

THE U.S. Energy DATABOOK

A summary of national and global energy indicators



NOVEMBER 10, 2021

FEDERAL RESERVE BANK *of* KANSAS CITY

SUMMARY OF CURRENT ENERGY CONDITIONS

Since the last edition of the U.S. energy databook, the energy sector made noticeable gains. With increased economic activity, oil and gas prices grew substantially. For the week ending October 29th, West Texas Intermediate (WTI) crude oil averaged \$83.84 per barrel and North Sea Brent averaged \$84.12 per barrel, rising 11.1 percent and 7.2 percent over the last three months, respectively. The Henry Hub natural gas spot price averaged \$5.68 per million Btu for the week ending October 29th, rallying 39.9 percent over the last three months. In October, the number of total active drilling rigs in the United States rose 3.0 percent from a month ago, and is up 11.5 percent from three months ago. However, U.S. crude oil production declined 1.6% percent from a month ago and is down 1.7% percent from three months ago. Oil production remains well below pre-pandemic levels. U.S. crude oil and petroleum products exports declined 4.8 percent in the last quarter and imports declined by 10.2 percent. Global demand for petroleum was up 1.9 percent and global petroleum production rose 1.8 percent over the last quarter, respectively.

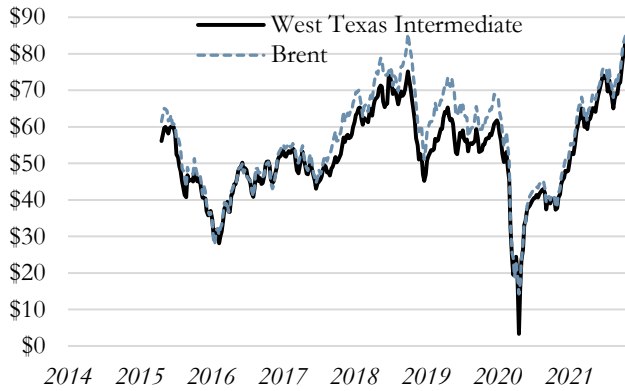
This databook provides current economic indicators to help monitor trends and allow comparison of past information. These indicators include: oil and natural gas prices; global petroleum production and demand; U.S. oil production and petroleum demand; U.S. crude oil stocks; OECD petroleum stocks; U.S.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



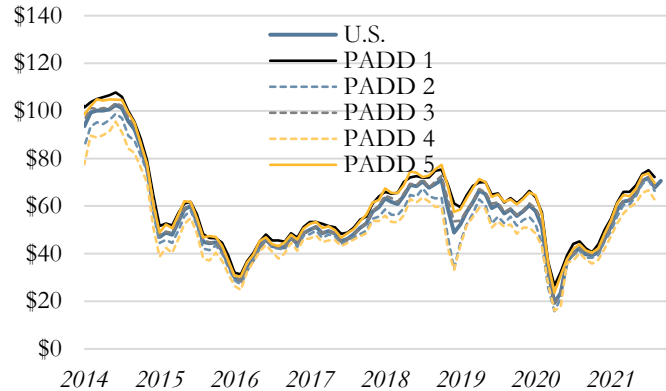
The Federal Reserve Bank of Kansas City's headquarters is located at 1 Memorial Drive in the heart of Kansas City, Missouri. The Federal Reserve Bank of Kansas City serves the Tenth Federal Reserve District, which includes Colorado, Kansas, western Missouri, Nebraska, northern New Mexico, Oklahoma and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

Weekly data through October 29, 2021

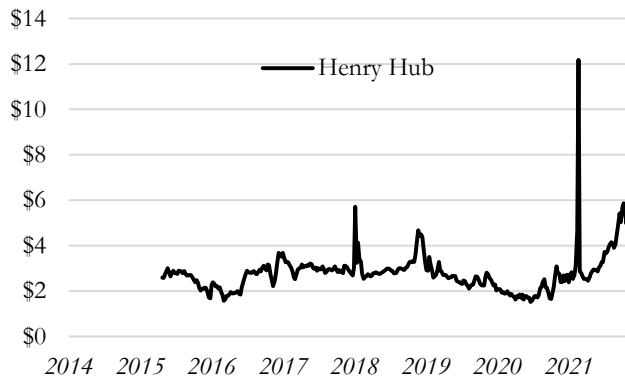
Weekly Oil Spot Prices, per barrel



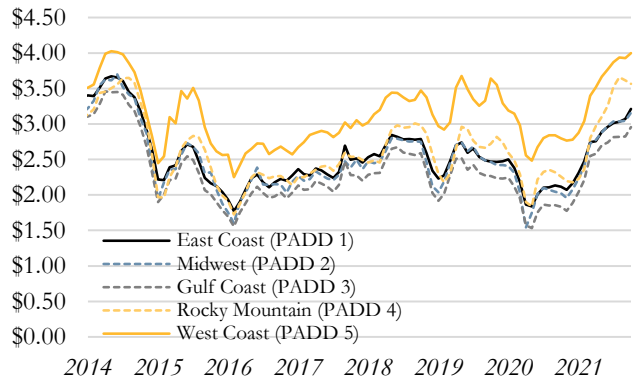
Refiner Acquisition Cost of Oil*, per barrel



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	10/29/21	Ago	Ago	Ago	Ago	Ago
West Texas Intermediate	\$83.84	\$0.36	\$8.39	\$11.09	\$20.37	\$46.52
Brent	\$84.12	-\$0.86	\$5.68	\$8.37	\$17.16	\$46.21
Henry Hub	\$5.68	\$0.73	\$0.00	\$1.62	\$2.80	\$2.59

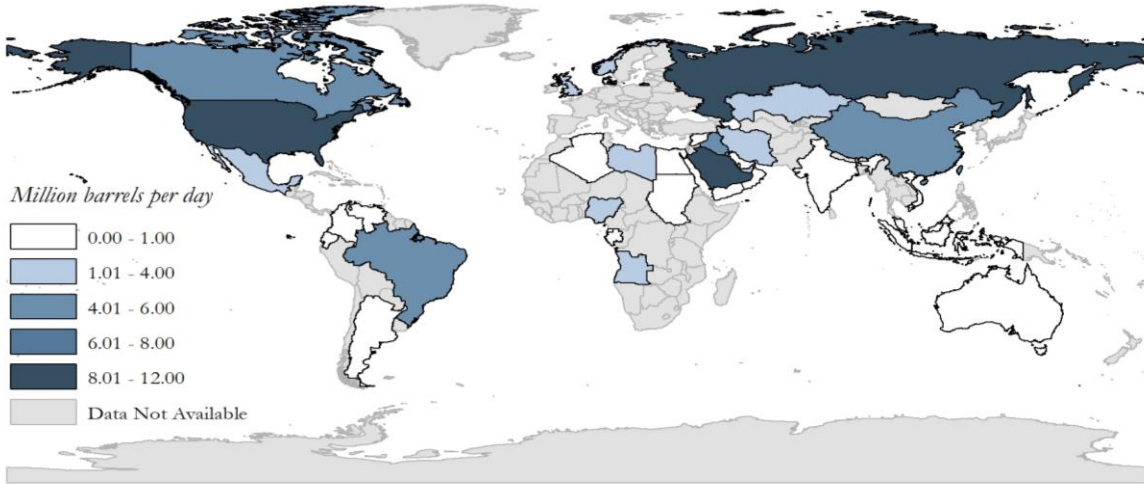
Monthly Gasoline Spot Prices, Change from

