Producing Shale Gas: How Industry Can Lead with Best Practice

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Advances in drilling and recovery technologies for shale gas have reshaped our assumptions about America’s natural gas resources and our future energy options. Expanded development of shale gas and its associated liquids offer the potential for turning energy scarcity into plenty, fostering a renaissance in our petrochemical and manufacturing sectors, and offering a cleaner option for power generation.¹

If shale gas production realizes its potential of providing reliable supplies of natural gas for decades at affordable prices, it will lower utility bills for households and, by driving down feedstock and production costs, boost American manufacturing. In addition, greater use of natural gas in electricity generation is already providing environmental and climate benefits as a cleaner, market-friendly substitute for coal and as a complement to intermittent renewable resources like wind and solar.²

In his 2012 State of the Union address, President Obama gave his strongest endorsement yet to shale gas. “The development of natural gas will create jobs and power trucks and factories that are cleaner and cheaper, proving that we don’t have to choose between our environment and our economy,” he said, adding that his administration “will take every possible action to safely develop this energy.”

But as the president’s remarks suggest, safety, and sustainability are key. For as gas production rises, so too does controversy over the environmental impact of shale gas development. Amid claims and counterclaims about its dangers from environmentalists and gas producers, hydraulic fracturing (“fracking”) has become a household word. The public is being bombarded with negative images of shale production, from media reports of an earthquake in Ohio attributed to hydraulic fracturing, to flaming water faucets in the movie Gasland.

In response to real and imagined dangers, there is growing political pressure to regulate production at both the state and federal levels. Some states, including New York, Maryland, and New Jersey, already have limited shale development. Environmental concerns also have inspired proposed legislation in Congress³ and
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Prompted federal agencies to take tentative steps toward new regulations.  

State and federal agencies have a duty to see that shale gas is developed in a manner than does not compromise public health and safety. But just as unchecked development entails one kind of risk, a new raft of aggressive restrictions and regulations on shale production entails another—the risk of squandering our opportunity to capture the economic and employment benefits of cheap, plentiful natural gas (and its associated “liquids” such as ethane and propane).

**Tackling the Challenges of Shale Gas**

The time has come for the shale gas industry to consider whether its current practices may be leading it down the wrong path toward heavy-handed regulation. To avoid such an outcome, the industry needs a proactive strategy for mitigating concerns about expanded shale development. Rather than waiting for regulators to set their own standards, gas producers should take the lead in defining and promoting the spread of “best practice” techniques that reduce the environmental footprint of shale gas production.

The more these environmentally sustainable practices are understood and appreciated, the more likely it is that such bottom-up and basin-specific approaches, rather than top-down mandates, could drive the regulatory agenda. Such a strategy should also emphasize openness and outreach to environmental organizations, policy makers, and other stakeholders.

That’s why we encourage the industry to organize a “Sustainable Shale Gas Initiative,” a consortium that includes shale gas producers, environmental advocates, and experts in shale resources and production. The Initiative would conduct studies of the different shale basins throughout the U.S. to identify the most efficient, cost-effective, and environmentally responsible development and production methods appropriate for each basin. From these findings, the Initiative would recommend steps industry leaders and policy makers could take to promote widespread use of these practices.

**Two Alternative Pathways**

This is a pivotal moment for the shale gas industry. Both legitimate concerns and misinformation about fracking are creating regulatory uncertainty for shale gas development. Depending on how producers respond to this increasingly negative narrative, one of two alternative pathways will emerge for future shale gas development.

The first is continuing with business as usual, hoping that spreading awareness of shale gas’s economic benefits will overwhelm qualms about its environmental impact. But given the present level of public confusion and concern about hydraulic fracturing, this path could very well lead to more drilling moratoria and federal command-and-control regulations that mandate specific production practices.
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As we have seen in other industries, regulators too often impose one-size-fits-all solutions that reduce innovation while adding costly requirements and technology mandates. This outcome could stifle the types of innovation in exploration and production techniques that have revolutionized the industry in the last decade. And just as the best drilling practices for Barnett Shale in Texas may not be appropriate for Marcellus Shale in Pennsylvania, environmental and safety regulations need to be tailored to the evolving expertise and best practices in each area.

The second pathway requires shale gas producers to take positive steps to head off unwise regulation. This course entails identifying best practices for more sustainable production methods basin-by-basin, and sharing the results of such studies with gas companies, other regulators and other stakeholders.

We recognize that getting enough producers to buy into this approach may prove to be just as challenging as convincing regulators and environmental advocates it can work. To build a new climate of trust, producers must not only identify and implement sustainable development practices, they must also work cooperatively with stakeholders to allow for review and oversight of those practices. This task will not be easy, but we believe it will produce better outcomes for producers, consumers, and the environment.

Best Sustainable Practices

Fortunately, the gas industry doesn’t need to start from scratch. Even the industry’s most vocal critics in the environmental community acknowledge that many of the concerns they raise could be addressed if the best practices of some producers were followed more widely and consistently at all new drilling sites. That gives the industry a unique opportunity to use its own expertise to solve these challenges, before regulators decide how they should be solved.

