

PETROLEUM WATCH

CALIFORNIA ENERGY COMMISSION

INSIDE

- Gasoline Retail Prices by Brand
- Diesel Retail Prices by Region
- OPEC Countries by Crude Oil Production
- U.S. Production and Net Imports of Crude Oil
- Production Cost per Barrel by Country (2016)
- International and Domestic Crude Prices
- Weekly U.S. Crude Inventories

Featured Topic:

OPEC Influence on U.S. Crude Oil

REFINERY NEWS

• Chevron El Segundo:

On August 21, a utility power failure resulted in a power disruption at an operating unit causing unplanned flaring. ([South Coast AQMD](#)).

CALIFORNIA GASOLINE RETAIL PRICES BY BRAND

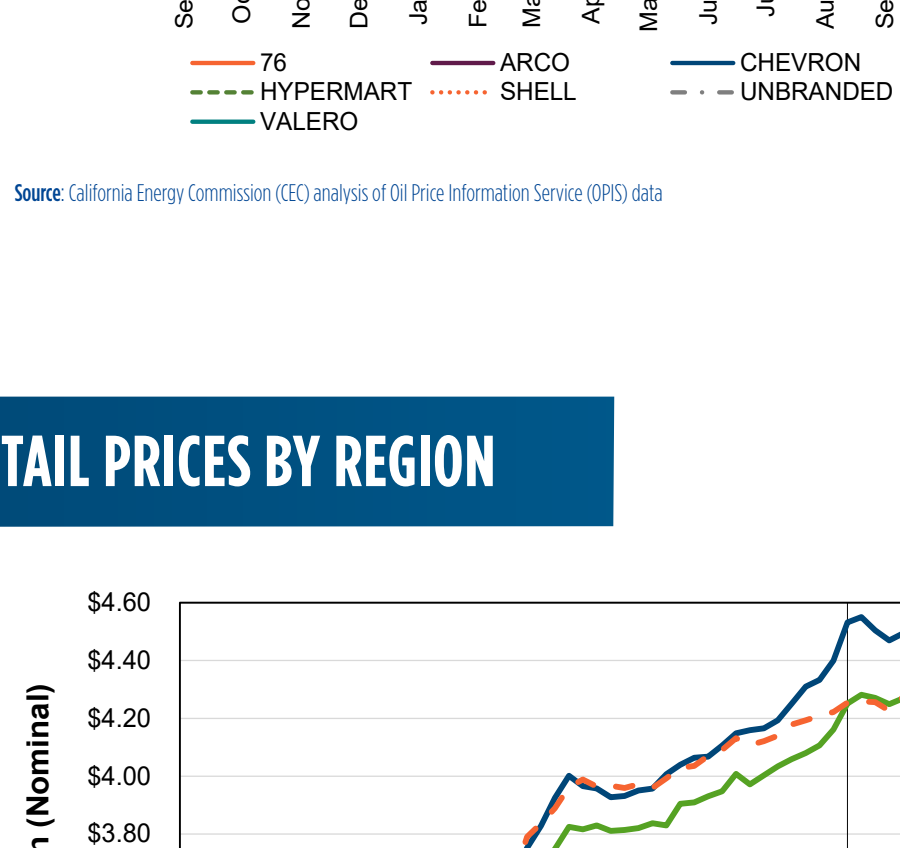
August 2021 vs. 2020

(Percentage Change)

76	37% higher
ARCO	40% higher
Chevron	36% higher
Hypermart	40% higher
Shell	36% higher
Unbranded	38% higher
Valero	37% higher

August 2021 Averages

76	\$4.45
ARCO	\$4.20
Chevron	\$4.60
Hypermart	\$4.06
Shell	\$4.53
Unbranded	\$4.24
Valero	\$4.39



Source: California Energy Commission (CEC) analysis of Oil Price Information Service (OPIS) data

