



Vol. 47 No. 10

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October 2023

KEY POINTS

- **Strong petroleum demand.** Petroleum demand (20.3 Mb/d) was the 4th highest for the month since 2007.
- **Weaker refinery throughput.** Refinery throughputs had their largest decline for the month since 2016; refinery capacity utilization fell to its lowest since March 2021.
- **Record-breaking oil production.** Oil production exceeded 13.1 million barrels per day, surpassing the previous month's record.
- **Robust total petroleum net exports.** Net exports of crude and petroleum products were at their 2nd highest for any month on record, expanding by 0.9 mb/d m/m.

EXECUTIVE SUMMARY

The average price of WTI fell declining 4.2% from \$89.43 per barrel to \$85.64 per barrel in October. Prior to October, the average price for WTI from July to September had been increasing, averaging 8.4% month-over-month - mostly from concerns over supply risks from geopolitical tension. Prices eventually shed the war premium - from October 1 through October 30, WTI oil prices fell \$5.78 per barrel. The conflict does have the potential of having a significant impact on supply.

U.S. seasonal refinery maintenance work continued into October and removed on average 0.7 million barrels per day of operable capacity. Throughput into refineries fell by 0.9 mb/d to 15.7 mb/d - slightly below the five-year average for October. Corresponding capacity utilization of 85.9% also fell but remained above its 5-year October average.

U.S. petroleum demand declined 208,000 b/d to 20.3 mb/d. This was the largest decline for the month since 2010 but it remained above the five-year average for October. The decline in demand was driven by decreases in other oils (495,000 b/d) and jet-fuel (68,000 b/d), which fully offset increases in motor gasoline (236,000 b/d), distillate fuel (17,000 b/d) and residual fuel (88,000 b/d).

Motor gasoline demand (8.8 mb/d) had the largest month-over-month increase for October since 2014, rising 236,000 b/d from September. This may be the result of gasoline pump prices falling by 22 cents or 6% in October to a national average of \$3.74. October gasoline stocks (220.7 mb) fell 1.7% from September mainly due to continuing refinery plant overhauls.

Distillate consumption (3.9 mb/d) was mostly flat month-over-month and at its lowest for October since 2007. Historically, the 10-year average growth rate from September to October is 4.2%, which makes the month-over-month October growth of 0.4% unusually small for this time of the year. Distillate inventories (111.9 mb) fell month-over-month by 7.2 million barrels to sit 13.1% below the five-year average. What could explain the pull for distillates are (1) the lack of medium and heavy sour in the global markets and in the US, which may have limited the availability of diesel supply; and (2) spot market demand for trucks having a double-digit increase (14.1% m/m), per DAT iQ industry trendline.

Other oils' consumption, which are used as feedstock in industrial/manufacturing processes, slipped by almost half a million barrels month-over-month to 5.4 mb/d. Despite this large drop, it was still the second highest for the month on record. Manufacturing activities, according to the Institute for Supply Management's manufacturing Purchasing Managers Index (PMI) had a reading of 46.7 in October - 2.3 percentage points lower than in September - indicated that there has been very little if any expansion in the manufacturing sector. Within the index, there were decreases in the index's measures of new orders, production, employment, and inventories.

U.S. net exports of petroleum increased by 924,000 b/d to 2.6 mb/d were the second strongest for any month on record. The growth came from an increase in total exports of crude oil of 363,000 b/d coupled with a decrease in crude imports of 399,000 b/d.

