

# THE U.S. Energy DATABOOK

*A summary of national and global energy indicators*



MAY 11, 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 slowed moderately. For the week ending April 28, West Texas Intermediate (WTI) crude oil averaged \$76.31 per barrel and North Sea Brent averaged \$81.40 per barrel, falling 5.0% and 5.2% respectively over the last quarter. The Henry Hub natural gas spot price averaged \$2.21 per million Btu for the week ending April 28, falling 28.2% over the last three months. In April, the total number of active drilling rigs in the United States declined by 2.1% from three months ago. U.S. crude oil production declined 0.4% from a month ago and is up 0.8% from three months ago but remains below pre-pandemic levels. U.S. crude oil and petroleum products exports increased 5.8% in the last quarter and imports decreased 1.4%. Global demand for petroleum increased by 0.27% and global petroleum production increased 0.37% over the last quarter.

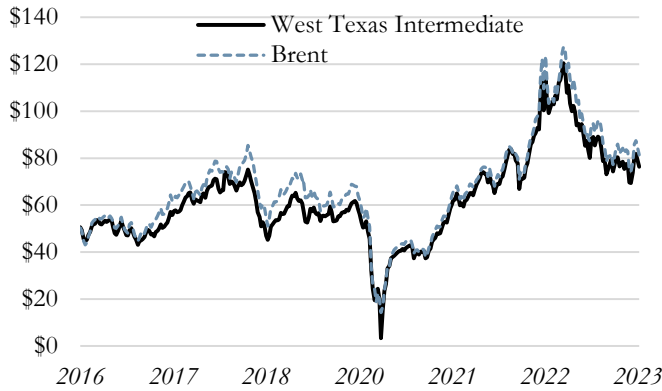
This databook provides current economic indicators to help monitor trends and allow comparison of past information. These indicators include: oil and natural gas prices; global petroleum production and demand; U.S. oil production and petroleum demand; U.S. crude oil stocks; OECD petroleum stocks; U.S. 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.



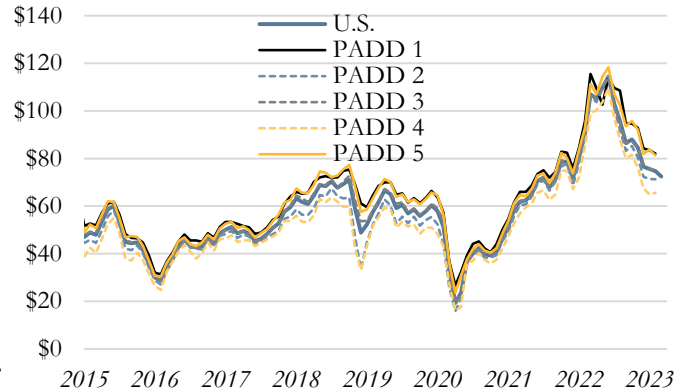
The Federal Reserve Bank of Kansas City's headquarters is located at 1 Memorial Drive in the heart of Kansas City, Missouri. The Federal Reserve Bank of Kansas City serves the Tenth Federal Reserve District, which includes Colorado, Kansas, western Missouri, Nebraska, northern New Mexico, Oklahoma and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

Weekly data through April 28, 2023

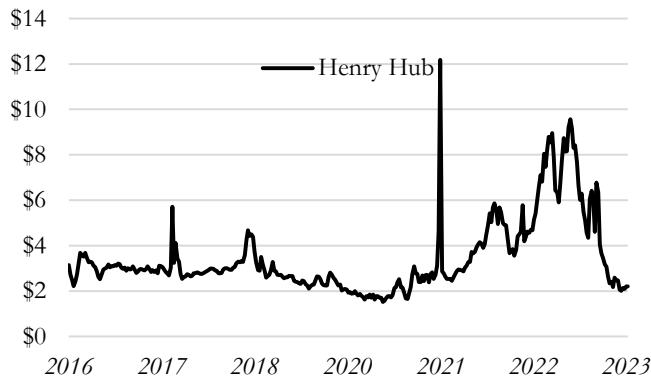
Weekly Oil Spot Prices, per barrel



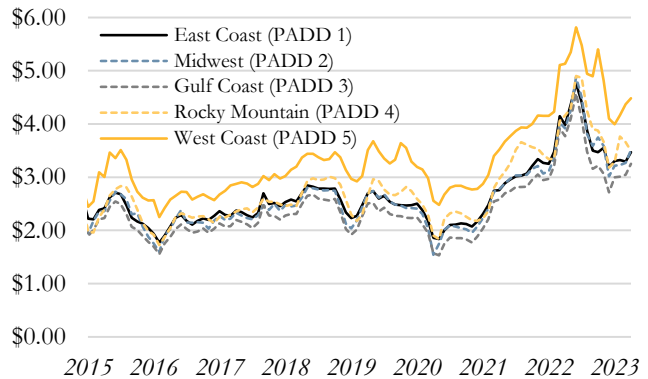
Refiner Acquisition Cost of Oil\*, per barrel



Weekly Natural Gas Spot Prices, per mmbtu



Monthly Gasoline Prices by PADD, per gallon



Weekly Spot Prices, Change from

	Current	1 Week	1 Month	3 months	6 Months	1 Year
Weekly Spot Prices	4/28/23	Ago	Ago	Ago	Ago	Ago
West Texas Intermediate	\$76.31	-\$2.91	\$2.52	-\$4.02	-\$11.56	-\$26.54
Brent	\$81.40	-\$3.22	\$3.40	-\$4.50	-\$11.61	-\$22.52
Henry Hub	\$2.21	\$0.00	\$0.20	-\$0.87	-\$2.91	-\$4.60

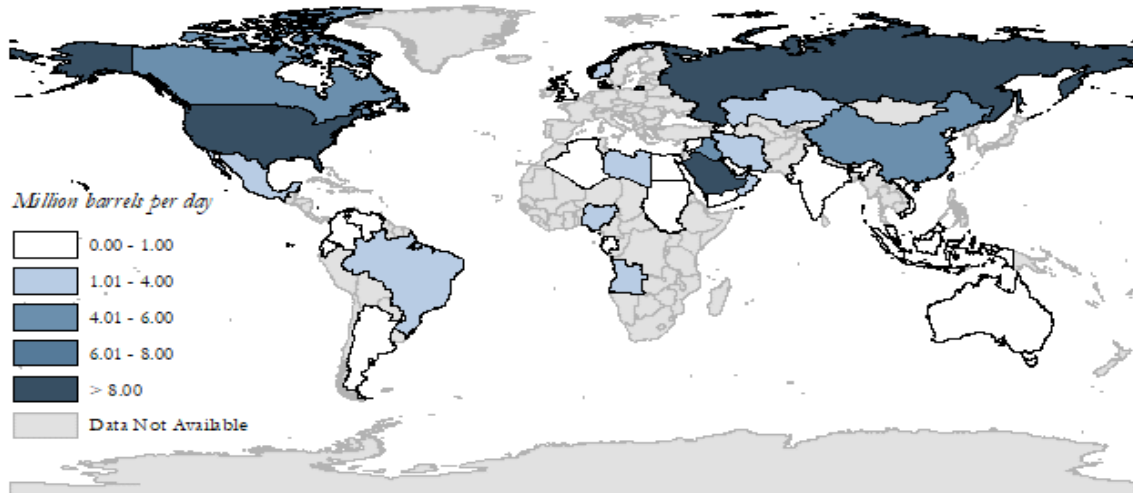
Monthly Gasoline Spot Prices, Change from

	Current	1 Month	3 months	6 Months	1 Year
Geographic Area	Apr-23	Ago	Ago	Ago	Ago
East Coast (PADD 1)	\$3.47	\$0.18	\$0.16	\$0.00	-\$0.51
Midwest (PADD 2)	\$3.51	\$0.24	\$0.29	-\$0.23	-\$0.40
Gulf Coast (PADD 3)	\$3.25	\$0.21	\$0.25	\$0.03	-\$0.52
Rocky Mountain (PADD 4)	\$3.49	-\$0.17	\$0.21	-\$0.38	-\$0.66
West Coast (PADD 5)	\$4.48	\$0.11	\$0.49	-\$0.92	-\$0.65

