

THE U.S. Energy DATABOOK

A summary of national and global energy indicators



AUGUST 11, 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 continued to stabilize. With improvements in the global pandemic and improved economic activity, energy demand, oil prices, and production are showing signs of recovery. In July, the number of total active drilling rigs in the United States rose 2.7 percent from a month ago, and is up 10.9 percent from three months ago. U.S. crude oil production rose a modest 0.7 percent from a month ago and 14.9 percent from three months ago, but remains well below pre-pandemic levels. For the week ending July 30th, West Texas Intermediate (WTI) crude oil averaged \$72.69 per barrel and North Sea Brent averaged \$75.75 per barrel, rising 14.6 percent and 13.1 percent over the last three months, respectively. The Henry Hub natural gas spot price averaged \$4.06 per million Btu for the week ending July 30th, increasing 41 percent in the last three months, on elevated summer demand. U.S. crude oil and petroleum products exports grew 2.5 percent in the last quarter and imports rose by 9 percent. Global demand for petroleum was up 2.4 percent and global petroleum production rose 4.8 percent over the last quarter, respectively.

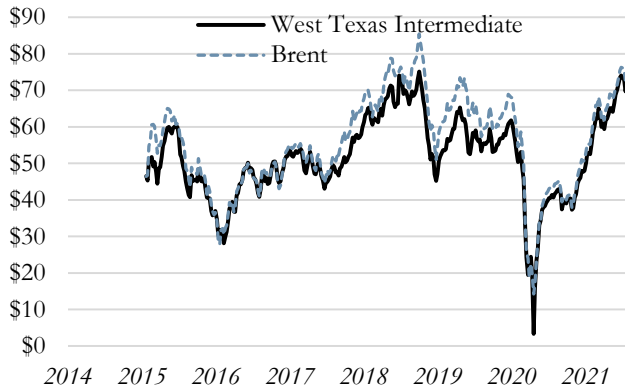
This databook provides current economic indicators to help monitor trends and allow comparison of past information. These indicators include: oil and natural gas prices; global petroleum production and demand; U.S. oil production and petroleum demand; U.S. crude oil stocks; OECD petroleum stocks; U.S.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



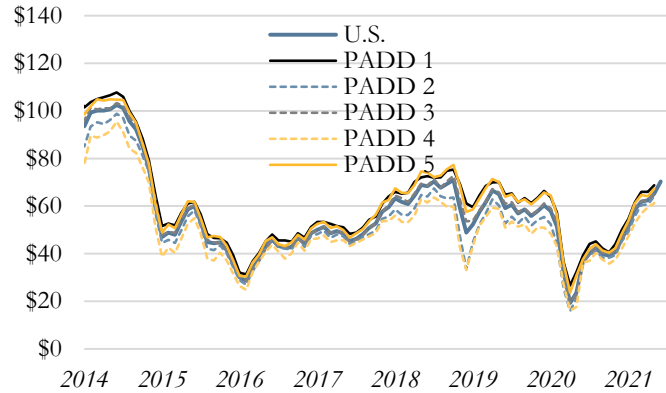
The Federal Reserve Bank of Kansas City's headquarters is located at 1 Memorial Drive in the heart of Kansas City, Missouri. The Federal Reserve Bank of Kansas City serves the Tenth Federal Reserve District, which includes Colorado, Kansas, western Missouri, Nebraska, northern New Mexico, Oklahoma and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

Weekly data through July 30, 2021

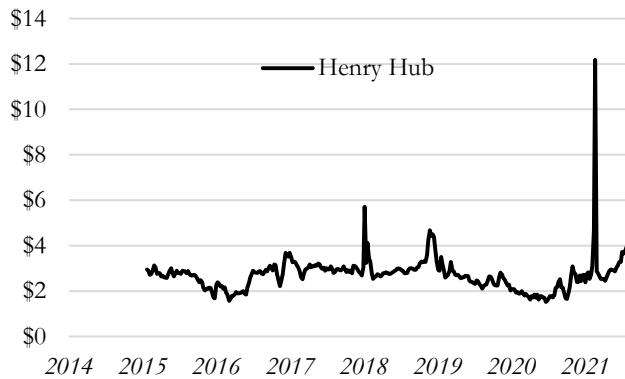
Weekly Oil Spot Prices, per barrel



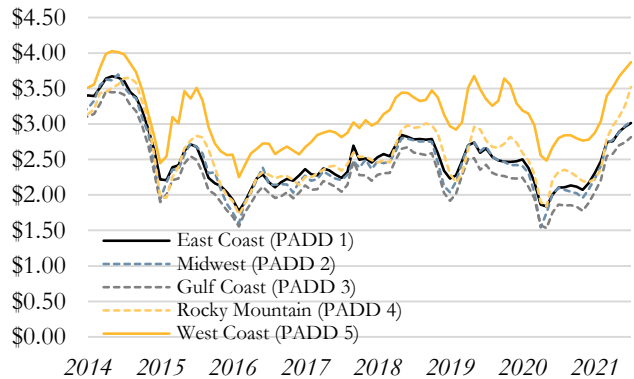
Refiner Acquisition Cost of Oil*, per barrel



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	7/30/21	Ago	Ago	Ago	Ago	Ago
West Texas Intermediate	\$72.69	\$3.01	-\$1.38	\$9.22	\$20.17	\$32.00
Brent	\$75.75	\$3.55	-\$0.51	\$8.79	\$20.57	\$32.53
Henry Hub	\$4.06	\$0.13	\$0.34	\$1.18	\$1.35	\$2.24

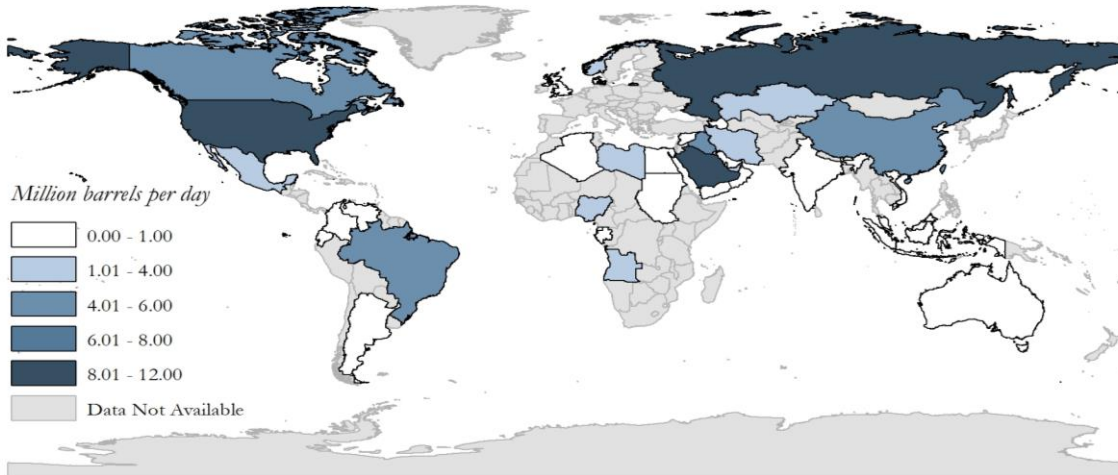
Monthly Gasoline Spot Prices, Change from

	Current	1 Month	3 months	6 Months	1 Year
Geographic Area	Jul-21	Ago	Ago	Ago	Ago
East Coast (PADD 1)	\$3.01	\$0.06	\$0.26	\$0.70	\$0.91
Midwest (PADD 2)	\$3.03	\$0.06	\$0.26	\$0.80	\$0.94
Gulf Coast (PADD 3)	\$2.82	\$0.08	\$0.24	\$0.77	\$0.95
Rocky Mountain (PADD 4)	\$3.52	\$0.26	\$0.55	\$1.29	\$1.20
West Coast (PADD 5)	\$3.87	\$0.10	\$0.35	\$0.99	\$1.07