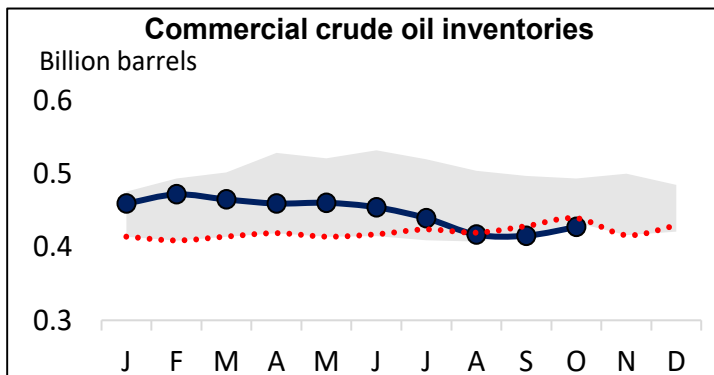
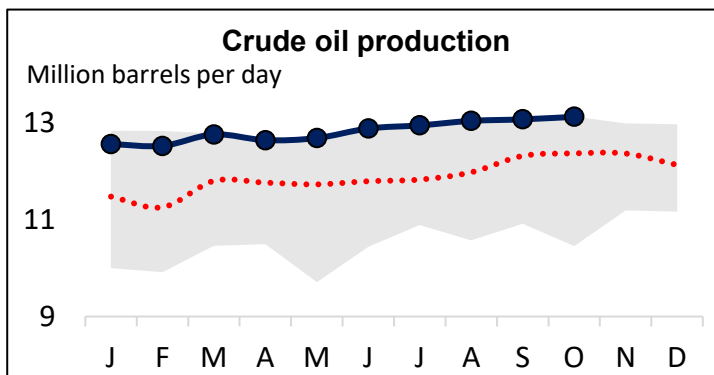
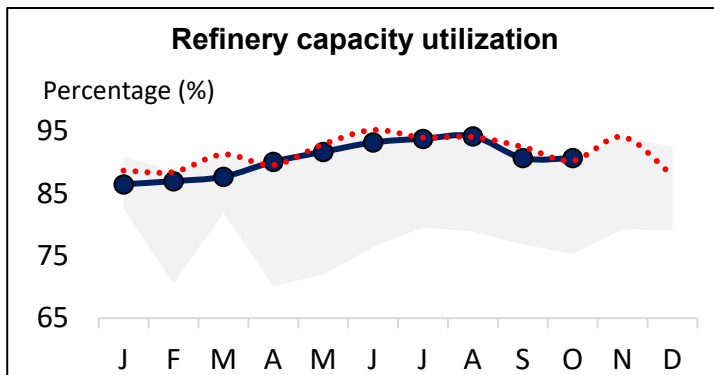
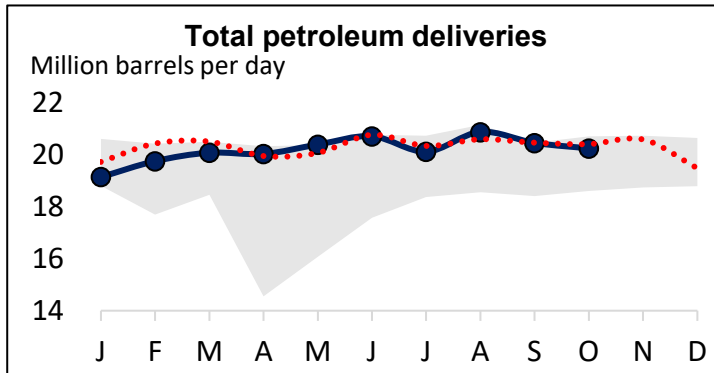
U.S. oil production has continued to rise despite a fall in the number of rigs due to technological advancements and improved efficiency levels. Oil production reached 13.1 million barrels per day in October, surpassing its record in September by 53,000 b/d. Combined with production of NGLs, which was at its 4th highest level on record since 1973, crude and condensate production was at an all-time high in October.

The US Federal Reserve kept interest rates unchanged, and October's CPI read lower-than-expected, but interest rates are still at multi-decade highs. Additionally, The University of Michigan Index of Consumer Sentiment, fell for a third-straight month on growing concerns about the negative effects of high interest rates. October's headline and core inflation numbers came out softer-than-expected due to a decline in energy prices and a much slower increase in food prices,

compared to a year ago. The headline CPI rose 3.2% - well below the 9.1% peak of last summer but still above the Fed's target rate. And core inflation is now at its lowest in more than two years.