	Current	1 Month	3 months	6 Months	1 Year
Geographic Area	Oct-21	Ago	Ago	Ago	Ago
East Coast (PADD 1)	\$3.21	\$0.14	\$0.20	\$0.45	\$1.09
Midwest (PADD 2)	\$3.16	\$0.11	\$0.12	\$0.38	\$1.14
Gulf Coast (PADD 3)	\$2.95	\$0.13	\$0.14	\$0.38	\$1.12
Rocky Mountain (PADD 4)	\$3.56	-\$0.05	\$0.04	\$0.60	\$1.31
West Coast (PADD 5)	\$4.00	\$0.07	\$0.13	\$0.48	\$1.20

*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

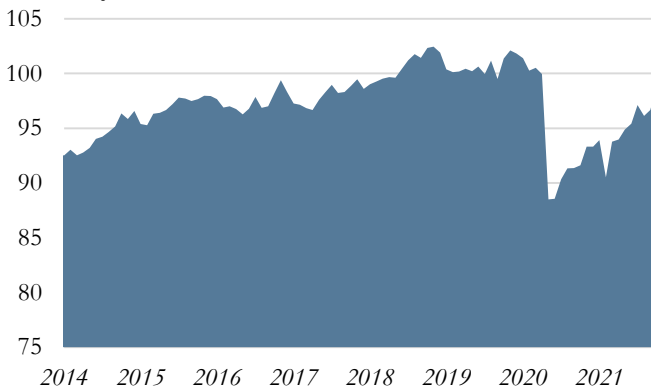
September 2021 Global Petroleum Production



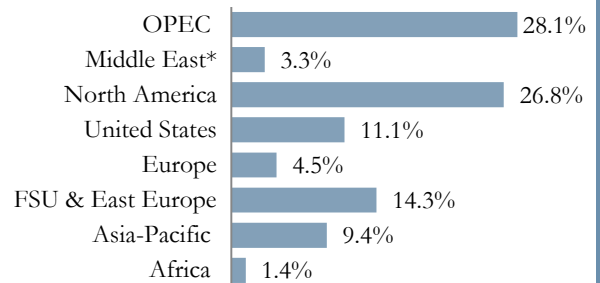
Source: Energy Information Administration/Haver Analytics

September 2021

Monthly Global Petroleum Production, million barrels per day

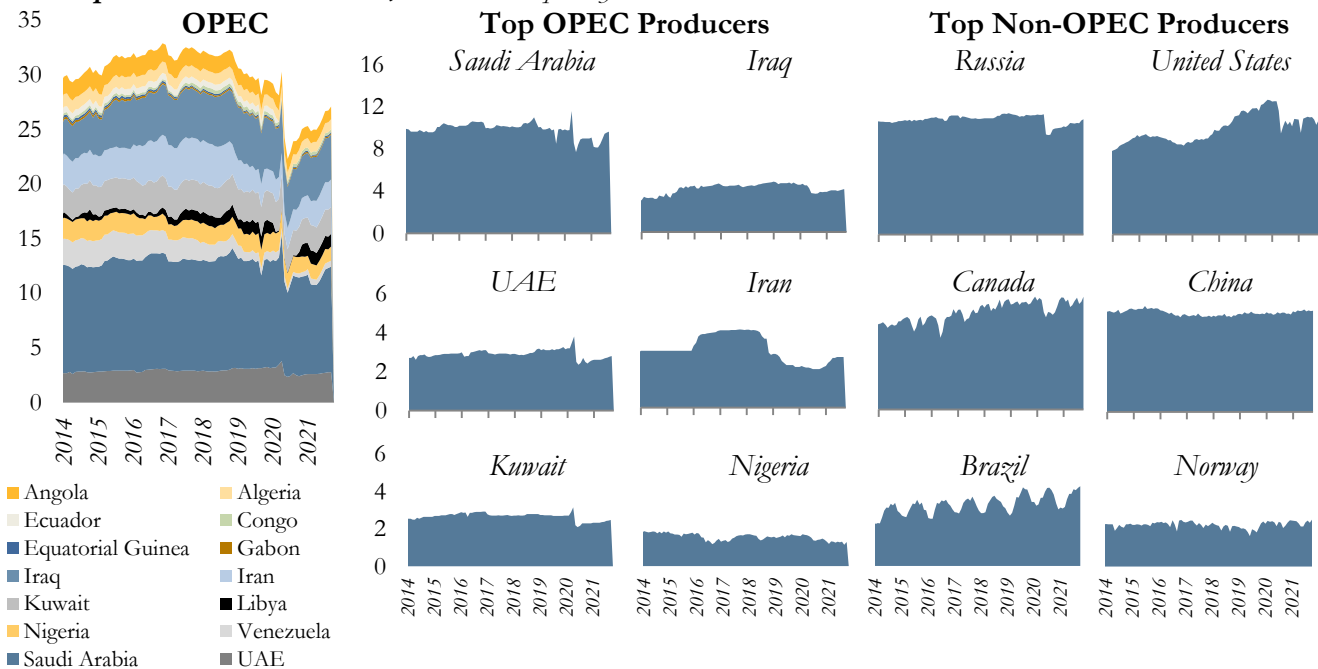


Regional Share of Production



*Excludes OPEC

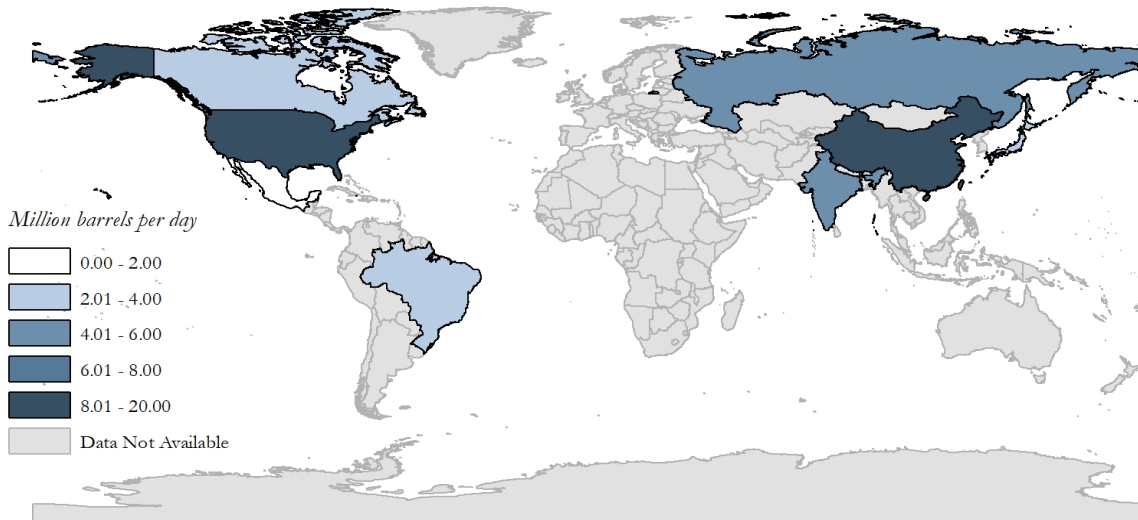
Top Crude Oil Producers, million barrels per day