*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

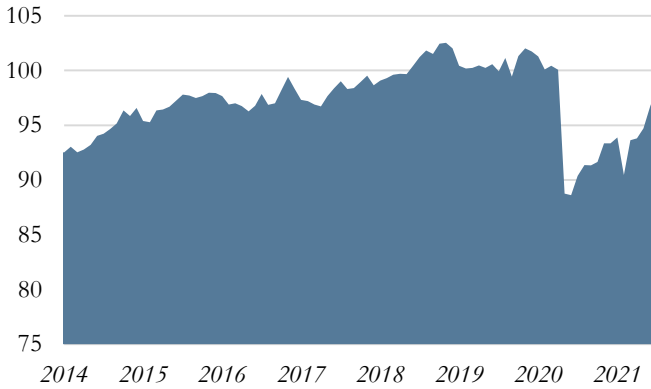
June 2021 Global Petroleum Production



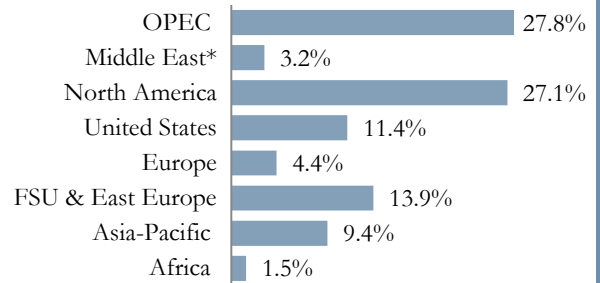
Source: Energy Information Administration/Haver Analytics

June 2021

Monthly Global Petroleum Production, million barrels per day

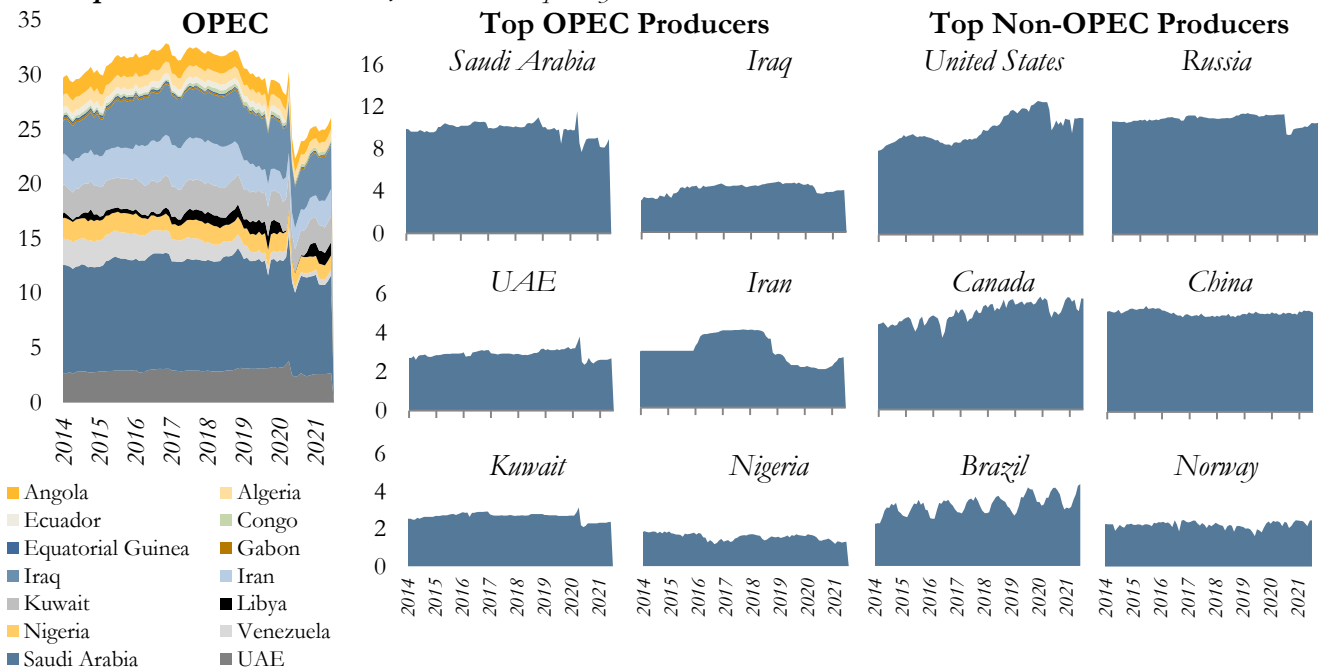


Regional Share of Production



*Excludes OPEC

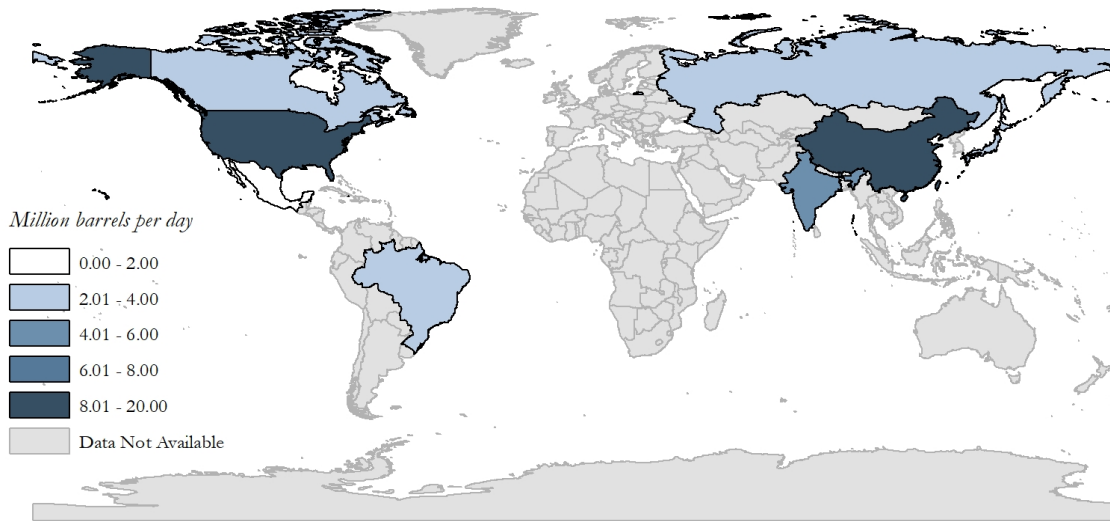
Top Crude Oil Producers, million barrels per day



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

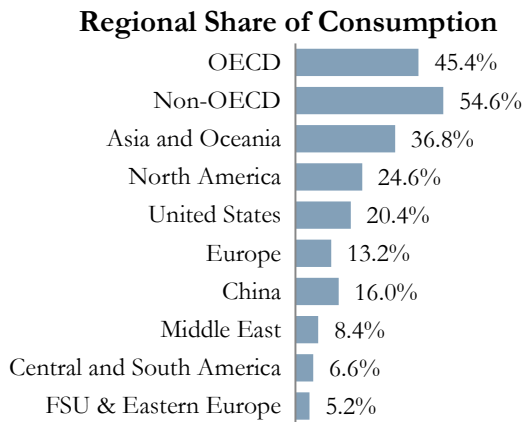
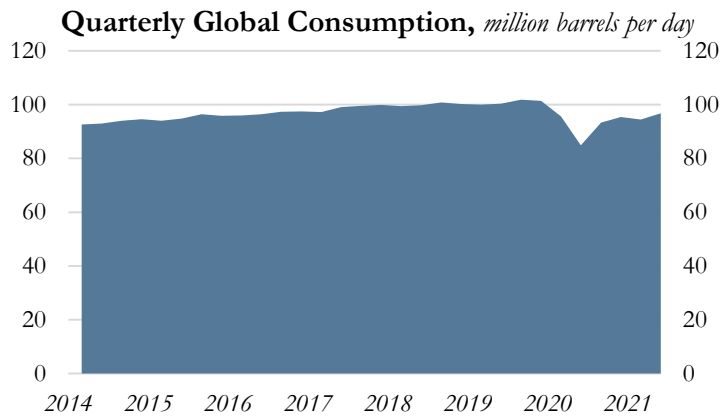
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