KEY CHARTS

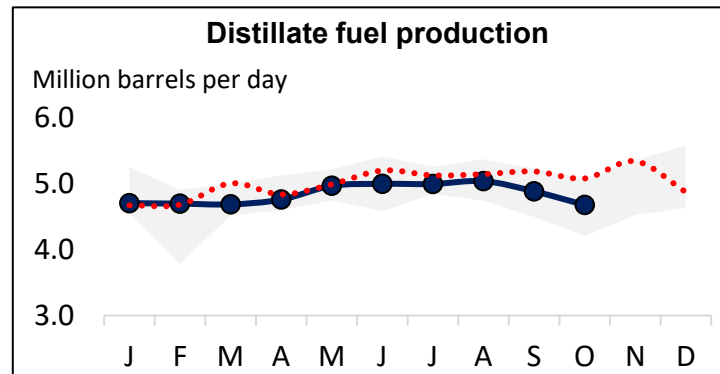
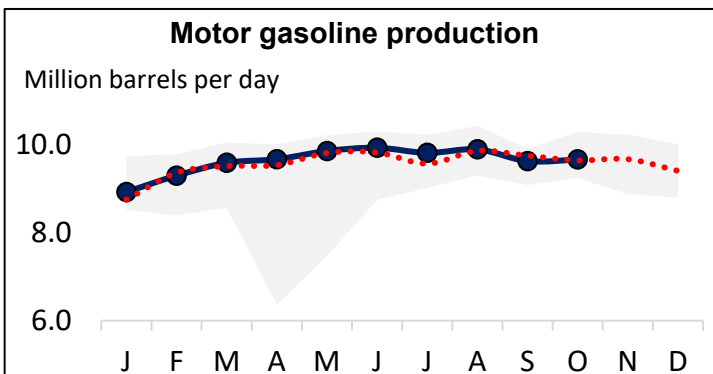
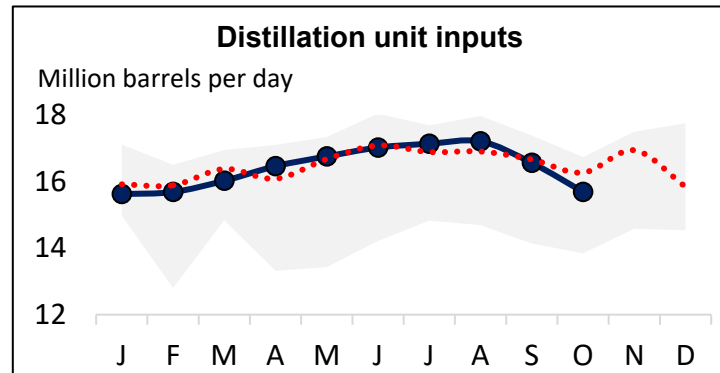
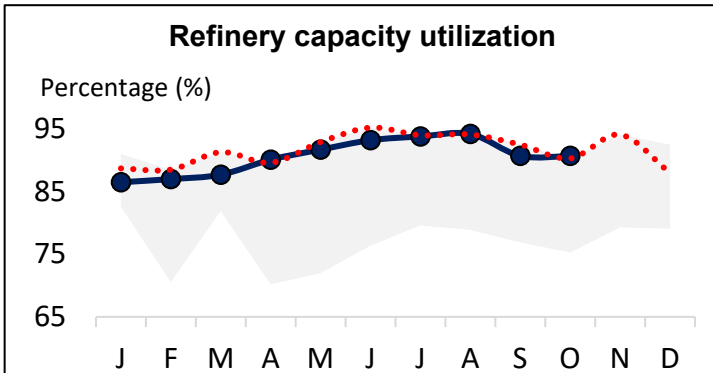
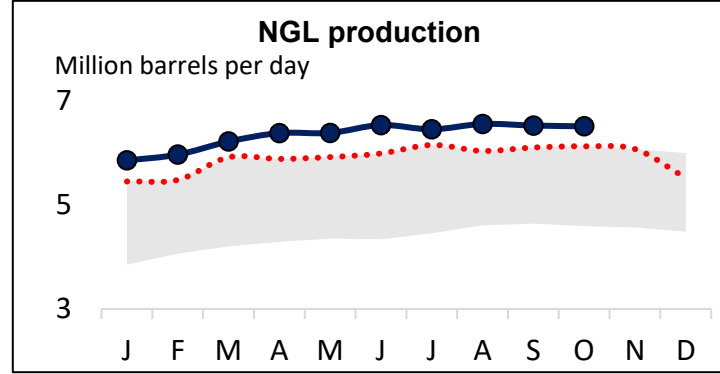
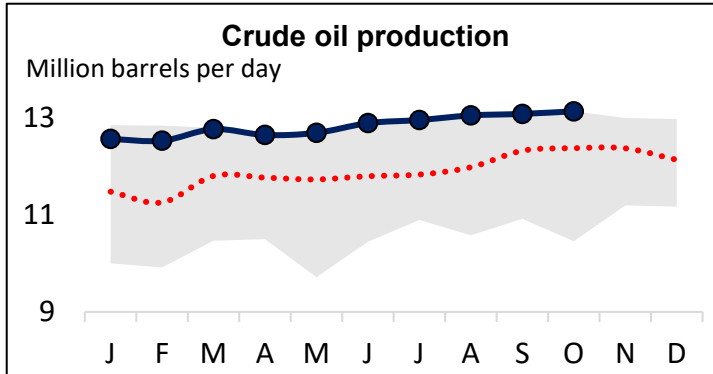
5-year range 2023 2022





