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## Why the Disruption of Libyan Oil Has Led to a Price Spike

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HOUSTON — Crude oil prices reached \$100 a barrel in the United States on Wednesday, the highest price in more than two years, as Middle East oil flows were interrupted this week for the first time since the region's turmoil began.

Multinational oil companies have curtailed production in Libya as protesters engage in violent confrontation with the government of Col. Muammar el-Qaddafi. Analysts estimate that as many as a million barrels of Libyan oil a day have been removed from world markets in recent days, and investors fear that more oil production could be disrupted if the unrest spreads to other crucial producing nations, like Algeria.

More broadly, economists are concerned that if oil prices stay high this year, they could slow the already fragile global economic recovery. As a general rule of thumb, every \$10 increase in the price of a barrel of oil reduces the growth of the gross domestic product by half a percentage point within two years.

Libya produces less than 2 percent of the world's oil, and exports little to the United States. But the high quality of its reserves magnifies its importance in

world markets.

Libya's "sweet" crude oil cannot be easily replaced in the production of gasoline, diesel and jet fuel, particularly by the many European and Asian refineries that are not equipped to refine "sour" crude, which is higher in sulfur content. Saudi Arabia has more than four million barrels of spare capacity and has promised to tap it if necessary, but that capacity is mostly for sour grades of oil.

Should the turmoil in Libya last for more than a few weeks, oil experts predict that European refiners will be forced to buy sweet crude from Algeria and Nigeria, two principal sources of sweet crude for the United States. That would probably push up American gasoline prices, which have already risen 6 cents a gallon over the last week to an average of \$3.19 for regular grade.

"It will force all sweet crude refiners into a bidding war," said Lawrence J. Goldstein, a director at the Energy Policy Research Foundation, an organization partly financed by the oil industry. "Quality matters more than quantity."

Sweet crude is particularly well suited for producing diesel fuel, which is far more popular as a transportation fuel in Europe than in the United States. Sour crudes are more expensive to refine, but American refineries are typically outfitted with equipment to refine them because so much oil imported to the United States comes from Latin America, where many oil reserves are sour.

The last time there was a shortage of sweet crude, in 2007 and early 2008, oil prices surged to more than \$140 a barrel, although that shortage was caused mostly by spiraling demand and not a sudden cut in supply.

The price of the benchmark American oil, West Texas Intermediate, briefly touched \$100 on Wednesday before settling at \$98.10 in New York trading, up

\$2.68 from Tuesday. In London, the benchmark Brent crude rose \$5.47, to \$111.25.

A gauge of jet fuel prices, known as Gulf Coast jet fuel, soared 10.7 cents, to \$2.99 a gallon in the spot market on Wednesday, putting pressure on airlines to raise fares. Meanwhile, diesel prices have risen 4 cents in the last week, to \$3.57 a gallon, the highest level since October 2008.

Michael Lynch, president of Strategic Energy and Economic Research, a consultancy firm, said the Brent benchmark was headed for \$120 a barrel while West Texas Intermediate would reach \$110 “in the near term.”

That could easily push the national average price for a gallon of regular gasoline to \$3.50, which economists say would cut into consumer discretionary spending, like dining out. Typically, every one-cent increase in the pump price of gasoline takes more than \$1 billion out of consumer pockets over a year.

**Bernard Baumohl**, chief global economist at the Economic Outlook Group, said in a research note that the turmoil “will slow the economic recovery this year, as both consumers and businesses look on with concern and begin to reconsider their spending plans.”

Still, the United States remains less directly vulnerable than most European or Asian nations because its large refineries can process both sweet and sour crudes. A versatile refinery fleet makes the United States an exporter of both diesel and jet fuel.

If supplies of sweet oil become tight, the United States can release supplies from the Strategic Petroleum Reserve, but that would probably have only a marginal effect on prices.

Europe is most immediately affected by the Libyan crisis. More than 85 percent of Libya's exports go to Europe, with more than a third of that going to Italy. Most of the rest goes to Asia. About 5 percent is sent to the United States.

ENI, the Italian oil company, Repsol of Spain, Total of France, Statoil of Norway, and [BASF](#), the German chemical and energy company, have halted much if not most of their oil production in Libya and moved personnel out of the country.

In a research note, [Barclays](#) Capital estimated that around one million barrels a day of production had been shut down, or more than half the country's total. Much of Libya's oil producing capacity and its port facilities are in the eastern part of the country, where the government has lost the most control.

That leaves the eyes of the oil world on neighboring Algeria, another country with a history of unrest. Algeria is the seventh-biggest source of American oil imports.

There have been sporadic protests against high food prices and unemployment in Algeria over the last several weeks, including at least two large demonstrations in Algiers demanding the resignation of President Abdelaziz Bouteflika.

"You have a powder keg in Algeria with social problems, ethnic problems and an Islamist organization blended together and overlapping," said Michael J. Economides, a professor of engineering and energy economics at the University of Houston. "Many refineries would go into paroxysm if they lose Libyan and Algerian oil."

Most Middle East oil production is controlled by national oil companies that operate as virtual state agencies and coordinate their security needs with the national militaries.

But that is not the case in either Libya or Algeria, where American and European oil companies have invested heavily over the last decade to bolster production that had been lagging. Foreign companies have shown in Libya, and to a lesser extent in Egypt, that they will shut down exploration and production and close their offices rather than jeopardize the safety of their employees.

*Christine Hauser contributed reporting from New York.*