\*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

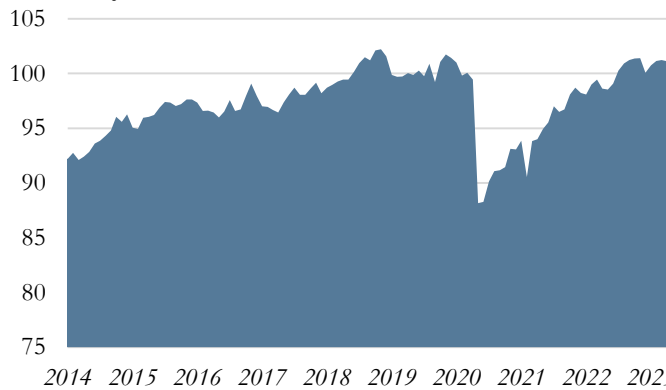
March 2023 Global Petroleum Production



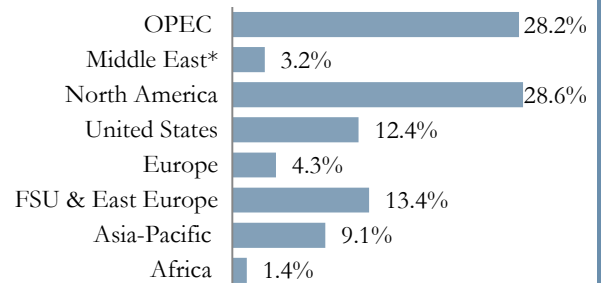
Source: Energy Information Administration/Haver Analytics

March 2023

Monthly Global Petroleum Production, million barrels per day

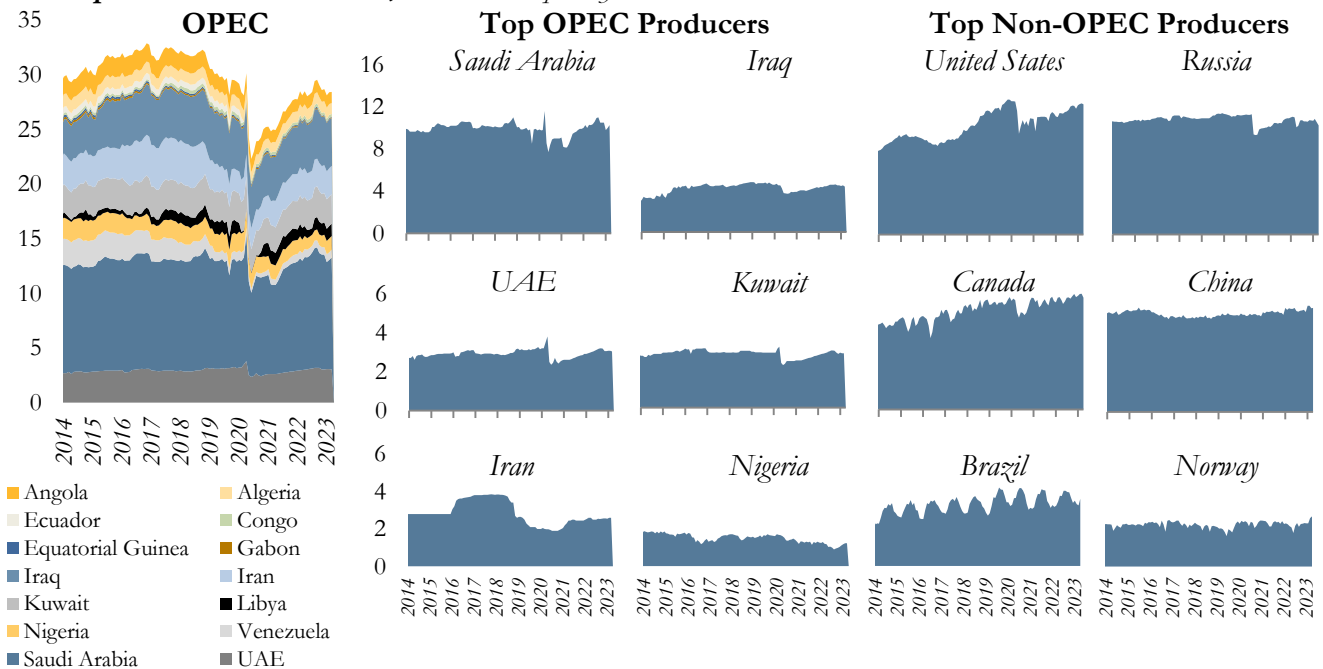


Regional Share of Production



\*Excludes OPEC

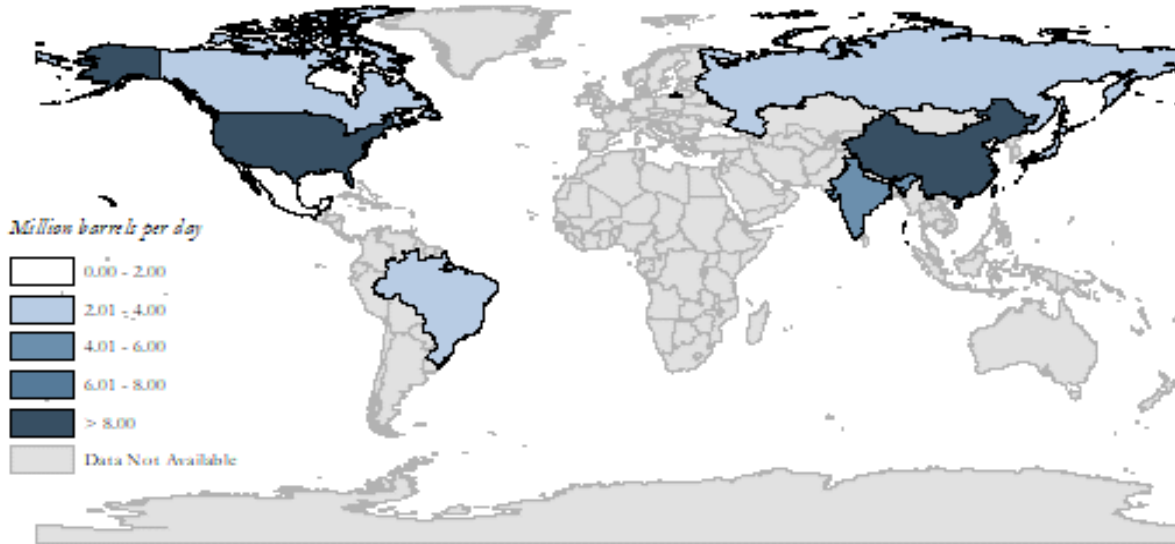
Top Crude Oil Producers, million barrels per day



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

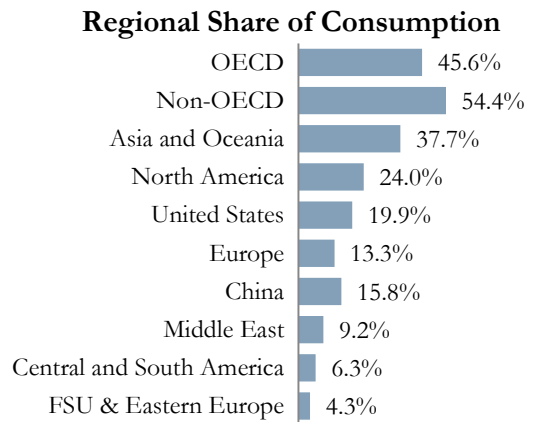
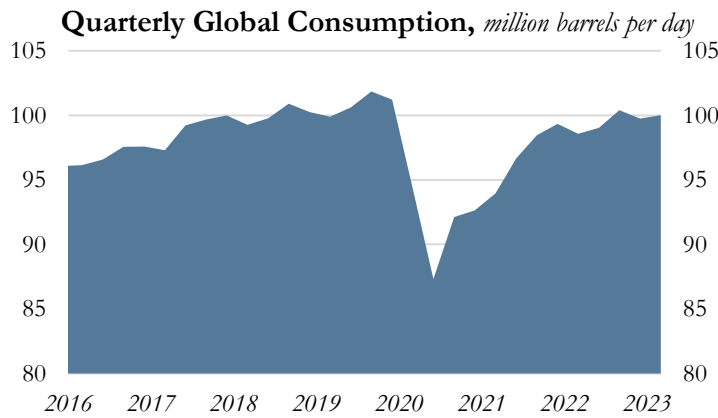
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

