

Summary for Policymakers

AN EXCERPT FROM THE CSIS REPORT “NEW ENERGY, NEW GEOPOLITICS:
BALANCING STABILITY AND LEVERAGE”

In the last ten years, U.S. shale gas and tight oil production has skyrocketed. Between 2005 and 2014, U.S. production of crude oil and natural gas has risen by nearly 65 and 34 per-cent, respectively, due to tight oil and shale gas development.¹ The shale gas supplies from Pennsylvania alone equal the entire natural gas export capacity of Qatar, the world’s second largest natural gas exporter in 2012.² And the increase from light tight oil production in places like North Dakota and Texas over the last five years is equivalent to Iraq’s current produc-tion levels. These increased energy supplies have fed not only national but global markets, helping to offset other market disruptions and stabilize prices, to the benefit of many.

The benefits thus far could pale in comparison to those that might arise in the future. New production techniques have meant that resource deposits around the world previously considered uneconomic to access have become “technically recoverable,” significantly add-ing to the global resource balance sheet. According to one preliminary assessment, 137 shale formations in the United States and 41 other countries hold around 10 percent of technically recoverable global crude oil and 32 percent of global natural gas.³ Deposits beyond the coun-tries examined increase these recoverable amounts still further. For a world increasingly de-pendent on energy to drive economic growth and prosperity, this is a good-news story.

For those who look at the world through a geostrategic lens, however, assessing the im-pact of these new resources is more complex. They raise questions about who stands to gain, who stands to lose, and what opportunities for advantage might emerge in both the energy and geopolitical realms. Since the advent of the so-called “shale gale” or “unconventionals revo-lution,” myriad energy analysts, geopolitical strategists and foreign policy experts, industry titans, and government officials, including heads of state, have offered their views on the po-tential strategic impact of the changing energy landscape on global economic and geopolitical relations. Some see limited significance, while others predict profound and radical change.

** In addition to the full report, CSIS will publish three additional “contributing reports”—one on energy, one on geopolitics and national security, and one on scenarios, strategies, and pathways. These contributing reports will offer greater detail to the analysis presented in this report. They will be posted on the CSIS website in spring 2014 (<http://csis.org/program/geostrategic-implications-unconventional-oil-and-gas-revolution>).

1. Calculations based on U.S. Energy Information Administration (EIA). 2014 projections from EIA, *Short-Term Energy Outlook (STEO)* (Washington, DC: EIA, November 2013), <http://www.eia.gov/forecasts/steo/archives/nov13.pdf>; data for 2005 is from EIA, *Short-Term Energy and Summer Fuels Outlook (STEO)* (Washington, DC: EIA, April 2014), <http://www.eia.gov/forecasts/steo/index.cfm>.

2. BP, *BP Statistical Review of World Energy 2013* (London: BP, 2013), http://www.bp.com/content/dam/bp/pdf/statistical-review/statistical_review_of_world_energy_2013.pdf.

3. EIA, “Technically Recoverable Shale Oil and Shale Gas Resources: An Assessment of 137 Shale Formations in 41 Countries Outside the United States,” June 13, 2013, 10, <http://www.eia.gov/analysis/studies/worldshalegas/>. No-tably, this assessment captures only a portion of the new energy potential, as it does not include some of the most hydrocarbon-rich countries in the Middle East and elsewhere.

Given the scope and intensity of the discourse surrounding this new source of energy production and its potential effects, the Center for Strategic and International Studies (CSIS) believed its expertise in energy, regional affairs, and national security could provide a useful and unique synthesis of the complex interactions under debate. Assembling a broad multifunctional team, CSIS undertook a year-long exploration of the potential geostrategic implications of shale gas and tight oil, with the intention of providing policymakers with a structured way to consider the potential risks and rewards of the new shale gas and tight oil resources.⁴ The analysis does not span the entire globe, but represents an overarching survey across categories of key international players, with deeper analysis in certain cases.⁵

Energy Impacts to Date

Though still relatively new, the U.S. shale gas and tight oil revolution is leading to major changes in the energy landscape, the most significant of which are summarized below.

