

THE U.S. Energy DATABOOK

A summary of national and global energy indicators



AUGUST 9, 2023

FEDERAL RESERVE BANK *of* KANSAS CITY

SUMMARY OF CURRENT ENERGY CONDITIONS

Since the last edition of the U.S. Energy Databook, activity in the energy sector decreased moderately. For the week ending July 28, West Texas Intermediate (WTI) crude oil averaged \$79.68 per barrel and North Sea Brent averaged \$83.55 per barrel, increasing 4.4% and 2.6% respectively over the last quarter. The Henry Hub natural gas spot price averaged \$2.59 per million Btu for the week ending July 28, increasing 17.2% over the last three months. In July, the total number of active drilling rigs in the United States declined by 12.1% from three months ago. U.S. crude oil production declined 0.1% from a month ago and is up 1.0% from three months ago but remains below pre-pandemic levels. U.S. crude oil and petroleum products exports declined 2.7% in the last quarter and imports decreased 0.9%. Global demand for petroleum increased 0.85% and global petroleum production declined 0.78% over the last quarter.

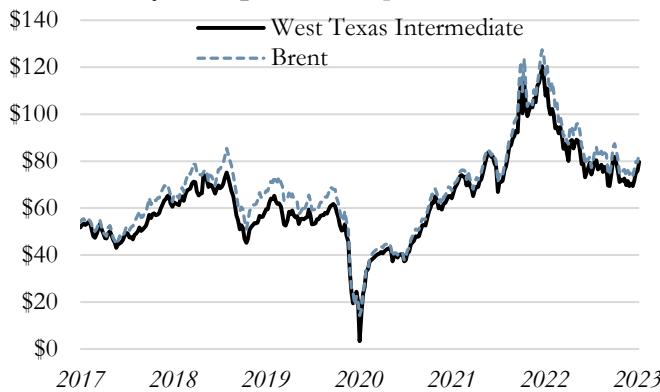
This databook provides current economic indicators to help monitor trends and allow comparison of past information. These indicators include: oil and natural gas prices; global petroleum production and demand; U.S. oil production and petroleum demand; U.S. crude oil stocks; OECD petroleum stocks; U.S. oil imports; U.S. oil exports; oil and gas drilling rig counts; and U.S. natural gas production. These indicators can be found on the following pages.



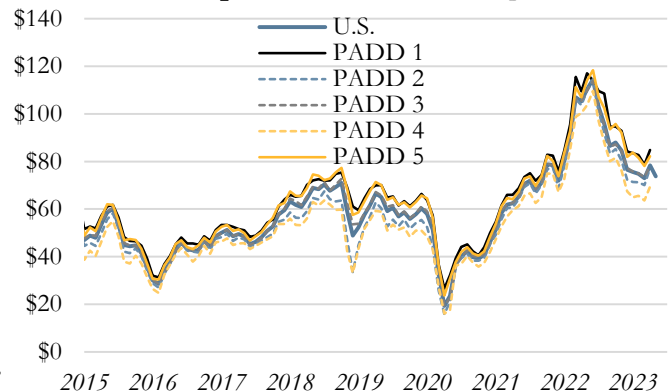
The Federal Reserve Bank of Kansas City's headquarters is located at 1 Memorial Drive in the heart of Kansas City, Missouri. The Federal Reserve Bank of Kansas City serves the Tenth Federal Reserve District, which includes Colorado, Kansas, western Missouri, Nebraska, northern New Mexico, Oklahoma and Wyoming. There are three branches across the Tenth Federal Reserve District located in Denver, Oklahoma City, and Omaha.

Weekly data through July 28, 2023

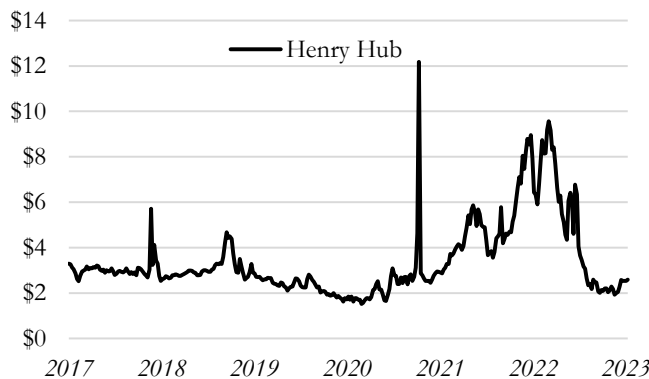
Weekly Oil Spot Prices, per barrel



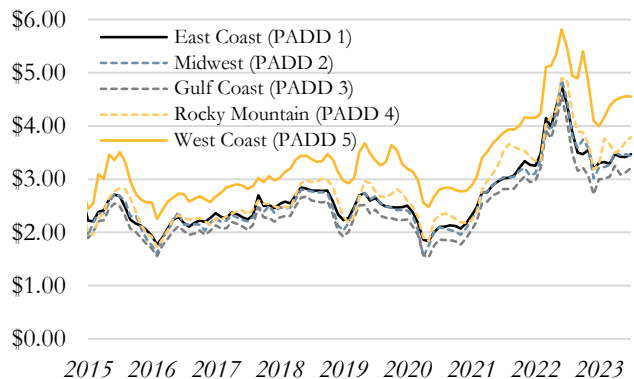
Refiner Acquisition Cost of Oil*, per barrel



Weekly Natural Gas Spot Prices, per mmbtu



Monthly Gasoline Prices by PADD, per gallon



Weekly Spot Prices, Change from

Weekly Spot Prices	Current 7/28/23	1 Week Ago	1 Month Ago	3 months Ago	6 Months Ago	1 Year Ago
West Texas Intermediate	\$79.68	\$4.07	\$10.32	\$3.37	-\$0.65	-\$19.92
Brent	\$83.55	\$4.07	\$10.00	\$2.15	-\$2.35	-\$25.73
Henry Hub	\$2.59	\$0.05	\$0.01	\$0.38	-\$0.49	-\$6.15

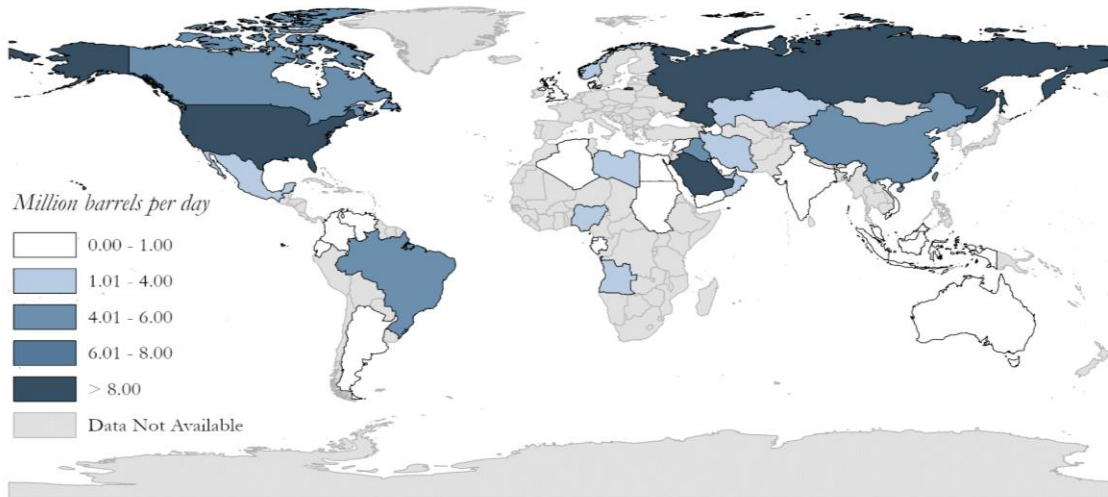
Monthly Gasoline Spot Prices, Change from

Geographic Area	Current Jul-23	1 Month Ago	3 months Ago	6 Months Ago	1 Year Ago
East Coast (PADD 1)	\$3.47	\$0.05	\$0.00	\$0.16	-\$0.93
Midwest (PADD 2)	\$3.44	-\$0.03	-\$0.08	\$0.22	-\$1.06
Gulf Coast (PADD 3)	\$3.21	\$0.08	-\$0.04	\$0.22	-\$0.88
Rocky Mountain (PADD 4)	\$3.79	\$0.08	\$0.29	\$0.50	-\$1.08
West Coast (PADD 5)	\$4.55	\$0.00	\$0.07	\$0.56	-\$0.93

*The cost of crude oil, including transportation and other fees paid by the refiner.

Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

June 2023 Global Petroleum Production



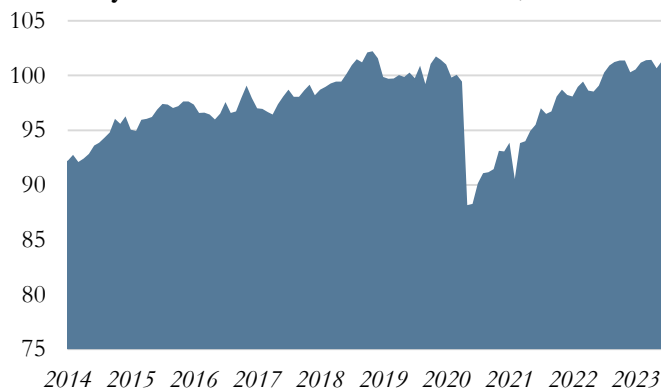
Million barrels per day

- 0.00 - 1.00
- 1.01 - 4.00
- 4.01 - 6.00
- 6.01 - 8.00
- > 8.00
- Data Not Available

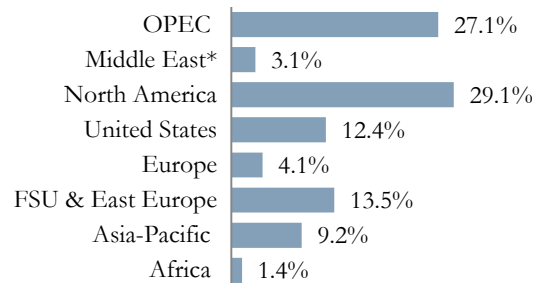
Source: Energy Information Administration/Haver Analytics

June 2023

Monthly Global Petroleum Production, million barrels per day

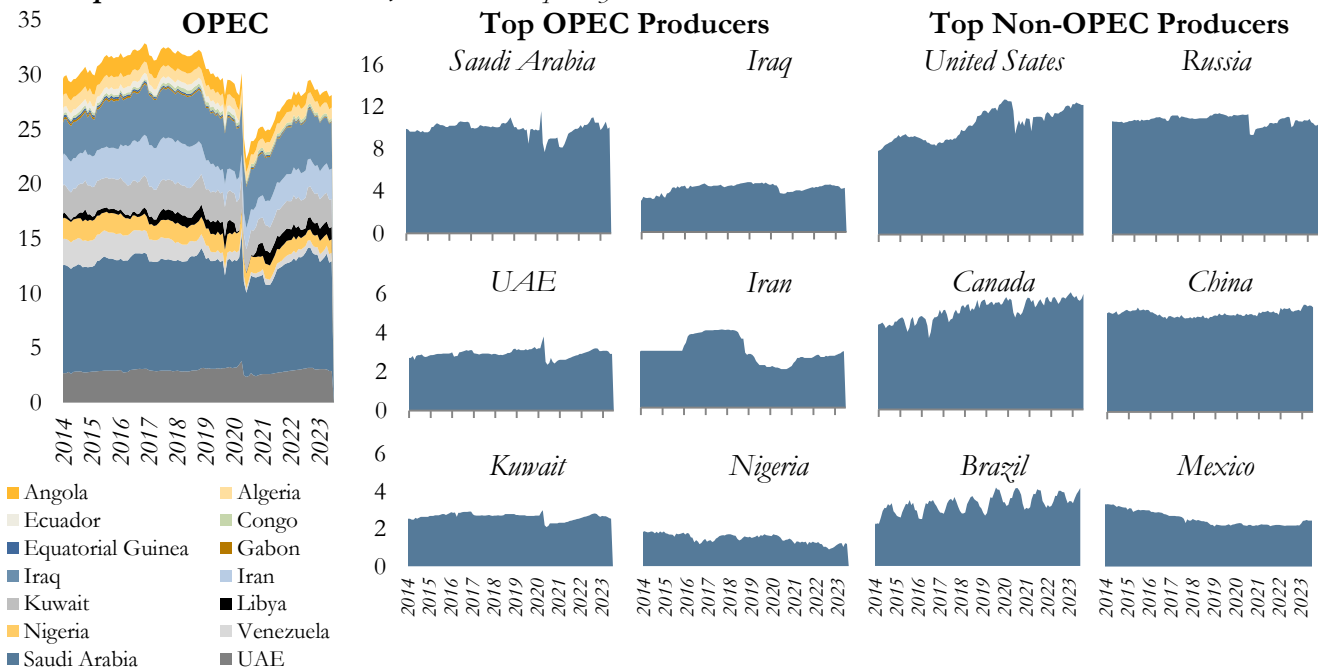


Regional Share of Production



*Excludes OPEC

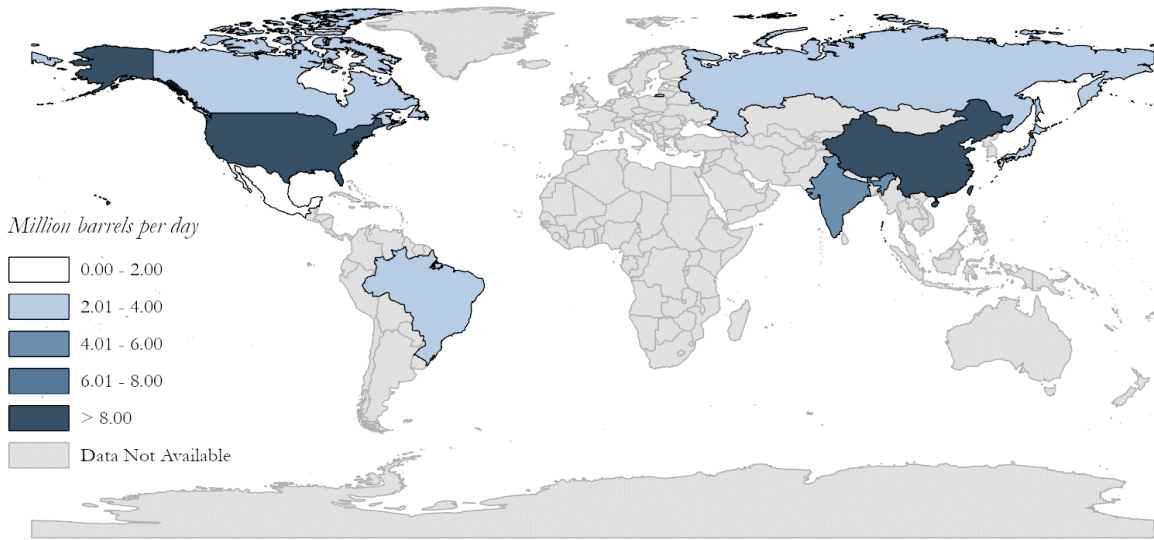
Top Crude Oil Producers, million barrels per day



Note: OPEC country production values are for crude oil and non-OPEC country data is for petroleum production.

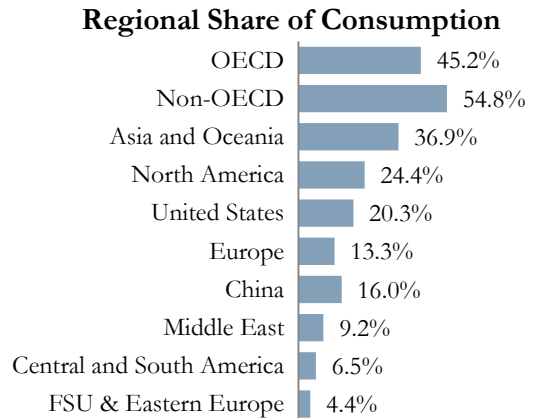
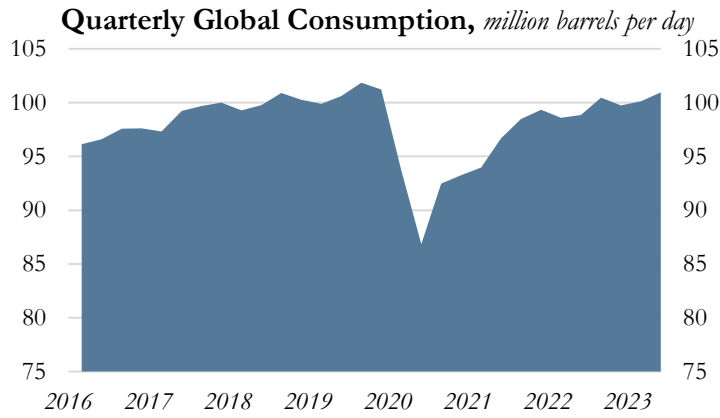
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

