NEWS

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HYDRAULIC FRACTURING: MANAGEMENT CHALLENGES – NOT TECHNOLOGY – BIGGEST HURDLES FOR COMPANIES

New Investor Guide Assesses Risks & Rewards of Shale Gas Development

NEW YORK, NY, March 8, 2012 – The natural gas industry is technologically capable of tapping vast shale gas resources in the United States, but it is unclear if all companies can successfully manage the complex array of environmental and social risks that could impede profitable extraction. Companies also vary in the quality, quantity and timeliness of their disclosure regarding shale gas activities, and generally need to replace anecdotal descriptions of some innovations with consistent and comprehensive data across their operations.

These findings are contained in a new report, *Discovering Shale Gas: An Investor Guide to Hydraulic Fracturing*, commissioned and funded by the Investor Responsibility Research Center (IRRC) Institute and conducted by the Sustainable Investments Institute (Si2).

A webinar on the report will be held today, March 8, 2012, at 11 AM EST to review the findings. Register here or visit https://www1.gotomeeting.com/register/642561937.

The study, with input from a panel of advisers from industry, environmental organizations and investment managers, identifies the full range of issues for investors and others to consider. It also profiles 10 publicly traded shale gas developers including Anadarko Petroleum, Cabot Oil & Gas, Carrizo Oil & Gas, Chesapeake Energy, Chevron, ExxonMobil, Hess, Range Resources, Southwestern Energy and WPX Energy (formerly Williams Cos.).

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The report notes that three critical issues challenge the industry:

- **Technical—**Fracking a horizontal shale well requires one to eight million gallons of water and thousands more gallons of chemicals than a conventional vertical gas well. These volumes create a host of issues companies must address.
- **Scale—**Thousands of shale gas wells may be drilled within a few years in some states. If contamination problems occur at only a small percentage, numerous communities could be negatively affected.
- **Location—**Development is spreading to new areas. Regulators and communities new to natural gas development are proving less tolerant of associated impacts than communities where gas production has occurred historically. Even if environmental concerns can be addressed, some communities may oppose industrialization of their surroundings.

Key findings are as follows:

- As a result of the three key issues, **shale gas development presents unique management challenges**—but not unique technological challenges—to mitigate adverse environmental impacts. The basic techniques to prevent pollution are similar to those in place for conventional onshore natural gas development.
- **It is unclear if the industry has the will, short-term economic incentives or regulatory oversight to avoid environmental and social impacts** that could lead to continued controversy and additional restrictions on drilling. An industry-wide commitment to transparency and best practices rather than mere regulatory compliance is essential.
- **Rapid technological innovation to reduce environmental impacts is occurring**, and industry has shown a willingness to respond quickly to issues. Commercial and investment opportunities to reduce environmental impacts also are evident, as seen by the growth of recycling technologies and new "green" fracturing fluid products.
- **Shale gas development has been an economic victim of its own success**, resulting in lower natural gas prices. This presents challenges for companies to absorb new costs associated with reducing environmental impacts.

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"Shale gas extraction is high stakes and high risk for companies, investors and the environment," said Jon Lukomnik, IRRC Institute executive director. "Perhaps because of that, most analyses have been one-sided. The reality is a bit more complex. The good news is that significant technological advancements have enabled companies to access a plentiful domestic energy source. The bad news is that shale gas is found in communities unfamiliar with petrochemical development where a regulatory patchwork does not always fully protect community interests. This places the onus on corporations to manage and negotiate through environmental and social issues on a community by community basis."

Lukomnik continued, "That means that some areas, such as the New York City watershed, may be simply off-limits, while others require more stringent methodologies than currently mandated by law. Everything, from selection of drill pad sites to choice of chemicals to when trucks are scheduled, needs to be considered. That is a huge managerial challenge, so regulators, investors, community groups and environmentalists are correct to distinguish amongst the companies engaging in hydraulic fracturing so as to judge managerial quality."

Report author Susan Williams of Si2 predicts, "The companies most adept at navigating these complex management, social, and environmental risks are best positioned to capitalize. Those that don't, or those who use one-size-fits-all solutions to different geologic formations, population patters and watersheds, will find their operations criticized, and possibly prompt restrictions on the entire industry. This new research guide will help investors get their arms around the driving issues, formulate key questions to pose to companies, and make informed investment decisions."

Si2 executive director Heidi Welsh commented, "Fracking is a quintessential 21st century energy issue about hard choices. It forces us to look at how we are meeting growing demand with unconventional energy sources, and who will pay the costs for how this affects communities."

Download a copy of the full report at www.irrcinstitute.org or www.siinstitute.org. Register for the webinar at https://www1.gotomeeting.com/register/642561937.

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About IRRC Institute
The IRRC Institute is a not-for-profit organization headquartered in New York, N.Y. Its mission is to provide thought leadership at the intersection of corporate responsibility and the informational needs of investors. More information is available at www.irrcinstitute.org.

About Sustainable Investments Institute
The Sustainable Investments Institute (Si2) provides research that enable investors to make informed, independent decisions on social and environmental shareholder proposals and related issues. More information is available at www.siinstitute.org.

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