

Hydraulic Fracturing – Quantitative Reporting

Exxon Mobil

Item #14

Annual Meeting: May 25, 2016, Dallas, TX

Resolution

This Proposal asks “the Board of Directors to report to shareholders, using quantitative indicators, by December 31, 2016, and annually thereafter, the results of company policies and practices, above and beyond regulatory requirements, to minimize the adverse environmental and community impacts from the company’s hydraulic fracturing operations associated with shale formations.”

Rationale for a Yes Vote

Hydraulic fracturing and horizontal drilling operations have the potential to create significant environmental and social impacts – from air pollution and water quality harm, to community disruption, greenhouse gas emissions, and even earthquakes -- resulting in increased risk to the company and shareowners from community opposition, regulatory scrutiny, and potential legal liability.

This Proposal reflects rising public expectations for *quantifiable* disclosure from companies undertaking hydraulic fracturing activities. Shareholder proposals requesting enhanced reporting have earned support from 25% - 40% of shareholders, indicating sustained concern from shareholders about the inadequacy of Exxon’s existing risk management disclosures.

As public expectations for transparency rise, investment value may be undermined by company operational practices that lag public and regulatory expectations. In order to measure the effectiveness of company practices intended to mitigate environmental and community impacts, investors need rigorous disclosure of steps to minimize risk, reporting on key indicators of success, and descriptions of steps undertaken by the company to continually improve operations. Companies that fail to transparently mitigate the environmental and community impacts of their operations face significant, ongoing business risks including regulatory enforcement, litigation, brand damage, and loss of social license to operate. As an example, Exxon was recently sued by a community group under the Clean Air Act for a significant release of pollutants at one of Exxon’s chemical facilities. The group stated that the lawsuit was filed because, while the company had open and productive talks with the group about the release, “some information, such as the type and level of pollution, was never provided.”¹

¹ “LEAN sues ExxonMobil, claiming violations of Clean Air Act; plant official claims problems have been addressed,” The Advocate, March 4, 2016. Available at: <http://theadvocate.com/news/15084723-32/lean-sues-exxonmobil-claiming-violations-of-clean-air-act-plant-official-claims-problems-have-been-a>.

Exxon has not provided the data necessary for investors or stakeholders to verify whether the company's policies and practices effectively manage the impacts and risks of hydraulic fracturing.

GROWING CONCERN REGARDING THE ENVIRONMENTAL AND SOCIAL IMPACTS OF HYDRAULIC FRACTURING OPERATIONS

As natural gas production has expanded in the United States, controversies associated with hydraulic fracturing have increased. In the rush to drill for natural gas, incidents of poorly constructed wells, equipment failures, degraded local and regional air quality, water contamination, lawsuits, disruptive community impacts, and strained community relations have occurred nationally. As a result of the growing public concern about these impacts, and industry's perceived lack of response, communities have enacted numerous costly bans and moratoria on hydraulic fracturing operations. Most prominently, the State of New York banned hydraulic fracturing across the state.

Community opposition to hydraulic fracturing operations has led to the recognition that companies must become more publicly transparent about managing their environmental footprint and social impacts, and that they must engage key stakeholders to earn and maintain their social license to operate. The public is no longer willing to trust large corporations like Exxon when they simply offer assurances to communities that they have optimal practices in place. At present Exxon's disclosures lag well behind the majority of its peers.

