in January to 12.3 mb/d, while natural gas liquids (NGL) production set a record for the month of January at 6.1 mb/d.**
- **Refinery throughput (15.5 mb/d) and its capacity utilization rate (85.9%) fell in January along with 1.0 mb/d of outages.**
- **U.S. petroleum exports of 9.6 mb/d decreased by 0.6 mb/d from December, but the U.S. remained a petroleum net exporter of 0.8 mb/d, which marked the lowest net exports since February 2022.**

With increased oil production, but lower exports and domestic refining activities, U.S. crude oil stocks (excluding the Strategic Petroleum Reserve, SPR) rose to their highest levels since May 2021.

The solid annual growth in U.S. petroleum demand showed divergent fuel changes. Motor gasoline demand rose by 3.1% y/y, as urban demand increased by over 0.3 mb/d y/y while rural demand fell by 0.1 mb/d. Jet fuel demand grew to its highest for the month of January since the onset of the pandemic in 2020. Distillates demand increased in January by 5.5% m/m from December, but fell by 5.8% y/y versus January 2022, apparently due to weaker freight trucking and an unseasonably warm winter, which reduced heating oil needs.

**API's Distillate Economic Indicator™** API's Distillate Economic Indicator™, which is based primarily on diesel/distillate supply, demand, and inventories, had a reading of +0.6 in January – down from +0.7 in December – and a three-month average of +0.8, which showed slowed but continued growth year-on-year of U.S. industrial production and broader economic activity. (Please see the following [chart](#) for details).

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  - Motor gasoline demand (8.2 mb/d) rose 3.1% y/y.
  - Distillate demand (3.8 mb/d) was at its lowest for January since 2017.
  - Kerosene-type jet fuel demand (1.5 mb/d) was at its highest for the month January since 2020.
  - Third lowest residual fuel oil demand for the month of January on record since 1936.
  - Solid “other oils” demand in January (5.7 mb/d).

#### Prices & Macroeconomy

- **Gasoline prices edged up along with crude oil prices in January.**
- **January industrial growth indicators diverged; consumer sentiment improved.**

#### Supply

- **U.S. crude oil production rebounded from December; NGL production set a January record.**

#### International trade

- **U.S. petroleum net exports (0.8 mb/d) receded to their lowest since Feb. 2022.**

#### Industry operations

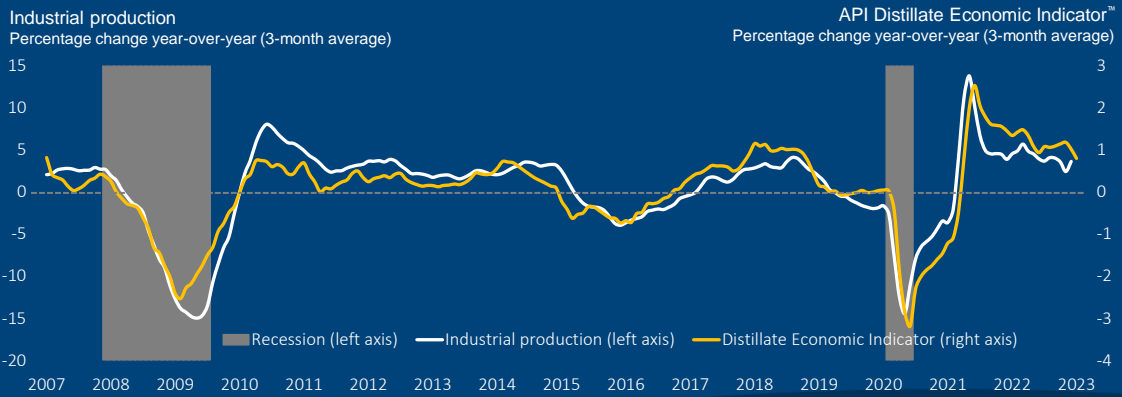
- **Refining throughput and capacity utilization rates fell in January.**