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

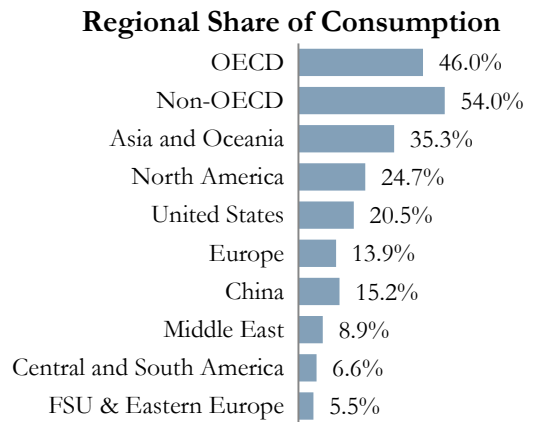
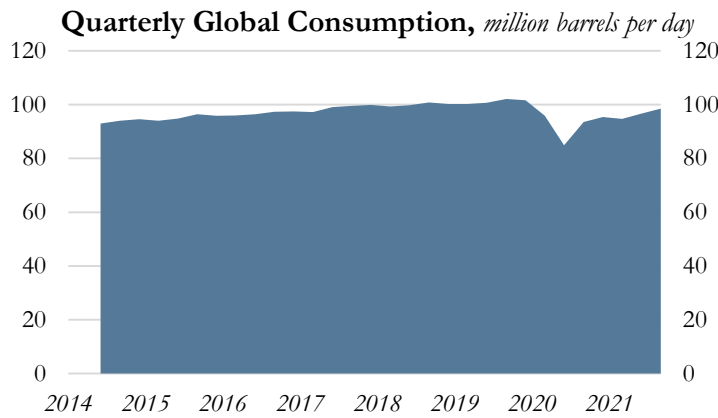
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

Third Quarter 2021 Global Petroleum Consumption

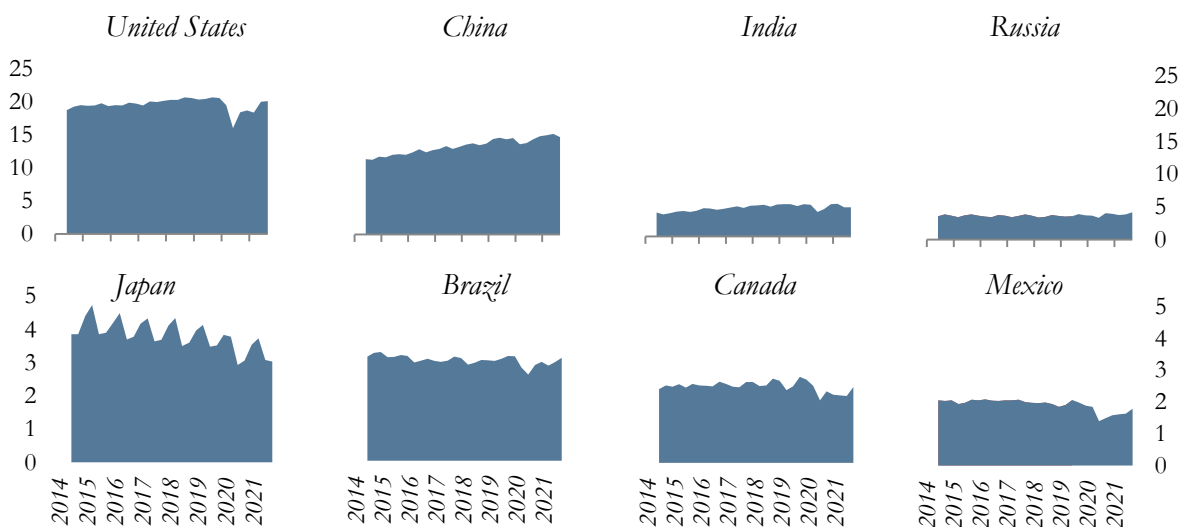


Source: Energy Information Administration/Haver Analytics

Third Quarter 2021

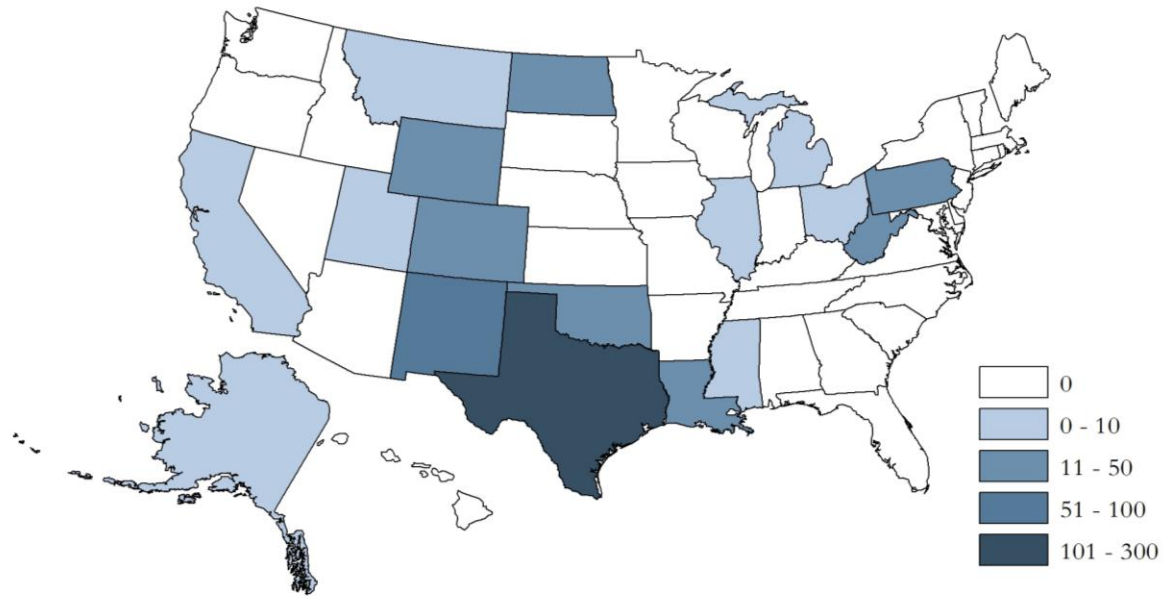


Top Petroleum Consumers, million barrels per day



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

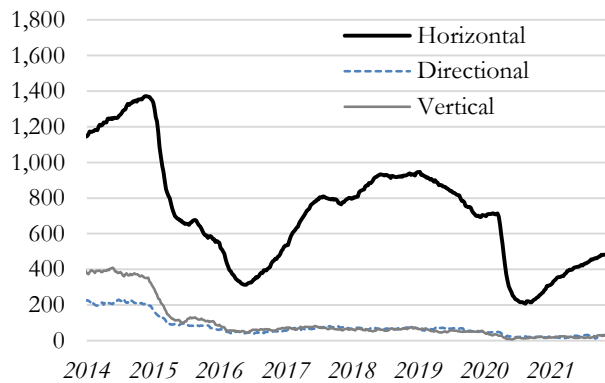
October 2021 Weekly Active Oil & Gas Drilling Rig Counts



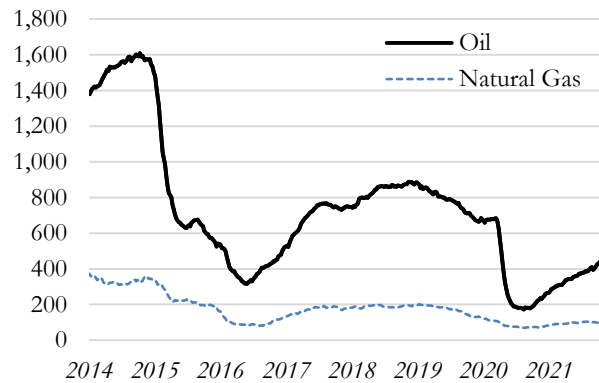
Source: Baker Hughes/Haver Analytics

October 29, 2021

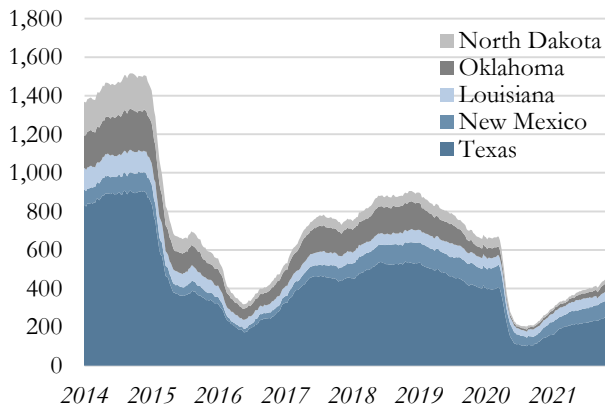
U.S. Active Drilling Rigs by Trajectory



U.S. Active Drilling Rigs by Type



Top Five States for Drilling Activity (Total Active Rigs)