EXXON FAILS TO PROVIDE INVESTORS WITH RELEVANT METRICS NECESSARY TO ASSESS THE COMPANY'S EXPOSURE TO HYDRAULIC FRACTURING OPERATIONAL RISK AND TO DETERMINE WHETHER THE COMPANY IS EFFECTIVELY MITIGATING THOSE RISKS

Company Practices

Exxon has failed to meaningfully report on key performance indicators necessary to assure investors and the public that it is adequately managing risk. In comparison with its peers, many of which are improving reporting practices, Exxon provides little data on its website and 10-K regarding the environmental and social impacts of its hydraulic fracturing operations, relying instead on generalized assurances of good practices. However Exxon's assurances are insufficient to provide investors an understanding of whether the Company is effectively mitigating risk. An analysis of Exxon's lack of disclosure follows:

1. GOALS AND SYSTEMS TO REDUCE TOXICITY OF DRILLING FLUIDS

Exxon provides no information as to whether it has goals in place, or has established systems, to reduce the toxicity of its drilling fluids. Chemicals used in hydraulic fracturing can include carcinogens, biocides, and a range of other harmful constituents. Exxon provides no information as to whether it has set goals or put systems in place to reduce the toxicity of the chemicals it is using, or whether it has asked its suppliers do so.

Peer Comparison: Exxon’s peers are taking action to reduce the toxicity of their fracking fluids. Apache,² EQT,³ and BHP Billiton⁴ provide quantitative measures of toxicity reductions they have undertaken. BHP Billiton and EQT Corporation report replacing traditional biocides with non-chemical or less harmful alternatives.⁵ Apache Corporation has reported that 83% of the volume of fracturing chemicals it uses are listed by the U.S. EPA’s Design for Environment Program, a set of criteria for safer chemicals.⁶ Anadarko Petroleum Corporation has developed a Chemical Assessment Rating Evaluator to improve the chemical profile of its fracking fluids, and Encana Corporation is expanding the scoring system for its Responsible Products Program, adding evaluation of drilling fluids to its current evaluation of fracking fluids.⁷

2. PERCENTAGE OF DRILLING WASTE MANAGED IN CLOSED LOOP SYSTEMS; GOALS TO ELIMINATE THE USE OF OPEN PITS FOR STORAGE OF DRILLING FLUID & FLOWBACK WATERS

Exxon provides little to no information about its storage of toxic drilling wastes and flowback waters.

Exxon provides no substantive information about its waste storage practices across the locations in which it conducts hydraulic fracturing. Storage of drilling wastes and flowback waters (which generally contain toxic chemicals) in open pits is one of the highest risk pathways for surface water contamination⁸ and can also cause infiltration into ground waters where ponds are unlined or improperly lined. Storing wastes in open air pits also poses risks to community health as chemicals are released into the air, a potential emission source that is rarely monitored.⁹ The practice of storing wastes in closed loop systems is gaining ground as a means of minimizing these problems. While storage tanks are an improvement to open pits, they must still be properly maintained. In July 2014, Exxon’s hydraulic fracturing subsidiary was found to have spilled 57,000 gallons of wastewater from a leaking tank into the Susquehanna River due to failure to provide adequate spill containment.¹⁰

Peer Comparison: Encana is adopting a closed-loop water management system across approximately 180 historic and active pits, and has committed to avoiding construction of any new drilling or flowback pits on pad sites in the Piceance Basin in Colorado.¹¹ Nine other companies report having moved to closed-looped

² Apache’s North America regions’ hydraulic fracturing chemical-use reduction achievements from 2012 through 2014 include a 30 to 40 percent chemical volume reduction. *Apache*, “Greener chemicals”, Accessed April 18, 2016, http://www.apachecorp.com/Sustainability/Environment/Chemicals/Greener_chemicals/index.aspx

³ 2014 EQT Social Responsibility Report (50% reduction in acid utilization), p. 16, <http://www.eqt.com/docs/pdf/2014%20EQT%20CSR%20Report.pdf>

⁴ BHP states 81 percent of fluids meet its highest Tier 4 standards, and 11 percent meet Tiers 1-3. “Responsibly managing hydraulic fracturing”, *BHP Billiton*, 2015, p. 1, http://www.bhpbilliton.com/~media/bhp/documents/society/reports/2015/150922_society_environment_responsiblymanaginghydraulicfracturing.pdf?la=en

⁵ “The Right Chemistry: Apache and ACS GI Collaborate to advance greener fracking fluids,” R. Liroff, *Green Biz*, (January 2016), <http://www.greenbiz.com/article/apache-and-acsgci-collaborate-advance-greener-fracking-fluids>.