#### Inventories

- **Highest U.S. commercial crude oil inventories since May 2021.**

# API's Distillate Economic Indicator™ - January 2023

The Distillate Economic Indicator™ value of +0.6 for January 2023 fell from a reading of +0.7 in December and resulted in a three-month average of +0.8, which showed continued growth of U.S. industrial production and broader economic activity



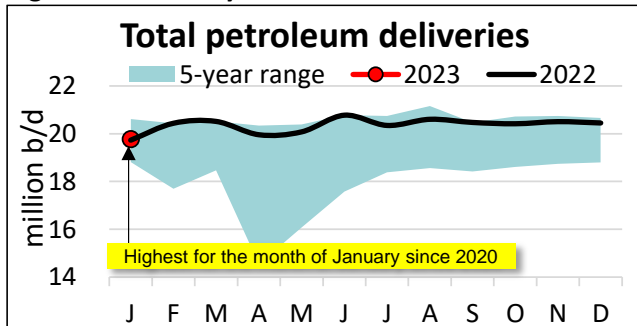
sources: API Monthly Statistical Report; EIA; CME Group; Moody's, Federal Reserve Board; API Team calculations



## Details by section

### Demand

**U.S. petroleum demand (19.8 mb/d) was its highest for January since 2020**



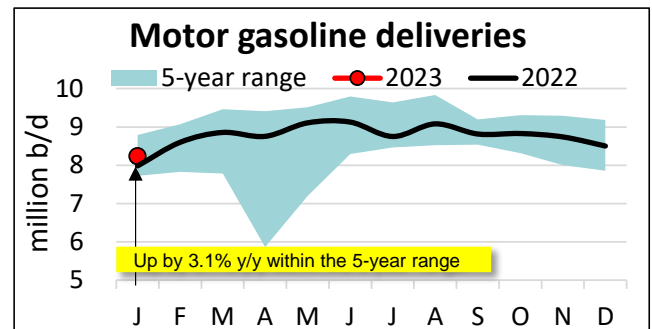
U.S. petroleum demand, as measured by total domestic petroleum deliveries, was 19.8 mb/d in January. This reflected a seasonal decrease of 3.3% from December but an increase of 0.2% y/y compared with January 2022 to its highest reading for the month of January since 2019.

### Gasoline

**Motor gasoline demand (8.2 mb/d) rose 3.1% y/y**

Consumer gasoline demand, measured by motor gasoline deliveries, was 8.2 mb/d in January. This reflected a seasonal decrease of 3.2% m/m from December, compared with an average decrease of

4.6% m/m for the past decade. Gasoline demand rose, however, by 3.1% y/y versus January 2022.



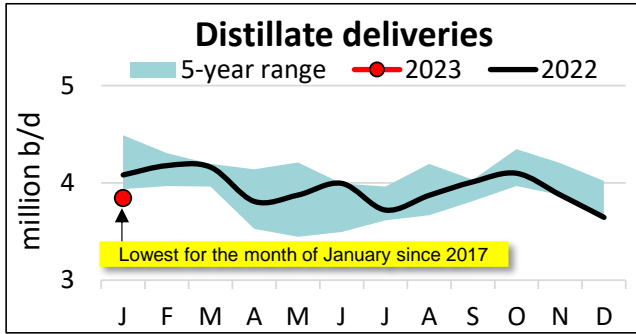
Deliveries of reformulated-type gasoline (consumed primarily in urban areas) rose by 14.1% y/y to 2.8 mb/d. By contrast, conventional gasoline (consumed mainly in rural areas) deliveries decreased by 1.7% y/y to 5.5 mb/d. These observations, together with the weak January seasonality shown by total gasoline demand, likely highlighted more essential driving and a solid return to urban commuting to start the new year.