First Quarter 2023 Global Petroleum Consumption

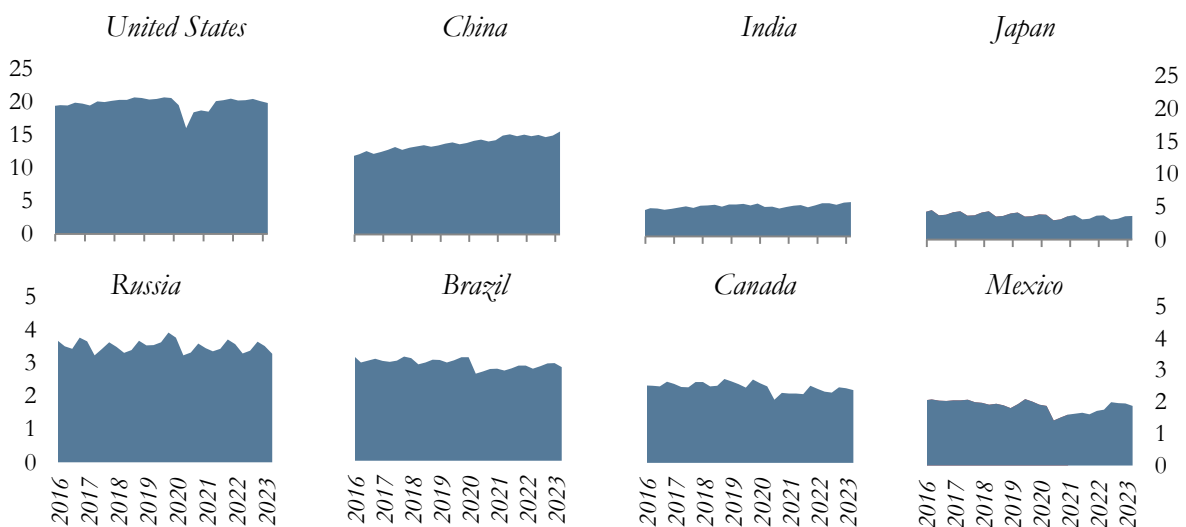


Source: Energy Information Administration / Haver Analytics

First Quarter 2023

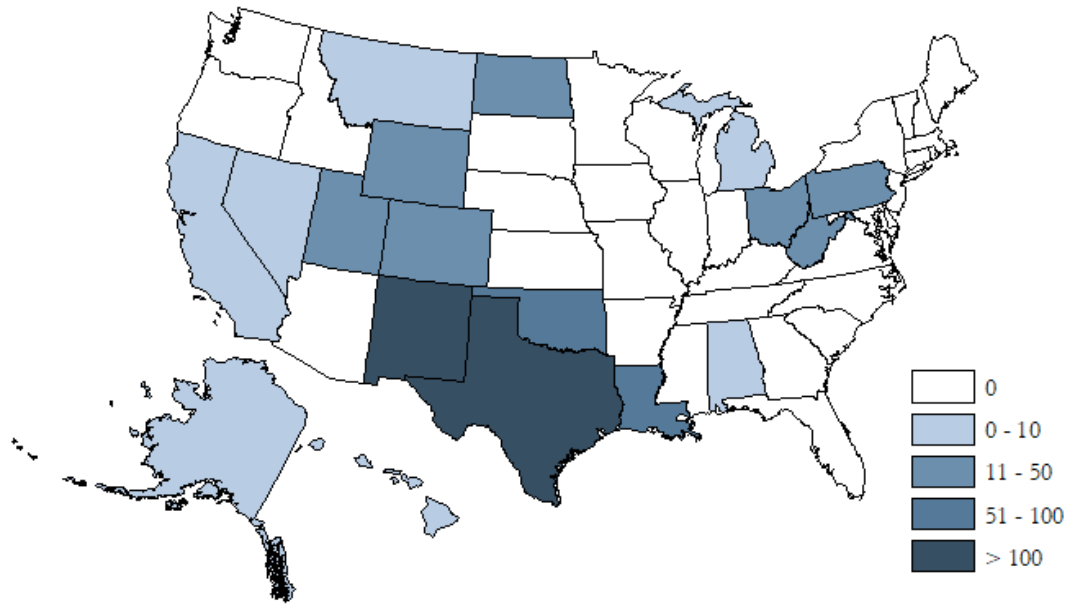


Top Petroleum Consumers, million barrels per day



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

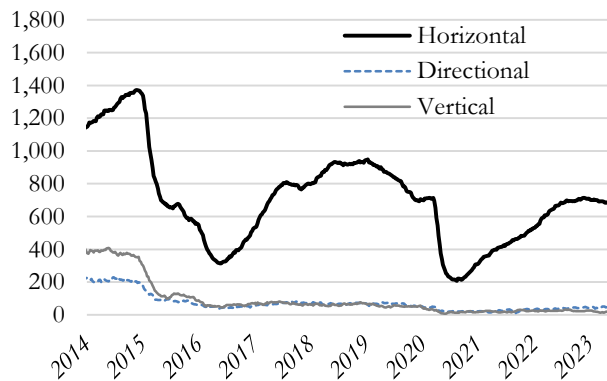
April 2023 Weekly Active Oil & Gas Drilling Rig Counts



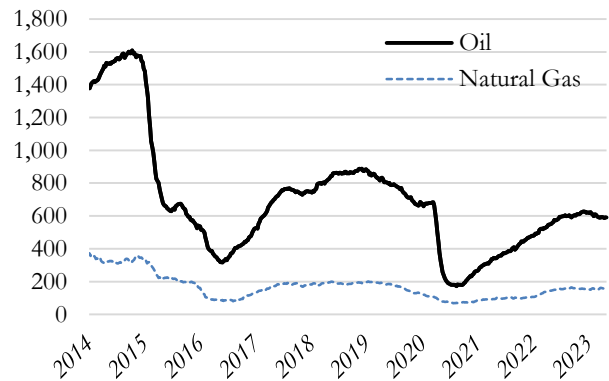
Source: Baker Hughes/Haver Analytics

April 28, 2023

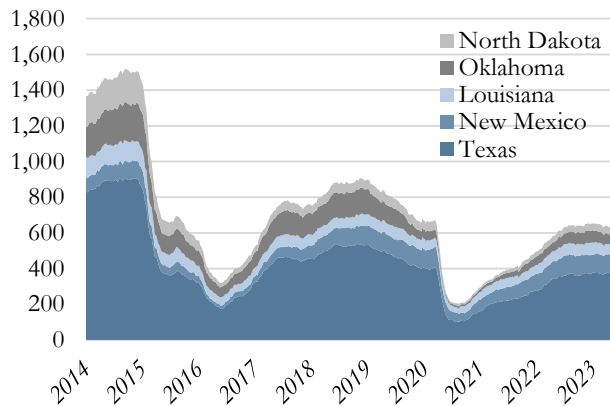
U.S. Active Drilling Rigs by Trajectory



U.S. Active Drilling Rigs by Type



Top Five States for Drilling Activity (Total Active Rigs)



Rig Count By Type

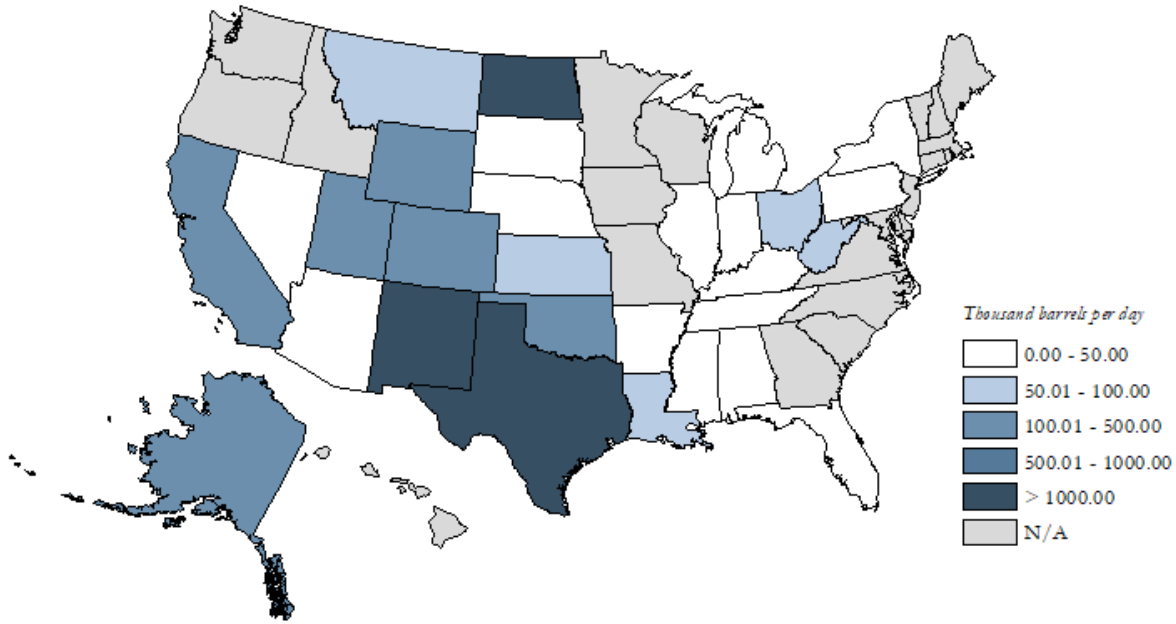
Rig Type	Current Week	1 Month Ago	3 Months Ago	1 Year Ago
Oil	591	592	609	552
Gas	161	160	160	144
Misc	3	3	2	2
<b>Total</b>	<b>755</b>	<b>755</b>	<b>771</b>	<b>698</b>