⁶ *Id.*

⁷ *Id.*

⁸ See Resources for the Future, “Pathways to Dialogue: What the Experts Say About the Environmental Risks of Shale Gas Development, Overview of Key Findings,” Krupnic, Hal Gordon, and Sheila Olmstead, p.6, (2013), http://www.rff.org/Documents/RFF-Rpt-PathwaystoDialogue_Overview.pdf,

⁹ See “Waste Pit Emissions – The Big Unknown,” *Inside Climate News*, <http://insideclimatenews.org/news/20141002/graphic-frackings-waste-pit-emissions-big-unknown>

¹⁰ “Exxon fights over Fracking with Pennsylvania Attorney General,” <http://www.wsj.com/articles/exxon-says-it-is-getting-singled-out-over-fracking-1405011974>.

¹¹ “Caring About Water in Colorado,” <http://www.encana.com/news-stories/our-stories/environment-caring-about-water-in-colorado.html>

systems in some portion of their operations,¹² including Anadarko, which uses closed loop management systems in its Marcellus and Wattenberg operations and CONSOL Energy in its Marcellus operations.¹³

3. PRE- AND POST- DRILLING GROUNDWATER TESTING

Exxon provides no information on whether it conducts pre- and post- drilling groundwater testing.

Groundwater contamination is one of the public's greatest concerns about hydraulic fracturing. Pre- and post- drilling groundwater testing allows companies to monitor groundwater before and after operations, providing critical information about contamination, should it occur, and giving companies an opportunity to address any problems in a timely manner. This testing not only helps to allay public concern, but provides a baseline of data against which claims of contamination can be measured to both protect the public and the company. Wyoming and Illinois have already begun requiring this type of testing.¹⁴

Peer Comparison – Twelve of Exxon's peers conduct play-by-play pre-drill ground water monitoring and 5 conduct post-drill ground water monitoring.¹⁵ WPX Energy details its play-by-play monitoring practices in its 10-K.¹⁶

4. PERCENTAGE OF WELLS USING 'GREEN COMPLETIONS' TO REDUCE RELEASE OF METHANE; METHANE LEAKAGE AS A PERCENTAGE OF TOTAL PRODUCTION

Exxon provides no quantitative information on green completions and does not report its methane leakage as a percentage of total production. Methane is a tremendously potent greenhouse gas, with a "global warming potential" 86 times that of carbon dioxide over a 20-year time frame, and 28-34 times more potent over a 100 year time frame.¹⁷ The climate change benefits of natural gas can be completely eliminated by methane leakage in its production, transmission, and distribution processes. In particular, oil and gas well completion, and well leakage, can be sizeable sources of greenhouse gas emissions.¹⁸

Although the problem has become a major concern,¹⁹ regulation of methane leakage at oil and gas operations is still limited in the types of emissions addressed, in the monitoring required, and in the actions required to be taken to reduce leaking, venting, and flaring. Exxon provides no information about whether it conducts green completions on wells that are not currently regulated, whether it monitors and fixes leaks

¹² See *Water and Waste Management Chart*, "Disclosing the Facts: Transparency and Risk in Hydraulic Fracturing," <http://disclosingthefacts.org/2015/>

¹³ *Id.*, at p. 21.

¹⁴ See <http://wyofile.com/dustin/wyoming-embarks-on-groundwater-monitoring-rule-for-oil-and-gas-development/> and Illinois Hydraulic Fracturing Regulatory Act, <http://www.ilga.gov/legislation/publicacts/98/PDF/098-0022.pdf>.