### Distillate Fuel Oil

**Distillate demand (3.8 mb/d) was at its lowest for January since 2017**

Distillate deliveries of 3.8 mb/d in January rose seasonally by 5.5% m/m from December but fell by

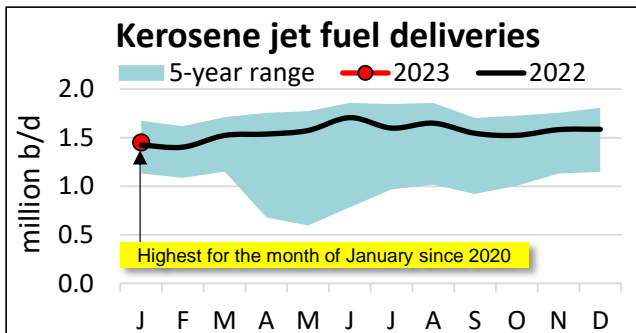
5.8% y/y compared with January 2022 to their lowest for the month since 2017.



DAT iQ industry trendlines showed that the quantity of spot trucks increased by 5.5% m/m, while the number of spot load posts increased by 1.2% m/m, which together showed that the relative availability of trucks increased by more than that of loads to be shipped in January, which was consistent with reports that U.S. freight volumes [fell](#).

**Kerosene Jet Fuel**

Kerosene-type jet fuel demand (1.5 mb/d) was at its highest for the month January since 2020

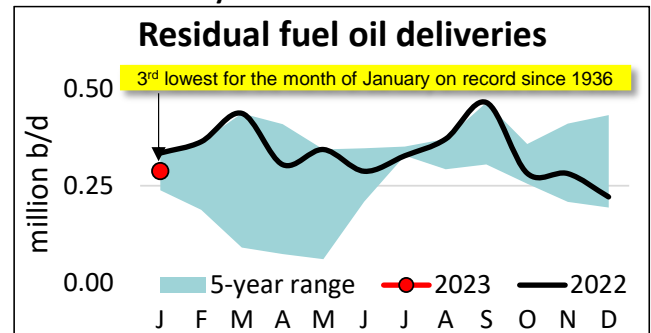


Kerosene-type jet fuel deliveries of 1.5 mb/d in January fell by 8.6% m/m from December, compared with an average seasonal decrease of 6.1% m/m between December and January over the past decade. The 1.5 mb/d in January 2023 reflected an increase, however, of 2.0% y/y versus January 2022 to its highest level for the month since before the U.S. onset of the pandemic in 2020.

High-frequency data from [Flightradar24](#) and [TSA](#) showed that the total numbers of flights and air passengers increased by 5.4% y/y and 32.3% y/y, respectively. Reports by the International Air Transport Association (IATA) showed a continued air passenger demand [recovery](#) as well as a [return](#) of air cargo to its pre-pandemic levels.

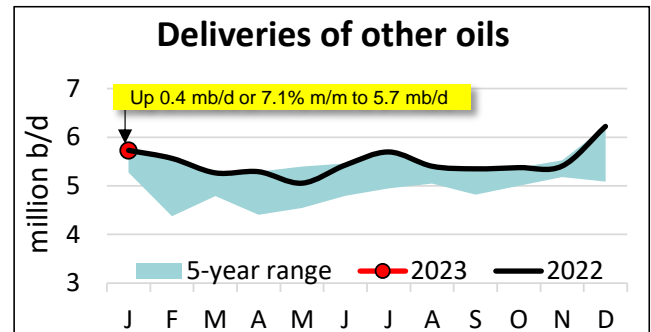
**Residual Fuel Oil**

Third lowest residual fuel oil demand for the month of January on record since 1936



Deliveries of residual fuel oil, which is used as a marine bunker fuel and internationally in electric power production, space heating, and industrial applications, were 0.3 mb/d in January, which reflected an increase of 30.3% m/m from December but a decrease of 13.8% y/y decrease compared with a year ago – to its third lowest volume for the month of January on record since 1936. The year-on-year decrease was consistent with reports that container shipping volumes [lagged](#) their pre-pandemic levels.