Second Quarter 2021 Global Petroleum Consumption

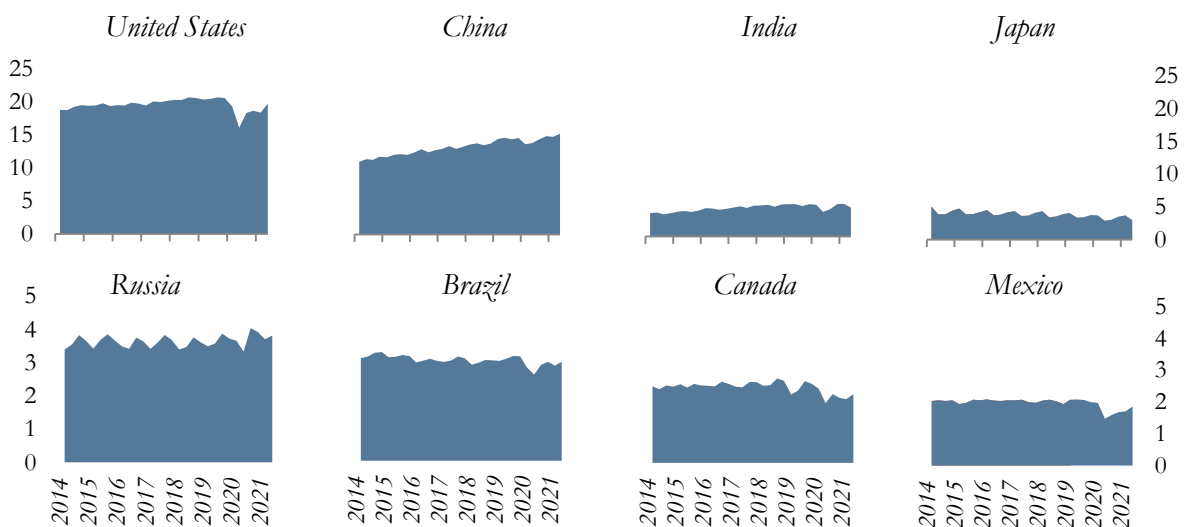


Source: Energy Information Administration/Haver Analytics

Second Quarter 2021

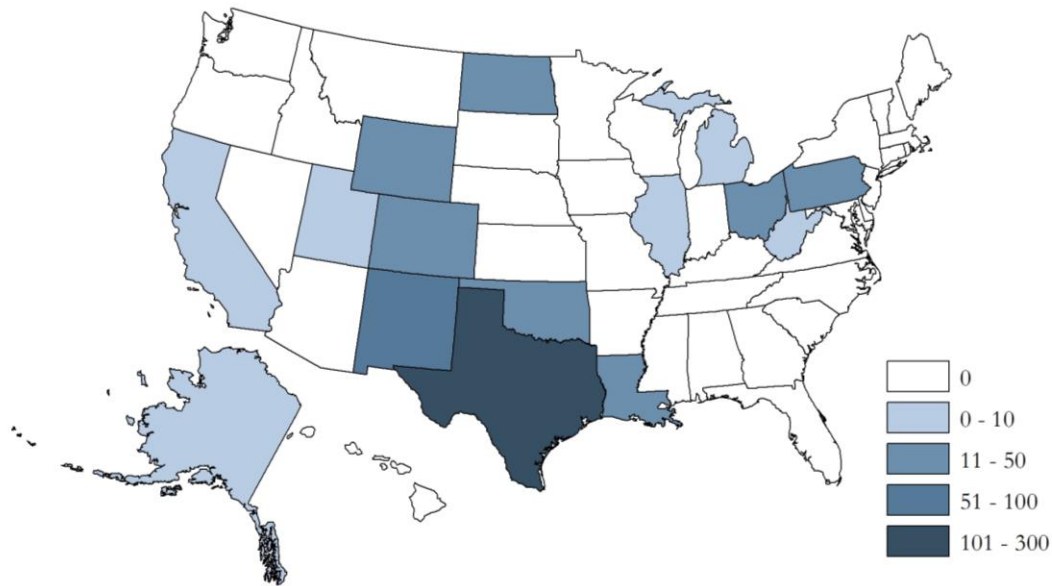


Top Petroleum Consumers, million barrels per day



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

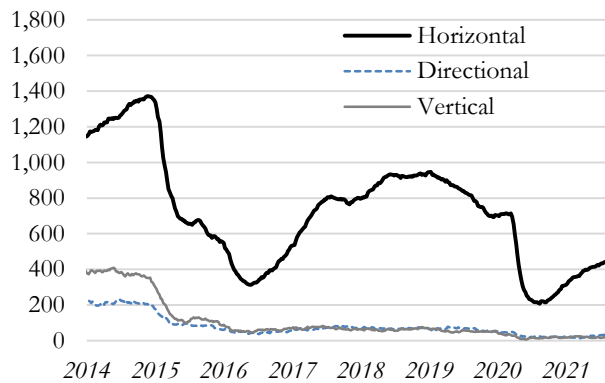
July 2021 Weekly Active Oil & Gas Drilling Rig Counts



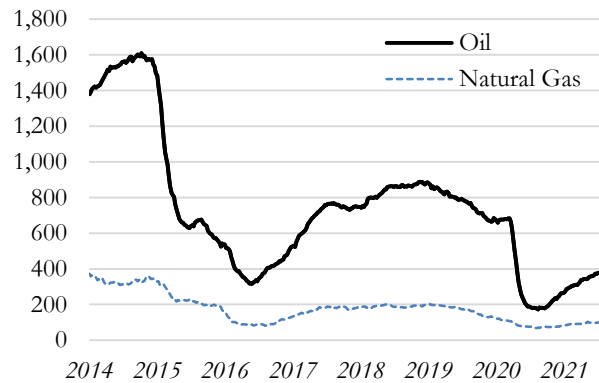
Source: Baker Hughes/Haver Analytics

July 30, 2021

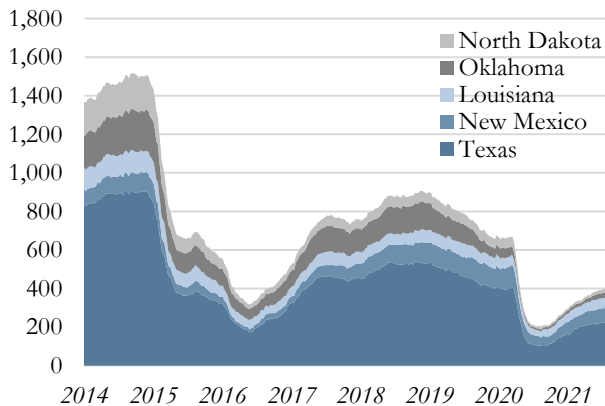
U.S. Active Drilling Rigs by Trajectory



U.S. Active Drilling Rigs by Type



Top Five States for Drilling Activity (Total Active Rigs)



Rig Count By Type

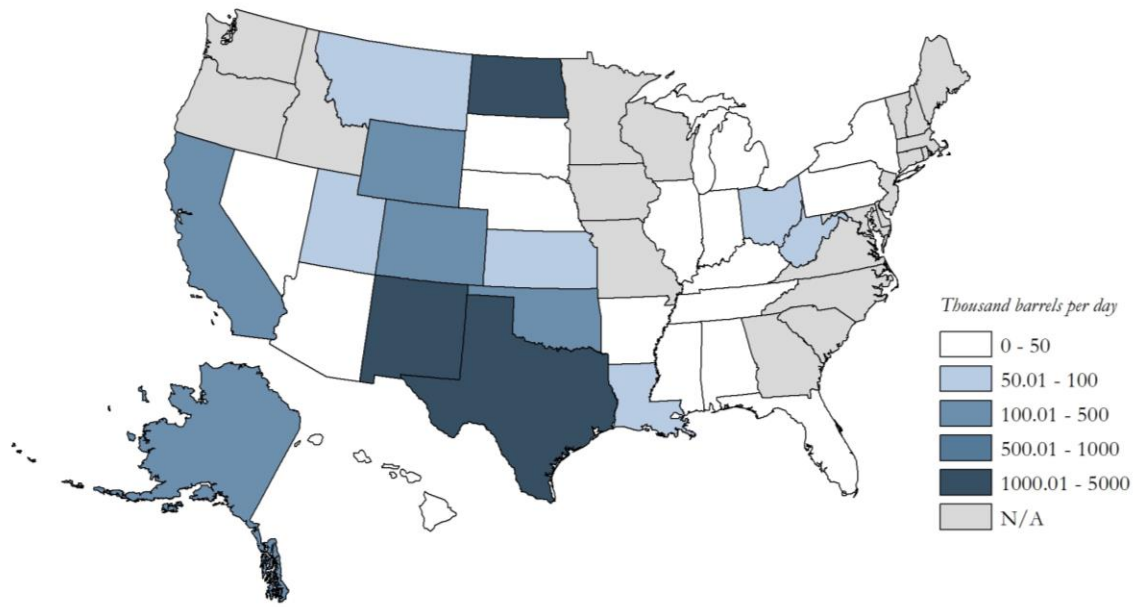
Rig Type	Current Week	1 Month Ago	3 Months Ago	1 Year Ago
Oil	385	376	342	180
Gas	103	99	96	69
Misc	0	0	2	2
Total	488	475	440	251