Second Quarter 2023 Global Petroleum Consumption

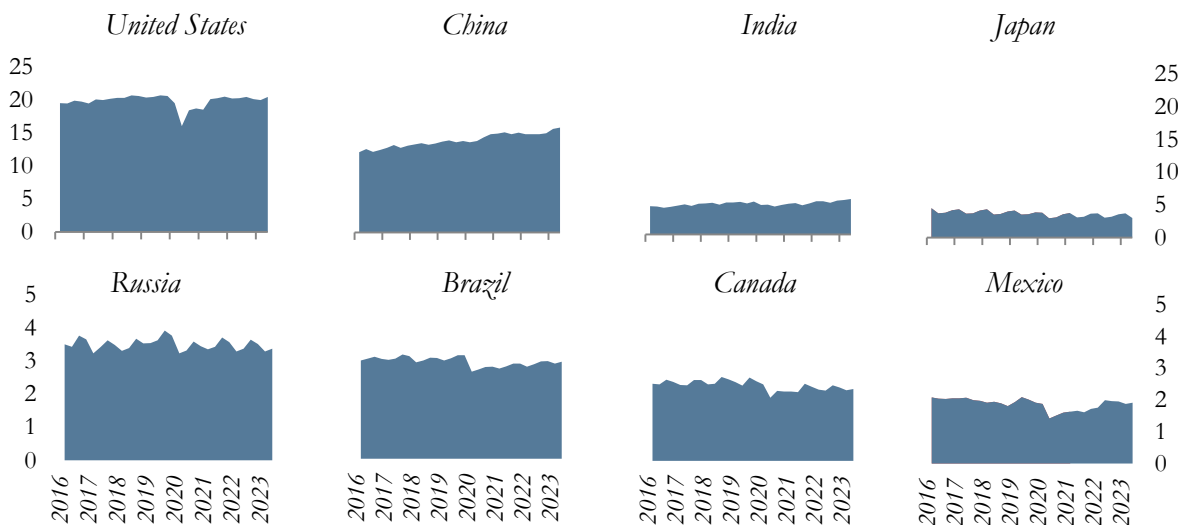


Source: Energy Information Administration/Haver Analytics

Second Quarter 2023

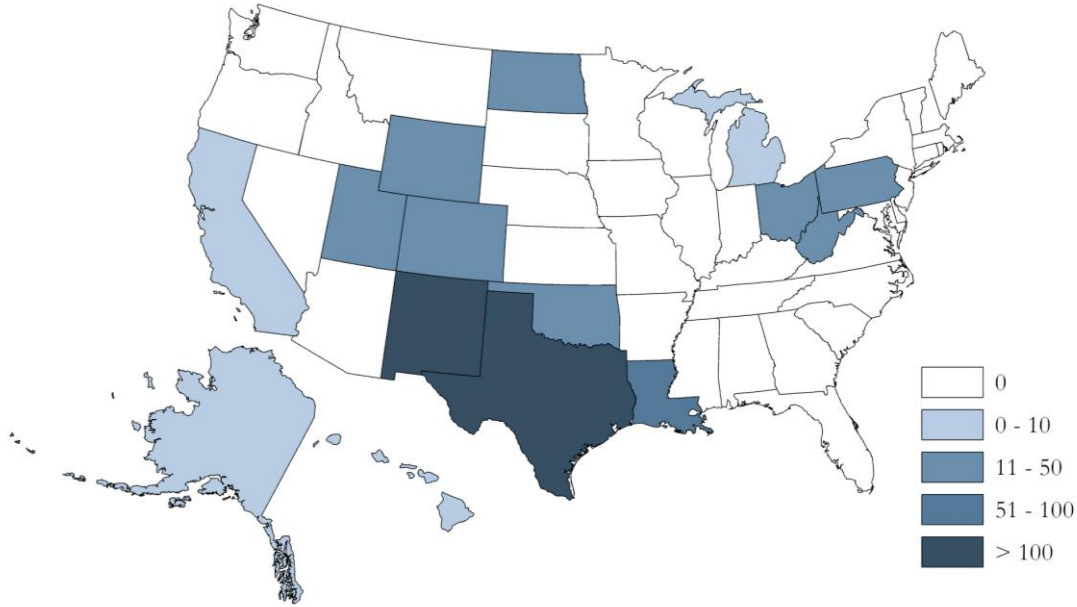


Top Petroleum Consumers, million barrels per day



Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

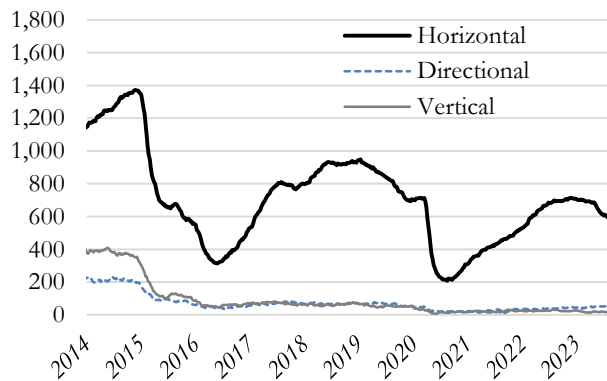
July 2023 Weekly Active Oil & Gas Drilling Rig Counts



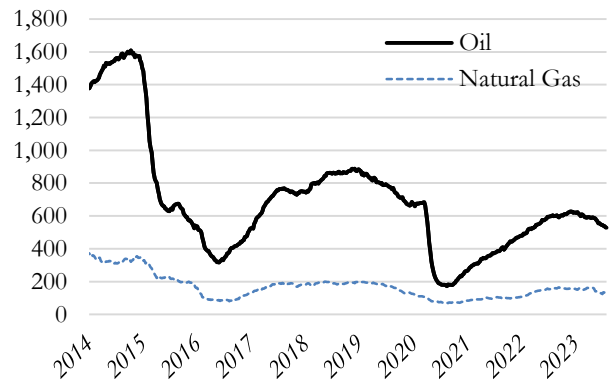
Source: Baker Hughes/Haver Analytics

July 28, 2023

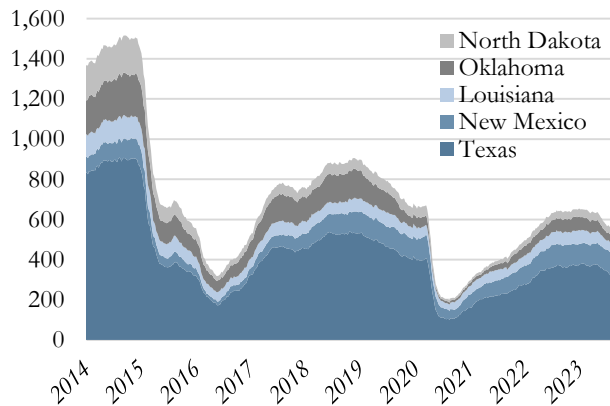
U.S. Active Drilling Rigs by Trajectory



U.S. Active Drilling Rigs by Type



Top Five States for Drilling Activity (Total Active Rigs)



Rig Count By Type

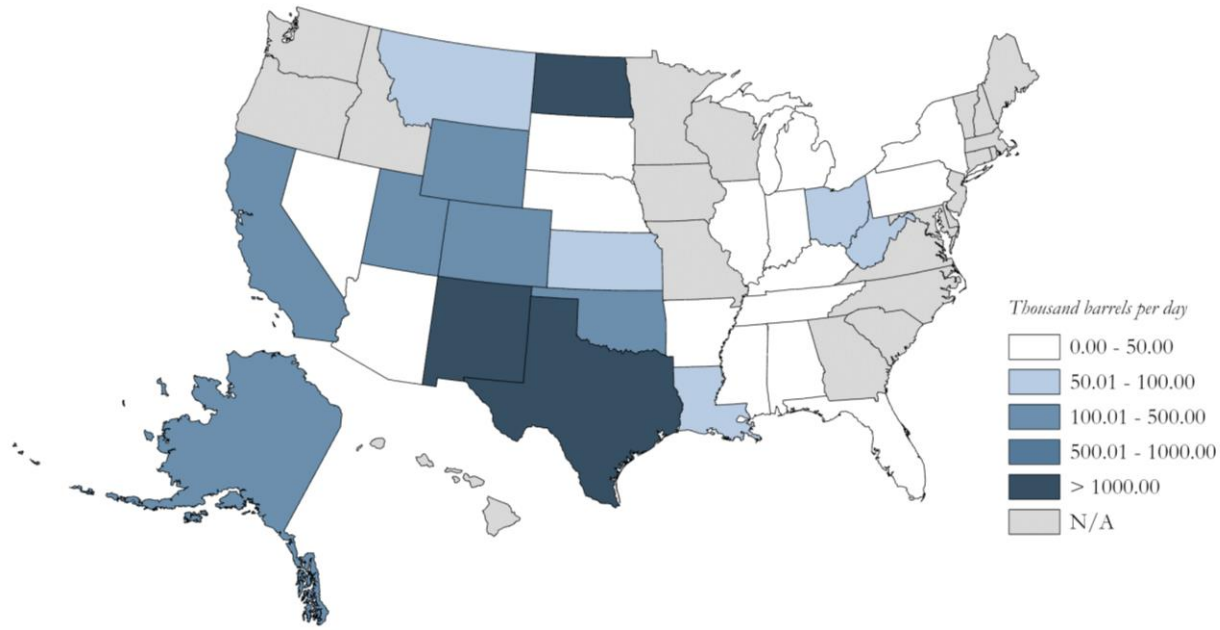
Rig Type	Current Week	1 Month Ago	3 Months Ago	1 Year Ago
Oil	529	545	591	605
Gas	128	124	161	157
Misc	7	5	3	5
Total	664	674	755	767

Rig Count By Type, Change from

Rig Type	Current Week	1 Month Ago	3 Months Ago	1 Year Ago
Oil	-	-2.9%	-10.5%	-12.6%
Gas	-	3.2%	-20.5%	-18.5%
Misc	-	40.0%	133.3%	40.0%
Total	-	-1.5%	-12.1%	-13.4%