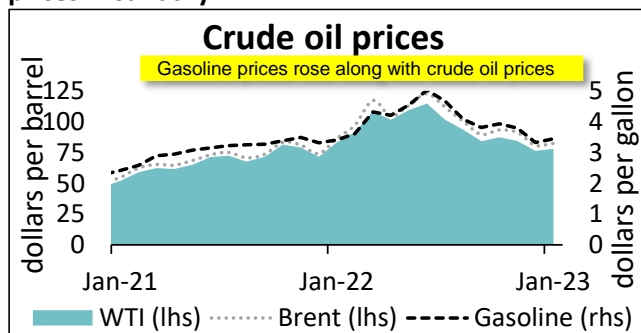
**Other Oils – Naphtha, Gasoil, Propane & Propylene**  
Solid other oils’ demand in January (5.7 mb/d)



Deliveries of refinery and petrochemical liquid feedstocks – that is, naphtha, gasoil, and propane/propylene (“other oils”) – were 5.7 mb/d in January, which reflected a decrease of 7.1% m/m from December but virtually unchanged compared with January 2022. U.S. petrochemicals have remained globally competitive amid the relatively [higher](#) energy and feedstock costs in many other economies.

## Prices

### Gasoline prices edged up along with crude oil prices in January



In January, West Texas Intermediate (WTI) crude oil prices increased by 2.2% m/m to \$78.12 per barrel. Brent crude oil spot prices rose by 2.0% m/m to \$82.50 per barrel, which implied a Brent-WTI crude oil price differential of \$4.38 per barrel in January, down from \$4.48 per barrel in December.

Crude oil remained the top input cost in making gasoline per [EIA](#). The U.S. average conventional gasoline price was \$3.45 per gallon in January, up by 3.6% m/m from December per [EIA](#).

## Macroeconomy

### January industrial growth indicators diverged; consumer sentiment improved

API's Distillate Economic Indicator™, which is based primarily on diesel/distillate supply, demand, and inventories, had a reading of +0.6 in January – down from +0.7 in December – and a three-month average of +0.8, which showed slowed but continued growth year-on-year of U.S. industrial production and broader economic activity.

The Institute for Supply Management's manufacturing Purchasing Managers Index (PMI) had a reading of 47.4 in January – 1.0 percentage points lower than in December. Index values below 50.0 suggest a contraction in the overall economy, and the manufacturing PMI fell below that threshold in January for the second straight month. Within the index, there were monthly increases in the index's measures of supplier deliveries, prices, backlog of orders, new export orders, and imports. And there were monthly decreases in the index's measures of employment, inventories, customers' inventories, new orders, production, employment, inventories, and customers' inventories. Two

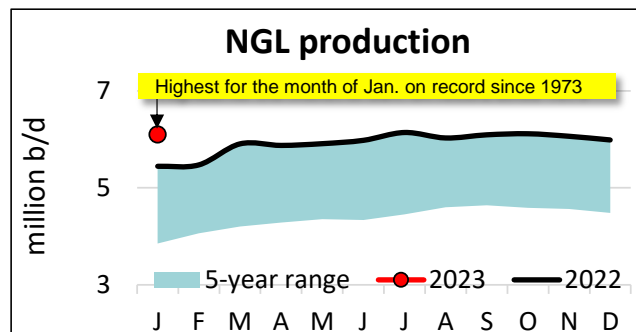
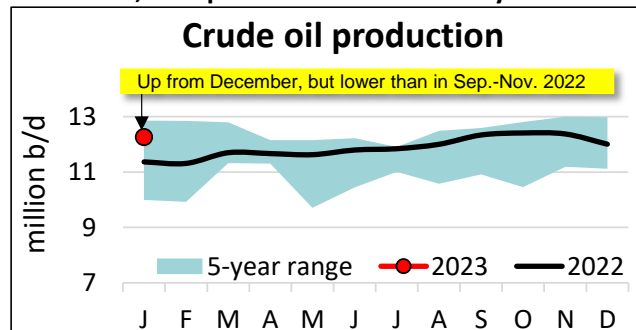
manufacturing industries surveyed reported growth in January, while 15 industries reported contractions in January compared with December.

