



RepRisk Report on 'Fracking'

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As nuclear power has recently come into public disfavor, extracting energy from slumbering natural gas reserves seems to be an increasingly appealing alternative for generating relatively clean energy. Hydraulic fracturing, commonly known as fracking, refers to the process of extracting natural gas from shale by pumping large amounts of water mixed with chemicals over a thousand meters underground. The catch is that the chemicals pumped deep beneath the surface cannot be properly disposed of and may end up seeping into groundwater. Another major issue is that fracking operations require large quantities of water, leading to overuse and potentially to shortages of this resource. Fracking has recently made it into the mainstream press, with headline-grabbing pieces in the New York Times and a front cover story in Time Magazine earlier this year. It also came into the spotlight as recently as May 2011 after the French government began debating a ban on the practice. Furthermore, there has been increasing interest from shareholders in regard to the risks involved and corresponding resolutions voted on at annual meetings of companies engaged in the practice.

RepRisk has been tracking criticism of the method, often voiced by smaller local newspapers and NGOs, for the past few years. This report highlights the issues surrounding the increasingly controversial method, which was first patented in the US and is now being introduced throughout the world. It examines five companies that have been strongly criticized in regard to this practice, indicating the alleged impacts of their operations and where they are occurring. The five companies are:

- **Halliburton Co**
- **Royal Dutch Shell PLC**
- **Chesapeake Energy Corp**
- **Exxon Mobil Corp**
- **Cabot Oil & Gas Corp**

All information has been taken from the RepRisk database, which objectively monitors the level of criticism related to environmental, social and governance issues to which a company is exposed in the media and other public sources. It also quantifies the negative news collected through its RepRisk Index (RRI). For more information about our methodology, please refer to page 7.

Full reports on each company are available for purchase from our Webshop www.reprisk.com/webshopsearch

Halliburton Co

Halliburton has been severely criticized for being the company leader in hydraulic fracturing¹ and for not publicly revealing all chemical components used in the drilling technique.

In the United States, Halliburton has been criticized for the 2005 provision in an energy law, nicknamed "the Halliburton loophole", which has prevented the US Environmental Protection Agency (EPA) from regulating fracking. Since then, Halliburton has legally practiced fracking in all Marcellus Shale² wells.

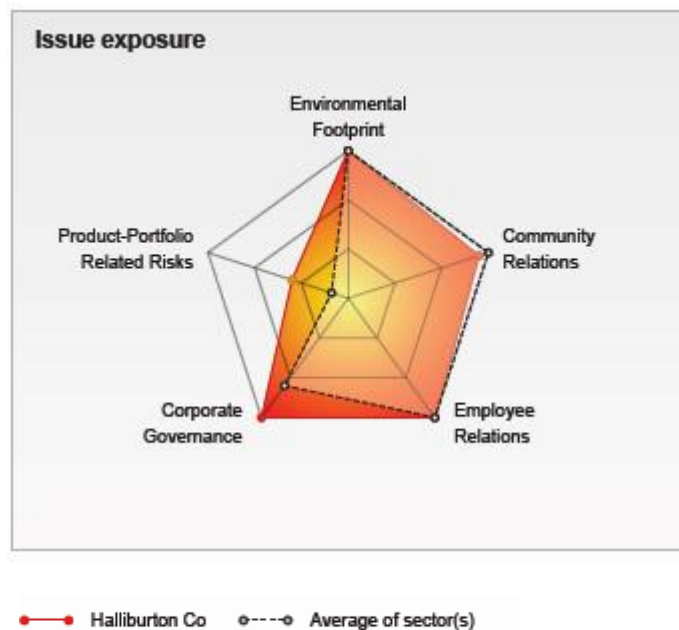
Recently, Halliburton came under fire when Pennsylvania's Senator, Bob Casey, reportedly launched a campaign in support of his Fracturing Responsibility and Awareness of Chemicals (FRAC) Act, which would bring fracking under the control of the EPA and remove the "loophole".

In 2010 RepRisk detected criticism of the company in Poland following its first hydraulic fracturing of a well there. The operation was carried out on behalf of the state-owned Polish Oil and Gas Company (PGNiG), when the Polish government made fracking a matter of national energy policy.

