**All Companies invoLved in HyDRaulic Fracturing operations face significant risks**

Onshore unconventional natural gas and oil production often requires hydraulic fracturing, which typically injects a mix of millions of gallons of water, thousands of gallons of chemicals, and particles deep underground to create fractures through which gas can flow for collection.

Fracturing uses millions of gallons of water, has the potential to impact groundwater, and requires the sound management of a significant quantity of toxic chemicals and large volumes of wastewater. Furthermore, these are industrial operations so they can also be socially disruptive—bringing with them increased truck traffic, skyrocketing rents and in some cases, increased crime. When companies fail to manage the environmental and social impacts inherent to fracturing operations, opposition from communities can lead to bans and moratoria, which can increase costs or eliminate potentially lucrative opportunities. Given these environmental and social impacts, there are significant risks throughout the entire lifecycle of fracturing operations which have the potential to impact a company’s bottom line; therefore investors require increased information to ensure such risks are being managed and mitigated.

**environmental impacts can directly impact a company’s bottom line**

* In 2014, North Dakota enacted rules declaring that oil producers failing to meet state targets for capping and reducing flaring of methane at well sites will be faced with state-mandated oil production limits.1
* In 2013, the federal government fined Exxon Mobil’s XTO unit and required a future pollution control commitment of $20 million, as a result of illegal wastewater discharges in Pennsylvania.2
* In December 2011, the Environmental Protection Agency (EPA) found that chemicals in a groundwater aquifer in Pavillion, Wyoming are “likely associated” with natural gas production, including fracturing.3 While the EPA’s findings have been controversial, Legacy Reserves backed out of a $45 million deal to buy Encana Corporation’s assets in the region after the EPA released preliminary data from the report.4

**COMMUNITY CONCERNS ABOUT THE ENVIRONMENTAL AND SOCIAL IMPACTS OF FRACTURING OPERATIONS HAVE LED TO BANS AND MORATORIA**

* A 2011 report of the U.S. Department of Energy’s Shale Gas Production Subcommittee, found that “if action is not taken to reduce the environmental impact accompanying the very considerable expansion of shale gas production expected across the country…there is a real risk of serious environmental consequences causing a loss of public confidence that could delay or stop this inactivity.”5
* In June 2015, New York State formally declared a ban on fracturing, after having a de facto ban on fracturing since 2008, while public health officials completed a study on the well stimulation technique’s health effects. New York’s decision marks the first high-profile ban by a state with significant shale energy reserves.6 France and Bulgaria have enacted national bans on the practice.Chevron’s license to explore for shale gas in Bulgaria was subsequently suspended.7
* Currently, there is a moratorium on drilling in the Delaware River Basin portion of the Marcellus shale.8 Two additional eastern Canadian provinces, New Brunswick and Nova Scotia, have joined Quebec, and Newfoundland and Labrador in imposing moratoria on high-volume hydraulic fracturing.9
* Pennsylvania’s Supreme Court, in December 2013, struck down several controversial sections to Act 13, a law that made major updates to rules governing the state’s oil and gas industry. The Court declared a section on statewide rules on oil and gas that preempt local zoning laws unconstitutional, meaning Pennsylvanians have a right to clean air and water and that the state government, a trustee of the state’s resources, “must conserve and maintain them for the benefit of all people.”10

**BANS AND MORATORIA ARE HAVING FINANCIAL IMPACTS**

* Norse Energy Corporation USA filed for Chapter 11 bankruptcy in December 2012 as a result of the moratorium in New York state, which idled seven of the company’s wells in the area.11
* Talisman Energy booked an impairment charge of $109 million on its assets in Quebec in 2012 because of Quebec’s continued moratorium on fracking.12
* Hess Corporation and Newfield Exploration Co. announced in July 2013 that they would be letting their leases lapse in a portion of the Delaware River Basin in PA where a moratorium has been in place for three years, reportedly costing the companies around $150 million in forgone lease payments, in addition to forgone expected revenues.13