Source: Baker Hughes/Haver Analytics

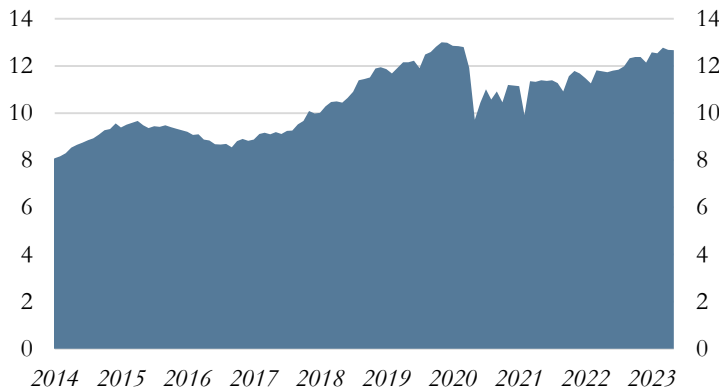
May 2023 U.S. Crude Oil Production



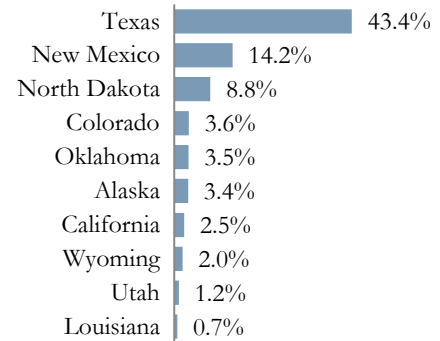
Source: Energy Information Administration/Haver Analytics

May 2023

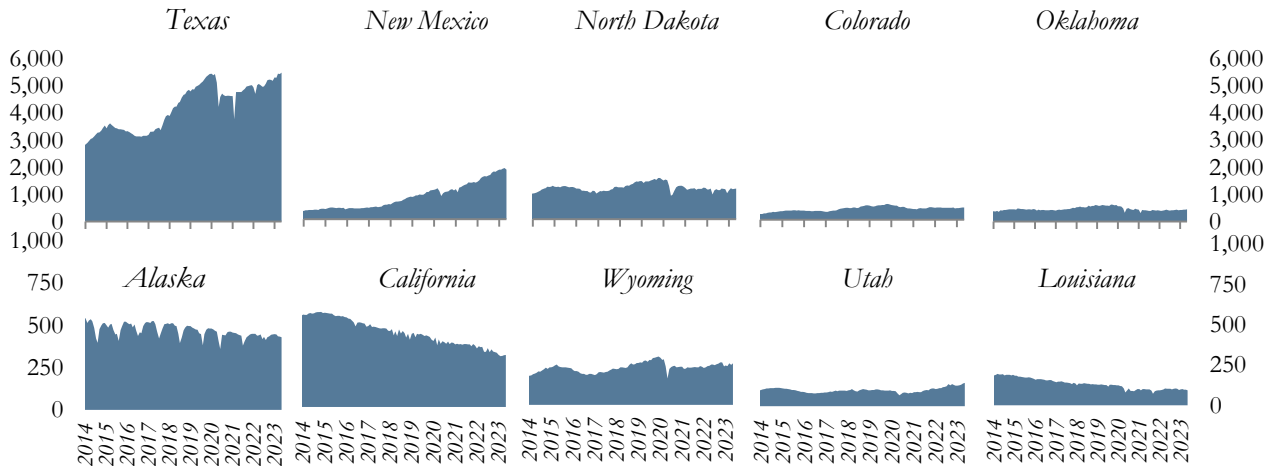
Monthly U.S. Production, million barrels per day



Share of Production

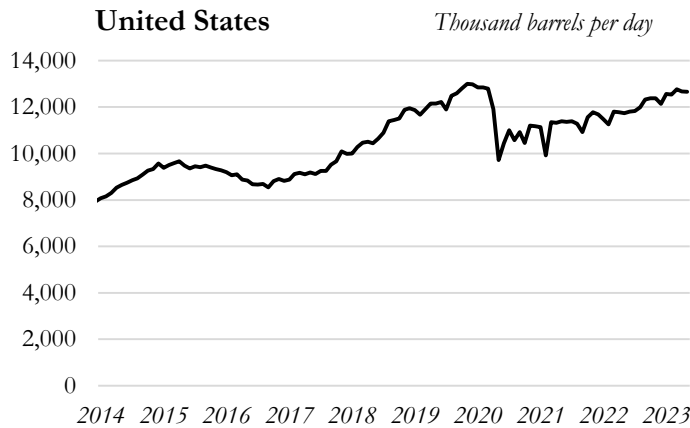


Top Producing States, thousand barrels per day

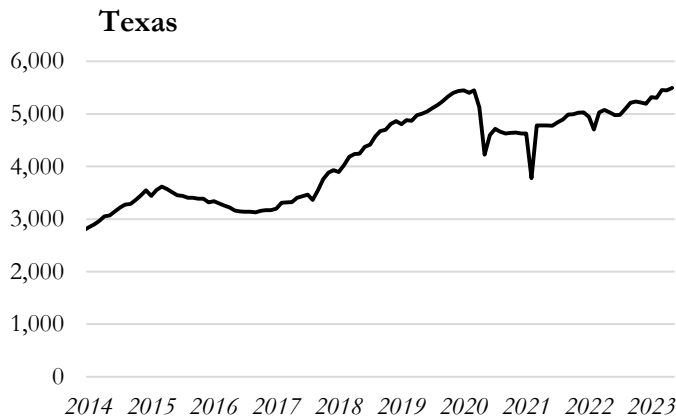


Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

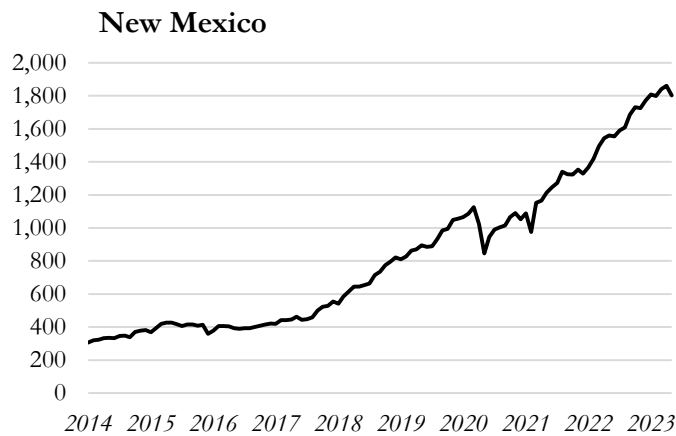
Data through May 2023



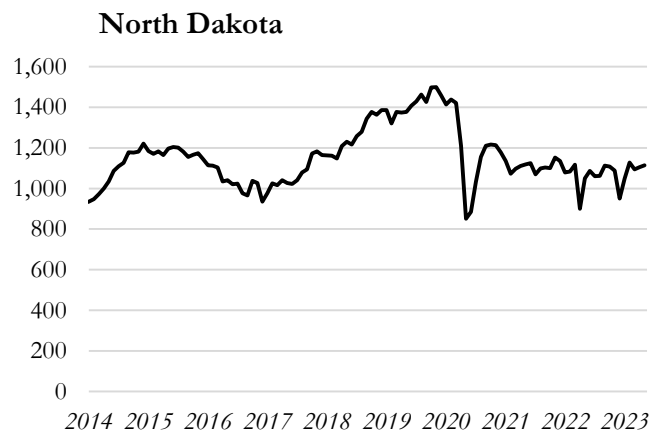
	United States <i>Thousand barrels per day</i>	<i>Change from</i>
May-23	12,662	
Month Ago	12,677	-0.1%
3 Months Ago	12,532	1.0%
6 Months Ago	12,376	2.3%
1 Year Ago	11,734	7.9%



	Texas <i>Thousand barrels per day</i>	<i>Change from</i>
May-23	5,494	
Month Ago	5,446	0.9%
3 Months Ago	5,306	3.5%
6 Months Ago	5,220	5.3%
1 Year Ago	5,029	9.2%
Share of U.S. Production		43.4%



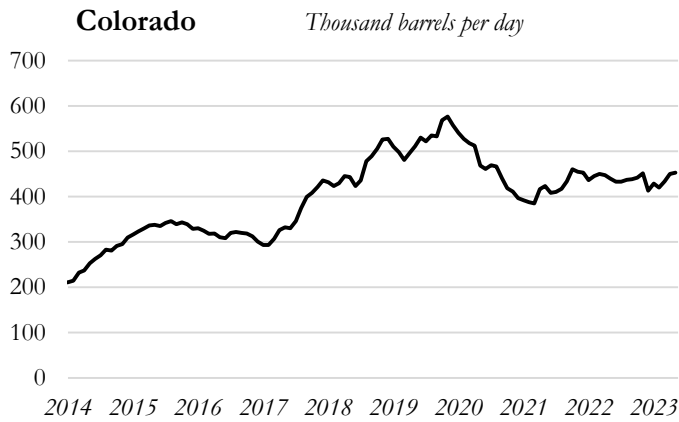
	New Mexico <i>Thousand barrels per day</i>	<i>Change from</i>
May-23	1,803	
Month Ago	1,861	-3.1%
3 Months Ago	1,799	0.2%
6 Months Ago	1,725	4.5%
1 Year Ago	1,561	15.5%
Share of U.S. Production		14.2%