SHIFTING ENERGY MARKETS, TRADE FLOWS, AND INVESTMENTS

U.S. tight oil and shale gas production along with slower demand growth has decreased the United States' need for imports. As a result, traditional U.S. suppliers are increasingly servicing other markets.⁶ At the same time that U.S. energy imports are falling, its exports are rising. New sources of energy are also altering commercial competitiveness and investment decisions for both companies and countries. As a result, the hierarchy of energy projects is being reordered, at least temporarily shifting capital investments to the U.S. energy sector and away from more expensive and/or risky locations. The sudden surge in U.S. energy supply and consequent reduction in natural gas prices have made North America among the most attractive and competitive places in the world to locate energy-intensive endeavors.

CAUTION ABOUT FORECASTING FUTURE PRODUCTION

It is risky business to extrapolate long-term conclusions from a resource with such a short production history. While the resource potential is large, there remains considerable uncertainty regarding any given reservoir's ultimate production. Thus far, however, technology and production practices have exceeded expectations, resulting in higher and higher production estimates as experience grows.

4. For the purposes of this report, when we discuss unconventional oil and gas in the context of the United States, we use the terms shale gas and tight oil as they are at the heart of the U.S. oil and gas production surge under examination and are responsible for much of the impacts analyzed in this report. When we discuss the potential for the production of unconventional resources outside of the United States, we use the term unconvensionals because the authors recognize that oil sands, heavy oil, coal bed methane, and other types of unconventional oil and natural gas have significant potential around the world and are often included under the "unconventional" category. Similarly, when discussing the future trajectory of production, we use the term unconvensionals because future assessments look at the global potential in addition to the United States.

5. This report focuses on North America, Asia, Europe, the Middle East, and Russia. Though it does not go in depth on Africa, Latin America, or Southeast Asia, these regions are touched on throughout the report.

6. Imports of gas and oil are down 28 and 16 percent, respectively, since 2005, based on calculations data from EIA.

ADDING URGENCY TO ALREADY-ONGOING REEXAMINATIONS OF ENERGY POLICY

The massive potential for additional development of unconventional oil and gas resources is prompting many countries to rethink their energy policies to either take advantage of their own unconventional resource base or respond to some of the changes brought about by the impact of the U.S. oil and gas production surge.

REORDERING OPTIONS TO DEAL WITH CLIMATE CHANGE

Many in the public and private sector alike are seeking ways to prioritize the role that natural gas plays in the energy economy, and proponents of the “green agenda” have split over whether to endorse or resist natural gas as a possible “bridge fuel” that promotes near-term emissions reduction as cleaner energy solutions are developed. Natural gas substitution in some economies is driving higher coal usage elsewhere, complicating previous positions on how best to navigate a path to a lower-emission future.

The Geopolitical Impacts of Global Energy Shifts

While concrete geostrategic impacts thus far have been limited, there have clearly been changes in national and international perceptions that may or may not align with new realities. Big energy producers like Russia and Saudi Arabia, producers aspiring for a greater role in world markets like Iran, Iraq, and Mexico, revenue-dependent countries like Nigeria, Yemen, and Algeria, large energy consumers like China, Europe, and Japan, and, as already discussed, the United States, have all shifted their domestic or foreign policies in response to perceived changes in strategic context resulting (or expected to result) from tight oil and shale gas development.