**METHANE EMISSIONS REMAIN A GROWING CONCERN**

* Methane leakage is a growing concern because of its effective heat-trapping potency. On a pound-per-pound basis, methane is 84 times more potent than carbon dioxide in contributing to climate change, in the first 20 years after its release.14
* The Environmental Defense Fund commissioned consultancy ICF International to analyze the economics of methane reduction opportunities. The study demonstrates that the oil and gas industry is capable of significantly and cost-effectively reducing methane emissions using currently available technology and practices.15
* Colorado became the first state to incorporate methane in tougher air pollution rules that require companies to detect and fix leaks, and to install technologies that capture 95% of emissions.16 Ohio and Wyoming have targeted methane emissions not covered under federal clean-air mandates.17 In January 2015, the Obama Administration announced that it will use its executive authority to impose new regulations on the oil and gas industry’s methane emissions from new and modified oil and gas wells, pipelines, and valves over the next decade.18

**EXISTING DISCLOSURE ON ENVIRONMENTAL AND SOCIAL RISKS IS INSUFFICIENT**

* The Department of Energy’s Secretary’s shale gas advisory panel recommended in November 2011 that companies “adopt a more visible commitment to using quantitative measures as a means of achieving best practice and demonstrating to the public that there is continuous improvement in reducing the environmental impact of shale gas production.”19
* The International Energy Agency (IEA), in its 2012 report, “Golden Rules for a Golden Age of Gas,” addressed the need of the energy industry to maintain or earn its social license to operate, stating that “full transparency, measuring and monitoring of environmental impacts and engagement with local communities are critical to addressing public concerns.”20 IEA continued, “Operators need to explain openly and honestly their production practices, the environmental, safety, and health risks and how they are addressed.”21
* In 2011, the Investor Environmental Health Network and the Interfaith Center on Corporate Responsibility published “Extracting the Facts: An Investor Guide to Disclosing Risks from Hydraulic Fracturing Operations” to provide a framework for companies to improve disclosure.22 These guidelines have earned support from investors on three continents managing assets more than $1.3 trillion, as well as from companies—Apache and Southwestern Energy —and environmental organizations—Environmental Defense Fund and the Natural Resources Defense Council.
* Despite widespread recognition regarding the importance of disclosure, a 2013 scorecard published by investor advocacy groups found industry-wide failure in meeting investor needs for disclosure of the risks, impacts, and mitigation efforts associated with hydraulic fracking operations. “Disclosing the Facts: Transparency and Risk in Hydraulic Fracturing Operations,” reported that none of the 24 companies assessed provided sufficient emissions, community impacts, and governance data.23 A 2014 update of the scorecard found some disclosure improvements, but still 29 of the 30 companies evaluated provided disclosures on fewer than half of the 35 indicators.24 A 2015 update assessing 30 companies on 39 indicators found further improvements, but concluded that most of the industry—70 percent of the companies assessed—continue to leave investors substantially in the dark about their policies, practices, and impacts, especially on a quantitative play-by-play basis.

**SHAREHOLDERS LACK THE INFORMATION NEEDED TO FULLY ASSESS RISK TO THE SECTOR AND DIFFERENTIATE AMONG INDIVIDUAL COMPANIES**

* Investment value may be undermined by company decision-making and policies that lag public and regulatory expectations for environmental protection.
* In the absence of meaningful disclosure, investors cannot differentiate risks and rewards at various companies.
* It is necessary for investors to have assurances that company managers are reducing business risks by addressing operational hazards and are capturing the genuine, measurable business rewards flowing from environmental management practices that have the potential to lower costs, increase profits, and enhance community acceptance.
* Investors require, relevant, reliable, and comparable information about companies’ natural gas operations to make investment judgments based on a robust assessment of companies’ environmental, social and governance policies, practices, and performance.
* The 2015 edition of “Disclosing the Facts” concludes that while some individual companies are beginning to disclose their impacts on air, water, and local communities, the industry as a whole fails to rigorously report on its impacts.

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