Rig Count By Type, Change from

Rig Type	Current Week	1 Month Ago	3 Months Ago	1 Year Ago
Oil	-	2.4%	12.6%	113.9%
Gas	-	4.0%	7.3%	49.3%
Misc	-	-	-100.0%	-100.0%
Total	-	2.7%	10.9%	94.4%

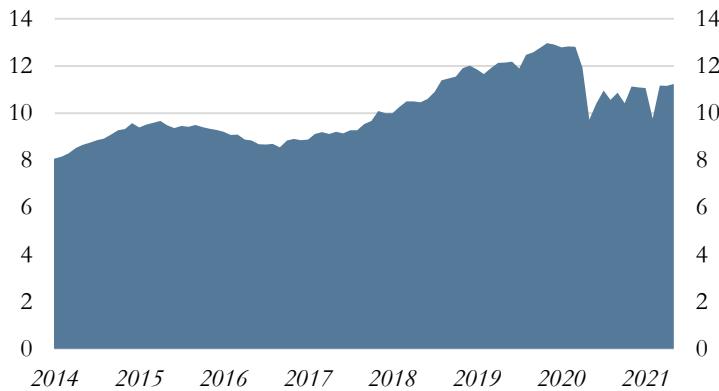
Source: Baker Hughes/Haver Analytics

May 2021 U.S. Crude Oil Production

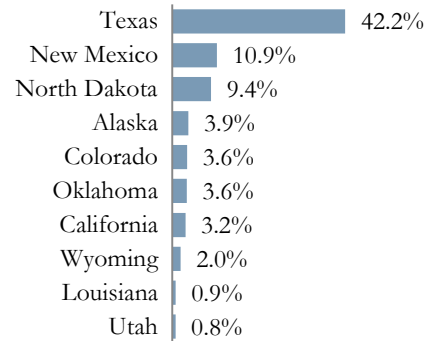


Source: Energy Information Administration/Haver Analytics

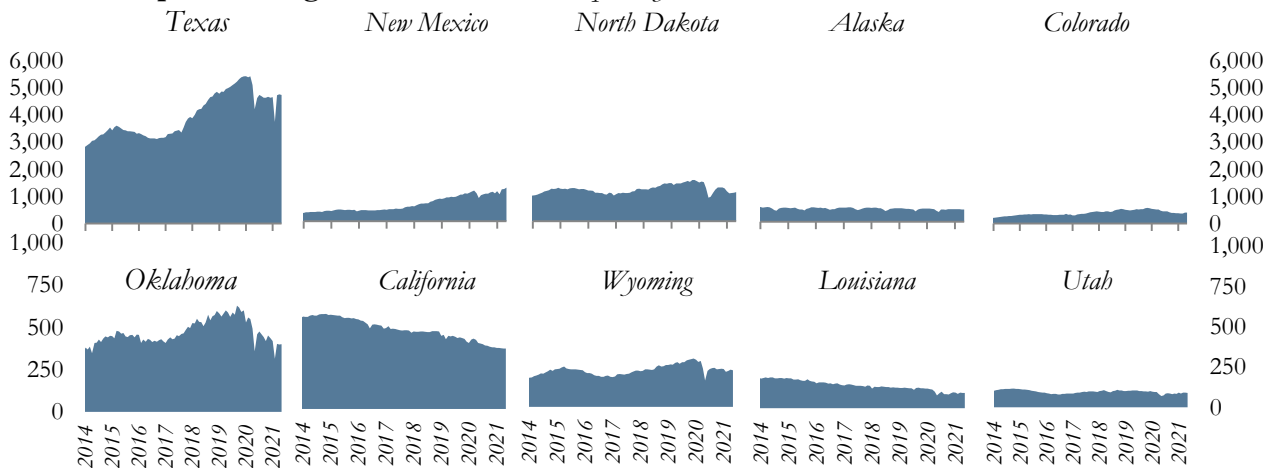
Monthly U.S. Production, million barrels per day



May 2021 Share of Production

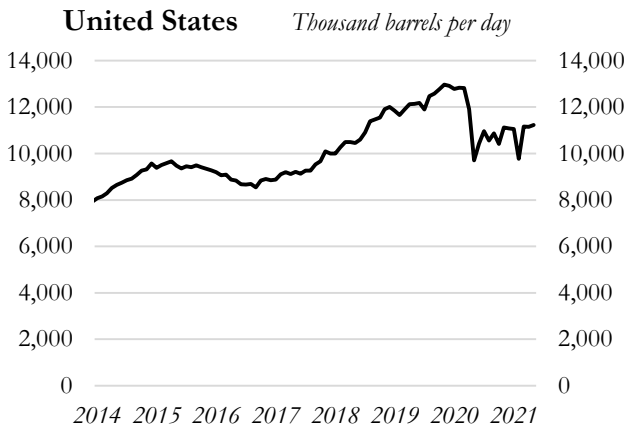


Top Producing States, thousand barrels per day

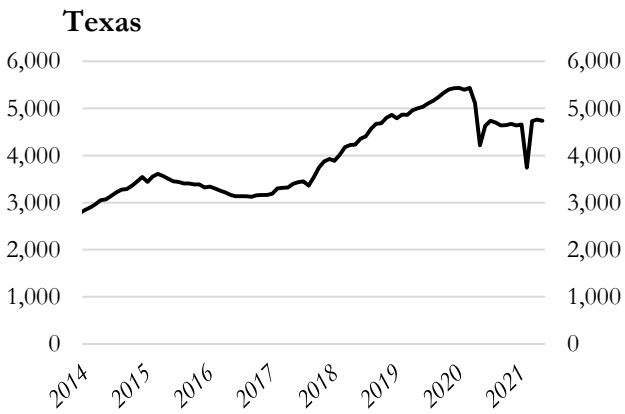


Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

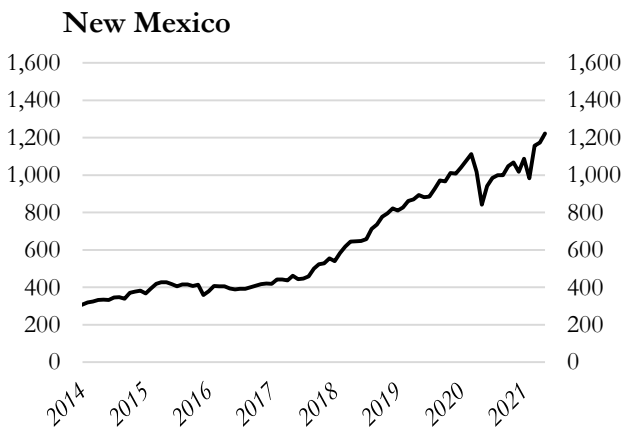
Data through May 2021



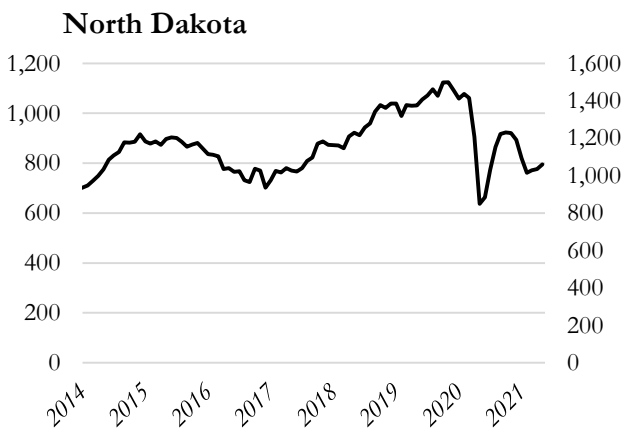
	United States	Change from
	Thousand barrels per day	
May-21	11,231	
Month Ago	11,151	0.7%
3 Months Ago	9,773	14.9%
6 Months Ago	11,121	1.0%
1 Year Ago	9,711	15.6%