Rig Count By Type, Change from

Rig Type	Current Week	1 Month Ago	3 Months Ago	1 Year Ago
Oil	-	-0.2%	-3.0%	7.1%
Gas	-	0.6%	0.6%	11.8%
Misc	-	0.0%	50.0%	50.0%
<b>Total</b>	-	<b>0.0%</b>	<b>-2.1%</b>	<b>8.2%</b>

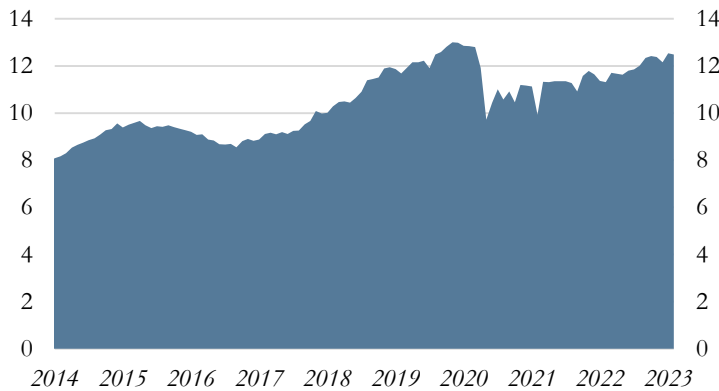
Source: Baker Hughes/Haver Analytics

February 2023 U.S. Crude Oil Production

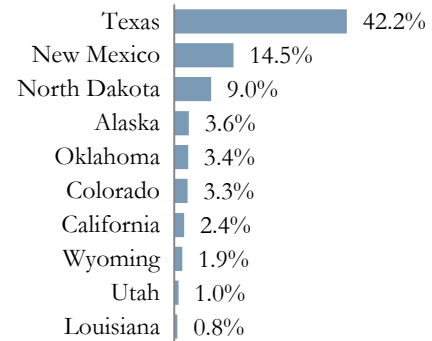


Source: Energy Information Administration/Haver Analytics

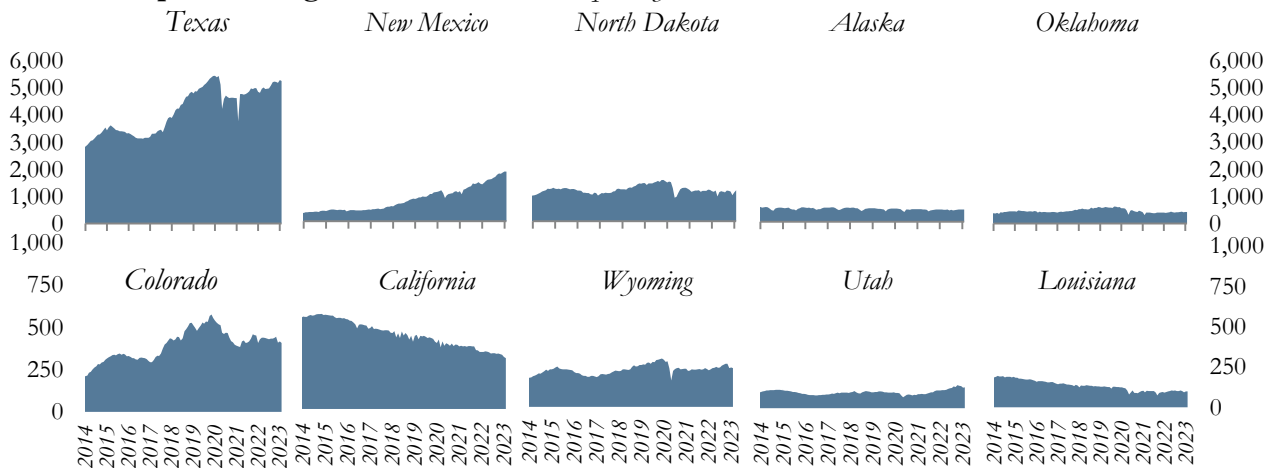
Monthly U.S. Production, million barrels per day



February 2023 Share of Production



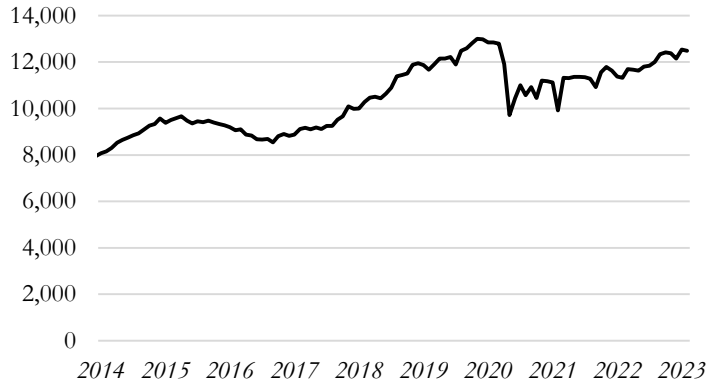
Top Producing States, thousand barrels per day



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

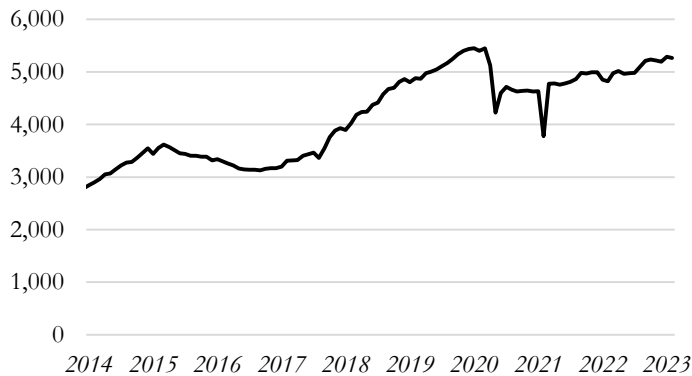
Data through February 2023

**United States** *Thousand barrels per day*



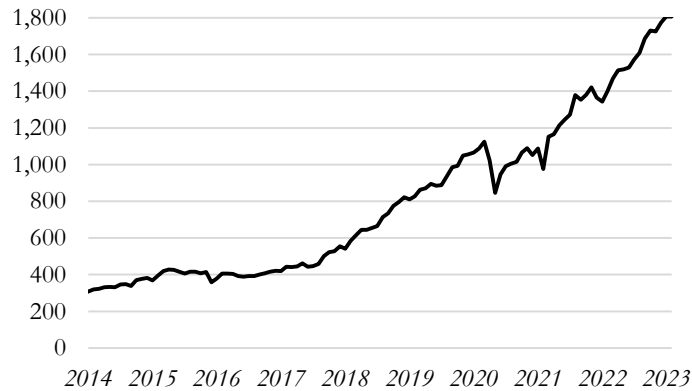
<b>United States</b>		<i>Change from</i>
<i>Thousand barrels per day</i>		
Feb-23	12,483	
Month Ago	12,536	-0.4%
3 Months Ago	12,379	0.8%
6 Months Ago	12,002	4.0%
1 Year Ago	11,316	10.3%