Top three controversial issues for Halliburton related to the fracking method:

1. Local pollution
2. Impact on ecosystems and landscapes
3. Impact on communities

Total environmental, social and governance (ESG) issue exposure for Halliburton



¹ Halliburton was the first company using hydraulic fracturing in 1947 to stimulate flow of natural gas from the Hugoton field in Kansas.

² The Marcellus Shale is a black shale formation extending deep underground from Ohio and West Virginia northeast into Pennsylvania and southern New York.

Royal Dutch Shell PLC

Royal Dutch Shell has been criticized for two highly controversial projects involving hydraulic fracturing in South Africa and Canada.

In early 2011, RepRisk detected criticism of Royal Dutch Shell regarding its participation in a large drilling project in South Africa’s Karoo region, a semi-arid area considered the country’s largest ecosystem. The project would use the controversial fracking technique for extracting shale gas. A local environmental group has called on President Zuma to impose an immediate halt to Shell’s drilling operations. Moreover, the group has harshly criticized Shell for its alleged drilling plan lasting 5 to 15 years that could have a devastating impact on their land, not only contributing to water scarcity but also seriously diminishing water quality.

Royal Dutch Shell came also under fire in British Columbia, Canada, where it planned to drill for coalbed methane in the Sacred Headwaters area. A local environmental NGO said that the fracking process at Shell’s Klappan Project could contaminate rivers in the region, where salmon is crucial to the traditional way of life of local and indigenous communities.

Top three controversial issues for Royal Dutch Shell related to the fracking method:

1. Impact on ecosystems and landscape
2. Impacts on communities
3. Local pollution

Total environmental, social and governance (ESG) issue exposure for Royal Dutch Shell



—●— Royal Dutch Shell PLC - - - - - Average of sector(s)

Chesapeake Energy Corp

Chesapeake Energy has also been targeted over its fracking operations for issues related to alleged environmental violations, impacts on local communities, and breaches of occupational health and safety.

In May 2011, the US State of Maryland was planning to sue the company, which is accused of violating the Federal Resource Conservation and Recovery Act and the Clean Water Act. The lawsuit comes in response to a massive spill that occurred on April 19, 2011 and caused thousands of gallons of fracking fluid to flow into Towanda Creek. Chesapeake Energy was reportedly conducting fracking operations when the spill occurred.

Furthermore, in February 2011, a blast at the Chesapeake Appalachia site in Avella injured three workers. The incident reportedly occurred while they were transferring water used in the gas-extraction fracking process.

RepRisk has captured concerns about Chesapeake for using the hydraulic fracturing method since 2009. Scientists, landowners and environmentalists in the US have targeted the company for threatening water supplies in 28 states.

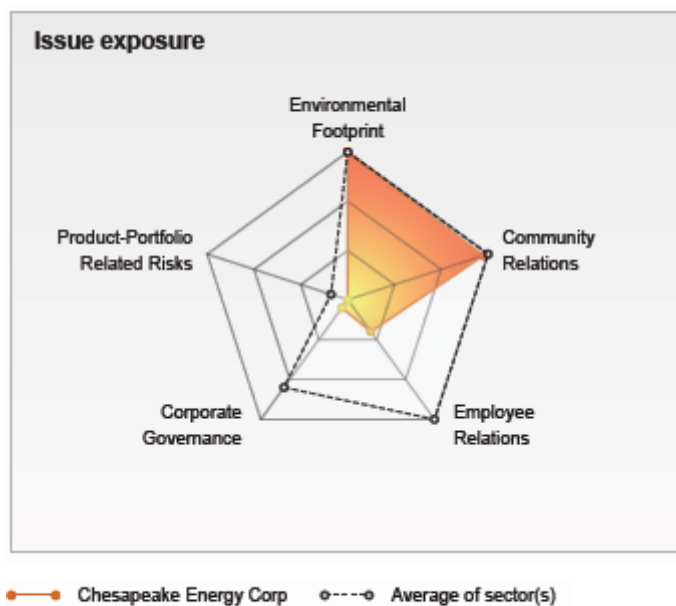
In 2009, Chesapeake was among the gas companies criticized by the New York State Department of Environmental Conservation for using 260 types of chemicals in hydraulic fracturing fluids, many of which appear to be toxic.