The [University of Michigan's consumer sentiment index](#) showed readings of 66.4 in February (preliminary) and 64.9 in January, up from 59.7 in December. The survey noted that, despite the index having improved by more than 6% versus its reading a year ago, its absolute levels remained historically low as "high prices continue to weigh consumers despite the recent moderation in inflation."

According to the [Bureau of Labor Statistics \(BLS\)](#), the unemployment rate fell to 3.4% in January from 3.5% in December. Non-farm payrolls rose by a preliminary estimate of 517,000 m/m, the strongest monthly gain since July 2022.

## Supply

### U.S. crude oil production rebounded from December; NGL production set a January record



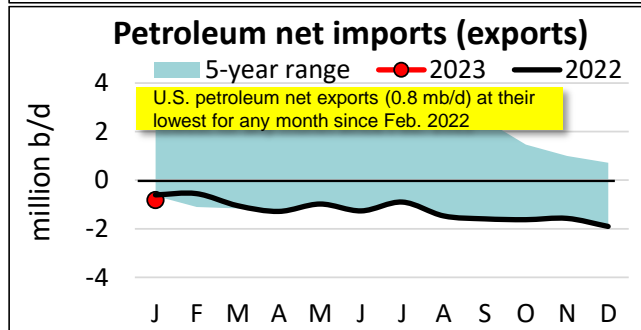
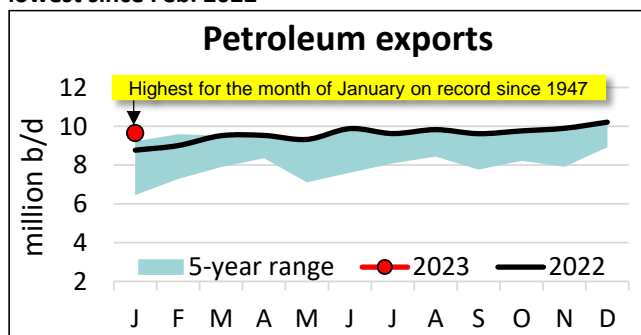
U.S. crude oil production of 12.3 mb/d in January rebounded from 12.0 mb/d in December, which was impacted by winter weather, but remained about one percent lower than production in September, October, and November 2022. Compared with January 2022, crude oil production was up by 0.9 mb/d y/y.

[Baker Hughes](#) reported 614 active oil-directed rigs in January, a 1.4% m/m (9 rigs) decrease from December.

Natural gas-directed drilling of 155 rigs in January rose by 0.4% m/m (1 rig) from December. The extraction of natural gas liquids (NGLs) depends on the relative values of ethane, propane, and butane, which historically have tended to correspond with those of crude oil. NGL production of 6.1 mb/d in January – its highest for the month on record since 1973 – was nearly on par with its record high set in October 2022.

**International trade**

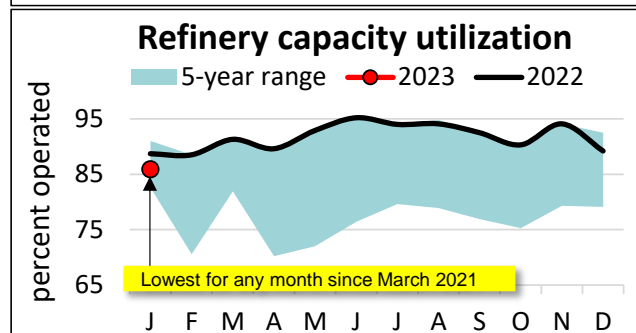
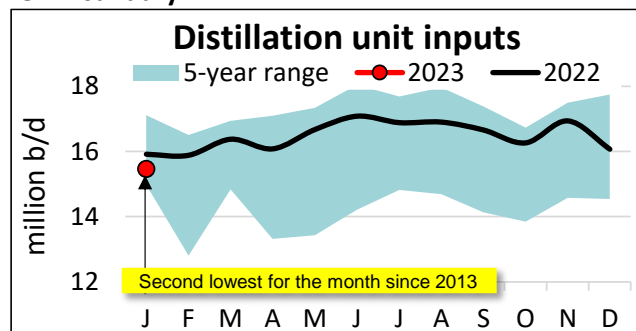
**U.S. petroleum net exports (0.8 mb/d) receded to their lowest since Feb. 2022**



U.S. petroleum exports of 9.6 mb/d, including 3.5 mb/d of crude oil 6.1 mb/d of refined products, in January fell by 0.6 mb/d m/m from December were still at their highest level for the month of January on record since 1947. At the same time, U.S. petroleum imports rose by 0.5 mb/d m/m in January. However, the U.S. was still a petroleum net exporter of 0.8 mb/d in January – the lowest U.S. petroleum net exports for any month since February 2022.