Rig Count By Type

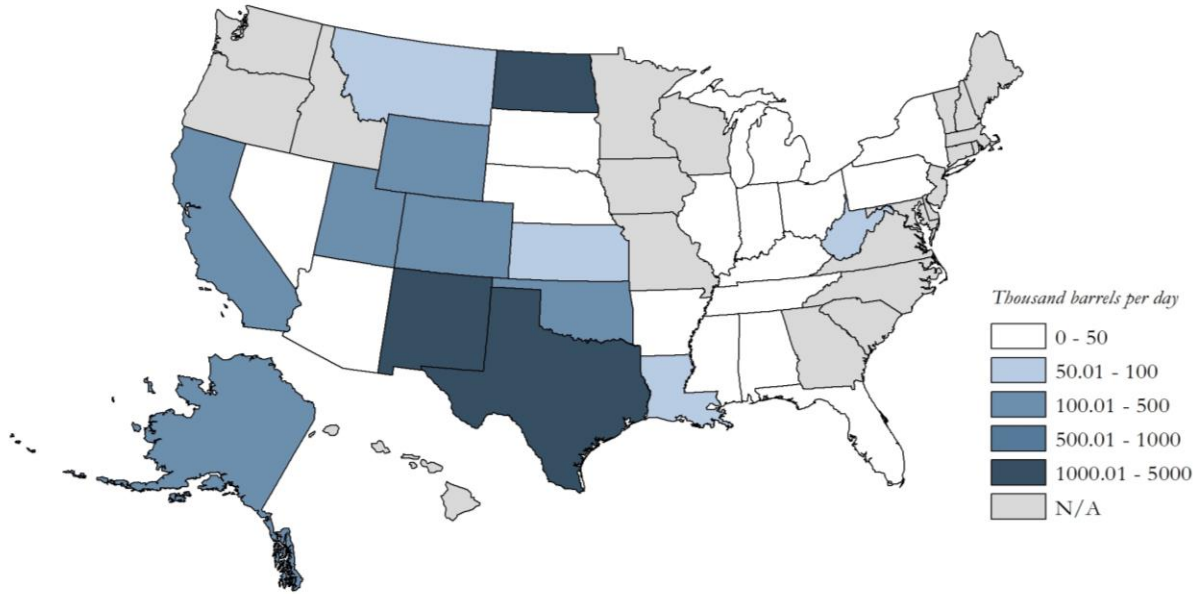
Rig Type	Current Week	1 Month Ago	3 Months Ago	1 Year Ago
Oil	444	428	385	221
Gas	100	99	103	72
Misc	0	1	0	3
Total	544	528	488	296

Rig Count By Type, Change from

Rig Type	Current Week	1 Month Ago	3 Months Ago	1 Year Ago
Oil	-	3.7%	15.3%	100.9%
Gas	-	1.0%	-2.9%	38.9%
Misc	-	-100.0%	-	-100.0%
Total	-	3.0%	11.5%	83.8%

Source: Baker Hughes/Haver Analytics

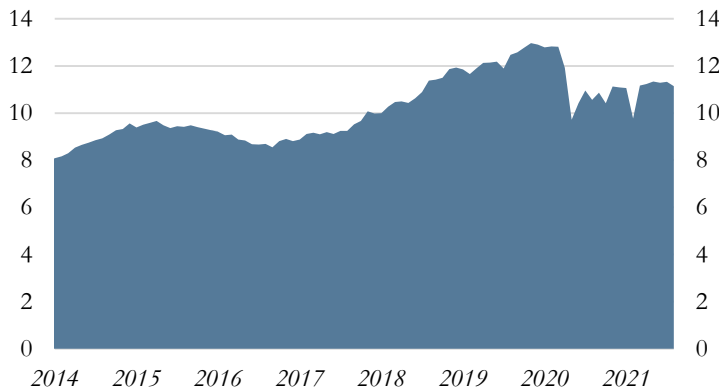
August 2021 U.S. Crude Oil Production



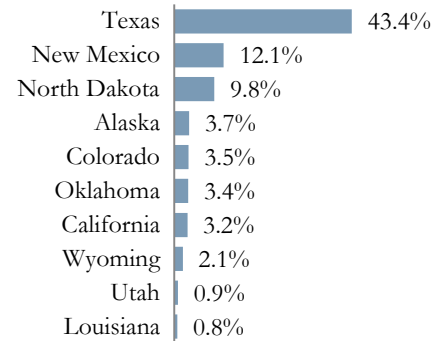
Source: Energy Information Administration/Haver Analytics

August 2021

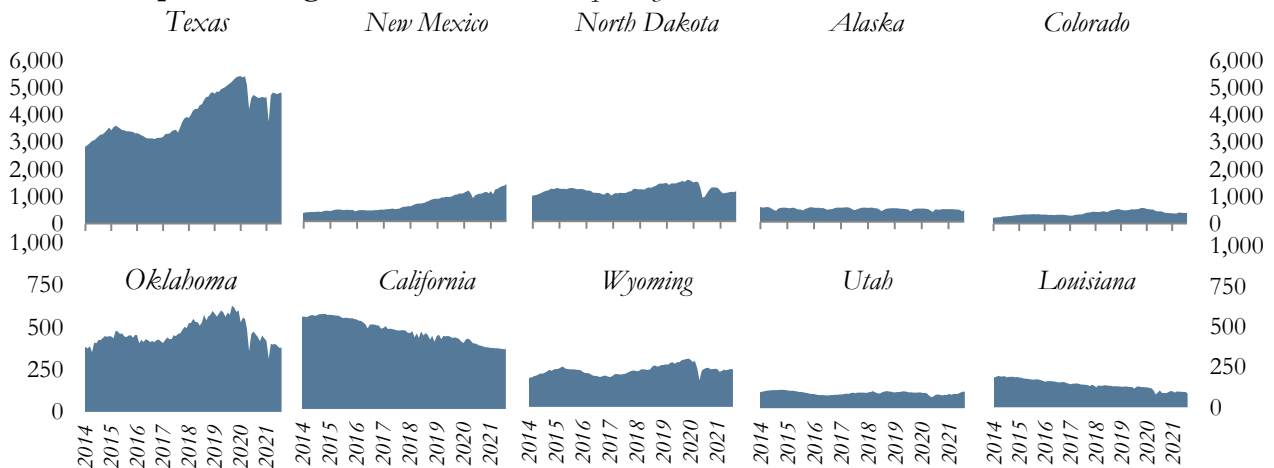
Monthly U.S. Production, million barrels per day