MSR Energy Charts

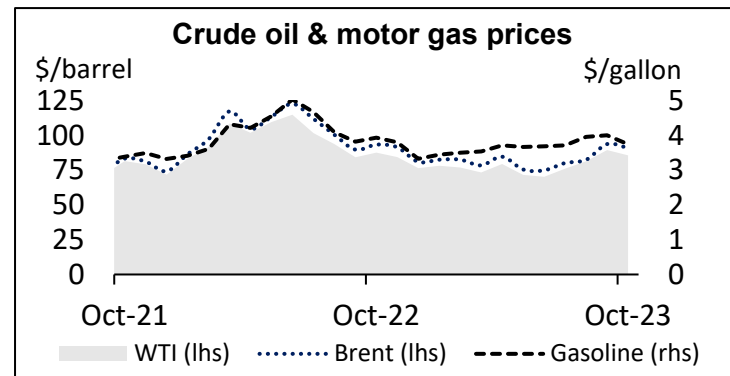
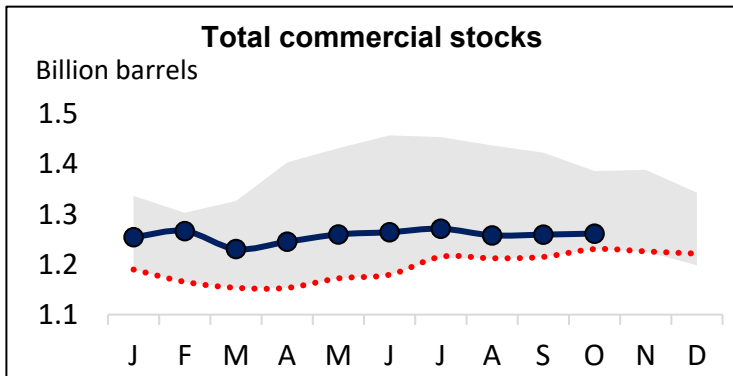
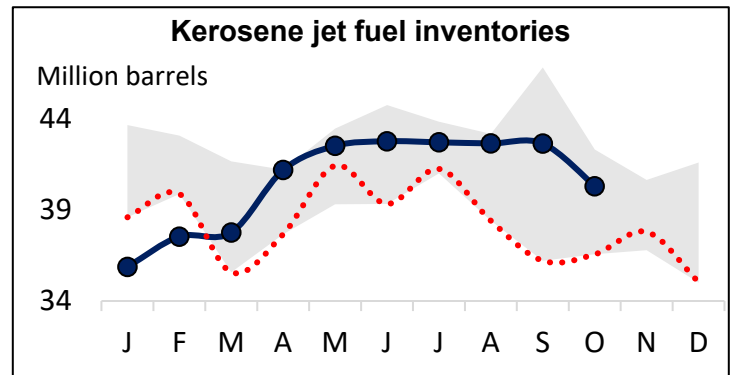