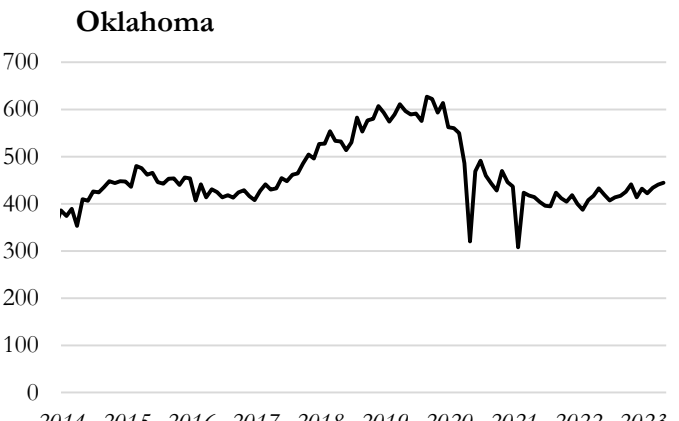
	North Dakota <i>Thousand barrels per day</i>	<i>Change from</i>
May-23	1,114	
Month Ago	1,104	0.9%
3 Months Ago	1,128	-1.3%
6 Months Ago	1,089	2.3%
1 Year Ago	1,050	6.1%
Share of U.S. Production		8.8%

Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

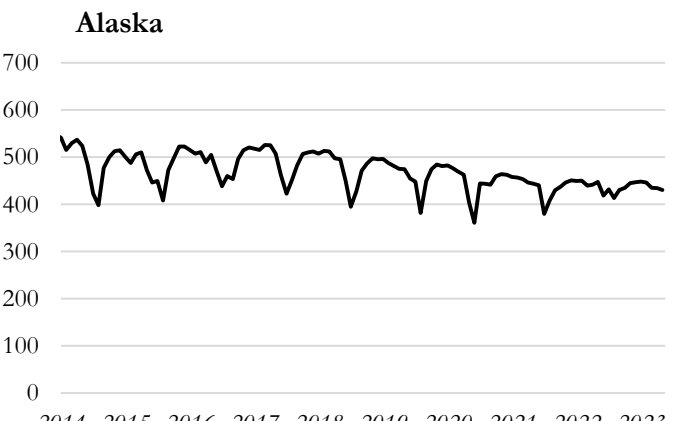
Data through May 2023



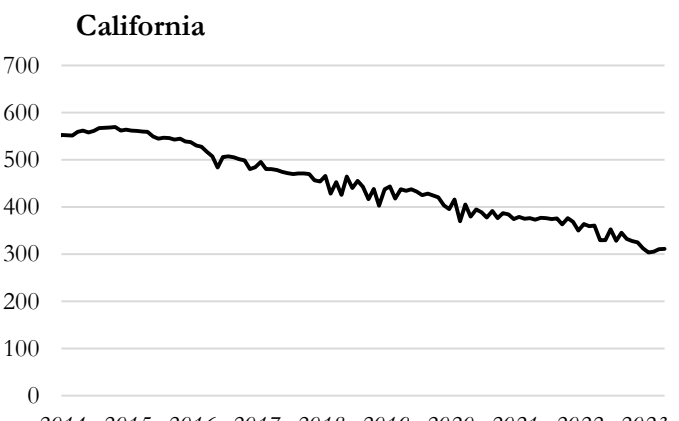
	Colorado	Change from
	Thousand barrels per day	
May-23	453	
Month Ago	450	0.6%
3 Months Ago	420	7.9%
6 Months Ago	451	0.3%
1 Year Ago	440	3.0%
Share of U.S. Production		3.6%



	Oklahoma	Change from
	Thousand barrels per day	
May-23	445	
Month Ago	441	0.9%
3 Months Ago	422	5.3%
6 Months Ago	441	0.8%
1 Year Ago	433	2.8%
Share of U.S. Production		3.5%



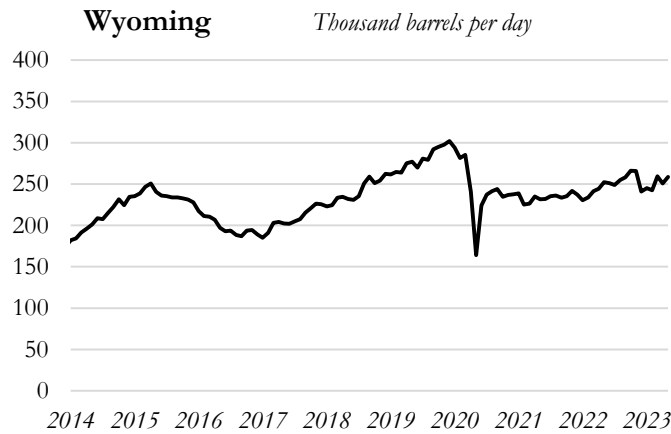
	Alaska	Change from
	Thousand barrels per day	
May-23	430	
Month Ago	434	-1.0%
3 Months Ago	446	-3.6%
6 Months Ago	445	-3.3%
1 Year Ago	447	-3.8%
Share of U.S. Production		3.4%



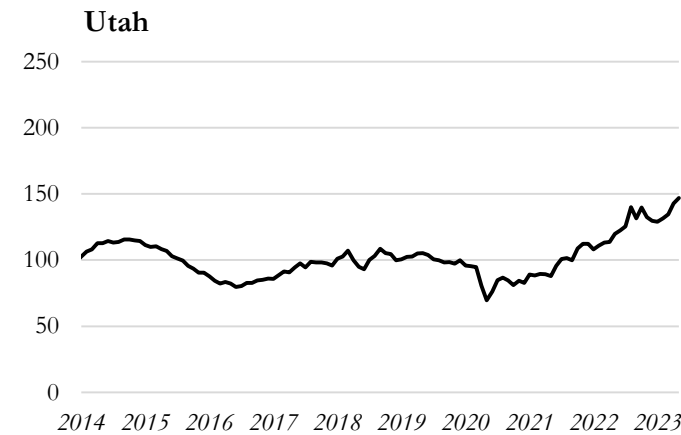
	California	Change from
	Thousand barrels per day	
May-23	311	
Month Ago	310	0.2%
3 Months Ago	303	2.5%
6 Months Ago	328	-5.1%
1 Year Ago	329	-5.6%
Share of U.S. Production		2.5%

Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

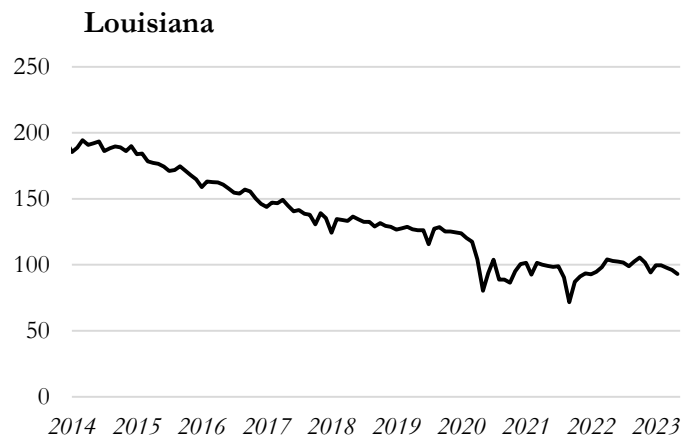
Data through May 2023



Wyoming		Change from
Thousand barrels per day		
May-23	259	
Month Ago	251	3.2%
3 Months Ago	243	6.6%
6 Months Ago	266	-2.6%
1 Year Ago	252	2.5%
Share of U.S. Production		2.0%



Utah		Change from
Thousand barrels per day		
May-23	147	
Month Ago	143	2.9%
3 Months Ago	132	11.6%
6 Months Ago	133	10.8%
1 Year Ago	120	22.7%
Share of U.S. Production		1.2%

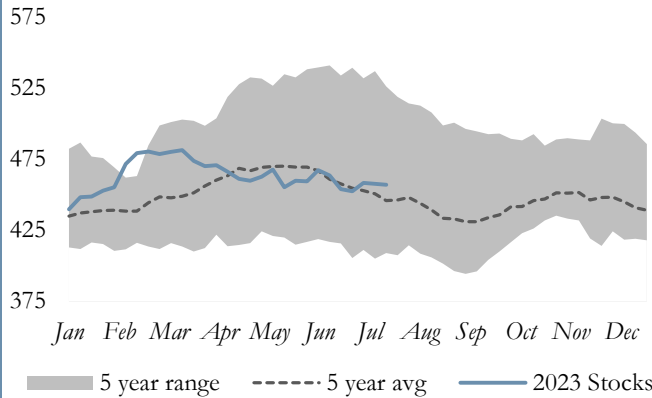


Louisiana		Change from
Thousand barrels per day		
May-23	93	
Month Ago	96	-3.2%
3 Months Ago	100	-6.7%
6 Months Ago	102	-8.6%
1 Year Ago	103	-9.7%
Share of U.S. Production		0.7%