Share of Production

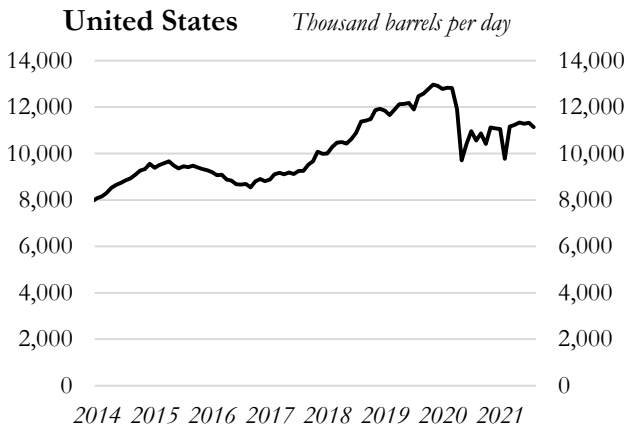


Top Producing States, thousand barrels per day

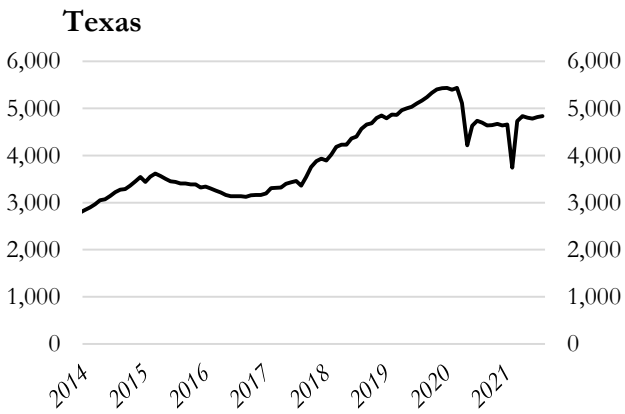


Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

Data through August 2021



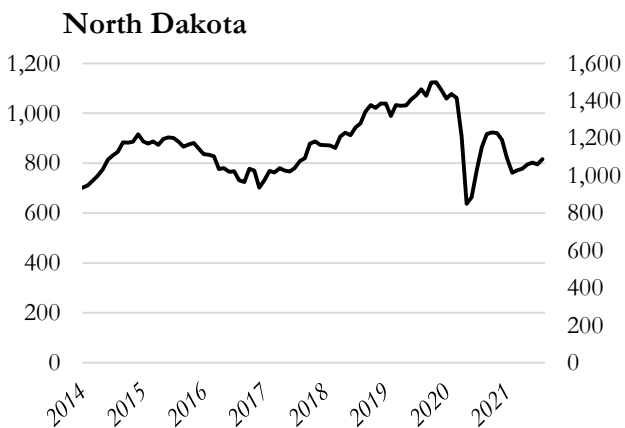
United States		Change from
<i>Thousand barrels per day</i>		
Aug-21	11,141	
Month Ago	11,326	-1.6%
3 Months Ago	11,334	-1.7%
6 Months Ago	9,773	14.0%
1 Year Ago	10,558	5.5%



Texas		Change from
<i>Thousand barrels per day</i>		
Aug-21	4,834	
Month Ago	4,816	0.4%
3 Months Ago	4,806	0.6%
6 Months Ago	3,745	29.1%
1 Year Ago	4,696	2.9%
Share of U.S. Production		43.4%



New Mexico		Change from
<i>Thousand barrels per day</i>		
Aug-21	1,346	
Month Ago	1,296	3.8%
3 Months Ago	1,234	9.1%
6 Months Ago	983	36.9%
1 Year Ago	999	34.7%
Share of U.S. Production		12.1%

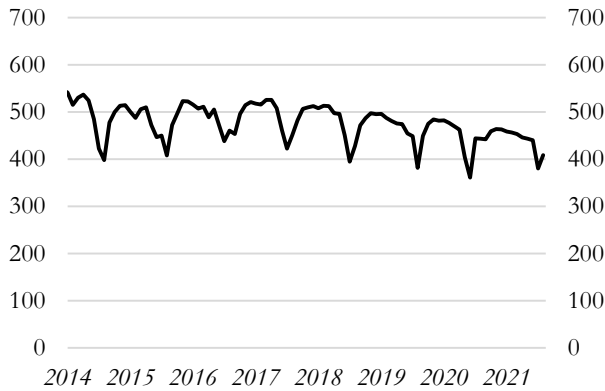


North Dakota		Change from
<i>Thousand barrels per day</i>		
Aug-21	1,089	
Month Ago	1,060	2.8%
3 Months Ago	1,061	2.6%
6 Months Ago	1,016	7.2%
1 Year Ago	1,154	-5.6%
Share of U.S. Production		9.8%

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

Data through August 2021

Alaska *Thousand barrels per day*



	Alaska	<i>Change from</i>
	<i>Thousand barrels per day</i>	
Aug-21	409	
Month Ago	380	7.5%
3 Months Ago	443	-7.9%
6 Months Ago	457	-10.5%
1 Year Ago	444	-7.9%
Share of U.S. Production	3.7%	

Colorado



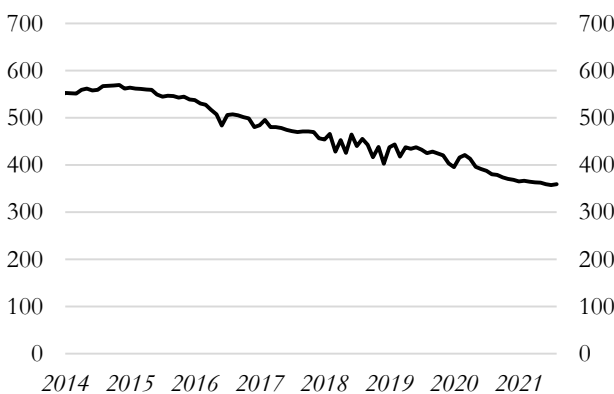
	Colorado	<i>Change from</i>
	<i>Thousand barrels per day</i>	
Aug-21	391	
Month Ago	390	0.3%
3 Months Ago	406	-3.7%
6 Months Ago	373	4.8%
1 Year Ago	445	-12.3%
Share of U.S. Production	3.5%	

Oklahoma



	Oklahoma	<i>Change from</i>
	<i>Thousand barrels per day</i>	
Aug-21	380	
Month Ago	379	0.3%
3 Months Ago	403	-5.8%
6 Months Ago	315	20.6%
1 Year Ago	459	-17.3%
Share of U.S. Production	3.4%	

California

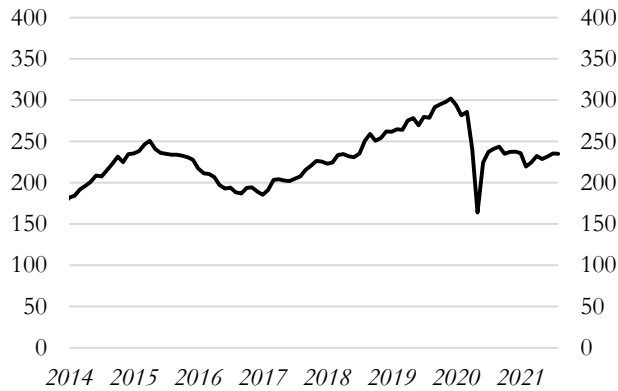


	California	<i>Change from</i>
	<i>Thousand barrels per day</i>	
Aug-21	359	
Month Ago	357	0.4%
3 Months Ago	363	-1.1%
6 Months Ago	366	-2.1%
1 Year Ago	380	-5.6%
Share of U.S. Production	3.2%	

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

Data through August 2021

Wyoming *Thousand barrels per day*



	Wyoming <i>Thousand barrels per day</i>	<i>Change from</i>
Aug-21	235	
Month Ago	236	-0.3%
3 Months Ago	229	2.8%
6 Months Ago	220	7.0%
1 Year Ago	241	-2.6%
Share of U.S. Production		2.1%

Utah



	Utah <i>Thousand barrels per day</i>	<i>Change from</i>
Aug-21	105	
Month Ago	103	1.2%
3 Months Ago	90	16.2%
6 Months Ago	85	23.0%
1 Year Ago	87	20.6%
Share of U.S. Production		0.9%