CALIFORNIA DIESEL RETAIL PRICES BY REGION

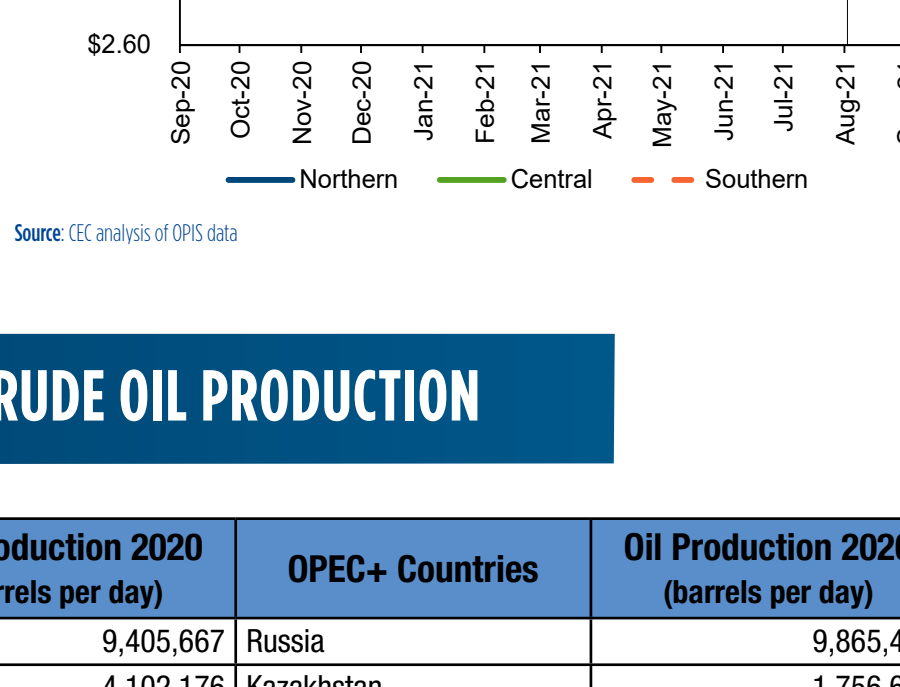
August 2021 vs. 2020

(Percentage Change)