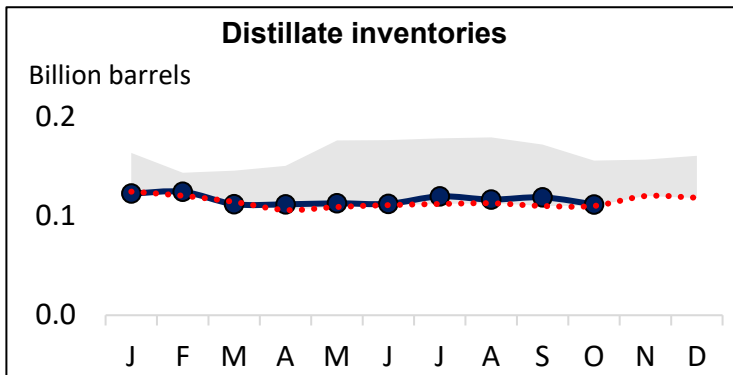
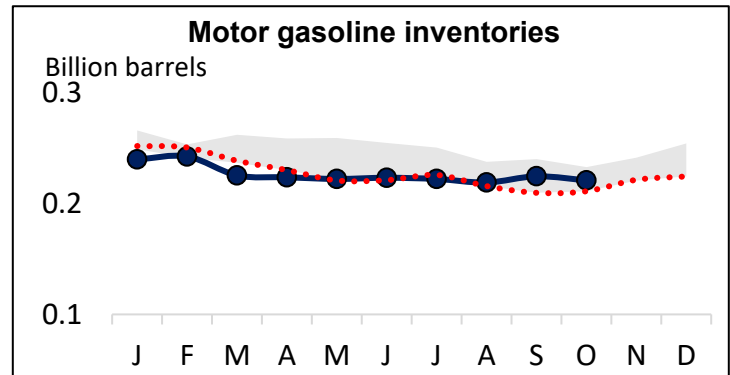
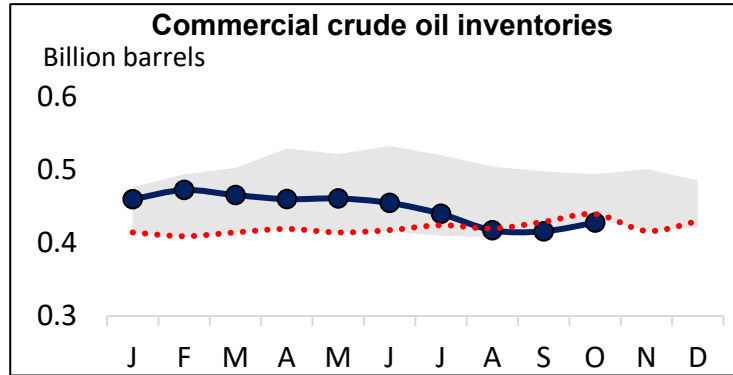
5-year range 2023 2022