In South Africa, Chesapeake came under scrutiny for its interest, together with several multinationals, in shale exploration in the Karoo Reserve. Local groups claimed that the companies' activities would jeopardize the delicate ecological balance of the Reserve.

Top three controversial issues for Chesapeake Energy related to the fracking method:

1. Health and safety issues
2. Impact on communities
3. Impact on ecosystems and landscapes

Total environmental, social and governance (ESG) issue exposure for Chesapeake Energy



Exxon Mobil Corp

RepRisk has captured criticism on Exxon Mobil for its use of fracking since 2009. At that time, the company came under fire for its alleged plans to expand hydraulic fracturing to Germany, Poland, Canada, Hungary and Argentina. The debate was triggered by its acquisition of XTO Energy and the subsequent enlargement of its shale gas capacities.

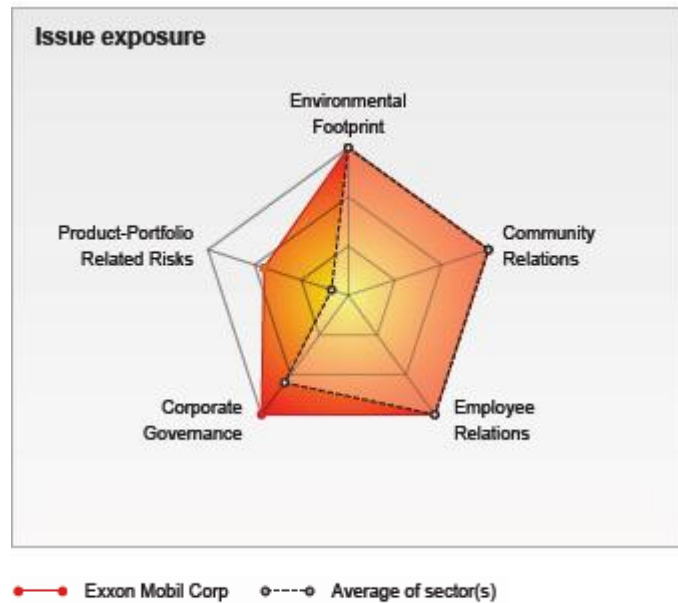
At the end of 2010, Exxon Mobil was criticized for using the fracking method in various parts of Germany. The company has faced harsh opposition in the city of Luenne, where an interest group mobilized popular support to stop exploratory drilling for natural gas in a field outside the city.

Furthermore, shareholder resolutions have been filed by US investors with several oil and gas firms, including Exxon Mobil. The resolutions urge the companies to adopt best management practices in relation to hydraulic fracturing operations in the US, and seek disclosure of companies' plans to manage associated issues such as water pollution, chemical use, litigation and regulatory risks.

Top three controversial issues for Exxon Mobil related to the fracking method:

1. Local pollution
2. Impact on communities
3. Health and safety issues

Total environmental, social and governance (ESG) issue exposure for Exxon Mobil



Cabot Oil and Gas Corp

Cabot Oil & Gas has been repeatedly criticized for using the fracking method.

In the US, environmental groups have criticized Cabot, together with other companies using fracking, for various ecological and social impacts, including cases of methane contamination of potable water, gas explosions, depletion of groundwater supply, animal deaths due to chemically-contaminated drinking water, and large-scale civilian evacuations due to health risks.

