



Statement of

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Before

Committee on Energy and Natural Resources  
U.S. Senate

Hearing on

# **“Challenges and Opportunities for Oil and Gas Development in Different Price Environments”**

April 26, 2016

**Congressional Research Service**

<https://crsreports.congress.gov>

TE10010

Chairman Murkowski, Ranking Member Cantwell, Senator Heinrich, Members of the Committee, my name is Michael Ratner. I am a Specialist in Energy Policy at the Congressional Research Service. CRS appreciates the opportunity to testify on the important issue of oil and natural gas development in different price environments. In accordance with our enabling statutes, CRS takes no position on policy or legislation.

## Introduction

Why prices for oil and natural gas have declined so drastically in recent years is directly related to the advent of U.S. shale gas production and the application of related techniques to the oil sector. The drop in oil prices since mid-2014 has attracted a lot of attention, and has prompted producers to improve their production methods. This has contributed to the resiliency of U.S. output. U.S. crude oil production in January 2016, the latest data available, remained over 9 million barrels per day, although it was the fourth month of decline, while prices remained low. Natural gas is different. U.S. natural gas production continues to rise, despite sustained low prices. In January 2016, U.S. natural gas production hit a new monthly high and in March the United States started exporting liquefied natural gas from the lower-48.

## Prices

In the United States, oil and natural gas prices are no longer linked. Outside of the United States, contract natural gas prices tend to be indexed to oil, but that is changing. Prices for both commodities are currently low, compared to just five years ago. Regardless of the price level, some analysts contend that external costs such as national security and the environment are not fully incorporated into the price, although analysts disagree about the magnitude of the externalities. Oil is in the \$40 per barrel range, up recently but still relatively low, and U.S. natural gas is under \$2 per million British thermal units. One does not have to think far back to when prices for both were much higher. In 2011, oil was close to \$100 per barrel and natural gas was about \$4 per million British thermal units. Also, keep in mind that ten years ago shale gas and tight oil were almost unknown. Any price assumptions in my testimony are not forecasts, and CRS has not evaluated the likelihood of any scenario.

## Producers

In a low price environment, both oil and natural gas producers as well as service companies face financial challenges. Companies have cut capital expenditures, laid off workers, filed for bankruptcy protection, gone into bankruptcy, sold assets, or been downgraded by credit agencies. Cutting capital expenditures, in particular, will have effects on production beyond a five-year time frame, especially in more challenging areas. However, the responsiveness of shale production could potentially smooth any related price effects. The longer prices stay low the harder it will be for companies to survive. Nevertheless, some companies will remain financially solid and will weather low prices better. As prices rise companies will reassess their strategies.

## Consumers

On the other hand, consumers of all types should benefit from low prices. Individuals and companies have seen their oil and natural gas related expenses decline. How consumers view the future of oil and natural gas, especially prices, influences their decision on purchasing new equipment that uses oil or natural gas. This will have an impact on future production needs and prices. As an example, prior to the fall in oil prices there was a lot of discussion on sectors where natural gas could replace oil products, mainly long-haul trucking, rail, and marine. Now, there is less talk of substitution in trucking or rail, although marine

remains an area of interest, which appears to be driven more by regulations than by prices. Similarly on electricity, there has been a shift to natural gas-fired generation versus coal. While this has mostly been an increase in utilization, new construction tends to focus on natural gas or renewables, in part because of regulatory issues and financial incentives. Oil remains the dominant fuel for transportation and different price levels may affect the fuel efficiency of a car one buys, but it is not as likely to significantly influence the fuel type consumed.

## Other Issues

There are a variety of other areas that will be affected by high or low prices, including related sectors like infrastructure, trade, the environment, and geopolitics, among other topics. As I mentioned, the United States began exporting liquefied natural gas earlier this year. With the lifting of restrictions at the end of last year, exporting crude oil from the United States has become easier. Regarding the environment, there will be positive and negative consequences that are outside my expertise. For geopolitics, countries that rely on oil and natural gas revenues for their budget have been hurt by low prices. This includes both U.S. allies and adversaries. Finally, oil and natural gas prices are big economic factors; however, the U.S. economy is well diversified and not reliant on state-controlled energy companies. Nevertheless, some local economies will benefit, while others do not depending upon the scenario.

Thank you for the opportunity to appear before the committee. I will be happy to elaborate on my opening remarks and address any questions you may have.

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