Northern CA	37% higher
Central CA	37% higher
Southern CA	33% higher

August 2021 Averages

Northern CA	\$4.51
Central CA	\$4.26
Southern CA	\$4.25



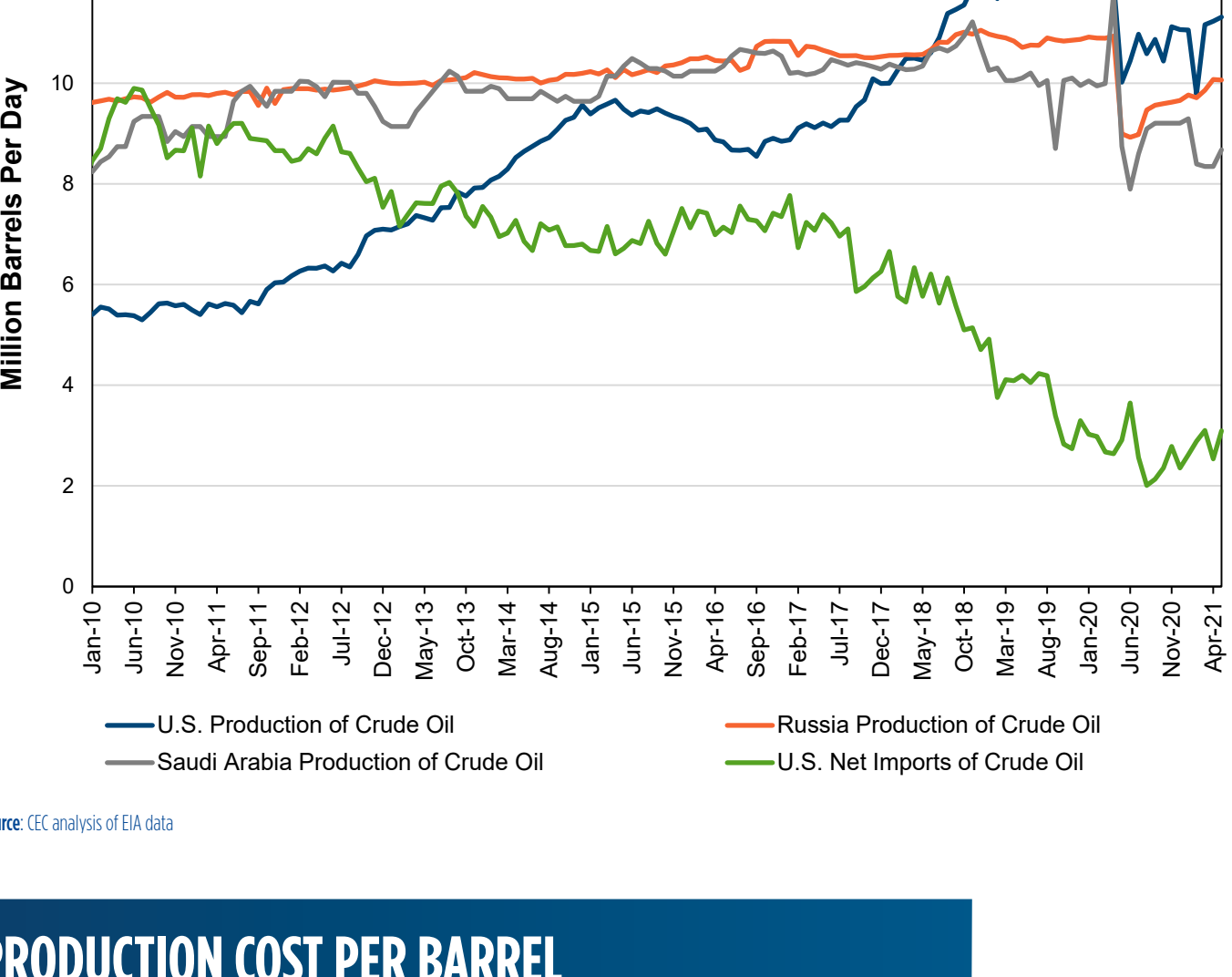
Source: CEC analysis of OPIS data

OPEC COUNTRIES BY CRUDE OIL PRODUCTION

OPEC Countries	Oil Production 2020 (barrels per day)	OPEC+ Countries	Oil Production 2020 (barrels per day)
Saudi Arabia	9,405,667	Russia	9,865,422
Iraq	4,102,176	Kazakhstan	1,756,674
United Arab Emirates	3,138,224	Mexico	1,710,261
Iran	2,665,750	Oman	948,905
Kuwait	2,556,809	Azerbaijan	693,734
Nigeria	1,774,630	Malaysia	555,695
Angola	1,256,672	Bahrain	170,741
Algeria	1,122,432	South Sudan	162,531
Venezuela	527,063	Brunei	100,167
Libya	408,074	Sudan	64,725
Congo-Brazzaville	283,164		
Gabon	173,634		
Equatorial Guinea	147,563		