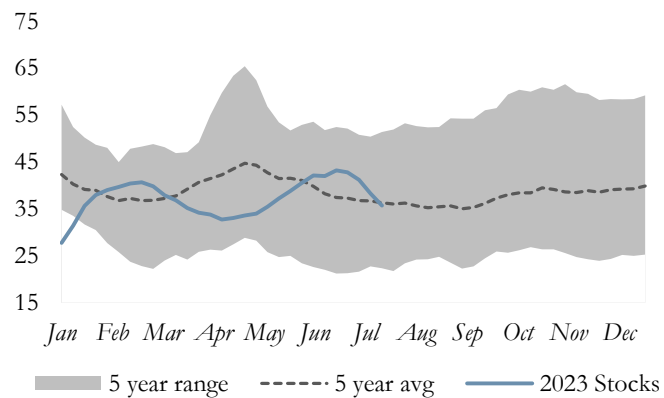
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

July 2023 Weekly U.S. Crude Oil Stocks

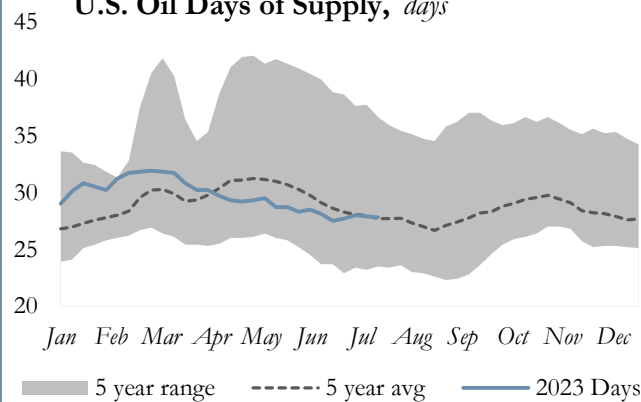
U.S. Oil Stocks, million barrels*



Cushing, OK Oil Stocks, million barrels



U.S. Oil Days of Supply, days



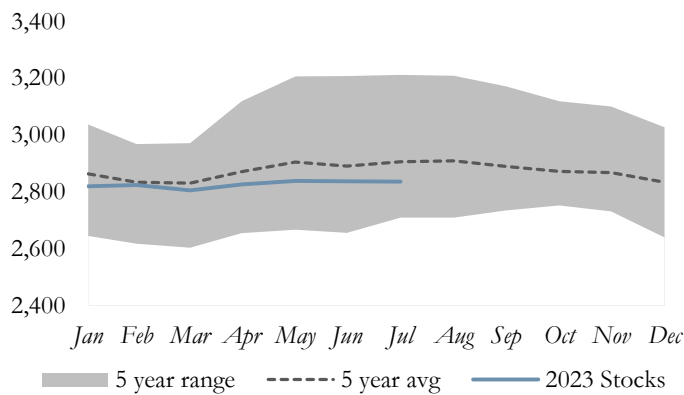
Crude Oil Stocks

	1 Week Ago	1 Year Ago
U.S.	-0.1%	8.2%
Cushing, OK	-6.8%	51.8%
Days of Supply	-0.4%	7.8%
East Coast (PADD 1)	1.7%	8.1%
Midwest (PADD 2)	-2.5%	14.1%
Gulf Coast (PADD 3)	1.0%	8.2%
Rocky Mountain (PADD 4)	-2.4%	2.8%
West Coast (PADD 5)	0.9%	-1.8%

*Stocks include those domestic and Customs-cleared foreign stocks held at, or in transit to, refineries and bulk terminals, and stocks in pipelines.

July 2023 OECD Commercial Petroleum Inventory

OECD Commercial Petroleum Inventory, million barrels



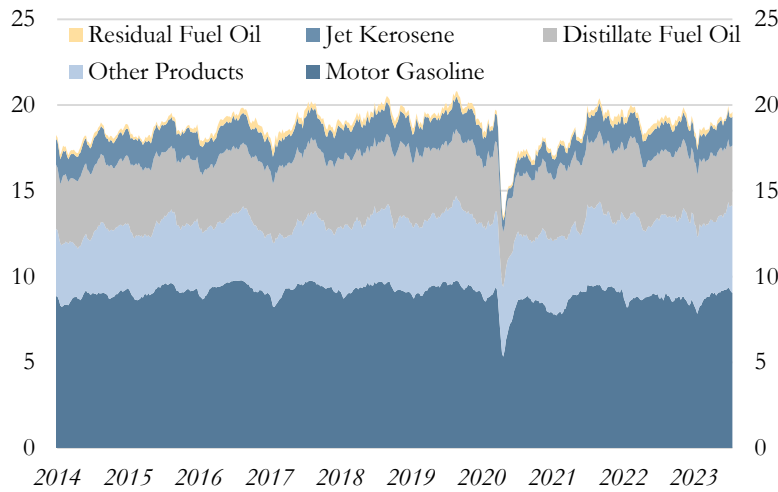
Petroleum Stocks	Million Barrels	Change from
Current Month	2,837	
1 Month Ago	2,838	0.0%
3 Months Ago	2,826	0.4%
6 Months Ago	2,819	0.6%
1 Year Ago	2,710	4.7%

Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

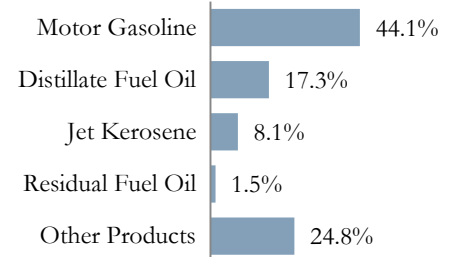
July 2023 Weekly U.S. Demand for Petroleum Products

4-Week Averages

All Petroleum Products, million barrels per day



Share of Total Consumption



U.S. Consumption by Product & Percent Change

U.S. Consumption by Product, thousand barrels per day

	<i>Current</i> 7/21/23	<i>1 Month</i> <i>Ago</i>	<i>3 Months</i> <i>Ago</i>	<i>6 Months</i> <i>Ago</i>	<i>1 Year</i> <i>Ago</i>
All Products	20,495	20,215	19,795	18,895	20,046
Motor Gasoline	9,037	9,273	9,065	7,817	8,810
Distillate Fuel Oil	3,542	3,670	3,874	3,631	3,799
Jet Kerosene	1,653	1,703	1,593	1,439	1,645
Residual Fuel Oil	303	147	194	290	254
Other Products	5,077	4,708	4,113	4,485	4,812

U.S. Consumption by Product, Change from

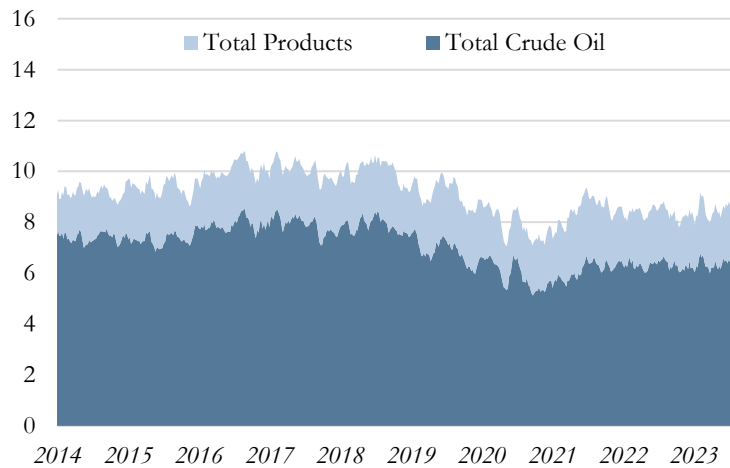
	<i>Current</i> 7/21/23	<i>1 Month</i> <i>Ago</i>	<i>3 Months</i> <i>Ago</i>	<i>6 Months</i> <i>Ago</i>	<i>1 Year</i> <i>Ago</i>
All Products	-	1.4%	3.5%	8.5%	2.2%
Motor Gasoline	-	-2.5%	-0.3%	15.6%	2.6%
Distillate Fuel Oil	-	-3.5%	-8.6%	-2.5%	-6.8%
Jet Kerosene	-	-2.9%	3.8%	14.9%	0.5%
Residual Fuel Oil	-	106.1%	56.2%	4.5%	19.3%
Other Products	-	7.8%	23.4%	13.2%	5.5%

Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

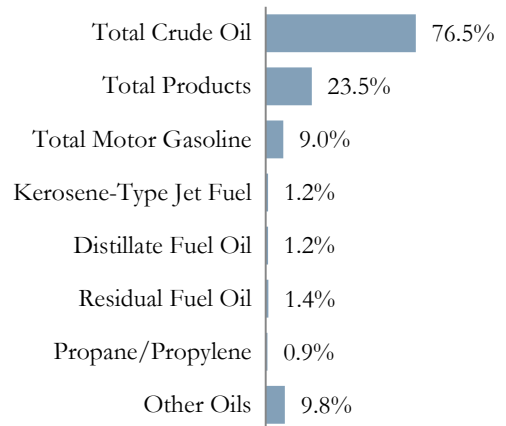
July 2023 Weekly U.S. Imports of Crude Oil & Petroleum Products

4-Week Averages

Imports, million barrels per day



Share of Total Imports



U.S. Imports by Product*

Thousand barrels per day

	Current 7/21/23	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
Total Crude Oil	6,615	6,381	6,502	6,207	6,550
Total Products	2,028	2,252	2,223	2,006	2,166
Total Motor Gasoline	775	952	812	519	781
Kerosene-Type Jet Fuel	108	104	155	90	92
Distillate Fuel Oil	102	143	138	198	122
Residual Fuel Oil	117	47	107	180	212
Propane/Propylene	78	88	106	157	80
Other Oils	849	918	904	863	880
Total Imports	8,643	8,633	8,725	8,213	8,716

U.S. Imports by Product, Change from

	Current 7/21/23	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
Total Crude Oil	-	3.7%	1.7%	6.6%	1.0%
Total Products	-	-9.9%	-8.8%	1.1%	-6.4%
Total Motor Gasoline	-	-18.6%	-4.6%	49.3%	-0.8%
Kerosene-Type Jet Fuel	-	3.8%	-30.3%	20.0%	17.4%
Distillate Fuel Oil	-	-28.7%	-26.1%	-48.5%	-16.4%
Residual Fuel Oil	-	148.9%	9.3%	-35.0%	-44.8%
Propane/Propylene	-	-11.4%	-26.4%	-50.3%	-2.5%
Other Oils	-	-7.5%	-6.1%	-1.6%	-3.5%
Total Imports	-	0.1%	-0.9%	5.2%	-0.8%

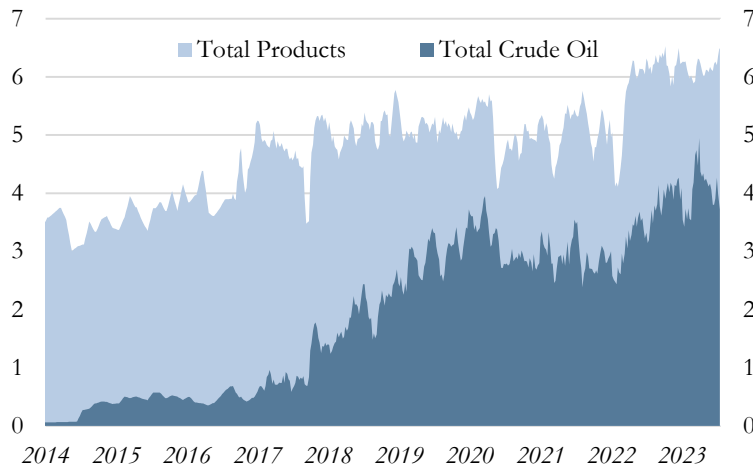
*Totals may not sum due to component rounding

Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

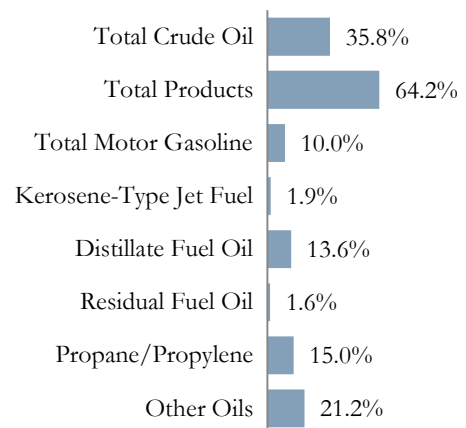
July 2023 Weekly U.S. Exports of Crude Oil & Petroleum Products

4-Week Averages

Exports, million barrels per day



Share of Total Exports



U.S. Exports by Product*

Thousand barrels per day

	<i>Current 7/21/23</i>	<i>1 Month Ago</i>	<i>3 Months Ago</i>	<i>6 Months Ago</i>	<i>1 Year Ago</i>
Total Crude Oil	3,613	3,907	4,339	3,731	3,486
Total Products	6,469	6,263	6,021	6,264	6,177
<i>Total Motor Gasoline</i>	1,012	918	830	938	857
<i>Kerosene-Type Jet Fuel</i>	195	172	139	208	161
<i>Distillate Fuel Oil</i>	1,371	1,200	1,135	1,187	1,485
<i>Residual Fuel Oil</i>	157	178	140	147	123
<i>Propane/Propylene</i>	1,517	1,611	1,503	1,501	1,443
<i>Other Oils</i>	2,142	2,093	2,275	2,284	2,108
Total Exports	10,082	10,169	10,360	9,994	9,663

U.S. Exports by Product, Change from

	<i>Current 7/21/23</i>	<i>1 Month Ago</i>	<i>3 Months Ago</i>	<i>6 Months Ago</i>	<i>1 Year Ago</i>
Total Crude Oil	-	-7.5%	-16.7%	-3.2%	3.6%
Total Products	-	3.3%	7.4%	3.3%	4.7%
<i>Total Motor Gasoline</i>	-	10.2%	21.9%	7.9%	18.1%
<i>Kerosene-Type Jet Fuel</i>	-	13.4%	40.3%	-6.3%	21.1%
<i>Distillate Fuel Oil</i>	-	14.3%	20.8%	15.5%	-7.7%
<i>Residual Fuel Oil</i>	-	-11.8%	12.1%	6.8%	27.6%
<i>Propane/Propylene</i>	-	-5.8%	0.9%	1.1%	5.1%
<i>Other Oils</i>	-	2.3%	-5.8%	-6.2%	1.6%
Total Exports	-	-0.9%	-2.7%	0.9%	4.3%

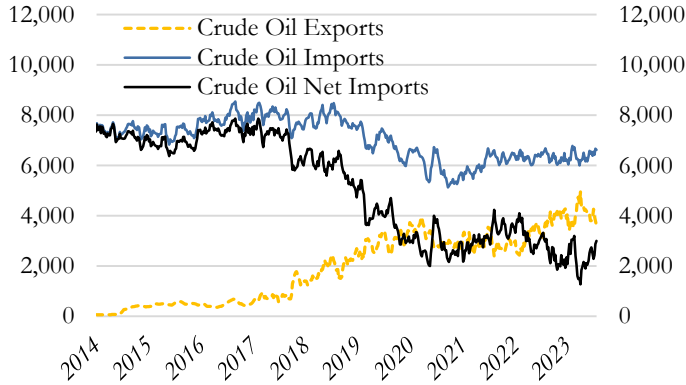
*Totals may not sum due to rounding

Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

July 2023 Weekly U.S. Net Imports of Crude Oil & Petroleum Products

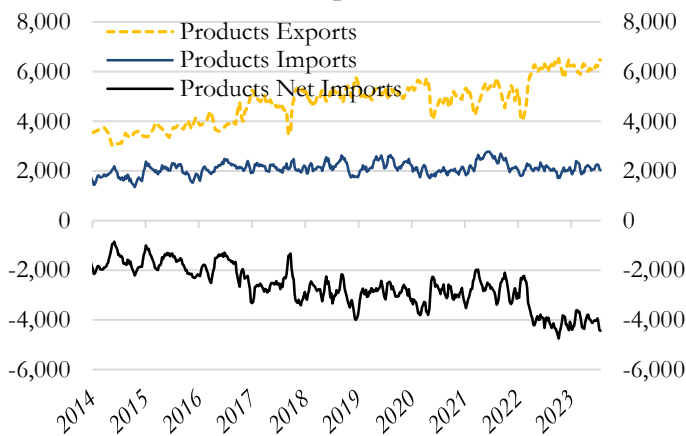
4-Week Averages, Thousand barrels per day

Crude Oil Net Imports



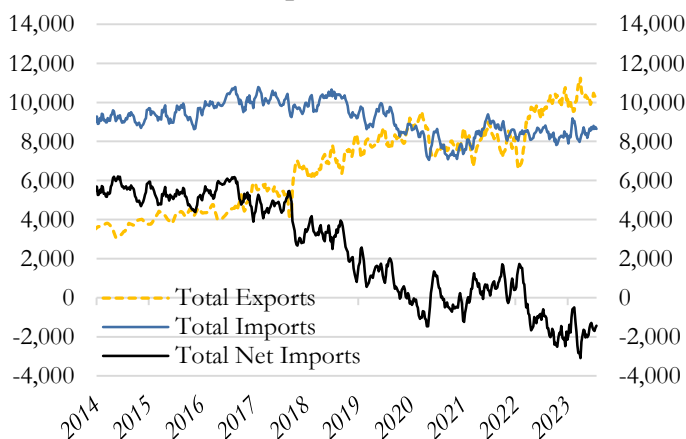
Crude Oil Net Imports		<i>Change from</i>
<i>Thousand barrels per day</i>		
7/21/23	3,003	
Month Ago	2,474	21.4%
3 Months Ago	2,163	38.8%
6 Months Ago	2,476	21.3%
1 Year Ago	3,064	-2.0%