**Industry operations**

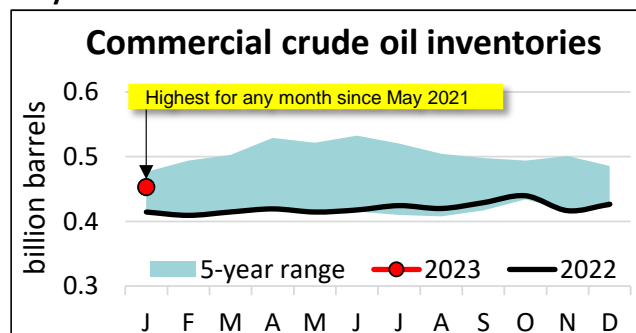
**Refining throughput and capacity utilization rates fell in January**

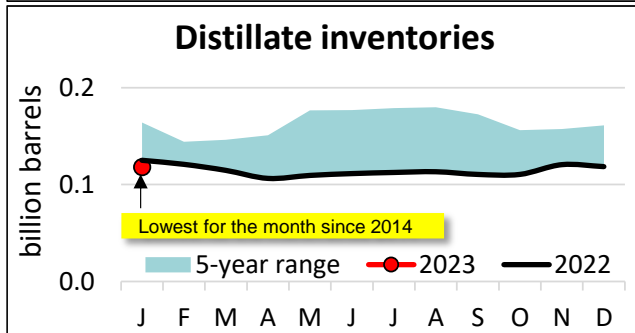
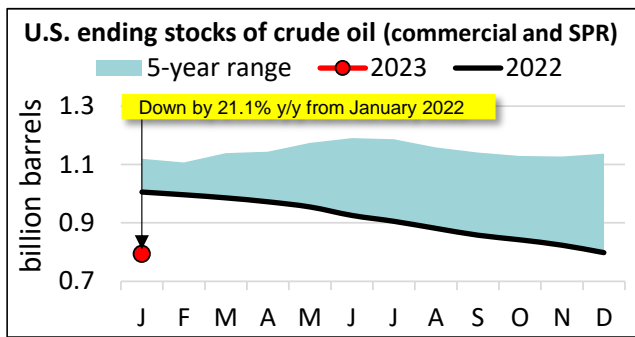


In January, U.S. refinery throughput, measured by gross inputs into crude distillation units, was 15.5 mb/d and implied a capacity utilization rate of 85.9%. The throughput fell by 3.8% m/m (0.6 mb/d) and by 2.8% y/y (0.5 mb/d) to its lowest for any month since March 2021. Bloomberg reported 1.0 mb/d of U.S. refinery capacity outages in January, only 0.2 mb/d of which was due to planned maintenance.

**Inventories**

**Highest U.S. commercial crude oil inventories since May 2021**





U.S. crude oil inventories 452.8 million barrels in January grew by 6.2% m/m (26.4million barrels) from December and by 9.3% y/y (38.5 million barrels) versus January 2022. The accumulation appeared to be a function of the rebound in crude oil production combined with the refinery outages.

With the ending of the 2022 U.S. Strategic Petroleum Reserve (SPR) releases, SPR inventories remained stable in January at 371.6 million barrels, their lowest since December 1983. Consequently, the U.S. ending stocks of crude oil (including commercial and SPR) decreased by 21.1% y/y in January to 793.0 million barrels.