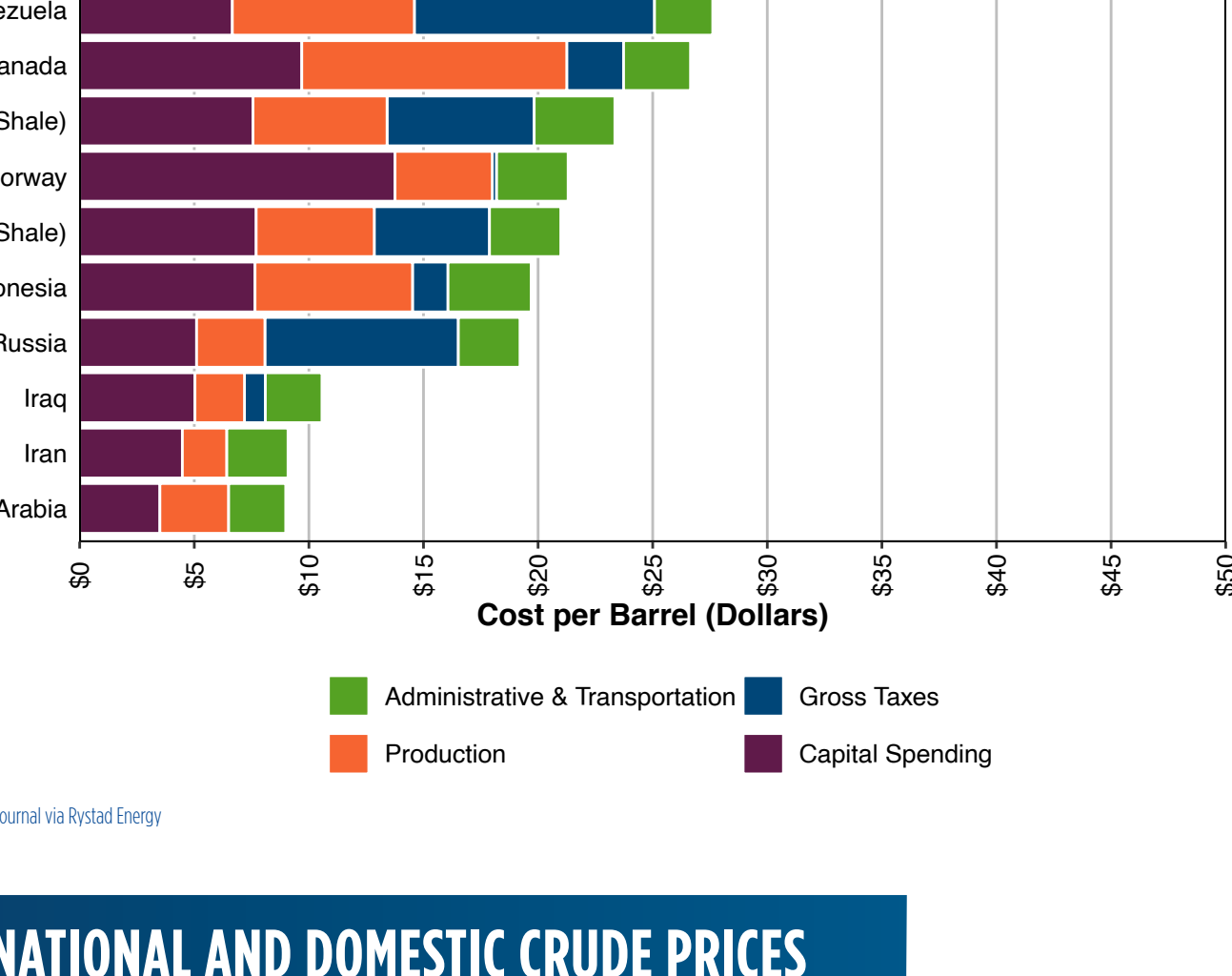
Source: Energy Information Administration (EIA) and Organization of Petroleum Exporting Countries (OPEC) data

