The Global Impact of US Shale

WASHINGTON, DC – The biggest innovation in energy so far this century has been the development of shale gas and the associated resource known as “tight oil.” Shale energy ranks at the top not only because of its abundance in the United States, but also because of its profound global impact – as events in 2014 will continue to demonstrate.

America’s shale gas and tight oil are already changing global energy markets and reducing both Europe's competitiveness vis-à-vis the US and China’s overall manufacturing competitiveness. They are also bringing shifts in global politics. Indeed, how shale energy may change America’s role in the Middle East is becoming a hot topic in Washington, DC, and in the Middle East itself.

This “unconventional revolution” in oil and gas did not come quickly. Hydraulic fracturing – known as “fracking” – has been around since 1947, and initial efforts to adapt it to dense shale began in Texas in the early 1980’s. But it was not until the late 1990’s and early 2000’s that the specific type of fracturing for shale, combined with horizontal drilling, was perfected. And it was not until 2008 that its impact on the US energy supply became notable.

Since then, the industry has developed fast, with shale gas currently accounting for 44% of total US natural-gas production. Given abundant supply, US gas prices have fallen to a third of those in Europe, while Asia pays five times as much. Tight oil, produced with the same technology as shale gas, is boosting US oil production as well, with output up 56% since 2008 – an increase that, in absolute terms, is larger than the total output of each of eight of the 12 OPEC countries. Indeed, the International Energy Agency predicts that in the next few years the US will overtake Saudi Arabia and
Russia to become the world’s largest oil producer.

Five years ago, it was expected that the US would be importing large volumes of liquefied natural gas to make up for an anticipated shortfall in domestic production. Now the US is not importing any LNG – thereby saving $100 billion on its annual import bill. At current prices, the increase in US oil production has been cutting another $100 billion from that bill. In addition, the unconventional revolution supports over two million jobs.

The global impact has been enormous. Much of the new global LNG capacity was developed with the US in mind. Now, with the US market cordoned off by cheap domestic gas, some of that LNG is going to Europe, introducing unexpected competition for traditional suppliers Russia and Norway.

For Japan, the lack of US demand for LNG proved fortunate in the aftermath of the disaster at the Fukushima Daiichi nuclear-power plant in 2011. Much of that LNG could go to Japan to generate electricity, replacing the electricity lost from the total shutdown of nuclear power.

Many other countries are reassessing their own energy policies in light of the unconventional-energy revolution. China, seeing the speed and extent of US shale-gas development, has placed a high priority on developing its extensive unconventional gas resources. For China, replacing coal with natural gas in electricity generation is essential to mitigate public discontent and health problems stemming from the heavy burden of urban air pollution.

The rise of US shale energy is also having a broader global economic impact: American shale gas is changing the balance of competitiveness in the world economy, giving the US an unanticipated advantage. Indeed, inexpensive natural gas is fueling a US manufacturing renaissance, as companies build new plants and expand existing facilities.

Throughout Europe, industrial leaders are becoming increasingly alarmed by enterprises’ loss of competitiveness to factories that use low-cost natural gas and the consequent shift of manufacturing from Europe to the US. This is particularly worrying in Germany, which relies on exports for half of its GDP, and where energy costs remain on a stubbornly upward trajectory. These high costs mean that German industry will lose global market share.

Whatever their targets for shifting their energy mix, European Union countries, already suffering from high unemployment, will be forced to reconsider high-cost energy strategies or face weakening competitiveness and loss of jobs.
The geopolitical impact is already evident. For example, Iran is now seriously at the table in nuclear negotiations, which might well not have happened were it not for tight oil. When strict sanctions were imposed on Iranian oil exports, many feared that world oil prices would spike, and that the sanctions would ultimately fail, owing to insufficient alternative supply. But the increase in US oil production over the last two years has more than made up for the missing Iranian output, enabling the sanctions (bolstered by parallel financial measures) to work – impelling Iran to negotiate seriously, which it was unwilling to do only two years ago.

In Arab capitals, anxiety is mounting that a rapid increase in US tight-oil production will fuel wholesale US disengagement from the Middle East. But this overstates the extent to which direct oil imports shape US policy toward the region. To be sure, rising US output, combined with greater automotive fuel efficiency, will continue to reduce US oil imports. And, while the US will still import oil in the years ahead, more of it will come from Canada (notwithstanding the debate about the Keystone XL pipeline).

But the fact is that Middle East supply has not loomed very large in the overall US petroleum picture for some time. After all, even before the growth of tight oil, the Persian Gulf provided only about 10% of total US supply. It was not direct US oil imports from the Middle East, but rather oil’s importance to the global economy and world politics, that helped define US strategic interests.

The Middle East will continue to be an arena of great geopolitical importance, and its oil will be essential to the functioning of the global economy. This implies that the region will likely remain a central strategic interest for the US.

Overall, however, the shale-energy revolution does provide a new source of resilience for the US and enhances America’s position in the world. The emergence of shale gas and tight oil in the US demonstrates, once again, how innovation can change the balance of global economic and political power.

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