Distillate inventories have been closely monitored amid continued [global market imbalances](#) due to Russia-Ukraine. U.S. distillate inventories remained below their historical five-year range in January. In terms of days of supply, distillate inventories were at 31.4 days of supply as of February 3, compared with an average of 33.0 days of supply in 2018-2022 per [EIA](#). tight

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

Disposition and Supply	January			Year-to-Date		
	2023 <sup>2</sup>	2022	% Change	2023 <sup>3</sup>	2022	% Change
<b>Disposition:</b>						
Total motor gasoline.....	8,233	7,982	3.1			
Finished reformulated.....	2,778	2,434	14.1			
Finished conventional.....	5,455	5,548	(1.7)			
Kerosene-jet.....	1,451	1,423	2.0			
Distillate fuel oil.....	3,845	4,081	(5.8)			
≤ 500 ppm sulfur.....	3,837	4,042	(5.1)			
≤ 15 ppm sulfur.....	3,823	4,033	(5.2)			
> 500 ppm sulfur.....	8	39	(79.5)			
Residual fuel oil.....	288	334	(13.8)			
All other oils (including crude losses).....	5,730	5,729	0.0			
Reclassified <sup>4</sup> .....	218	182	na			
Total domestic product supplied.....	19,765	19,731	0.2			
Exports.....	9,647	8,763	10.1			
Total disposition.....	29,412	28,494	3.2			
<b>Supply:</b>						
Domestic liquids production						
Crude oil (including condensate).....	12,267	11,369	7.9			
Natural gas liquids.....	6,100	5,446	12.0			
Other supply <sup>5</sup> .....	106	1,226	(91.3)			
Total domestic supply.....	18,473	18,041	2.4			
Imports:						
Crude oil (excluding SPR imports).....	6,540	6,383	2.5			
From Canada.....	3,581	3,931	(8.9)			
All other.....	2,959	2,452	20.7			
Products.....	2,298	1,776	29.4			
Total motor gasoline (incl. blend.comp)....	568	422	34.6			
All other.....	1,730	1,353	27.8			
Total imports.....	8,838	8,159	8.3			
Total supply.....	27,311	26,200	4.2			
Stock change, all oils.....	(2,101)	(2,294)	na			
<b>Refinery Operations:</b>						
Input to crude distillation units.....	15,467	15,918	(2.8)			
Gasoline production.....	9,029	8,756	3.1			
Kerosene-jet production.....	1,575	1,517	3.8			
Distillate fuel production.....	4,649	4,644	0.1			
Residual fuel production.....	275	263	4.6			
Operable capacity.....	18,014	17,941	0.4			
Refinery utilization <sup>6</sup> .....	85.9%	88.7%	na			
Crude oil runs.....	14,955	15,451	(3.2)			

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)

	January 2023	December 2022	January 2022	% Change From	
				Month Ago	Year Ago
<b>Stocks (at month-end, in millions of barrels):</b>					
Crude oil (excluding lease & SPR stocks).....	452.8	426.4	414.3	6.2	9.3
Unfinished oils.....	83.8	82.2	82.9	1.9	1.0
Total motor gasoline.....	236.8	225.6	251.8	5.0	(5.9)
Finished reformulated.....	0.0	0.0	0.0	(0.2)	5.0
Finished conventional.....	16.5	16.2	18.1	1.9	(8.7)
Blending components.....	220.3	209.4	233.7	5.2	(5.7)
Kerosene-jet.....	35.8	35.0	38.6	2.3	(7.2)
Distillate fuel oil.....	117.9	118.5	125.0	(0.5)	(5.7)
≤ 500 ppm sulfur.....	110.5	110.9	117.8	(0.4)	(6.2)
≤ 15 ppm sulfur.....	108.0	108.2	114.8	(0.2)	(5.9)
> 500 ppm sulfur.....	7.4	7.6	7.2	(2.6)	2.8
Residual fuel oil.....	31.7	30.7	26.7	3.3	18.5
All other oils.....	272.6	310.9	250.7	(12.3)	8.7
Total all oils.....	1,231.4	1,229.3	1,190.0	0.2	3.5