U.S. PRODUCTION AND NET IMPORTS OF CRUDE OIL



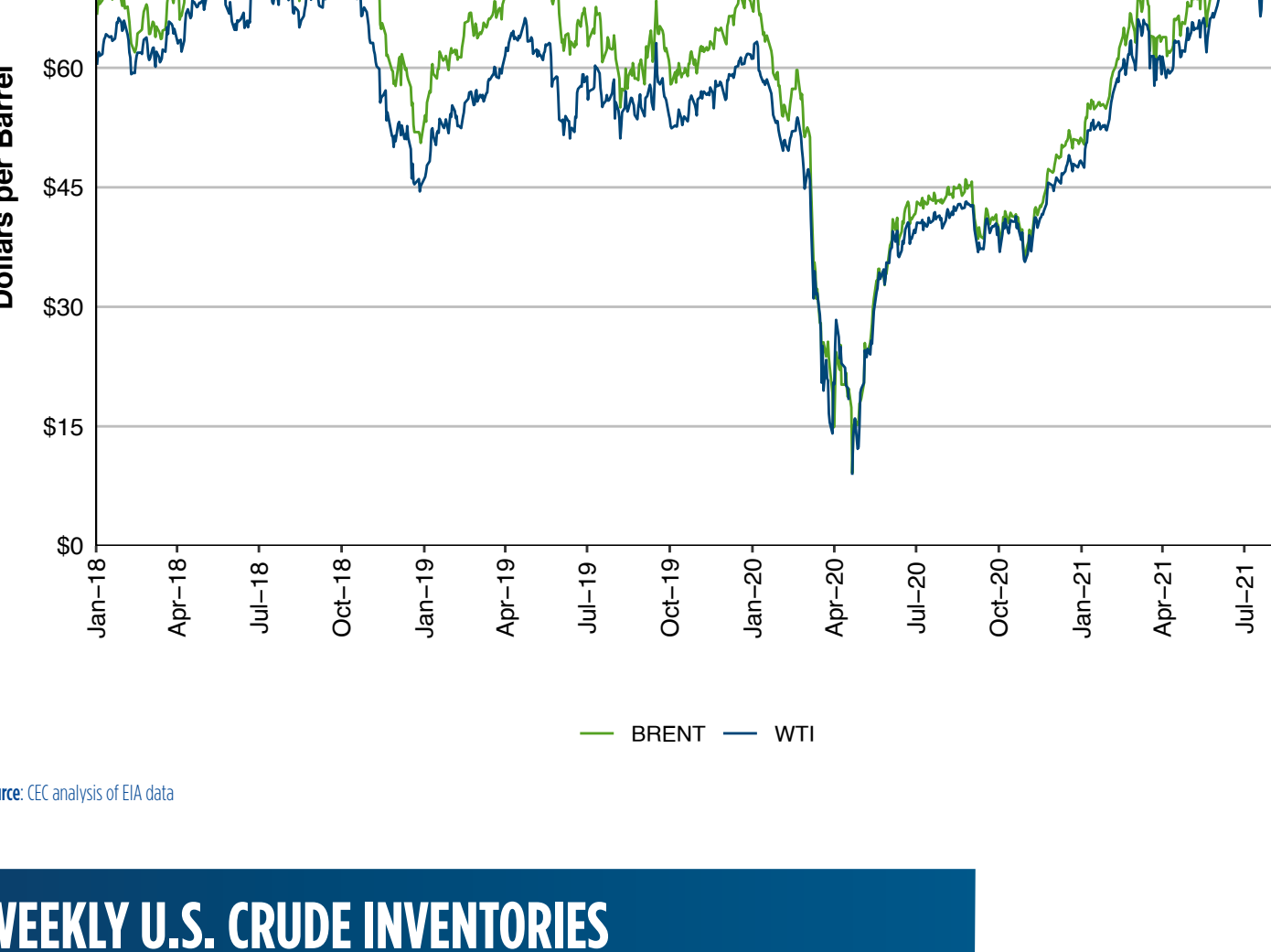
Source: EEC analysis of EIA data

PRODUCTION COST PER BARREL BY COUNTRY (2016)