**Texas**



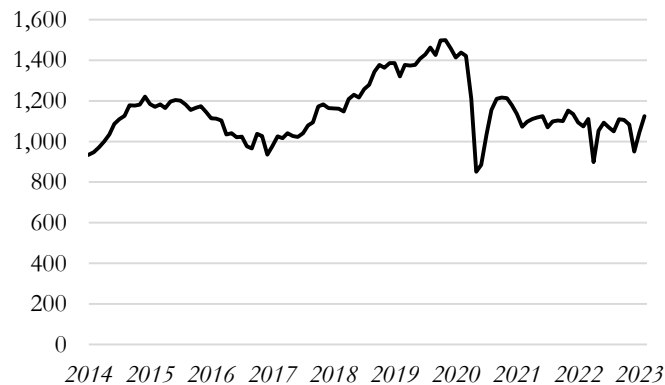
<b>Texas</b>		<i>Change from</i>
<i>Thousand barrels per day</i>		
Feb-23	5,264	
Month Ago	5,289	-0.5%
3 Months Ago	5,220	0.8%
6 Months Ago	5,092	3.4%
1 Year Ago	4,821	9.2%
Share of U.S. Production		42.2%

**New Mexico**



<b>New Mexico</b>		<i>Change from</i>
<i>Thousand barrels per day</i>		
Feb-23	1,807	
Month Ago	1,808	0.0%
3 Months Ago	1,725	4.7%
6 Months Ago	1,609	12.3%
1 Year Ago	1,401	29.0%
Share of U.S. Production		14.5%

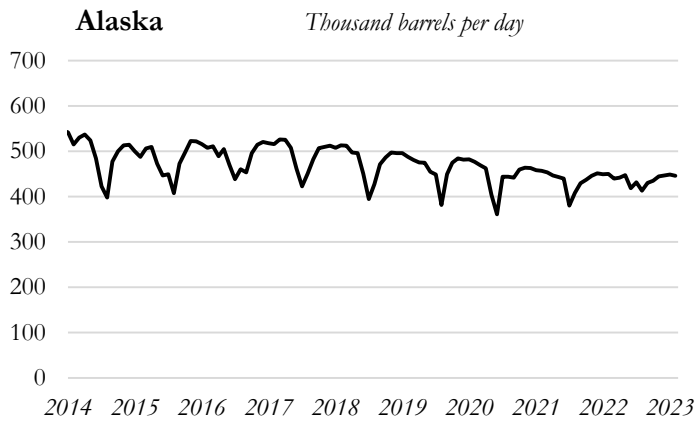
**North Dakota**



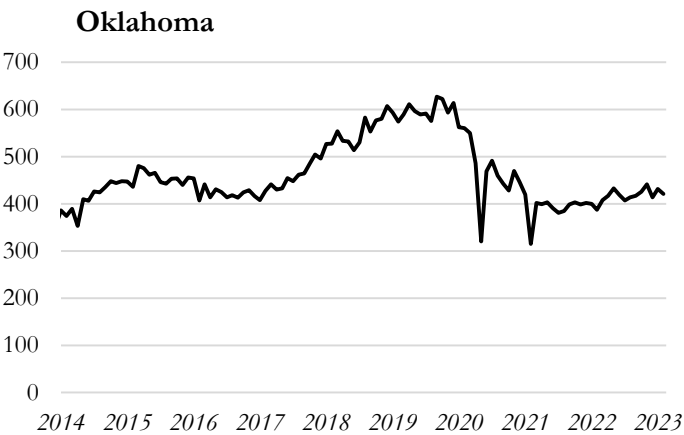
<b>North Dakota</b>		<i>Change from</i>
<i>Thousand barrels per day</i>		
Feb-23	1,124	
Month Ago	1,047	7.4%
3 Months Ago	1,084	3.7%
6 Months Ago	1,049	7.2%
1 Year Ago	1,074	4.7%
Share of U.S. Production		9.0%

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

Data through February 2023



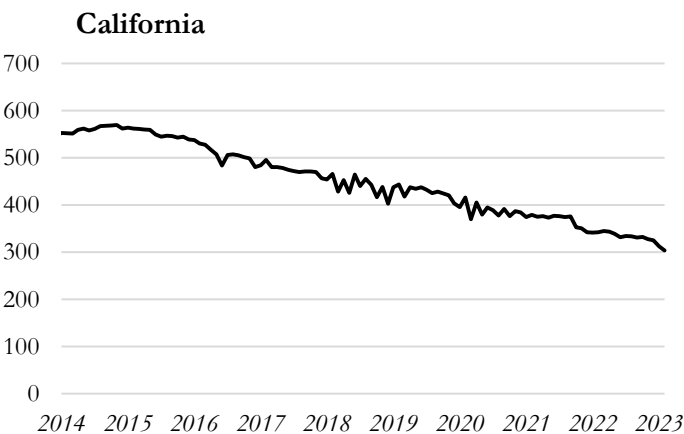
	<b>Alaska</b>	<i>Change from</i>
	<i>Thousand barrels per day</i>	
Feb-23	446	
Month Ago	448	-0.5%
3 Months Ago	445	0.3%
6 Months Ago	413	8.0%
1 Year Ago	450	-0.9%
Share of U.S. Production		3.6%



	<b>Oklahoma</b>	<i>Change from</i>
	<i>Thousand barrels per day</i>	
Feb-23	421	
Month Ago	432	-2.5%
3 Months Ago	441	-4.6%
6 Months Ago	414	1.7%
1 Year Ago	387	8.7%
Share of U.S. Production		3.4%



	<b>Colorado</b>	<i>Change from</i>
	<i>Thousand barrels per day</i>	
Feb-23	407	
Month Ago	418	-2.5%
3 Months Ago	445	-8.4%
6 Months Ago	433	-6.0%
1 Year Ago	430	-5.2%
Share of U.S. Production		3.3%

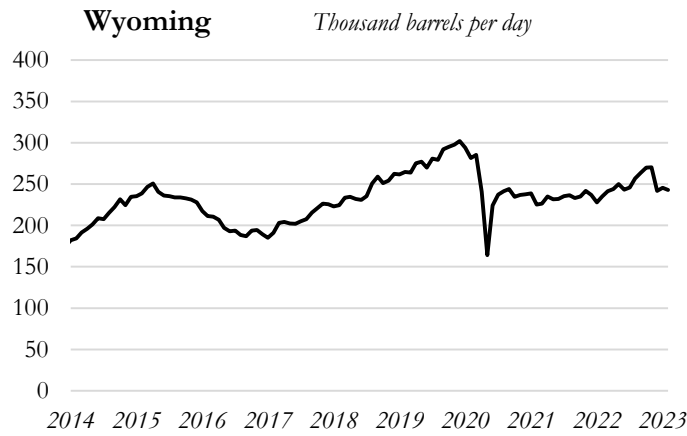


	<b>California</b>	<i>Change from</i>
	<i>Thousand barrels per day</i>	
Feb-23	303	
Month Ago	312	-2.8%
3 Months Ago	328	-7.4%
6 Months Ago	333	-9.0%
1 Year Ago	342	-11.4%
Share of U.S. Production		2.4%

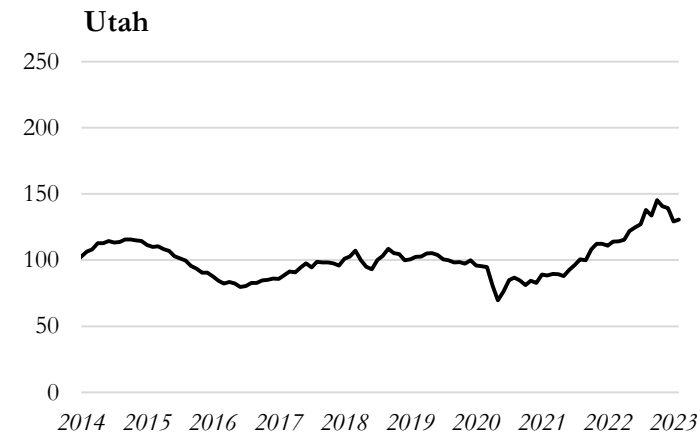
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics



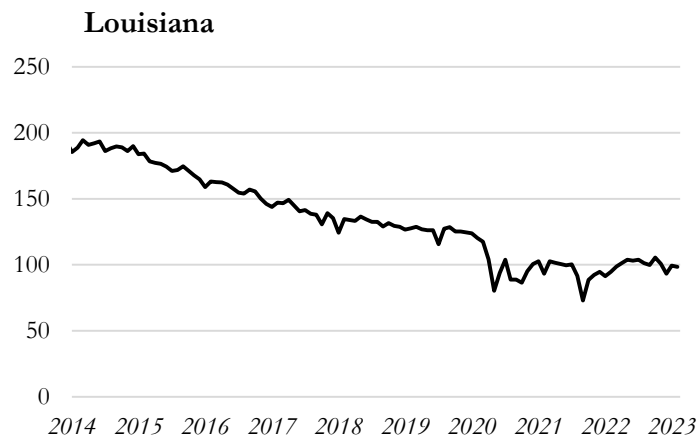
Data through February 2023



Wyoming		Change from
Thousand barrels per day		
Feb-23	243	
Month Ago	245	-0.9%
3 Months Ago	270	-10.0%
6 Months Ago	257	-5.4%
1 Year Ago	235	3.4%
Share of U.S. Production	1.9%	