	Texas	Change from
	Thousand barrels per day	
May-21	4,741	
Month Ago	4,763	-0.5%
3 Months Ago	3,745	26.6%
6 Months Ago	4,671	1.5%
1 Year Ago	4,219	12.4%
Share of U.S. Production	42.2%	



	New Mexico	Change from
	Thousand barrels per day	
May-21	1,222	
Month Ago	1,173	4.2%
3 Months Ago	983	24.4%
6 Months Ago	1,068	14.5%
1 Year Ago	842	45.1%
Share of U.S. Production	10.9%	

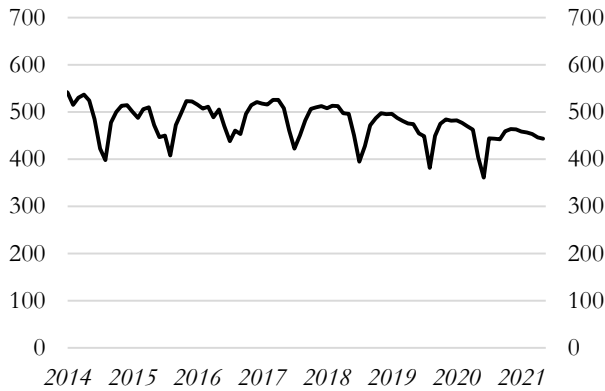


	North Dakota	Change from
	Thousand barrels per day	
May-21	1,061	
Month Ago	1,035	2.5%
3 Months Ago	1,016	4.4%
6 Months Ago	1,227	-13.6%
1 Year Ago	850	24.8%
Share of U.S. Production	9.4%	

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

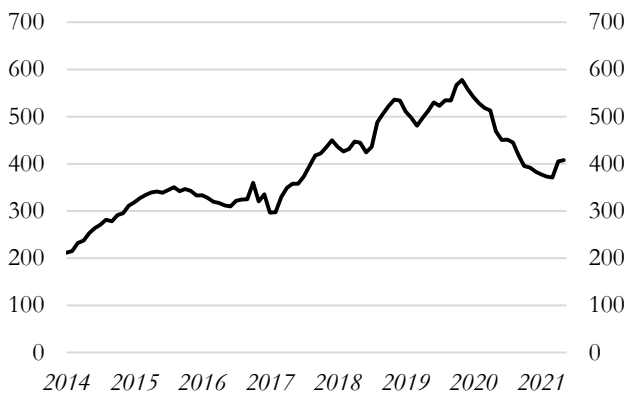
Data through May 2021

Alaska *Thousand barrels per day*



	Alaska	<i>Change from</i>
	<i>Thousand barrels per day</i>	
May-21	443	
Month Ago	446	-0.7%
3 Months Ago	457	-2.9%
6 Months Ago	464	-4.4%
1 Year Ago	404	9.7%
Share of U.S. Production	3.9%	

Colorado



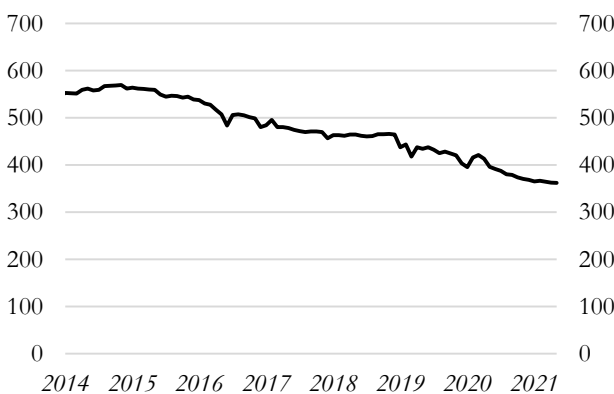
	Colorado	<i>Change from</i>
	<i>Thousand barrels per day</i>	
May-21	408	
Month Ago	405	0.7%
3 Months Ago	373	9.3%
6 Months Ago	392	3.9%
1 Year Ago	469	-13.1%
Share of U.S. Production	3.6%	

Oklahoma



	Oklahoma	<i>Change from</i>
	<i>Thousand barrels per day</i>	
May-21	400	
Month Ago	400	0.2%
3 Months Ago	315	27.0%
6 Months Ago	452	-11.4%
1 Year Ago	359	11.3%
Share of U.S. Production	3.6%	

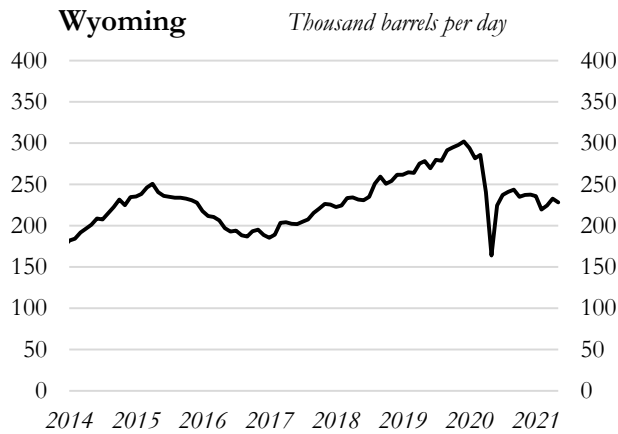
California



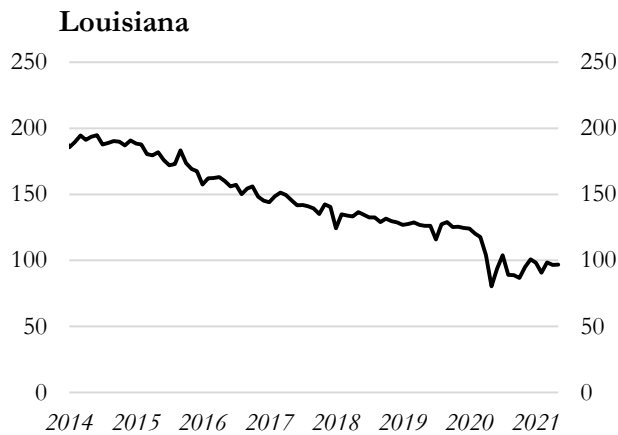
	California	<i>Change from</i>
	<i>Thousand barrels per day</i>	
May-21	362	
Month Ago	363	-0.2%
3 Months Ago	366	-1.2%
6 Months Ago	370	-2.2%
1 Year Ago	396	-8.6%
Share of U.S. Production	3.2%	

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

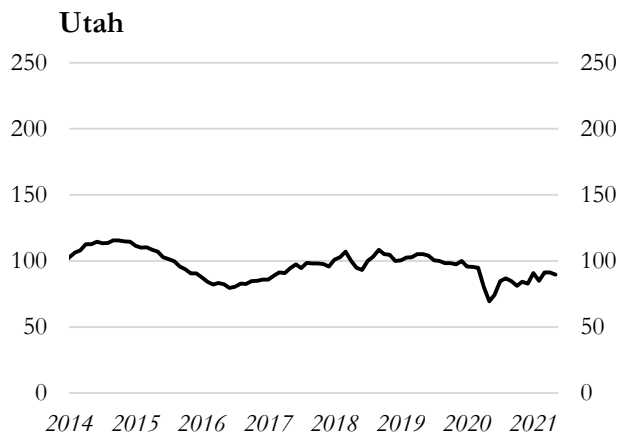
Data through May 2021



Wyoming		Change from
Thousand barrels per day		
May-21	228	
Month Ago	233	-2.0%
3 Months Ago	220	3.9%
6 Months Ago	237	-3.8%
1 Year Ago	164	39.1%
Share of U.S. Production		2.0%