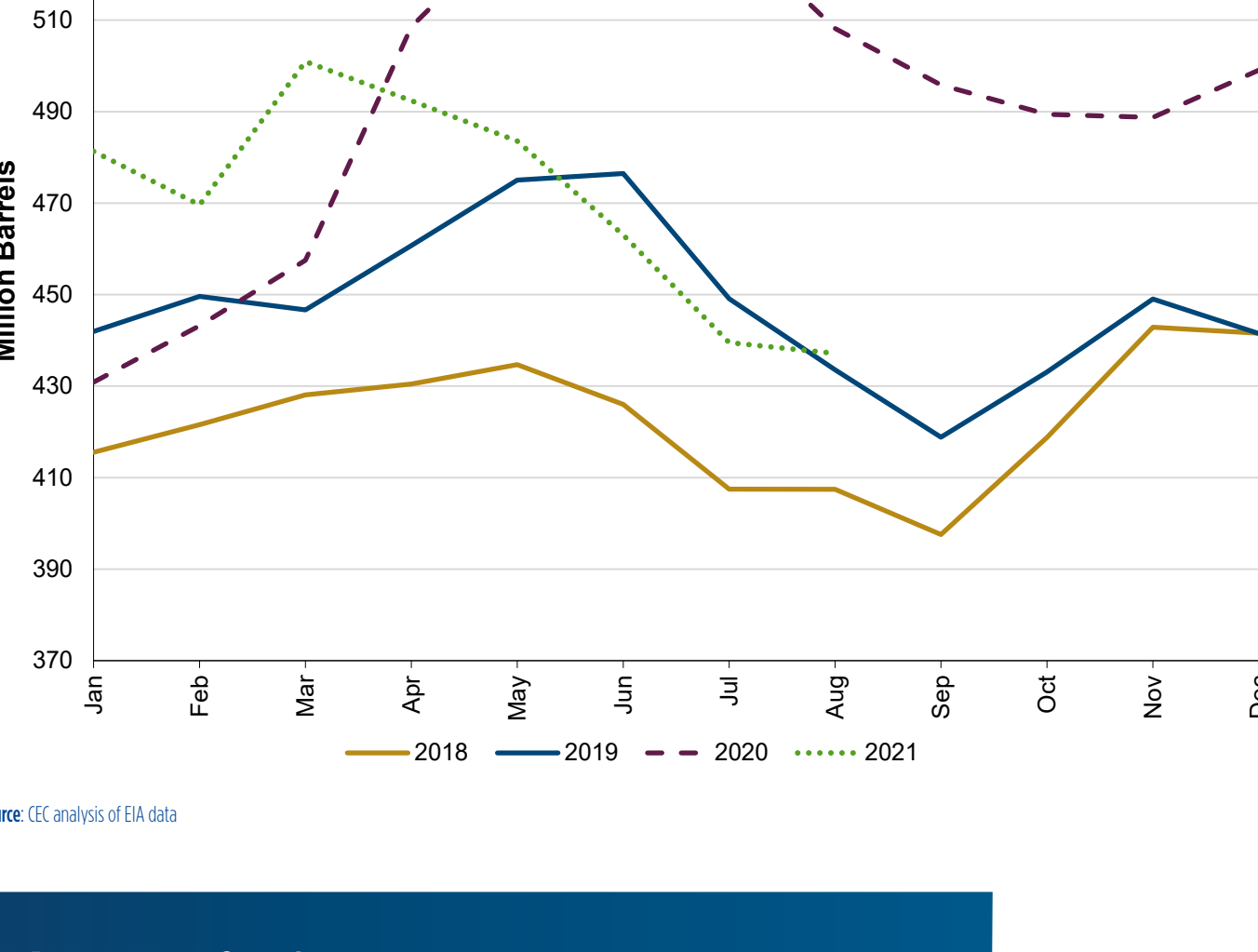
Source: Wall Street Journal via Rystad Energy

INTERNATIONAL AND DOMESTIC CRUDE PRICES



Source: EEC analysis of EIA data

WEEKLY U.S. CRUDE INVENTORIES



Source: EEC analysis of EIA data

FEATURED TOPIC

OPEC INFLUENCE ON U.S. CRUDE OIL

WHO IS OPEC?

The Organization of the Petroleum Exporting Countries (OPEC) is an intergovernmental organization of 13 oil exporting countries. According to OPEC, their mission is coordinating and unify the petroleum policies of its member countries to ensure the stabilization of oil markets and secure a regular supply of petroleum to consumers, steady income to producers, and a fair return on capital for investors in the petroleum industry.

The organization was founded in 1960 by Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela to secure profitable prices and keep the market free from restrictions. OPEC is a leader in the petroleum industry, known for keeping prices profitable while reducing market competition. In 2016, OPEC countries coordinated with 10 non-member countries in an effort to have more influence over the global oil market. In 2016, OPEC countries coordinated with 10 non-member countries in an effort to gain more control over the global oil market. OPEC and non-member countries, collectively referred to as OPEC+, work together to secure energy supply and lasting stability for the benefit of producers, consumers, investors, and the global economy. OPEC Countries by Crude Oil Production lists the 13 OPEC member countries and the 10 non-member countries in descending order of oil production in 2020.