Utah		Change from
Thousand barrels per day		
Feb-23	131	
Month Ago	129	1.2%
3 Months Ago	141	-7.2%
6 Months Ago	138	-5.3%
1 Year Ago	114	14.6%
Share of U.S. Production	1.0%	

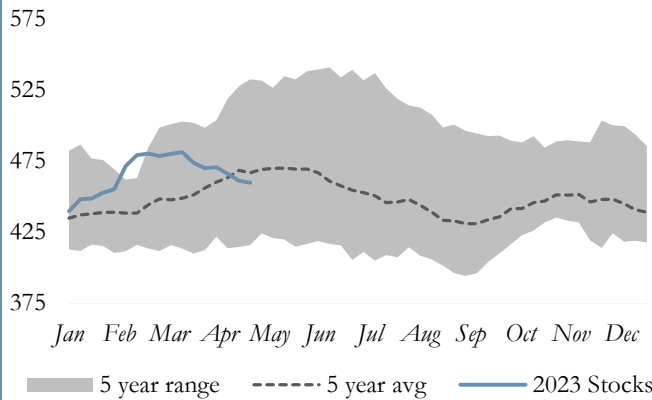


Louisiana		Change from
Thousand barrels per day		
Feb-23	99	
Month Ago	99	-0.9%
3 Months Ago	101	-2.2%
6 Months Ago	101	-2.7%
1 Year Ago	95	4.2%
Share of U.S. Production	0.8%	

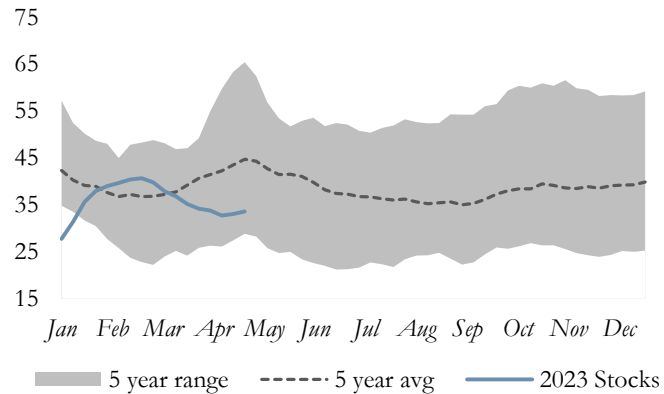
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

April 2023 Weekly U.S. Crude Oil Stocks

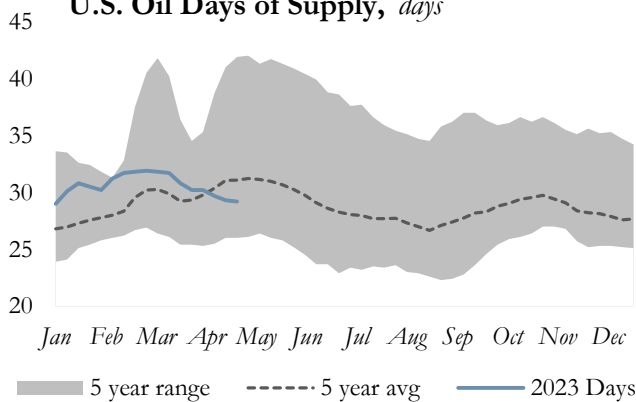
U.S. Oil Stocks, million barrels\*



Cushing, OK Oil Stocks, million barrels



U.S. Oil Days of Supply, days



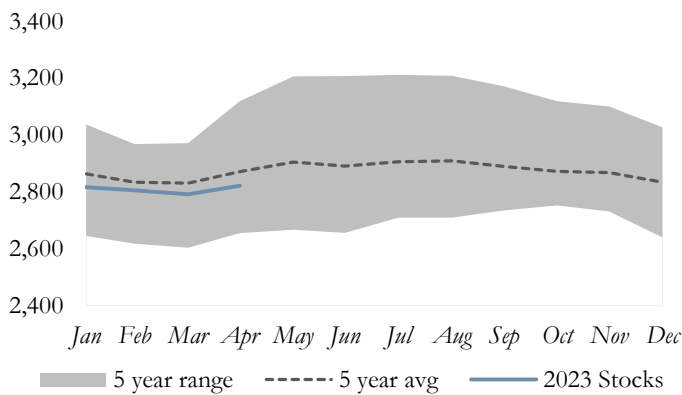
Crude Oil Stocks

	1 Week Ago	1 Year Ago
U.S.	-0.3%	10.6%
Cushing, OK	1.6%	16.6%
Days of Supply	-0.3%	9.4%
East Coast (PADD 1)	-1.5%	-9.2%
Midwest (PADD 2)	1.8%	13.8%
Gulf Coast (PADD 3)	-1.9%	10.0%
Rocky Mountain (PADD 4)	1.1%	10.4%
West Coast (PADD 5)	2.8%	9.9%

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

April 2023 OECD Commercial Petroleum Inventory

OECD Commercial Petroleum Inventory, million barrels



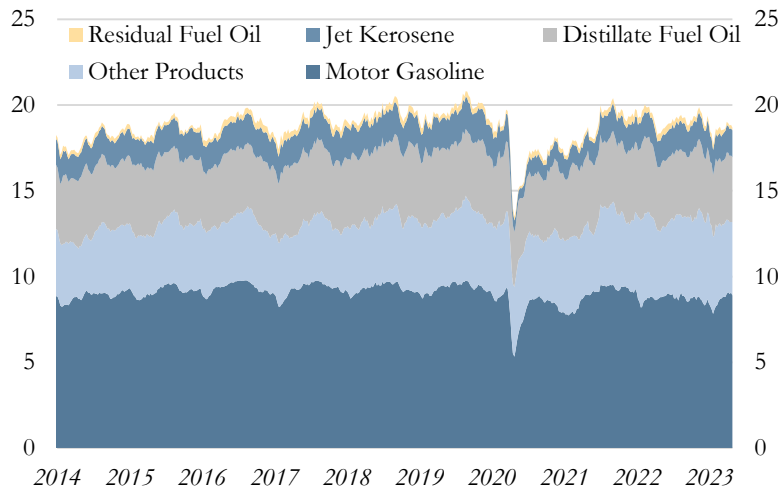
Petroleum Stocks	Million Barrels	Change from
Current Month	2,822	
1 Month Ago	2,792	1.1%
3 Months Ago	2,816	0.2%
6 Months Ago	2,767	2.0%
1 Year Ago	2,655	6.3%

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

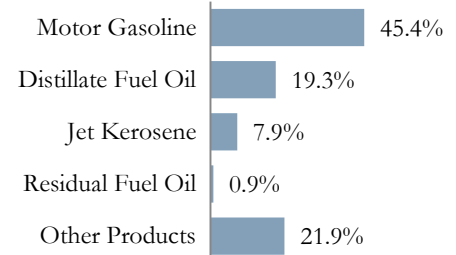
**April 2023 Weekly U.S. Demand for Petroleum Products**

*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> 4/28/23	<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	19,596	20,054	19,374	20,275	19,273
Motor Gasoline	8,896	8,998	8,061	8,636	8,799
Distillate Fuel Oil	3,782	3,916	3,854	4,144	3,774
Jet Kerosene	1,555	1,596	1,475	1,481	1,540
Residual Fuel Oil	168	185	306	260	409
Other Products	4,289	4,324	4,360	4,721	3,811