Louisiana		Change from
Thousand barrels per day		
May-21	97	
Month Ago	97	0.2%
3 Months Ago	91	6.6%
6 Months Ago	95	1.9%
1 Year Ago	80	20.4%
Share of U.S. Production		0.9%

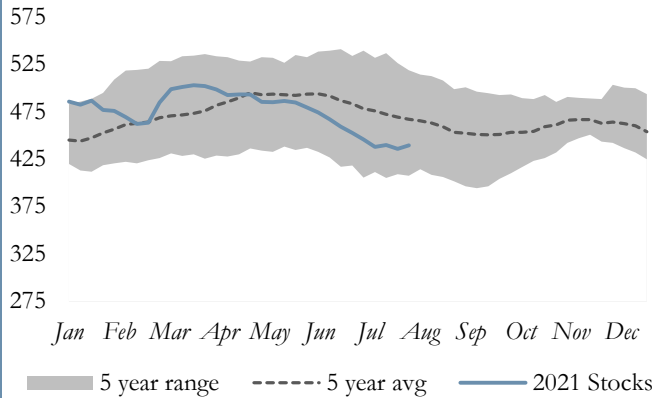


Utah		Change from
Thousand barrels per day		
May-21	90	
Month Ago	91	-1.9%
3 Months Ago	85	5.3%
6 Months Ago	84	6.3%
1 Year Ago	70	28.8%
Share of U.S. Production		0.8%

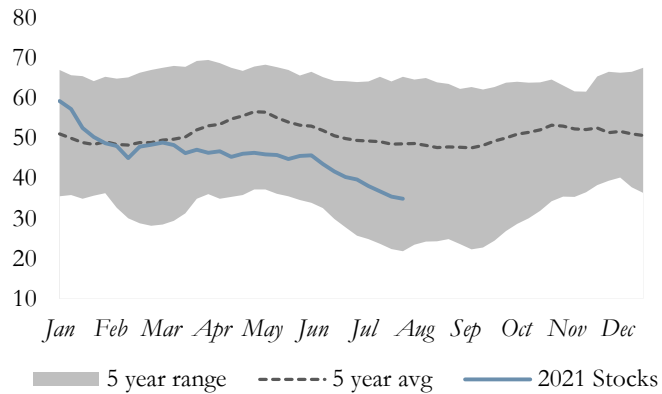
Source: U.S. Department of Energy, Energy Information Administration/Haver Analytics

July 2021 Weekly U.S. Crude Oil Stocks

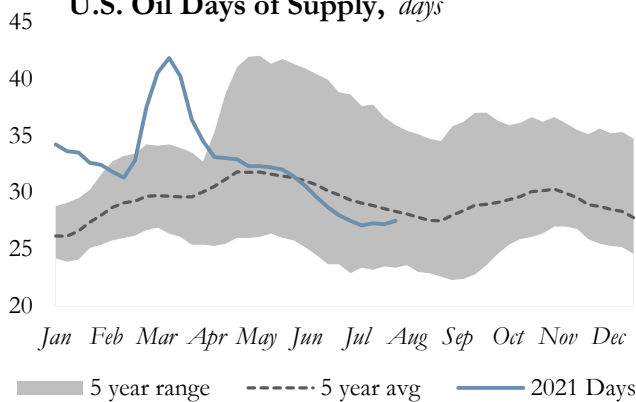
U.S. Oil Stocks, million barrels*



Cushing, OK Oil Stocks, million barrels



U.S. Oil Days of Supply, days



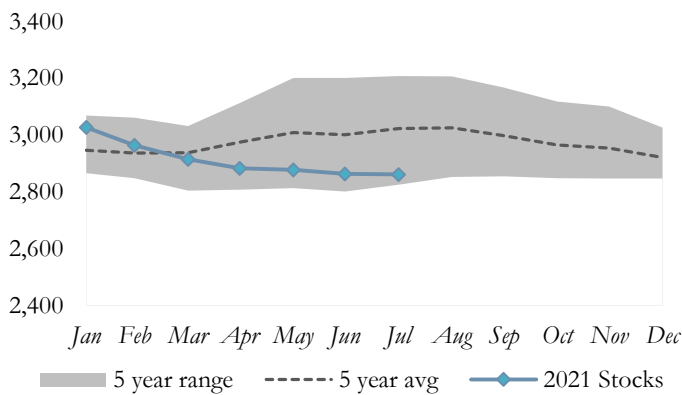
Crude Oil Stocks

	1 Week Ago	1 Year Ago
U.S.	0.8%	-15.3%
Cushing, OK	-1.5%	-32.8%
Days of Supply	1.1%	-23.4%
East Coast (PADD 1)	-4.8%	-26.3%
Midwest (PADD 2)	-0.2%	-15.6%
Gulf Coast (PADD 3)	1.3%	-16.1%
Rocky Mountain (PADD 4)	-0.6%	-5.1%
West Coast (PADD 5)	3.1%	-12.5%

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

July 2021 OECD Commercial Petroleum Inventory

OECD Commercial Petroleum Inventory, million barrels



Petroleum Stocks

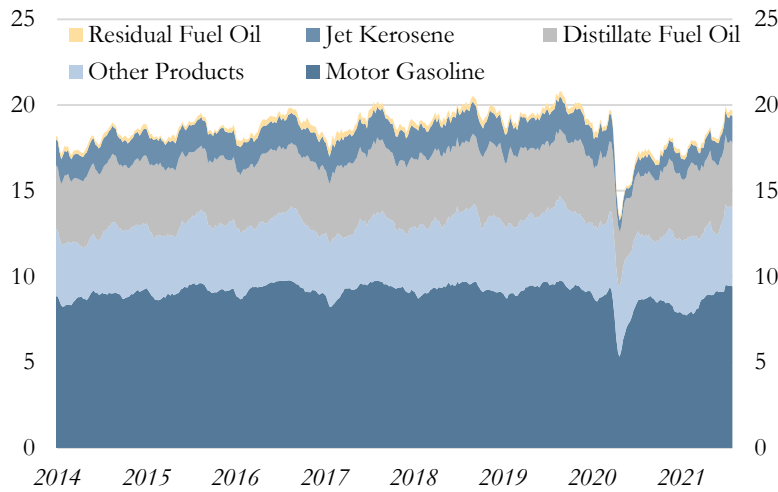
	Million Barrels	Change from
Current Month	2,862	
1 Month Ago	2,864	-0.1%
3 Months Ago	2,884	-0.8%
6 Months Ago	3,027	-5.5%
1 Year Ago	3,207	-10.8%

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

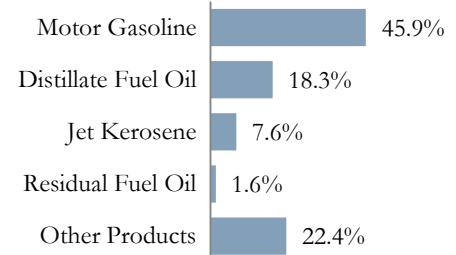
July 2021 Weekly U.S. Demand for Petroleum Products

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> 7/30/21	<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	20,544	20,943	19,794	19,365	18,285
Motor Gasoline	9,420	9,504	8,947	7,812	8,656
Distillate Fuel Oil	3,766	4,073	4,109	3,982	3,562
Jet Kerosene	1,565	1,412	1,201	1,136	1,095
Residual Fuel Oil	331	285	152	188	321
Other Products	4,593	4,710	4,311	4,482	3,618