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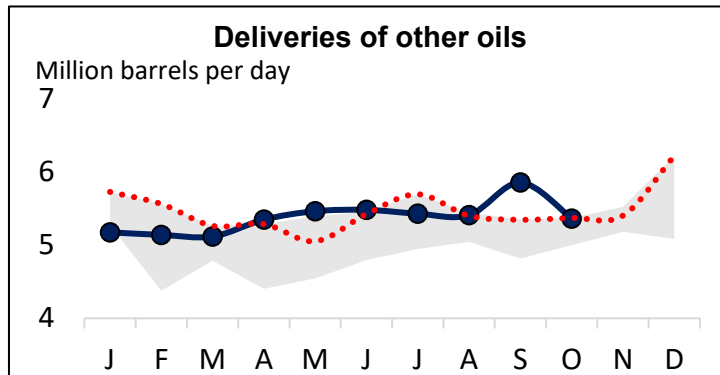
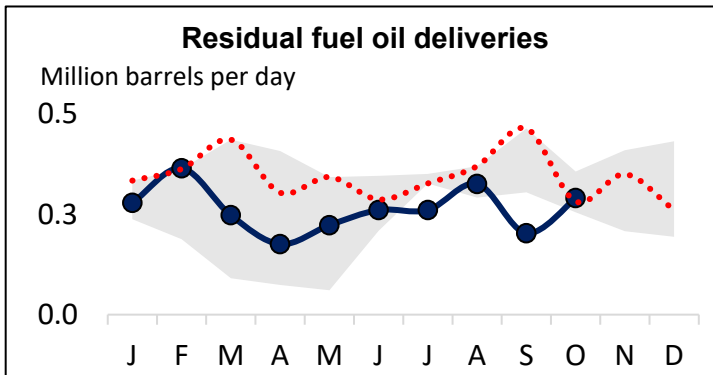
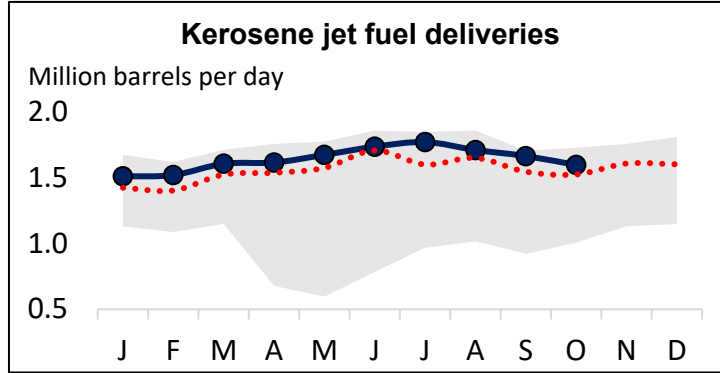
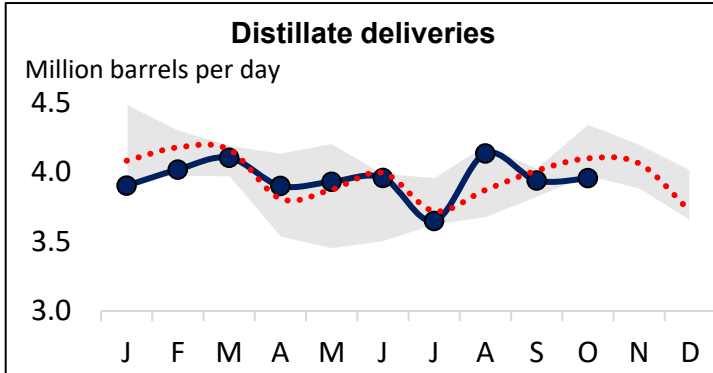
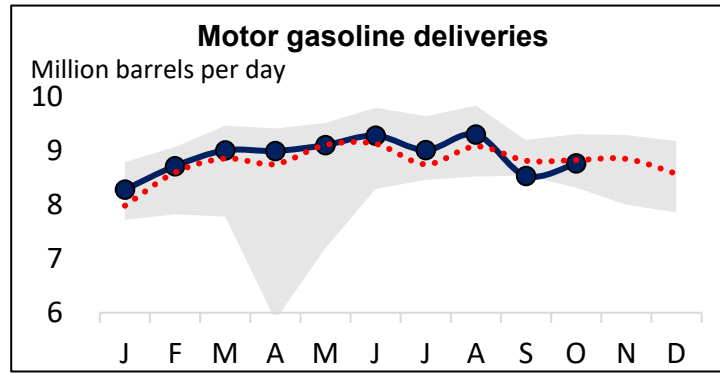
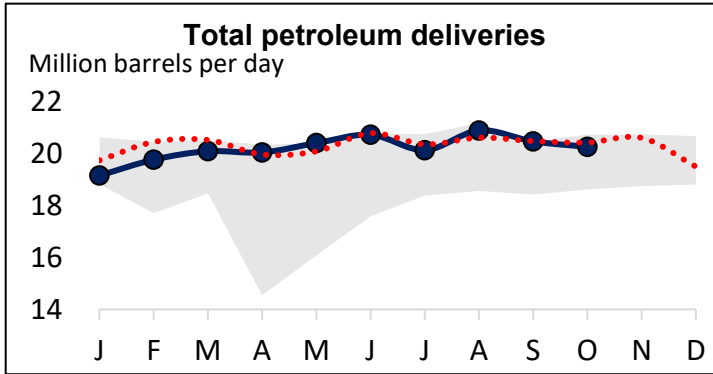
5-year range 2023 2022