**U.S. Consumption by Product, Change from**

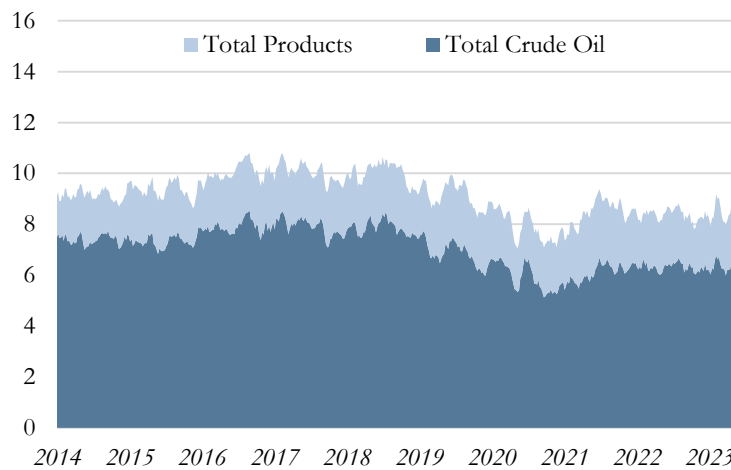
	<i>Current</i> 4/28/23	<i>1 Month</i> <i>Ago</i>	<i>3 Months</i> <i>Ago</i>	<i>6 Months</i> <i>Ago</i>	<i>1 Year</i> <i>Ago</i>
All Products	-	-2.3%	1.1%	-3.3%	1.7%
Motor Gasoline	-	-1.1%	10.4%	3.0%	1.1%
Distillate Fuel Oil	-	-3.4%	-1.9%	-8.7%	0.2%
Jet Kerosene	-	-2.6%	5.4%	5.0%	1.0%
Residual Fuel Oil	-	-9.2%	-45.1%	-35.4%	-58.9%
Other Products	-	-0.8%	-1.6%	-9.2%	12.5%

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

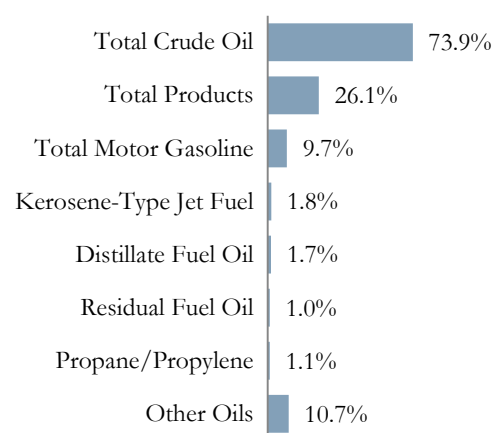
April 2023 Weekly U.S. Imports of Crude Oil & Petroleum Products

4-Week Averages

Imports, million barrels per day



Share of Total Imports



U.S. Imports by Product\*

Thousand barrels per day

	Current 4/28/23	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
<b>Total Crude Oil</b>	<b>6,315</b>	<b>6,214</b>	<b>6,599</b>	<b>6,089</b>	<b>6,025</b>
<b>Total Products</b>	<b>2,232</b>	<b>1,934</b>	<b>2,072</b>	<b>1,954</b>	<b>2,129</b>
Total Motor Gasoline	833	627	506	529	752
Kerosene-Type Jet Fuel	153	143	106	146	131
Distillate Fuel Oil	146	159	247	113	118
Residual Fuel Oil	89	93	210	204	300
Propane/Propylene	95	144	170	94	104
Other Oils	917	767	833	862	724
<b>Total Imports</b>	<b>8,547</b>	<b>8,148</b>	<b>8,671</b>	<b>8,043</b>	<b>8,154</b>

U.S. Imports by Product, Change from

	Current 4/28/23	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
<b>Total Crude Oil</b>	-	<b>1.6%</b>	<b>-4.3%</b>	<b>3.7%</b>	4.8%
<b>Total Products</b>	-	<b>15.4%</b>	<b>7.7%</b>	<b>14.2%</b>	<b>4.8%</b>
Total Motor Gasoline	-	32.9%	64.6%	57.5%	10.8%
Kerosene-Type Jet Fuel	-	7.0%	44.3%	4.8%	16.8%
Distillate Fuel Oil	-	<b>-8.2%</b>	<b>-40.9%</b>	29.2%	23.7%
Residual Fuel Oil	-	<b>-4.3%</b>	<b>-57.6%</b>	<b>-56.4%</b>	<b>-70.3%</b>
Propane/Propylene	-	<b>-34.0%</b>	<b>-44.1%</b>	1.1%	<b>-8.7%</b>
Other Oils	-	19.6%	10.1%	6.4%	26.7%
<b>Total Imports</b>	-	<b>4.9%</b>	<b>-1.4%</b>	<b>6.3%</b>	<b>4.8%</b>

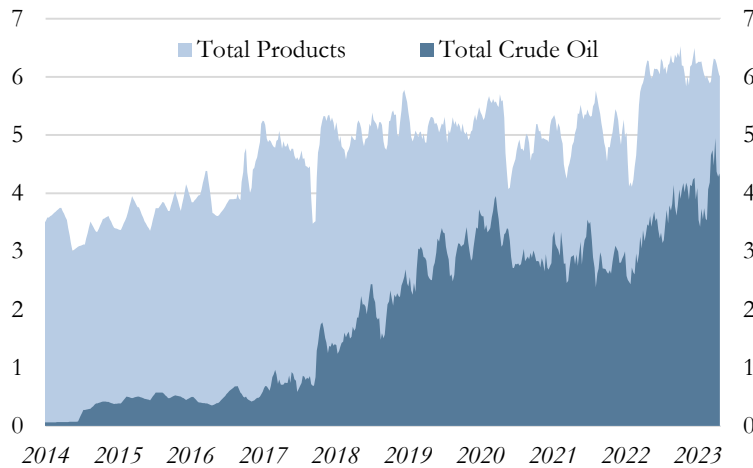
\*Totals may not sum due to component rounding

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

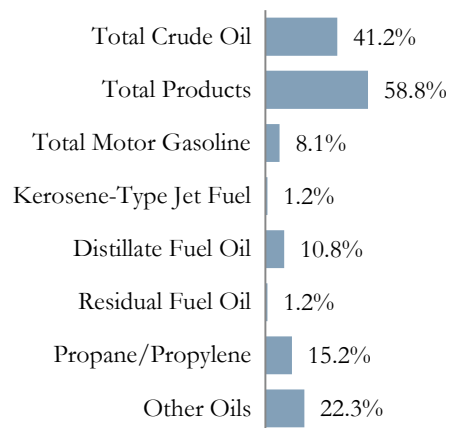
**April 2023 Weekly U.S. Exports of Crude Oil & Petroleum Products**

4-Week Averages

**Exports, million barrels per day**



**Share of Total Exports**



**U.S. Exports by Product\***

Thousand barrels per day

	Current 4/28/23	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
<b>Total Crude Oil</b>	<b>4,214</b>	<b>4,946</b>	<b>3,552</b>	<b>4,016</b>	<b>3,436</b>
<b>Total Products</b>	<b>6,019</b>	<b>6,296</b>	<b>6,121</b>	<b>6,055</b>	<b>6,270</b>
Total Motor Gasoline	826	867	905	887	900
Kerosene-Type Jet Fuel	124	163	190	164	204
Distillate Fuel Oil	1,106	1,149	1,044	1,112	1,422
Residual Fuel Oil	121	215	141	131	111
Propane/Propylene	1,559	1,669	1,496	1,471	1,344
Other Oils	2,284	2,234	2,347	2,291	2,290
<b>Total Exports</b>	<b>10,232</b>	<b>11,241</b>	<b>9,673</b>	<b>10,071</b>	<b>9,707</b>

**U.S. Exports by Product, Change from**

	Current 4/28/23	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
<b>Total Crude Oil</b>	-	<b>-14.8%</b>	<b>18.6%</b>	<b>4.9%</b>	<b>22.6%</b>
<b>Total Products</b>	-	<b>-4.4%</b>	<b>-1.7%</b>	<b>-0.6%</b>	<b>-4.0%</b>
Total Motor Gasoline	-	-4.7%	-8.7%	-6.9%	-8.2%
Kerosene-Type Jet Fuel	-	-23.9%	-34.7%	-24.4%	-39.2%
Distillate Fuel Oil	-	-3.7%	5.9%	-0.5%	-22.2%
Residual Fuel Oil	-	-43.7%	-14.2%	-7.6%	9.0%
Propane/Propylene	-	-6.6%	4.2%	6.0%	16.0%
Other Oils	-	2.2%	-2.7%	-0.3%	-0.3%
<b>Total Exports</b>	-	<b>-9.0%</b>	<b>5.8%</b>	<b>1.6%</b>	<b>5.4%</b>