U.S. Consumption by Product, Change from

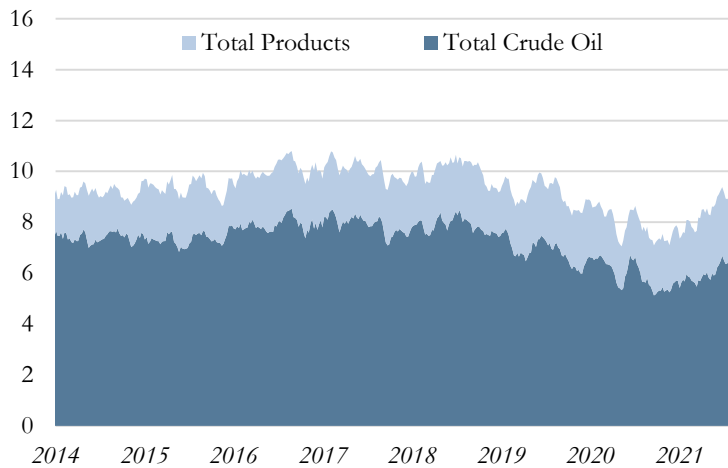
	<i>Current</i> 7/30/21	<i>1 Month</i> <i>Ago</i>	<i>3 Months</i> <i>Ago</i>	<i>6 Months</i> <i>Ago</i>	<i>1 Year</i> <i>Ago</i>
All Products	-	-1.9%	3.8%	6.1%	12.4%
Motor Gasoline	-	-0.9%	5.3%	20.6%	8.8%
Distillate Fuel Oil	-	-7.5%	-8.3%	-5.4%	5.7%
Jet Kerosene	-	10.8%	30.3%	37.8%	42.9%
Residual Fuel Oil	-	16.1%	117.8%	76.1%	3.1%
Other Products	-	-2.5%	6.5%	2.5%	26.9%

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

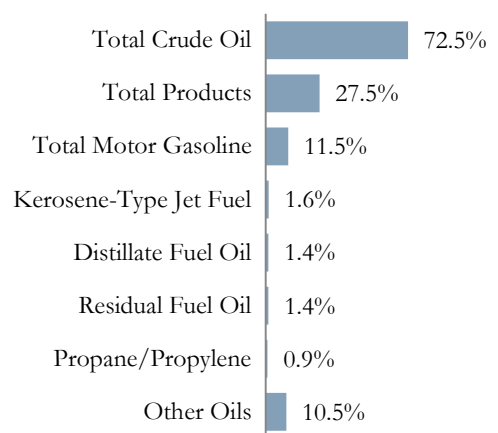
July 2021 Weekly U.S. Imports of Crude Oil & Petroleum Products

4-Week Averages

Imports, million barrels per day



Share of Total Imports



U.S. Imports by Product*

Thousand barrels per day

	Current 7/30/21	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
Total Crude Oil	6,564	6,492	5,831	5,964	5,666
Total Products	2,491	2,676	2,477	2,130	2,003
Total Motor Gasoline	1,043	924	1,000	480	654
Kerosene-Type Jet Fuel	145	168	135	124	170
Distillate Fuel Oil	128	256	182	450	108
Residual Fuel Oil	128	180	127	165	91
Propane/Propylene	85	78	129	155	92
Other Oils	949	1,059	904	756	879
Total Imports	9,055	9,168	8,308	8,094	7,669

U.S. Imports by Product, Change from

	Current 7/30/21	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
Total Crude Oil	-	1.1%	12.6%	10.1%	15.8%
Total Products	-	-6.9%	0.6%	16.9%	24.4%
Total Motor Gasoline	-	12.9%	4.3%	117.3%	59.5%
Kerosene-Type Jet Fuel	-	-13.7%	7.4%	16.9%	-14.7%
Distillate Fuel Oil	-	-50.0%	-29.7%	-71.6%	18.5%
Residual Fuel Oil	-	-28.9%	0.8%	-22.4%	40.7%
Propane/Propylene	-	9.0%	-34.1%	-45.2%	-7.6%
Other Oils	-	-10.4%	5.0%	25.5%	8.0%
Total Imports	-	-1.2%	9.0%	11.9%	18.1%

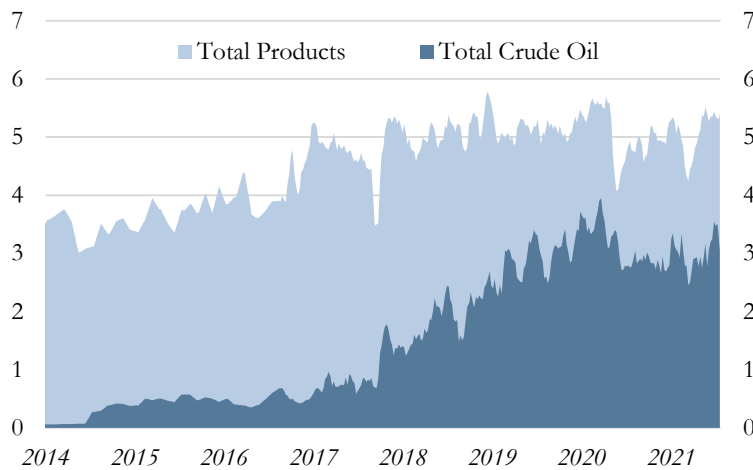
*Totals may not sum due to component rounding

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

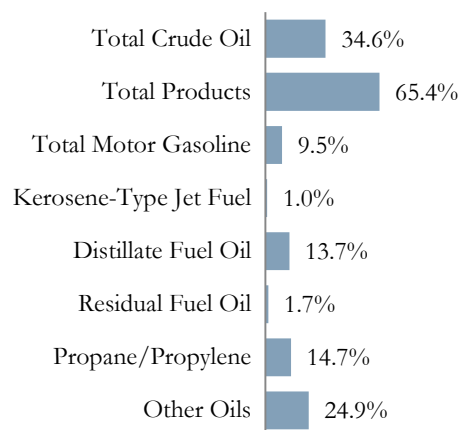
July 2021 Weekly U.S. Exports of Crude Oil & Petroleum Products

4-Week Averages

Exports, million barrels per day



Share of Total Exports



U.S. Exports by Product*

Thousand barrels per day

	<i>Current 7/23/21</i>	<i>1 Month Ago</i>	<i>3 Months Ago</i>	<i>6 Months Ago</i>	<i>1 Year Ago</i>
Total Crude Oil	2,901	3,546	2,776	3,062	2,784
Total Products	5,493	5,440	5,035	5,065	4,757
<i>Total Motor Gasoline</i>	795	783	684	754	511
<i>Kerosene-Type Jet Fuel</i>	87	89	97	55	62
<i>Distillate Fuel Oil</i>	1,153	1,180	1,023	964	1,339
<i>Residual Fuel Oil</i>	140	128	96	90	118
<i>Propane/Propylene</i>	1,232	1,177	1,192	1,291	991
<i>Other Oils</i>	2,087	2,083	1,945	1,911	1,737
Total Exports	8,394	8,986	7,811	8,127	7,541

U.S. Exports by Product, Change from

	<i>Current 7/23/21</i>	<i>1 Month Ago</i>	<i>3 Months Ago</i>	<i>6 Months Ago</i>	<i>1 Year Ago</i>
Total Crude Oil	-	-18.2%	4.5%	-5.3%	4.2%
Total Products	-	1.0%	9.1%	8.5%	15.5%
<i>Total Motor Gasoline</i>	-	1.5%	16.2%	5.4%	55.6%
<i>Kerosene-Type Jet Fuel</i>	-	-2.2%	-10.3%	58.2%	40.3%
<i>Distillate Fuel Oil</i>	-	-2.3%	12.7%	19.6%	-13.9%
<i>Residual Fuel Oil</i>	-	9.4%	45.8%	55.6%	18.6%
<i>Propane/Propylene</i>	-	4.7%	3.4%	-4.6%	24.3%
<i>Other Oils</i>	-	0.2%	7.3%	9.2%	20.1%
Total Exports	-	-6.6%	7.5%	3.3%	11.3%