BIG PRODUCER: RUSSIA

- Reinforces pre-existing reorientation toward Asian markets
- Adds to existing energy-sector pressures, reinforcing the necessity of reform
- Lessens others’ interests in the Arctic, to Russia’s possible advantage

BIG PRODUCER: SAUDI ARABIA

- Reinforces a reorientation toward Asian markets that were already underway
- Complicates Saudi Arabia’s role as a market balancer
- Feeds a broader concern over the United States’ continued commitment to stability in the Middle East

REENTRANTS: IRAN, IRAQ, AND MEXICO

- Raises the stakes for each of the reentrants to get back on the market

- Puts increased pressure on Organization of the Petroleum Exporting Countries (OPEC) cohesion
- Accelerates internal pressures for reform

REVENUE-DEPENDENTS

- Raises concern for potential modest future price decline and risks of instability

CONSUMER: CHINA

- Enhances China's energy security position but does not alleviate its overall vulnerability
- Dampens China's "United States in decline" narrative
- Offers new possibilities to shift the U.S.-China energy conversation from competition to cooperation

CONSUMER: EUROPE

- Helps the United States to rebound economically in ways that widen the gap with Europe and exacerbate competitiveness concerns
- Increases pressures on Europe's green agenda
- Does little to alleviate concerns with unpredictable suppliers in Russia and the Middle East and North Africa

CONSUMER: JAPAN

- Aided Japan after Fukushima, but unlikely to offer long-term price relief
- Complicates intra-Asian dynamics

The Shale Gas and Tight Oil Revolution and U.S. National Security

The link between energy and national security is multifaceted, complex, and often opaque. In general terms, there are two broad areas where the shale gas and tight oil revolution has raised questions at home and abroad: those relating to changed perceptions and those relating to changed realities.

PERCEPTIONS

- Presents limited examples of a greater ability for the United States to exercise global leadership due to the shale gas and tight oil revolution
- Raises questions around the world about U.S. willingness to exercise global leadership

REALITIES

- Has done little to relieve pressures on traditional allies and partners in Europe and Asia
- Increases the potential for market instability, strained governance, and unrest for energy import- and export-dependent states
- Exacerbates the gap between U.S. national and popular interests

Scenarios, Pathways, and Policy Recommendations

The evolution of shale gas and tight oil production has occurred at such a rapid pace that U.S. policymakers have been challenged to respond with a largely unexpected new energy posture for the United States. The difficulty of setting a clear path is compounded by the uncertainty around the future of unconventional oil and gas development: Will it remain essentially a U.S. phenomenon, or will other countries begin to realize their own production potential? How long might production continue to rise, how long would it take to decline? To craft an energy strategy moving forward, the study team evaluated a range of potential futures in regard to global unconventional oil and gas production to better inform assessments of the most robust strategy going forward.

SCENARIOS

The study evaluated detailed models for four potential futures out to 2025,⁷ augmented by a higher-level projection of how each might extend through 2040. The scenarios are illustrative and not meant to encompass the full range or complexity of possible energy futures. Their basic features are as follows:

Baseline Scenario: This scenario assumes that unconventional oil and natural gas production is basically and predominantly a U.S. (in the case of oil) and North American (in the case of natural gas) story.

Breakthrough Scenario: This scenario assumes that the U.S. experience continues apace, but also that the vast stores of unconventional oil and gas around the world are unlocked as other nations successfully overcome the cost, technological, and environmental barriers inhibiting current production.

Failure Scenario: In this scenario, unconventional oil and gas around the world remain undeveloped, and the success experienced in the United States begins to reverse itself toward the end of this decade. By 2025, the United States is back to an oil and gas production profile that looks very similar to what was expected before the current boom took off (i.e., the strategic outlook of 2005–08).

7. For the purposes of this analysis, the study team, in cooperation with the original authors, used modified versions of scenarios proposed in Energy Research Institute of the Russian Academy of Sciences (ERI RAS), *Global and Russian Energy Outlook up to 2040* (Moscow: ERI RAS, 2013), http://www.eriras.ru/files/Global_and_Russian_energy_outlook_up_to_2040.pdf; and International Energy Agency (IEA), *World Energy Outlook 2011: Are We Entering a Golden Age of Gas?* (Paris: IEA, 2011), <http://www.worldenergyoutlook.org/goldenageofgas/>.

Gas Breakthrough Scenario: Finally, this scenario assumes that unconventional gas production increases globally, but that tight oil maintains a minimal share of global oil production.

Each of these scenarios could arise from a variety of factors and trends, and could be significantly altered by factors that include national policies, political instability, economic shifts (either global or regional), and technological advances.