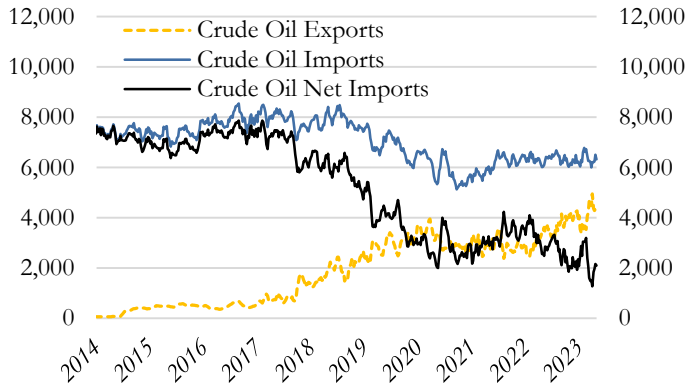
\*Totals may not sum due to rounding

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

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

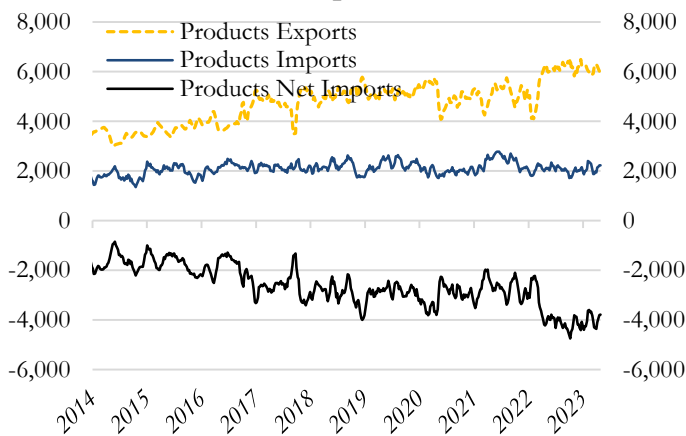
4-Week Averages, Thousand barrels per day

#### Crude Oil Net Imports



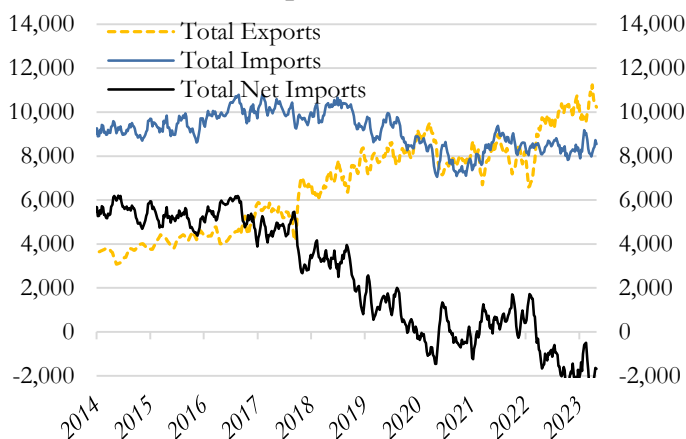
Crude Oil Net Imports		Change
Thousand barrels per day		from
4/28/23	2,101	
Month Ago	1,269	65.6%
3 Months Ago	3,047	-31.0%
6 Months Ago	2,073	1.4%
1 Year Ago	2,588	-18.8%

#### Products Net Imports



Products Net Imports		Change
Thousand barrels per day		from
4/28/23	-3,786	
Month Ago	-4,362	-
3 Months Ago	-4,049	-
6 Months Ago	-4,101	-
1 Year Ago	-4,141	-

#### Total Net Imports

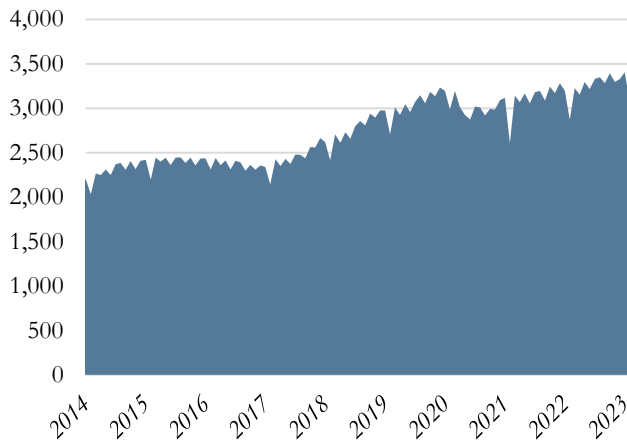


Total Net Imports		Change
Thousand barrels per day		from
4/28/23	-1,685	
Month Ago	-3,093	-
3 Months Ago	-1,002	-
6 Months Ago	-2,028	-
1 Year Ago	-1,553	-

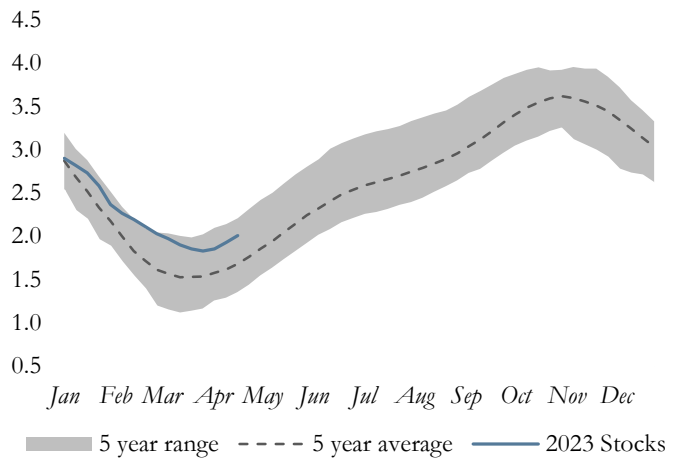
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

U.S. Natural Gas Production & Stocks

**February 2023 Production**  
Total U.S. Production, Billion cubic feet (Bcf)



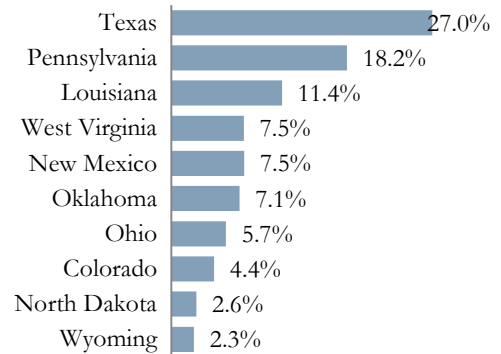
**April 2023 Weekly Stocks**  
U.S. Natural Gas Stocks, Billion cubic feet (Bcf)



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	3,085	3,405	3,297	3,349	2,870
U.S. Stocks	2,009	1,853	2,734	3,394	1,490

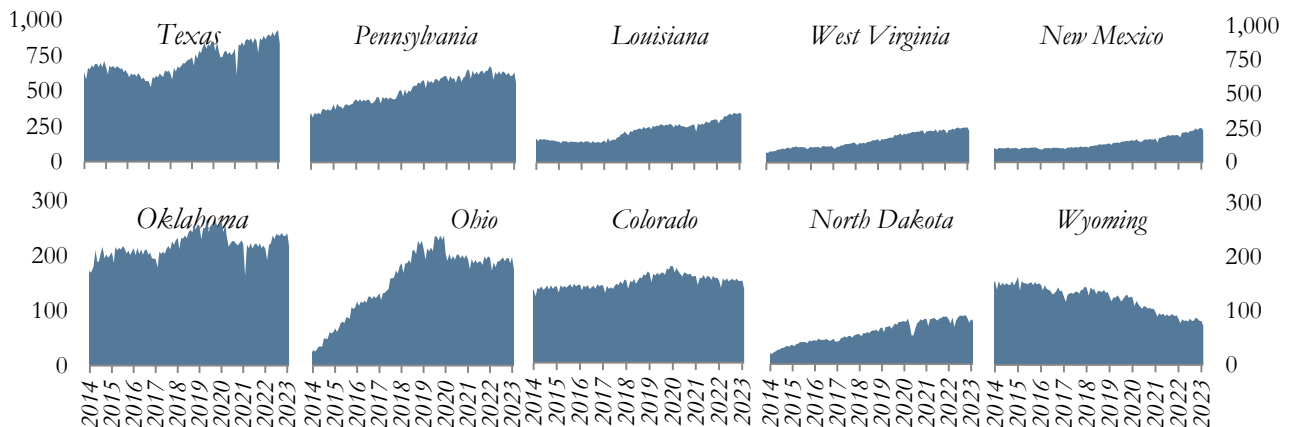
Share of Production



U.S. Natural Gas, Change from

	Current Period*	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
U.S. Production	-	-9.4%	-6.4%	-7.9%	7.5%
U.S. Stocks	-	8.4%	-26.5%	-40.8%	34.8%

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.

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