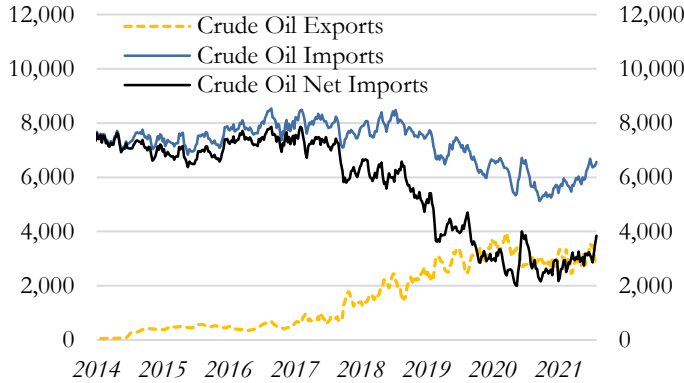
*Totals may not sum due to rounding

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

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

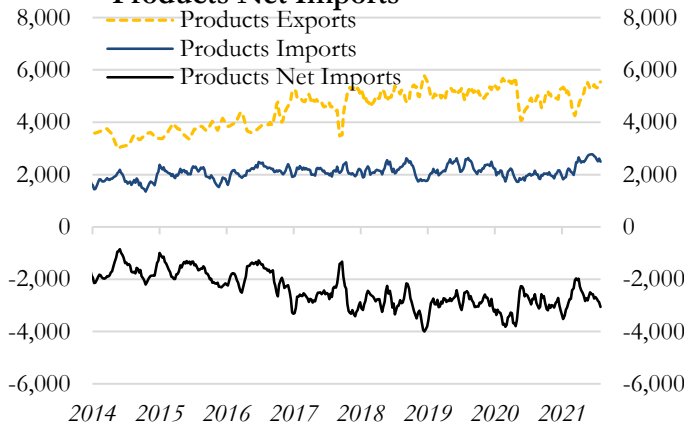
4-Week Averages, Thousand barrels per day

Crude Oil Net Imports



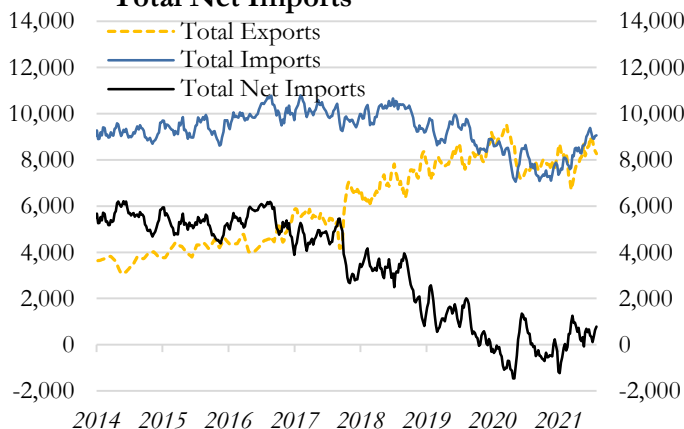
Crude Oil Net Imports		Change
Thousand barrels per day		from
7/30/21	3,844	
Month Ago	3,022	27.2%
3 Months Ago	2,883	33.3%
6 Months Ago	2,939	30.8%
1 Year Ago	2,775	38.5%

Products Net Imports



Products Net Imports		Change
Thousand barrels per day		from
7/30/21	-3,058	
Month Ago	-2,679	-
3 Months Ago	-2,647	-
6 Months Ago	-3,072	-
1 Year Ago	-2,764	-

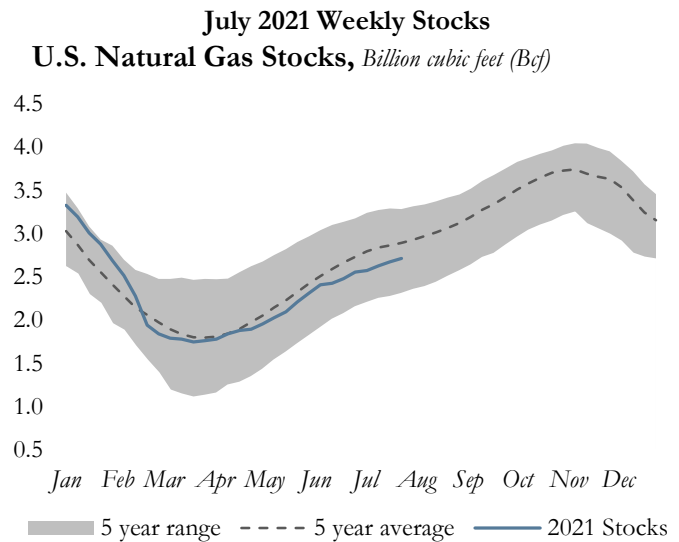
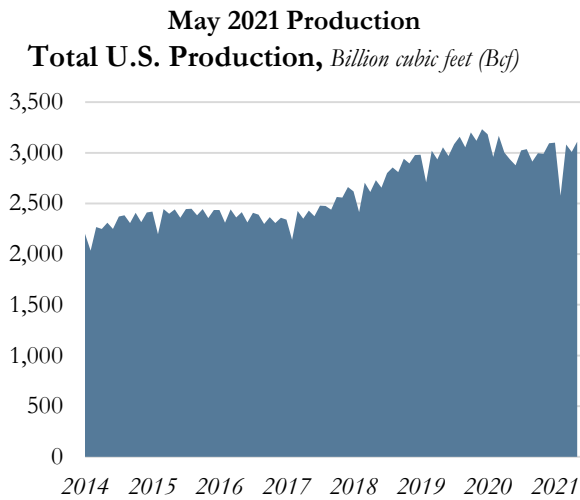
Total Net Imports



Total Net Imports		Change
Thousand barrels per day		from
7/30/21	786	
Month Ago	343	-
3 Months Ago	236	-
6 Months Ago	(134)	-
1 Year Ago	11	-

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

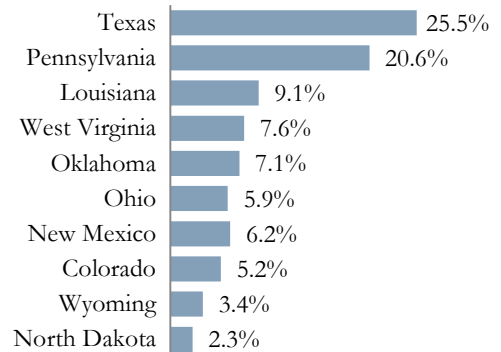
U.S. Natural Gas Production & Stocks



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	3,109	3,008	2,577	2,990	3,023
U.S. Stocks	2,727	2,574	1,958	2,689	3,274

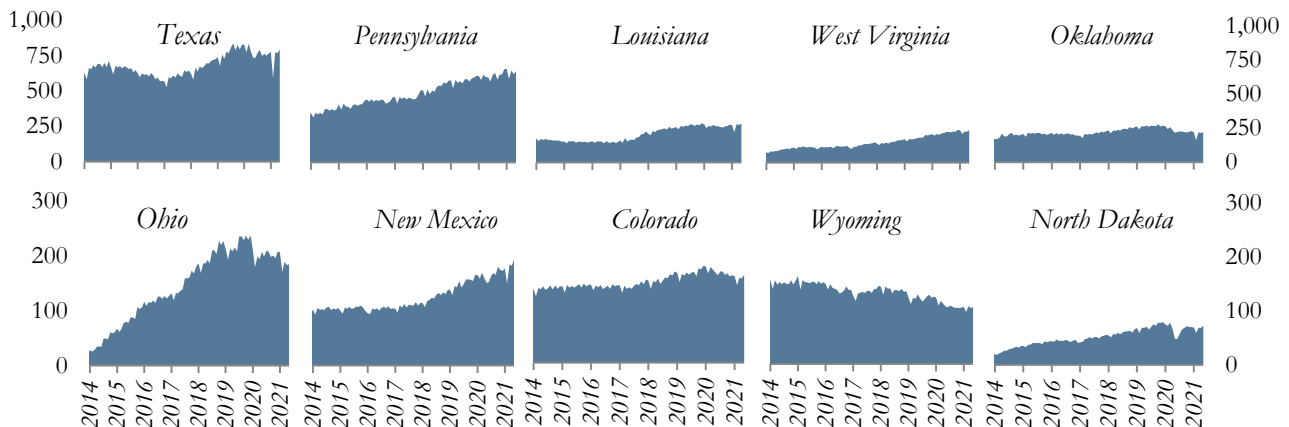
Share of Production



U.S. Natural Gas, Change from

	Current Period*	1 Month Ago	3 Months Ago	6 Months Ago	1 Year Ago
U.S. Production	-	3.4%	20.6%	4.0%	2.8%
U.S. Stocks	-	5.9%	39.3%	1.4%	-16.7%

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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