According to EIA, OPEC member countries produce about 40 percent of the world's crude oil. OPEC's oil exports represent about 60 percent of the total petroleum traded internationally. Such large market share means OPEC's actions heavily influence international oil prices. International oil prices are relevant to California because roughly half of the state's crude oil imports are sourced from foreign countries. In 2020, California sourced 47.5 percent of its crude oil supply from foreign countries, of which 54 percent of imports were from OPEC+ countries.

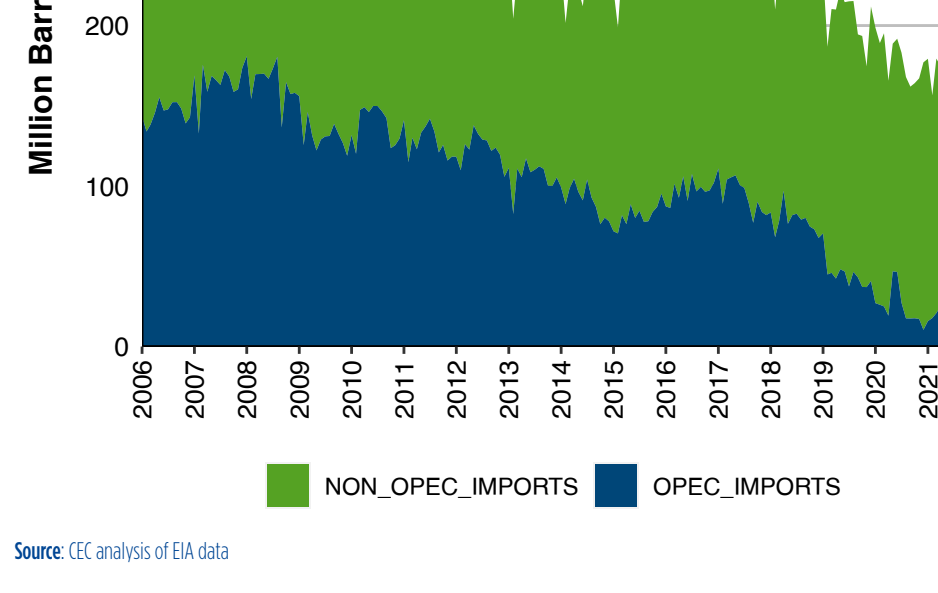
The remainder of California's oil is produced in-state and imported from Alaska. So while the West Texas Intermediate (WTI) is considered the benchmark for U.S. oil prices, California's oil market more closely follows the Brent international prices. This makes OPEC's actions influential over California's oil prices.

INFLUENCE ON U.S. OIL SUPPLY

Prior to 2010, the U.S. heavily imported oil from foreign countries including OPEC+ countries. With the development of new drilling technologies in the U.S., like hydraulic fracturing and horizontal drilling, difficult-to-extract oil reserves in shale rock formations became accessible. After 2010, domestic crude oil production increased while crude oil net imports decreased. U.S. Production and Net Imports of Crude Oil shows the inverse relationship between the two. Net imports are calculated as the total imports of crude oil (thousands of barrels per day) minus the total U.S. crude oil production surpassed U.S. net imports of crude oil at 7.8 million barrels per day. By the end of 2018, U.S. crude oil production reached 11.9 million barrels per day, surpassing Saudi Arabia and Russia to become the largest global crude oil producer.

Monthly Crude Oil Imports to the U.S. provides a more detailed look at the crude oil imports to the U.S. from OPEC and non-OPEC countries. The steady decline in foreign imports has dropped from 369 million barrels in 2006 to 215 million barrels in 2020, a 42 percent decrease. Although total

MONTHLY CRUDE OIL IMPORTS TO THE U.S.



Source: EEC analysis of EIA data

imports to the U.S. have declined, a majority of the reduction comes from the decrease in imports from OPEC countries. Total imports in 2006 from OPEC countries were 174 million barrels, but dropped 83 percent in 2020 to 30 million barrels. Even though OPEC lost a large purchaser in their market, they still hold significant influence over global prices due to the flexibility of their production practices.