Louisiana

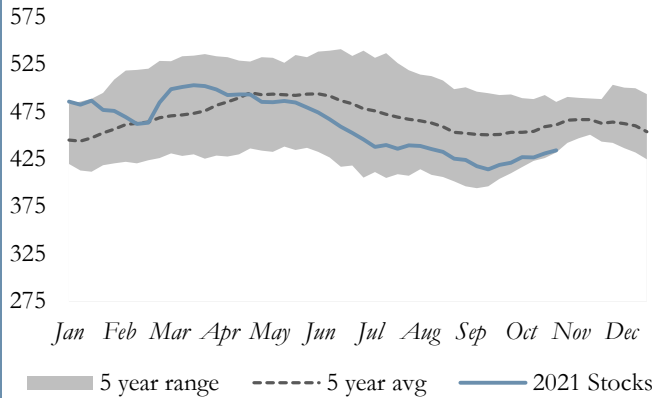


	Louisiana <i>Thousand barrels per day</i>	<i>Change from</i>
Aug-21	84	
Month Ago	95	-11.0%
3 Months Ago	97	-12.6%
6 Months Ago	91	-7.0%
1 Year Ago	89	-5.1%
Share of U.S. Production		0.8%

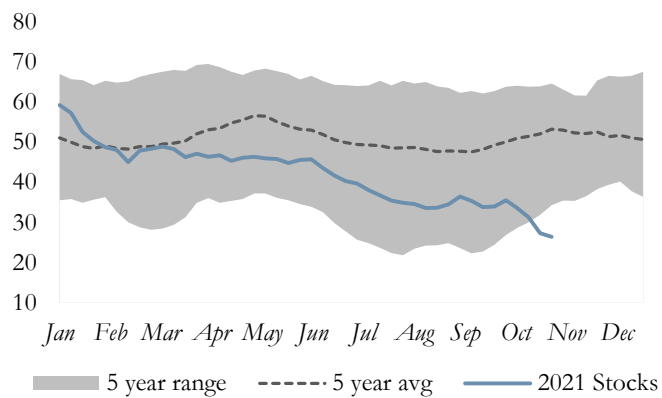
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

October 2021 Weekly U.S. Crude Oil Stocks

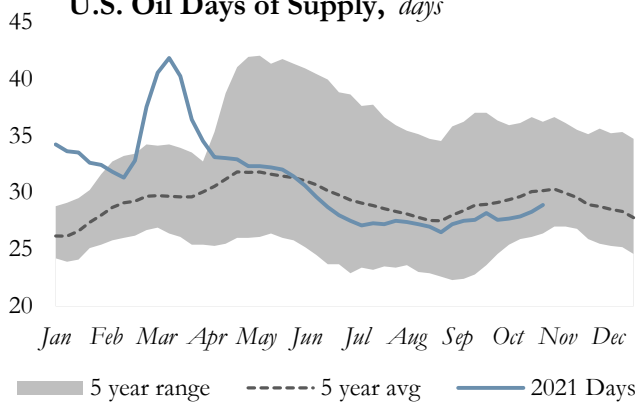
U.S. Oil Stocks, million barrels*



Cushing, OK Oil Stocks, million barrels



U.S. Oil Days of Supply, days



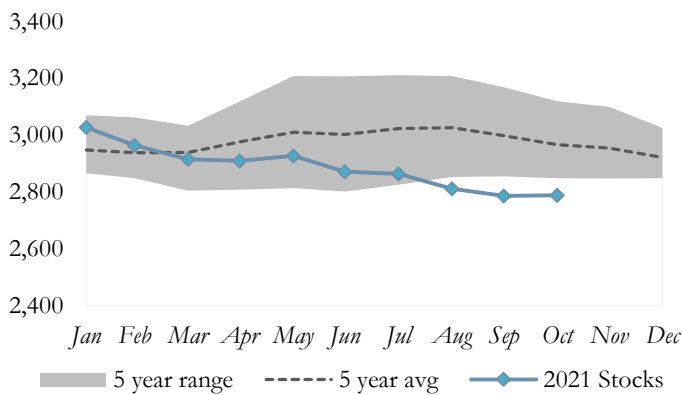
Crude Oil Stocks

	1 Week Ago	1 Year Ago
U.S.	0.8%	-10.4%
Cushing, OK	-3.4%	-56.6%
Days of Supply	2.1%	-20.2%
East Coast (PADD 1)	2.5%	-18.9%
Midwest (PADD 2)	1.0%	-27.3%
Gulf Coast (PADD 3)	0.8%	-1.6%
Rocky Mountain (PADD 4)	2.0%	3.0%
West Coast (PADD 5)	-0.9%	-9.7%

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

October 2021 OECD Commercial Petroleum Inventory

OECD Commercial Petroleum Inventory, million barrels



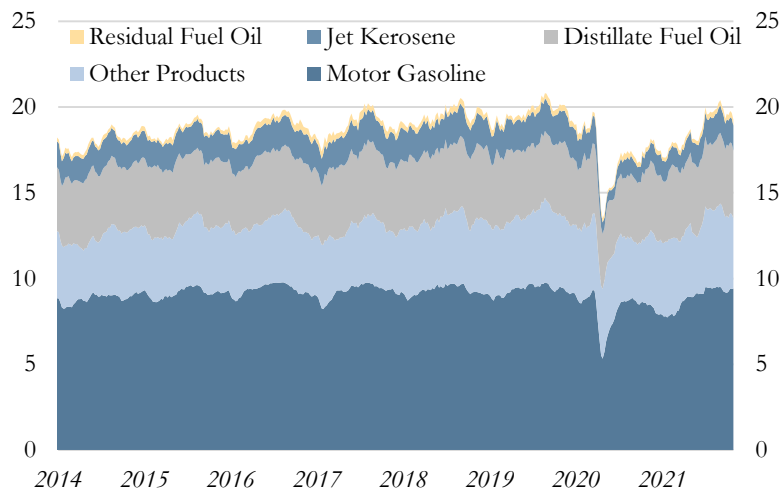
Petroleum Stocks

	Million Barrels	Change from
Current Month	2,789	
1 Month Ago	2,786	0.1%
3 Months Ago	2,863	-2.6%
6 Months Ago	2,910	-4.2%
1 Year Ago	3,119	-10.6%

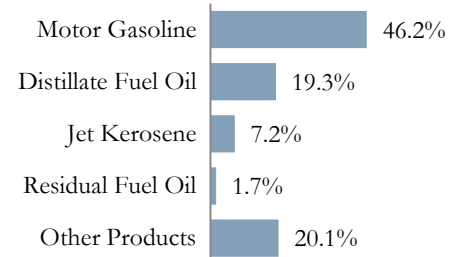
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

October 2021 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> 10/29/21	<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	20,384	20,743	20,544	19,794	18,895
Motor Gasoline	9,412	9,153	9,420	8,947	8,436
Distillate Fuel Oil	3,941	4,139	3,766	4,109	3,941
Jet Kerosene	1,471	1,496	1,565	1,201	1,017
Residual Fuel Oil	350	297	331	152	230
Other Products	4,094	4,517	4,593	4,311	4,025

U.S. Consumption by Product, Change from

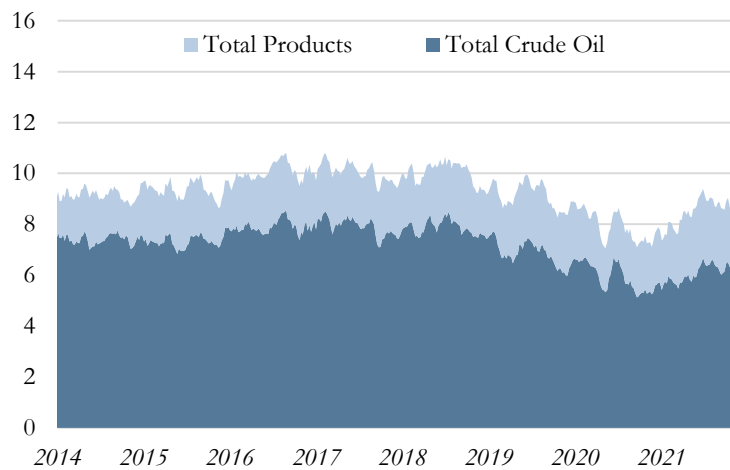
	<i>Current</i> 10/29/21	<i>1 Month</i> <i>Ago</i>	<i>3 Months</i> <i>Ago</i>	<i>6 Months</i> <i>Ago</i>	<i>1 Year</i> <i>Ago</i>
All Products	-	-1.7%	-0.8%	3.0%	7.9%
Motor Gasoline	-	2.8%	-0.1%	5.2%	11.6%
Distillate Fuel Oil	-	-4.8%	4.6%	-4.1%	0.0%
Jet Kerosene	-	-1.7%	-6.0%	22.5%	44.6%
Residual Fuel Oil	-	17.8%	5.7%	130.3%	52.2%
Other Products	-	-9.4%	-10.9%	-5.0%	1.7%