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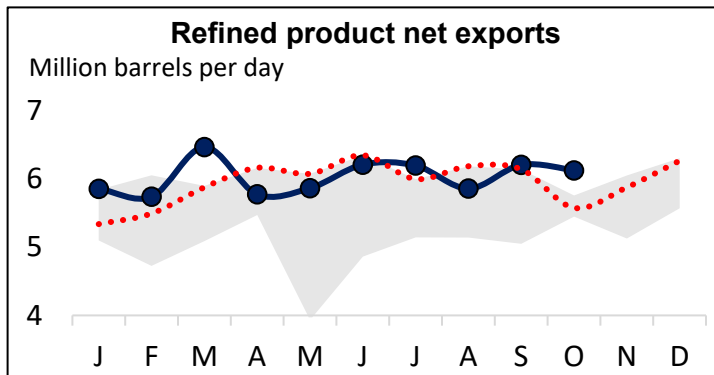
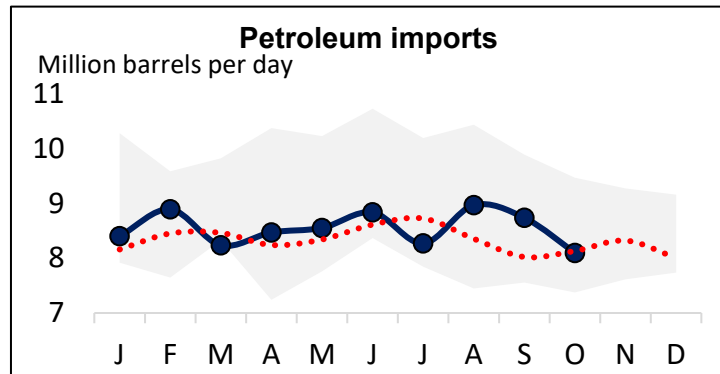
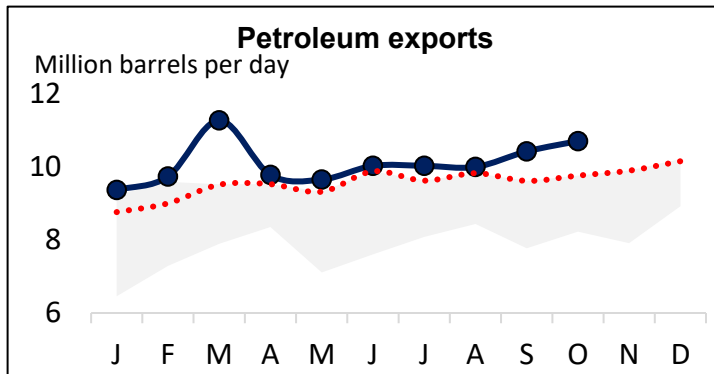
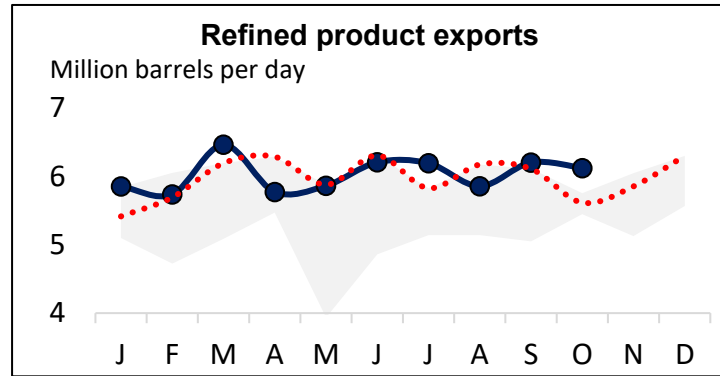
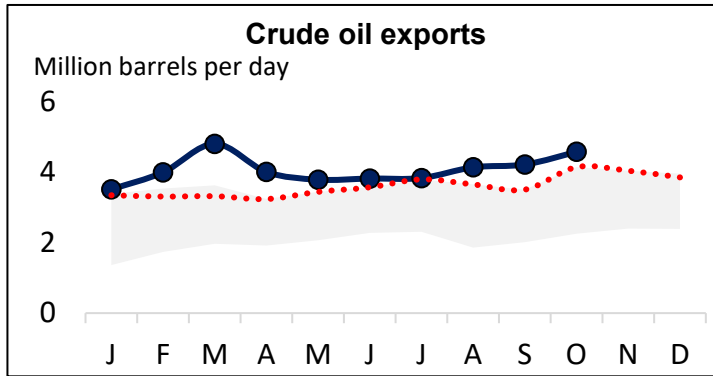
5-year range 2023 2022