¹⁵ Disclosing the Facts 2015: Transparency and Risk in Hydraulic Fracturing, Water and Waste Issues table, p.17, <http://disclosingthefacts.org/2015/>

¹⁶ WPX Energy 2014 10-K, p. 21, <http://d1lge852tjigow.cloudfront.net/CIK-0001518832/25599b57-fa32-43a6-ae83-0469799a5bcc.pdf>

¹⁷ See "Climate Change 2013: The Physical Science Basis, Intergovernmental Panel on Climate Change," page 714, http://www.climatechange2013.org/images/report/WG1AR5_ALL_Final.pdf.

¹⁸ See "Methane Research: The 16 Studies Series," EDF (The study found that methane emissions from equipment leaks and pneumatic devices were larger than previously thought.), https://www.edf.org/sites/default/files/methane_studies_fact_sheet.pdf

¹⁹ "On Fracking Front, A Push To Reduce Leaks of Methane Scientists, engineers, and government regulators are increasingly turning their attention to solving one of the chief environmental problems associated with fracking for natural gas and oil – significant leaks of methane, a potent greenhouse gas," Yale Environment 360, April 2014, http://e360.yale.edu/feature/on_fracking_front_a_push_to_reduce_leaks_of_methane/2754/

across all its wells, or whether or how it uses leak detection technology. It also fails to provide the percentage leakage rate for methane from its drilling, completion, and production operations.

Peer Comparison: In a 2015 survey of oil and gas companies, 11 of Exxon's peers reported that they used methane leak detection technologies to identify leaks; 8 companies reported the percentage of wells at which they used green completions; and 5 companies reported their percentage leakage rate for methane from drilling, completion, and production operations.²⁰

5. QUANTITIES OF WATER USED BY REGION

Exxon does not provide data regarding its water use by region, even for operations in areas of drought. A recent study of water use in hydraulic fracturing operations in the U.S. found that most operations occur in areas currently experiencing "high water stress," including the Permian Basin in Texas, in which Exxon operates.²¹ Metrics relating to amount of water used by region, the companies' rates of recycling and reuse of produced water or waste water, and reductions in freshwater withdrawals are critical for investors in assessing the extent to which companies are mitigating exposure to water-related risks. The Appalachian Shale Regional Practices group (ASRPG) principles and the International Energy Agency's *Golden Rules for a Golden Age of Gas* report both call for quantitative reporting on water use and recycling.²²

Peer Comparison: Six companies currently report their water use by region and source type including BHP Billiton, Hess, Apache, Noble, Anadarko, and Occidental.²³ Noble Energy provides one of the best examples of effective water use reporting. It provides key metrics on water use, recycling, and sourcing from non-potable sources for each play in which it operates.²⁴ In fact, in clear contrast to 19 other companies, Exxon fails to provide information about whether it has a policy to use non-potable water wherever feasible and, in contrast to at least 7 other companies, it fails to provide play-by-play information on the percentage of flowback water reused for subsequent well completions.²⁵

6. NUMBERS AND TYPES OF COMMUNITY COMPLAINTS AND PORTION RESOLVED

Exxon does not report information on numbers and categories of community complaints received or its resolution of those community complaints. The impacts of hydraulic fracturing operations on local communities has frequently led to contentious, strained relations between oil and gas companies and the communities in which they operate. Failure to properly address these types of concerns has created financial implications for companies. In the recent past, shareholders have suffered losses in their investments when company operations have been curtailed by bans and moratoria enacted by communities

²⁰ See *Air Emissions Chart*, "Disclosing the Facts: Transparency and Risk in Hydraulic Fracturing," <http://disclosingthefacts.org/2015/>

²¹ A recent study of 25,000 shale wells revealed that nearly half were developed in water basins with "high" or "extremely high" water stress. For example, 92% of Colorado's nearly 4,000 wells were drilled in "extremely high" water stress areas, and even in the Susquehanna River Basin, where water is abundant, drought conditions caused the Susquehanna River Basin Commission to suspend water withdrawal privileges for companies during two recent summers. See Ceres, "Hydraulic Fracturing & Water Stress: Growing Competitive Pressures for Water," (2013) <http://www.ceres.org/resources/reports/hydraulic-fracturing-water-stress-growing-competitive-pressures-for-water>.