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

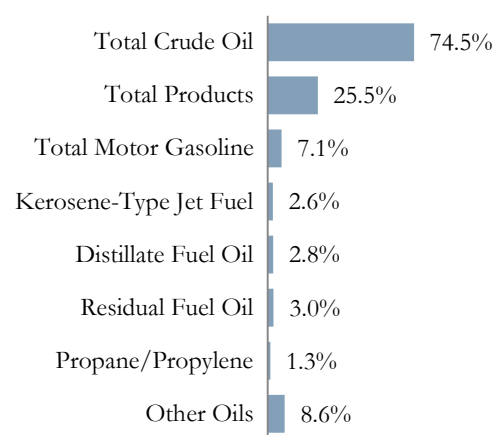
October 2021 Weekly U.S. Imports of Crude Oil & Petroleum Products

4-Week Averages

Imports, million barrels per day



Share of Total Imports



U.S. Imports by Product*

Thousand barrels per day

	Current 10/29/21	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
Total Crude Oil	6,061	6,453	6,564	5,831	5,274
Total Products	2,073	2,443	2,491	2,477	1,982
Total Motor Gasoline	578	949	1,043	1,000	499
Kerosene-Type Jet Fuel	210	244	145	135	167
Distillate Fuel Oil	227	236	128	182	247
Residual Fuel Oil	244	173	128	127	151
Propane/Propylene	106	83	85	129	114
Other Oils	701	748	949	904	788
Total Imports	8,134	8,896	9,055	8,308	7,256

U.S. Imports by Product, Change from

	Current 10/29/21	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
Total Crude Oil	-	-6.1%	-7.7%	3.9%	14.9%
Total Products	-	-15.1%	-16.8%	-16.3%	4.6%
Total Motor Gasoline	-	-39.1%	-44.6%	-42.2%	15.8%
Kerosene-Type Jet Fuel	-	-13.9%	44.8%	55.6%	25.7%
Distillate Fuel Oil	-	-3.8%	77.3%	24.7%	-8.1%
Residual Fuel Oil	-	41.0%	90.6%	92.1%	61.6%
Propane/Propylene	-	27.7%	24.7%	-17.8%	-7.0%
Other Oils	-	-6.3%	-26.1%	-22.5%	-11.0%
Total Imports	-	-8.6%	-10.2%	-2.1%	12.1%

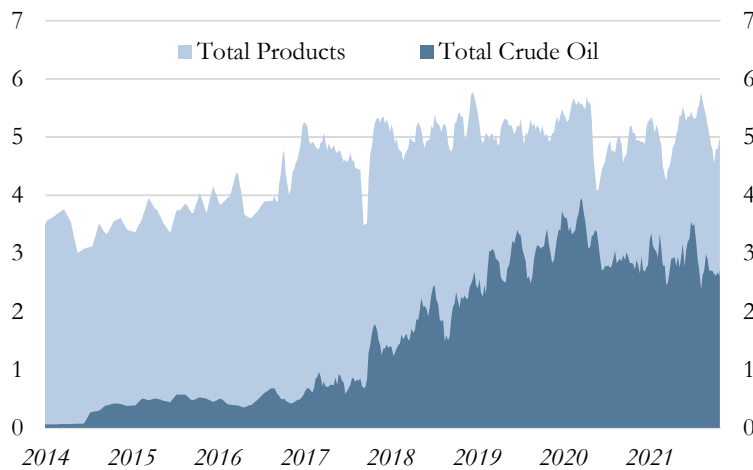
*Totals may not sum due to component rounding

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

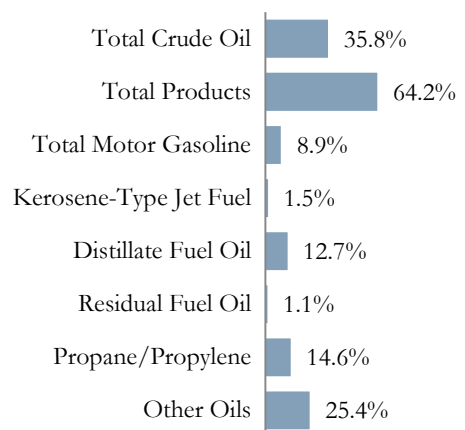
October 2021 Weekly U.S. Exports of Crude Oil & Petroleum Products

4-Week Averages

Exports, million barrels per day



Share of Total Exports



U.S. Exports by Product*

Thousand barrels per day

	Current 10/29/21	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
Total Crude Oil	2,822	2,642	2,720	2,948	2,724
Total Products	5,052	4,542	5,549	5,125	5,077
Total Motor Gasoline	701	596	739	625	668
Kerosene-Type Jet Fuel	115	92	97	91	51
Distillate Fuel Oil	999	759	1,222	989	1,119
Residual Fuel Oil	89	109	127	140	112
Propane/Propylene	1,149	1,127	1,255	1,261	1,261
Other Oils	1,999	1,860	2,109	2,020	1,868
Total Exports	7,874	7,184	8,270	8,072	7,801

U.S. Exports by Product, Change from

	Current 10/29/21	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
Total Crude Oil	-	6.8%	3.8%	-4.3%	3.6%
Total Products	-	11.2%	-9.0%	-1.4%	-0.5%
Total Motor Gasoline	-	17.6%	-5.1%	12.2%	4.9%
Kerosene-Type Jet Fuel	-	25.0%	18.6%	26.4%	125.5%
Distillate Fuel Oil	-	31.6%	-18.2%	1.0%	-10.7%
Residual Fuel Oil	-	-18.3%	-29.9%	-36.4%	-20.5%
Propane/Propylene	-	2.0%	-8.4%	-8.9%	-8.9%
Other Oils	-	7.5%	-5.2%	-1.0%	7.0%
Total Exports	-	9.6%	-4.8%	-2.5%	0.9%