MSR Energy Charts

5-year range 2023 2022



ESTIMATED UNITED STATES PETROLEUM BALANCE¹
(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	October			Year-to-Date		
	2023 ²	2022	% Change	2023 ³	2022	% Change
Disposition:						
Total motor gasoline.....	8,768	8,807	(0.4)	8,901	8,830	0.8
Finished reformulated.....	2,903	2,773	4.7	2,782	2,790	(0.3)
Finished conventional.....	5,865	6,034	(2.8)	6,119	6,040	1.3
Kerosene-jet.....	1,596	1,558	2.4	1,641	1,554	5.6
Distillate fuel oil.....	3,956	4,163	(5.0)	3,948	4,046	(2.4)
≤ 500 ppm sulfur.....	3,929	4,126	(4.8)	3,921	4,026	(2.6)
≤ 15 ppm sulfur.....	3,921	4,122	(4.9)	3,907	4,017	(2.7)
> 500 ppm sulfur.....	27	36	(25.0)	28	20	40.0
Residual fuel oil.....	291	277	5.1	263	332	(20.8)
All other oils (including crude losses)	5,363	5,003	7.2	5,176	5,132	0.8
Reclassified ⁴	278	198	na	259	165	na
Total domestic product supplied.....	20,252	20,007	1.2	20,188	20,060	0.6
Exports.....	10,704	9,575	11.8	10,103	9,422	7.2
Total disposition.....	30,956	29,582	4.6	30,290	29,482	2.7
Supply:						
Domestic liquids production						
Crude oil (including condensate).....	13,138	12,378	6.1	12,837	11,842	8.4
Natural gas liquids.....	6,503	6,168	5.4	6,333	5,947	20.0
Other supply ⁵	1,093	1,241	(11.9)	1,261	1,212	4.0
Total domestic supply.....	20,734	19,786	4.8	20,432	19,000	7.5
Imports:						
Crude oil (excluding SPR imports).....	6,382	6,239	2.3	6,473	6,313	2.5
From Canada.....	3,664	3,748	(2.2)	3,808	3,828	(0.5)
All other.....	2,718	2,492	9.1	2,665	2,485	7.2
Products.....	1,714	1,906	(10.1)	2,068	2,046	1.1
Total motor gasoline (incl. blend.comp).....	602	503	19.7	746	646	15.5
All other.....	1,112	1,403	(20.7)	1,322	1,400	(5.6)
Total imports.....	8,096	8,145	(0.6)	8,541	8,358	2.2
Total supply.....	28,830	27,931	3.2	28,972	27,359	5.9
Stock change, all oils.....	(2,126)	(1,650)	na	(1,318)	(2,123)	na
Refinery Operations:						
Input to crude distillation units.....	15,689	16,266	(3.5)	16,422	16,505	(0.5)
Gasoline production.....	9,677	9,654	0.2	9,640	9,573	0.7
Kerosene-jet production.....	1,612	1,568	2.8	1,701	1,617	5.2
Distillate fuel production.....	4,676	5,077	(7.9)	4,840	4,992	(3.0)
Residual fuel production.....	273	253	7.9	268	252	6.3
Operable capacity.....	18,272	18,017	1.4	18,227	17,955	1.5
Refinery utilization ⁶	85.9%	90.3%	na	90.1%	91.9%	na
Crude oil runs.....	15,309	15,776	(3.0)	15,899	15,992	(0.6)

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 BALANCE¹

(Daily average in thousands of 42 gallon barrels)

	October 2023	September 2023	October 2022	% Change From	
				Month Ago	Year Ago
Stocks (at month-end, in millions of barrels):					
Crude oil (excluding lease & SPR stocks).....	427.9	415.9	439.7	2.9	(2.7)
Unfinished oils.....	87.2	85.9	85.2	1.5	2.4
Total motor gasoline.....	220.8	224.4	210.4	(1.6)	4.9
Finished reformulated.....	0.0	0.0	0.0	0.0	(31.0)
Finished conventional.....	18.0	16.9	16.5	6.5	9.2
Blending components.....	202.8	207.5	193.9	(2.3)	4.6
Kerosene-jet.....	40.3	42.6	36.5	(5.4)	10.5
Distillate fuel oil.....	111.9	119.2	110.5	(6.1)	1.3
≤ 500 ppm sulfur.....	104.1	111.3	102.5	(6.5)	1.5
≤ 15 ppm sulfur.....	101.5	108.8	99.8	(6.7)	1.7
> 500 ppm sulfur.....	7.8	7.9	7.9	(1.3)	(1.8)
Residual fuel oil.....	27.3	28.1	30.0	(2.8)	(9.1)
All other oils.....	346.3	343.5 R	318.3	0.8	8.8
Total all oils.....	1,261.7	1,259.6 R	1,230.5	0.2	2.5