There is already a strong foundation of best practices to build upon. Consider these examples:

- Evidence shows that pad drilling, which reduces land impacts, also saves money by improving rig efficiency and reducing pit construction costs.
- Companies report that treating and recycling water used in fracturing reduces truck traffic and cuts the costs.
- Some producers report that investments to capture methane emissions during well testing and production generate additional revenues that far exceed their costs.

Basin-Specific Case Studies

Shale gas basins have different geologies and require variations in production practices, but there are some common issues and concerns that apply everywhere. Studies of specific basis should be organized around a “top ten” of the most important issues in sustainable shale gas development:
1. Reduced land disturbance.
2. Reduced water use and disposal.
3. Reduced atmospheric methane emissions.
4. Model well completion and operating practices.
5. Use of non-toxic hydraulic fracturing fluids.
6. Reduced air-quality impacts.
7. Treatment of naturally occurring radiation.
8. Collection of pre-drilling and development baseline data.

A Window of Opportunity

We are not alone in urging the shale gas industry to take the lead in identifying and spreading sustainable production methods. President Obama has recognized the importance of domestic natural gas development to ensure America’s economic prosperity and security. In his “Blueprint for a Secure Energy Future” issued in March 2011, the president called for moving forward with a balanced approach to developing our shale gas reserves:

In order to take full advantage of this important domestic energy resource, we must proactively address concerns that have been raised regarding potential negative impacts associated with hydraulic fracturing (“fracking”) practices. That is why the Administration is taking steps to address these concerns and ensure that natural gas production proceeds in a safe and responsible manner.5

With these goals in mind, President Obama directed the Secretary of Energy’s Advisory Board (SEAB) to create a Shale Gas Production Subcommittee to determine the best path forward for shale gas development. The Subcommittee released its final report last November, after six months of hearings and investigation. The report is notable in that the panel did not sound an alarm or call for a list of new regulations. Instead, the report recommended an industry-led initiative to reduce the environmental footprint of shale gas production:

Organizing for best practice: The Subcommittee believes the creation of a shale gas industry production organization dedicated to continuous improvement of best practice, defined as improvements in techniques and methods that rely on measurement and field experience, is needed to improve operational and environmental outcomes. The Subcommittee favors a national approach including regional mechanisms that recognize differences in geology, land use, water resources, and regulation.6

This recommendation includes two important elements. The first is that producers need to take a proactive approach centered on “continuous improvement of best practice.”7 The second is that the pursuit of best practices should rely on a bottom-up approach that empowers producers and state regulators to leverage
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the lessons learned within particular regions and basins.

While SEAB's work was still underway, the National Petroleum Council (NPC) released a report entitled “Prudent Development: Realizing the Potential of North America’s Abundant Natural Gas and Oil Resources.” The NPC’s first recommended strategy for government and companies endorsed a best-practices focus with decentralized “councils of excellence.”

**State-Level Leadership**

A rigorous campaign to promote best practices will be useful in informing the debate over proposed federal regulations, but there is an even more urgent need for this kind of education at the state level. While federal agencies are still studying the best approach to new rules, state policy makers across the country are already chest-deep in new shale gas regulations.

A stronger commitment from the shale gas industry to sustainable production practices can improve the regulatory outcomes in all of these states. In states like New York, the burden is now on the industry to convince policy makers and the general public not only that shale gas can be produced in an environmentally responsible way, but that producers are fully committed to ensuring it will be by holding themselves to high standards for sustainability.

**Choosing the Right Path**

In January, President Obama made his strongest commitment yet to developing America’s shale gas resources, provided that it is done in a “safe” and “environmentally responsible” way. Just what constitutes safe and sustainable production, of course, is a matter of intensifying debate. How that debate is resolved—whether by adopting new top-down federal mandates or through state oversight of bottom-up, best practice standards—is vitally important. At stake is stable and affordable energy for U.S. homes and businesses as well as the fortunes of America’s shale gas producers and the tens of thousands of workers and businesses they support.

That is why we urge America’s producers to undertake a Sustainable Shale Gas Initiative. Done right, it could help America resolve the regulatory debate over shale gas in a constructive and positive way—a way that is sustainable for industry and for the public—and that builds on the basin-by-basin best practices that many gas producers have already begun to deploy.

Taking the high road to sustainable shale gas production is a matter of enlightened self-interest for America’s natural gas industry. It will be good for business, provide U.S. consumers with stable and affordable energy, and protect public health and safety.
Endnotes

1 For an overview of the recent changes in the U.S. natural gas industry and their economic and policy implications, see “Natural Gas Reconsidered,” published by the Progressive Policy Institute in July, 2011.

2 Ibid.

3 Chief among the bills proposed to regulate shale gas production is the Fracturing Responsibility and Awareness of Chemicals Act (“FRAC Act”), introduced in the House (H.R. 1084) by Rep. DeGette (Colo.-1) with 64 cosponsors, and in the Senate (S. 587) by Sen. Robert Casey (PA) with 10 cosponsors.


9 For more on the steps taken by states to regulate shale gas development, see “Considering Shale Gas Extraction in North Carolina: Lessons from Other States” by the Nicholas Institute for Environmental Policy Solutions at Duke University (discussion draft released November 2011, available at http://nicholasinstitute.duke.edu/nw-hydraulic-fracturing/paper); and state-specific reviews conducted by the State Review of Oil and Natural Gas Environmental Regulations ("STRONGER"), available at http://www.strongerenergy.org.

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