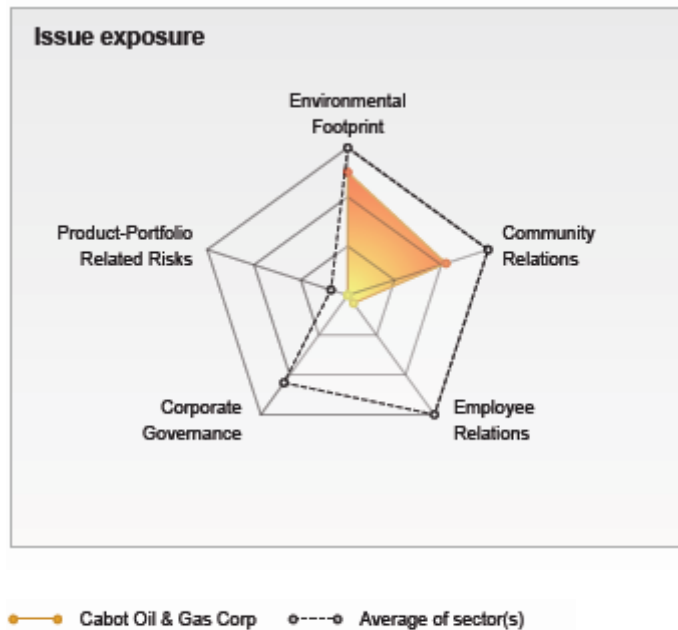
In 2009, Cabot Oil and Gas was reportedly cited for illegally discharging chemical substances and industrial waste at a water well and a creek in Pennsylvania. According to the state Department of Environmental Protection, the 8,000 gallons of pollutants affected a wetland and killed fish. The spills involved LGC-35 gel, used as a drilling lubricant for the hydraulic fracturing of wells.

Following a series of legal complaints, in December 2010 Cabot agreed to pay compensation totaling USD 4.1 million to 19 homeowners in the city of Dimock, Pennsylvania, whose wells were allegedly contaminated by methane gas as a result of Cabot's shale gas activities although the company denied responsibility for the pollution.

Top three controversial issues for Cabot Oil & Gas related to the fracking method:

1. Waste issues
2. Local pollution
3. Impacts on communities

Total environmental, social and governance (ESG) issue exposure for Cabot Oil & Gas



Methodology

RepRisk special reports are compiled using information from the RepRisk database, which consists of negative news on companies' environmental, social and governance performance. The RepRisk database currently contains criticism on more than 18,000 companies and holds news from thousands of sources, ranging from commercial newspapers and online media to NGO websites, blogs and newsletters. Once the negative news has been identified with advanced search algorithms and analyzed for its novelty, relevance and severity, risk analysts enter it into the database and link it to the companies in question. No news is entered twice unless it has been escalated to a more influential source, contains additional information, or has not appeared for the past 6 weeks. This helps to ensure the balanced and objective rating and weighting of the negative news, and thus the company's quantitative measure of risk exposure, the RepRisk Index (RRI). The RRI measures the risk to a company's reputation, not its actual reputation in general.

RepRisk objectively monitors the level of criticism to which a company is exposed. All data is collected and processed through a strictly rule-based approach; it is not the result of an assessment, rating or verdict from our analysts.

For more information about the RepRisk tool or this report on fracking, please contact Karen Reiner at reiner@reprisk.com, ph: +41 43 300 54 48, or visit our website: www.reprisk.com.

About RepRisk

RepRisk is the leading provider of dynamic data on environmental and social risks for an unlimited universe of companies and projects. The company's web-based tool, RepRisk, allows you to identify and assess the environmental, social and governance issues which may present financial, reputational, and ethical risks. It is used by investment professionals, financial institutions, supply chain managers, multinational corporations, and compliance managers, and includes a variety of features enabling clients to monitor risk trends over time, create customized watch lists, tailor alert services, and more. The tool plays an integral role in increasing transparency and ensuring compliance with internal and international standards, thereby helping reduce risk exposure.

RepRisk's comprehensive and relevant database enables you to meet the risk management and compliance challenges in an increasingly complex world. On a daily basis, RepRisk tracks a company's or project's environmental and social risk exposure by monitoring independent third-party sources such as all major print media, over 800 NGOs, newsletters, news sites, governmental agencies and blogs. Controversial issues covered include environmental footprint and climate change, human rights and community relations, labor conditions and employee relations as well as corruption and money-laundering. In particular, all principles of the UN Global Compact are addressed. RepRisk covers all major business languages (English, Chinese, Japanese, Korean, French, German, Spanish, Portuguese, and Russian) and its database currently includes over 18,000 companies and 4,000 projects, and is updated and growing daily.

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