Products Net Imports



Products Net Imports		<i>Change from</i>
<i>Thousand barrels per day</i>		
7/21/23	-4,441	
Month Ago	-4,011	-
3 Months Ago	-3,798	-
6 Months Ago	-4,258	-
1 Year Ago	-4,011	-

Total Net Imports



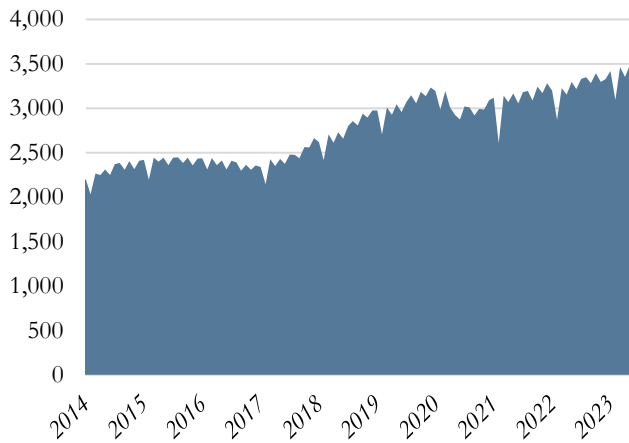
Total Net Imports		<i>Change from</i>
<i>Thousand barrels per day</i>		
7/21/23	-1,439	
Month Ago	-1,537	-
3 Months Ago	-1,635	-
6 Months Ago	-1,782	-
1 Year Ago	-948	-

Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

U.S. Natural Gas Production & Stocks

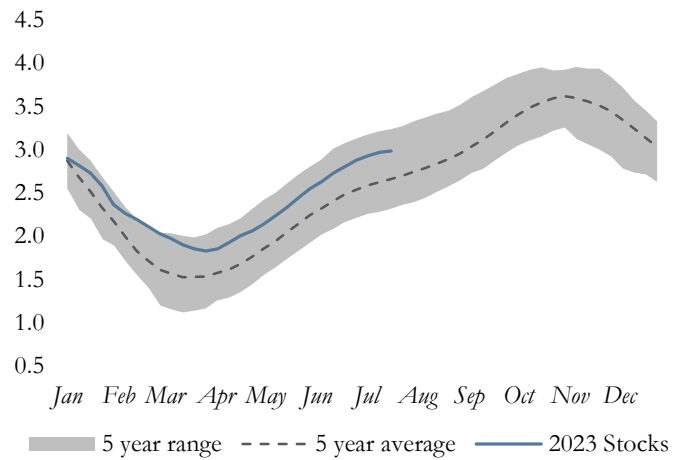
May 2023 Production

Total U.S. Production, Billion cubic feet (Bcf)



July 2023 Weekly Stocks

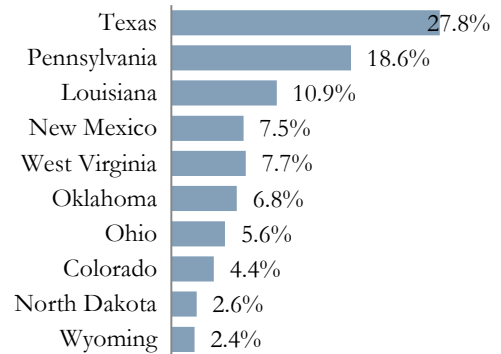
U.S. Natural Gas Stocks, Billion cubic feet (Bcf)



U.S. Natural Gas, Billion cubic feet (Bcf)

	Current Period*	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
U.S. Production	3,484	3,353	3,094	3,297	3,296
U.S. Stocks	2,987	2,805	2,009	2,734	2,416

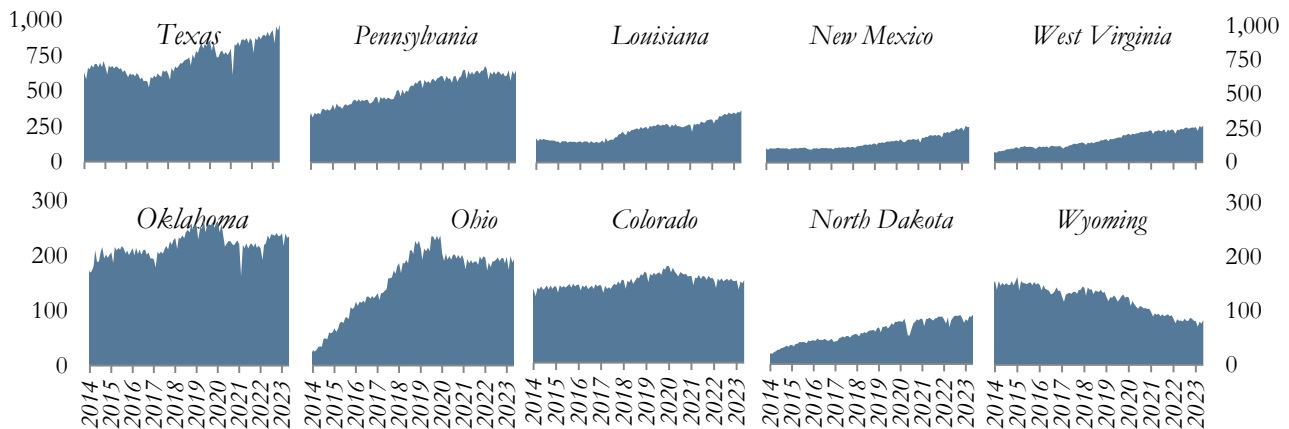
Share of Production



U.S. Natural Gas, Change from

	Current Period*	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
U.S. Production	-	3.9%	12.6%	5.7%	5.7%
U.S. Stocks	-	6.5%	48.7%	9.3%	23.6%

Top Producing States, Billion cubic feet (Bcf)



*U.S. production is monthly data & stocks are weekly data

Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

Definitions:

West Texas Intermediate: A crude oil produced in Texas and southern Oklahoma which serves as a reference or "marker" for pricing a number of other crude streams and is traded in the domestic spot market at Cushing, Oklahoma.

Brent: A blended crude oil produced in the North Sea region which serves as a reference or "marker" for pricing a number of other international crude streams.

Petroleum products include unfinished oils, liquefied petroleum gases, pentanes plus, aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, petrochemical feedstocks, special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.

Refined petroleum products include but are not limited to gasolines, kerosene, distillates (including No. 2 fuel oil), liquefied petroleum gas, asphalt, lubricating oils, diesel fuels, and residual fuels.

Notes:

Page 2: Petroleum Administration for Defense Districts (PADD) are geographic aggregations of the 50 States and the District of Columbia into five districts by the Petroleum Administration for Defense in 1950. These districts were originally defined during World War II for purposes of administering oil allocation. For more information, visit: <http://www.eia.gov/petroleum/supply/monthly/pdf/append.pdf>

Page 3: For OPEC countries & the U.S., only crude oil production data is used. For non-OPEC countries (excluding the U.S.) total petroleum production data is used. Total petroleum production includes production of crude oil (including lease condensates), natural gas plant liquids, biofuels, other liquids, and refinery processing gains.

Page 5: The active rig count is the number of rigs actively exploring for or developing oil or natural gas. Rig counts provide an indicator of new drilling activity and potential for expanded crude oil or natural gas production.

Pages 10: Crude oil stocks are stocks of crude oil and lease condensate held at refineries, in pipelines, at pipeline terminals, and on leases.

Crude oil stocks for Cushing include domestic and foreign crude oil stocks held in tank farms in Lincoln, Payne, and Creek counties in Oklahoma. Cushing, Oklahoma, is the designated delivery point for NYMEX crude oil futures contracts.

Days of supply are calculated by taking the current stock level and dividing by product supplied (used as an estimate of demand) averaged over the most recent four-week period. For crude oil, refinery inputs of crude oil are used as a proxy for demand.

Notes:

Page 11: Petroleum Consumption approximately represents consumption of petroleum products because it measures the disappearance of these products from primary sources, i.e., refineries, natural gas-processing plants, blending plants, pipelines, and bulk terminals.

Data Revisions

Most data are revised periodically to correct for errors and incorporate additional information as it becomes available. Data shown in this report are subject to change.

Regional Economic Analysis

Sign up to receive *The U.S. Energy Databook* and other publications each month via email using the link below:

<http://www.kansascityfed.org/ealert/>

For more analysis on the U.S. energy industry, read the latest release of *The Tenth District Energy Survey*.

<https://www.kansascityfed.org/research/indicatorsdata/energy>

Additional Resources Available

- Agricultural Surveys
- Manufacturing Survey
- Services Survey
- Energy Survey
- Regional Economic Analysis
- Speeches
- Banker Resources
- Economic Indicators
- Economic Research
- Educational Tools

Visit: www.KansasCityFed.org