SCENARIOS' IMPLICATIONS

The four scenarios collectively portray a wide range of potential outcomes for unconventional production, with different implications and potential winners and losers.

Overarching Insights:

- A natural gas breakthrough scenario could be transformative
- The variation in unconventional oil outlooks is not that significant
- The shift toward markets in the East is the defining feature of every possible future
- A failure scenario is most likely to create additional impetus for conflict or tension
- Climate goals must be more actively pursued no matter how the future unfolds

Producers:

- The United States is most sensitive to alternative futures
- The next decade will prove critical for Russia
- Implications for OPEC countries vary

Reentrants, new entrants, and resource-dependents:

- Shale failure is preferable for certain producers if unconvensionals don't exist at home
- New Africa production will face near-term challenges but is likely to work out in the long run

Consumers:

- All major consumers benefit from abundance
- Promoting unconventional oil and gas development could reduce import dependence in some places, especially China
- Resource competition in Asia could intensify and shift to the Indian Ocean over time
- Europe will continue to face challenges in every possible scenario explored

PATHWAYS

U.S. policymakers face a choice between two paths for managing this new energy posture—what this report terms “energy stability” or “energy leverage.” The energy stability pathway suggests the United States’ energy advantage should be used to enhance energy security around the world, on the theory that more stable energy markets will foster strong economies and enhance geopolitical stability. The energy leverage pathway views the energy advantages presented by the U.S. oil and gas production as tools that can be employed in the service of broader geopolitical or economic objectives.

Ultimately, either by design or by accident, the United States and other countries are unlikely to pursue a purely energy-stability or leverage-oriented pathway. This is because energy policy is a mix of complex domestic and international factors, and geopolitics is even more complicated by the larger universe of energy- and non-energy-related elements that influence the relationships among countries. Rather than all this uncertainty leading to stasis, however, it is precisely the unknown nature of energy developments, geopolitical forces, and national security interests that argues for steering as much as possible toward an energy-stability pathway.

Recommendations

U.S. policymakers should take the following actions to implement this approach:

1. Promote greater production and more efficient energy use at home and abroad. The United States has a well-established track record of promoting common energy principles, albeit with mixed success. The recommendation points to direct U.S. support for energy reform among the big-producer, reentrant, revenue-dependent, and consumer countries outlined in this report (and others).
2. Further encourage, beyond current activities, production of unconventional oil and gas abroad. Indeed, the United States has already been active in this area of diplomatic and technical engagement since the early days of shale gas development. These efforts are most effective when they involve companies that are on the front line of developing these new resources.
3. Encourage trade in energy resources to promote flexible, adaptable, and efficient markets. Ideally this would include an expansion of natural gas exports, as well as the initiation of exports of crude oil, at the very least it requires a more flexible and expeditious approach to exports and a more direct explanation of the country’s longer-term policy on the export of these commodities.
4. Maintain continued and clear U.S. commitment to protect sea lanes of communication. In the near term it is important to instill confidence in both the willingness and the capability of the United States to maintain its role as lead provider of this global common good, while working toward more collective approaches to the greatest possible extent over the longer term.

5. Scale back domestic rhetoric on the “independence” afforded by new energy posture. Public appreciation for the United States’ continued reliance, both direct and indirect, on global energy markets is critical if efforts to deter threats to regional stability, or to respond to instability if necessary, are to be successful.
6. Bolster commitment to a culture of innovation. The United States should continue to support investment in and application of new technologies that helped to make this and other types of frontier energy “breakthroughs” possible, including clean and efficient energy technologies that will be central to a long-term strategy on climate change.
7. Utilize the opportunity to bolster foreign policy ties or geopolitical dynamics where energy has traditionally played a central role. This new energy trend alters energy-related trade ties. To the extent that those trade shifts are disturbing or even potentially destabilizing to certain relationships or regional dynamics, seek out opportunities to shore up new areas of cooperation and ways to deepen engagement despite the shifts in commercial trade ties.

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