While U.S. reliance on foreign oil has declined, Saudi Arabia remains the global leader in oil exports followed by Russia and Iraq. Therefore, these OPEC+ countries have the most control over crude oil prices.

INFLUENCE ON PRICES

OPEC attempts to manage oil production of its member countries by setting crude oil production targets, or quotas, for its members. When production quotas get decreased, it usually leads to an increase in crude prices since world crude oil supply becomes artificially restrained. The reverse holds true as well: when production quotas are increased, crude price tends to drop due to the influx of supply. Compliance of OPEC members with OPEC quotas is mixed because production decisions are ultimately in the hands of the individual members.

A primary reason OPEC remains influential is because these countries, especially Saudi Arabia, have the lowest production costs and can still maintain profit margins at low oil prices, regardless of market conditions. Production Cost per Barrel by Country (2016) provides a breakdown of the associated production costs of one barrel of crude oil in certain countries. Most notable is how the top producers of OPEC+ have the lowest costs compared to the rest of the world. Iran, Iraq, and Saudi Arabia can all produce a barrel of crude oil for about \$10 or less. These countries are large oil fields that produce oil relatively easily and require little to no well stimulation. In addition to the ease of production, their fields are located near coastal hubs that make transportation costs low. Russia, the second largest producer in the collective, also has some of the cheapest oil to produce but due to taxes the associated costs are nearly doubled.

In March 2020, Saudi Arabia and Russia got into an oil price war and the price of oil fell dramatically. The price war began over proposed oil production cuts due to the COVID-19 pandemic and disagreements over prices. Saudi Arabia announced discounted prices and increased production to pressure Russia which caused oil markets to react. As a result, Brent prices fell 24 percent and WTI prices fell 25 percent. In the midst of the Saudi-Russia price war, demand for transportation fuels was dropping due to the COVID-19 pandemic and oil prices fell further. The combination of increased supply and decreased demand led to historically low oil prices. In April 2020, OPEC+ reached an agreement to restrict production, which was maintained through the

year and gradually eased during 2021. The return of demand and constrained supply has increased crude prices to higher than they were in January 2020, before the pandemic.

CURRENT AND FUTURE OUTLOOK

On July 18, OPEC+ agreed to increase monthly crude oil production beginning August 2021 since their forecasts anticipate crude demand to increase as world economies recover from the pandemic. Given OPEC+'s market significance, their increases to the global supply brought Brent international (and consequently WTI) crude prices down in August 2021. WTI and Brent averaged above \$70 for the months of June and July. For August the monthly averages dipped to \$71 for Brent and \$68 for WTI. International and Domestic Crude Prices shows how crude prices have recovered since the demand drops in 2020. Current prices look similar to what they were during the summer months of 2018. The Brent-WTI differentials are also much tighter in 2021 compared to 2018. So far in 2021, the difference between Brent and WTI prices has averaged \$2.86, over \$3.00 less than the 2018 average (\$6.12).

Although prices might look like 2018 prices, Weekly U.S. Crude Inventories for 2021 are higher than they were in 2018. Weekly U.S. inventories never dropped below 430 million barrels in summer 2021, while summer 2018 inventories averaged 414 million barrels. Looking back at U.S. Production and Net Imports of Crude Oil, monthly crude production rates for 2021 are slightly higher than what they were in 2018. Crude oil production for the month of June 2021 was 10.6 million barrels per day and 11.3 million barrels per day in June 2021.

Since crude inventories are within historical levels, there is no immediate price pressure from the supply side. Crude inventories depend on production, demand, and exports, so changes in any one of these may alter inventory levels. For example, the effects from Hurricane Ida have taken off a large portion of the nation's offshore oil production, which could affect prices if demand starts to pick up again.

Price volatility will always be present in the crude oil markets, especially now with COVID variants causing renewed concerns about travel and restrictions. Contracts for crude oil futures are already in backwordation (future contracts less expensive than current spot prices), suggesting that industry expects crude demand to decrease in the upcoming months (contrary to the OPEC demand forecast). Even with fluctuations in global crude demand, OPEC and its allied countries have demonstrated over the years their ability to flexibly respond to changing market conditions.

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