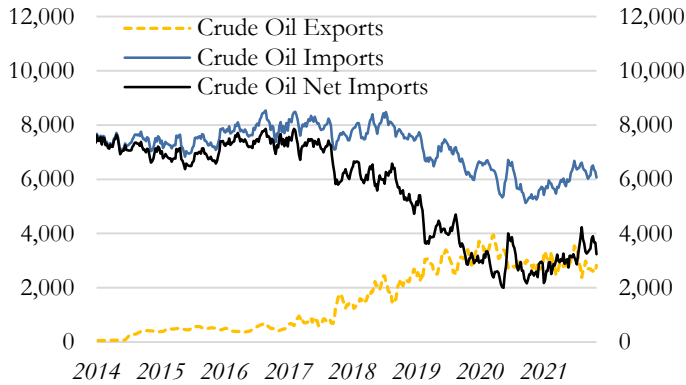
*Totals may not sum due to rounding

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

October 2021 Weekly U.S. Net Imports of Crude Oil & Petroleum Products

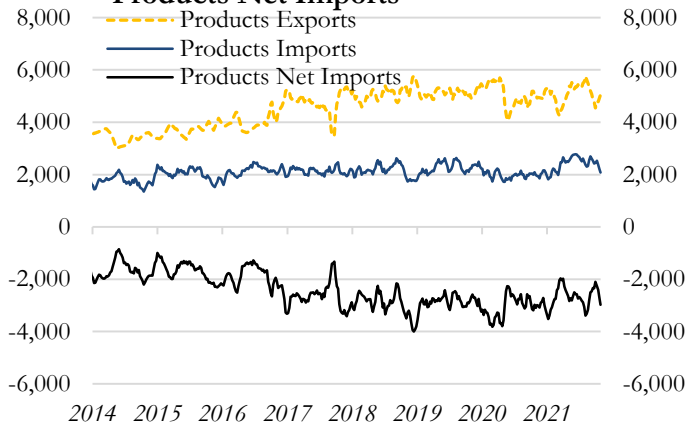
4-Week Averages, Thousand barrels per day

Crude Oil Net Imports



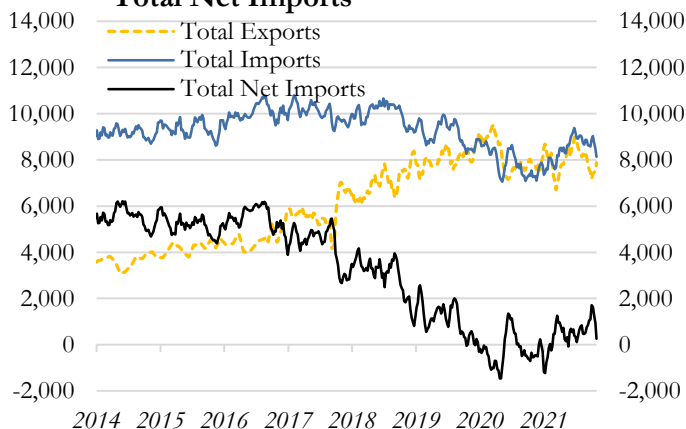
Crude Oil Net Imports		<i>Change from</i>
<i>Thousand barrels per day</i>		
10/29/21	3,240	
Month Ago	3,812	-15.0%
3 Months Ago	3,844	-15.7%
6 Months Ago	2,883	12.4%
1 Year Ago	2,550	27.1%

Products Net Imports



Products Net Imports		<i>Change from</i>
<i>Thousand barrels per day</i>		
10/29/21	-2,979	
Month Ago	-2,099	-
3 Months Ago	-3,058	-
6 Months Ago	-2,647	-
1 Year Ago	-3,095	-

Total Net Imports



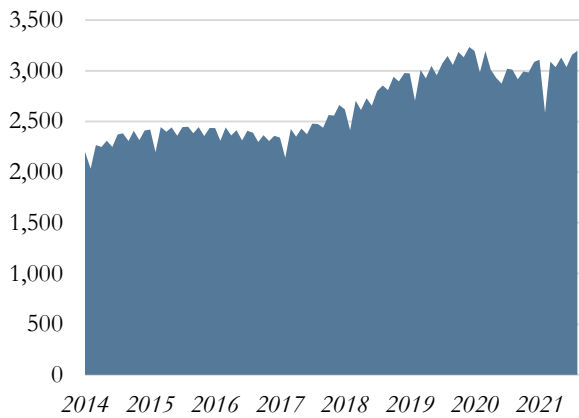
Total Net Imports		<i>Change from</i>
<i>Thousand barrels per day</i>		
10/29/21	261	
Month Ago	1,712	-
3 Months Ago	786	-
6 Months Ago	236	-
1 Year Ago	(545)	-

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

U.S. Natural Gas Production & Stocks

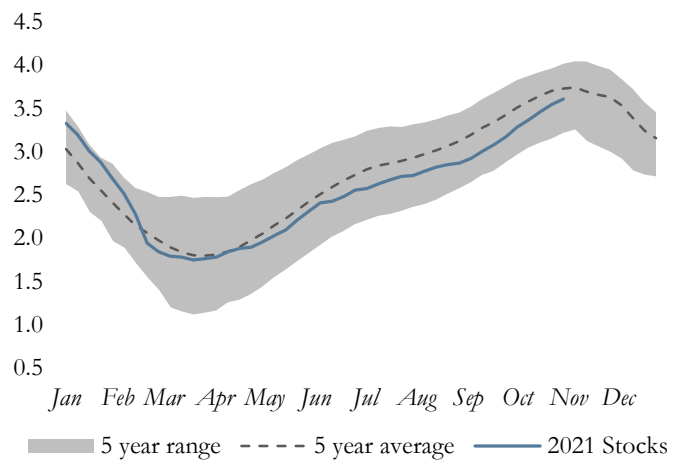
August 2021 Production

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



October 2021 Weekly Stocks

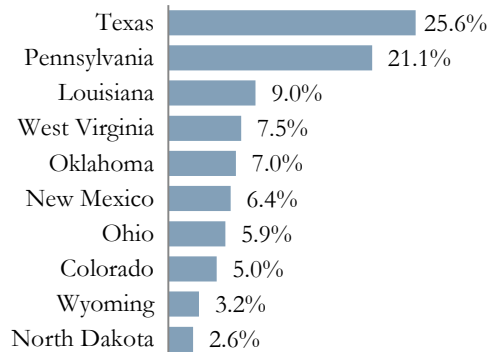
U.S. Natural Gas Stocks, Billion cubic feet (Bcf)



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	3,199	3,158	3,130	2,586	2,992
U.S. Stocks	3,611	3,288	2,727	1,958	3,919

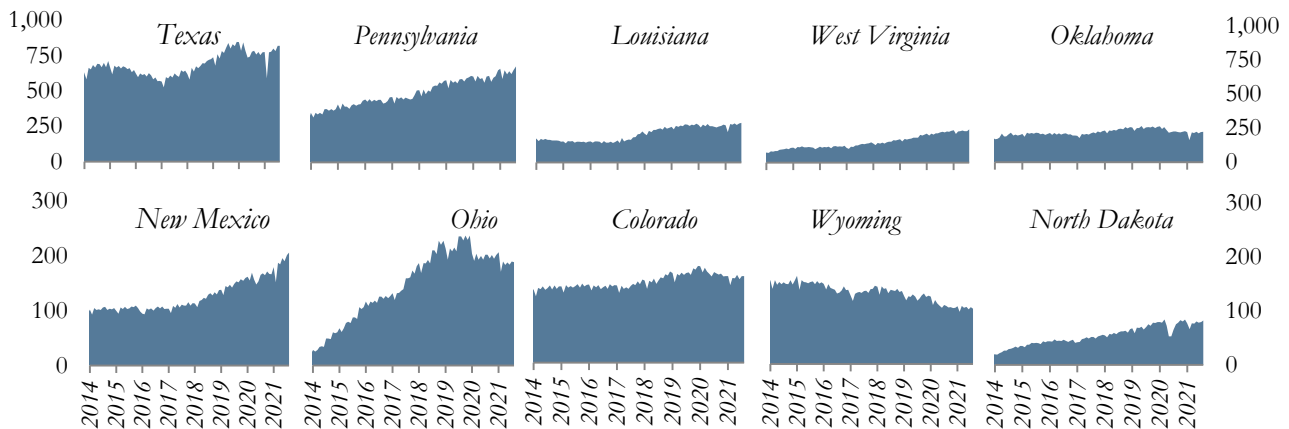
Share of Production



U.S. Natural Gas, Change from

	Current Period*	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
U.S. Production	-	1.3%	2.2%	23.7%	6.9%
U.S. Stocks	-	9.8%	32.4%	84.4%	-7.9%

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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