²² For ASRPG, see http://asrpg.org/pdf/ASRPG_standards_and_practices-April2012.pdf. For the IEA report, see http://www.worldenergyoutlook.org/media/weowebiste/2012/goldenrules/weo2012_goldenrulesreport.pdf

²³ Disclosing the Facts 2015: Transparency and Risk in Hydraulic Fracturing, Water and Waste Issues table, p.17, <http://disclosingthefacts.org/2015/>

²⁴ Noble Energy 2014 Sustainability Report, p.7, http://sr.nobleenergyinc.com/wp-content/uploads/2015/08/nobleEnergy_2014_SR.pdf

²⁵ Disclosing the Facts 2015: Transparency and Risk in Hydraulic Fracturing, Water and Waste Issues table, p.17, <http://disclosingthefacts.org/2015/>

concerned about the adverse impacts associated with hydraulic fracturing operations. As noted above, Exxon has directly experienced the effects of moratoria that impede its ability to operate.²⁶

Another risk of unresolved community complaints is litigation. In 2011, Exxon's XTO subsidiary was named as a defendant in a class action lawsuit in the U.S. District Court for the Eastern District of Arkansas for "noxious and harmful nuisance, contamination, trespass and diminution of property values that the Gas Wells have caused . . ." including allegations of drinking water contamination.²⁷ While Exxon interacts with the communities in which it operates, Exxon does not report a systematic approach for identifying and addressing community concerns about the impacts of its operations, including quantifying the numbers and categories of community complaints and portion resolved. Thus, shareholders are unable to ascertain if Exxon is adequately addressing community concerns and complaints in a manner that will facilitate ongoing and successful operations.

Peer Comparison: Eight other companies now have programs for capturing and addressing categories of community complaints received.²⁸ For example, Apache is piloting a new software system in two of its major shale operations allowing it to track stakeholder engagements and company responses. Each region's results are aggregated and reported upward.²⁹ Hess has developed an internal database to support implementation and management of stakeholder engagement and grievance mechanism processes.³⁰ BHP also reports it has a system for acknowledging, documenting, investigating, and resolving community concerns, and reporting back to leadership through weekly reports.³¹ These examples demonstrate how companies are creating systems for compiling, assessing, and resolving community issues.

RESPONSE TO EXXON'S ARGUMENTS

In its Statement in Opposition, Exxon argues that its Corporate Citizenship Reports (CCRs) discuss the "risk management issues associated with unconventional resource development."³² While Exxon does discuss, in general and non-quantitative terms, broad and generalized issues concerning hydraulic fracturing operations, the company does not disclose the specific information requested in this resolution, including information on adoption of best practices and the success of those practices across its various hydraulic fracturing operations. Where Exxon provides any data, it is generally aggregated, company-wide statistics, which reflect Exxon's total oil, gas, chemical, and other operations around the world. Company-wide metrics, reflecting Exxon's global operations, do not provide useful information for shareholders on what is

²⁶ Exxon has experienced such costs; it is the largest producer of natural gas in Germany, a country that has maintained a moratorium on fracking despite intense industry lobbying. "Transparency and Trust, ExxonMobil and Shale Gas in Germany, Natural Gas Europe, Sept. 2012, <http://www.naturalgaseurope.com/exxonmobil-and-shale-gas-in-germany>; "Relief for brewers, concern for Exxon? New German government would keep fracking ban," Energy Ticker, Nov. 2013, <http://blogs.marketwatch.com/energy-ticker/2013/11/08/relief-for-brewers-concern-for-exxon-new-german-government-would-keep-fracking-ban/>.

²⁷ "A fracking class action lawsuit," <http://desmogblog.com/2013/05/15/faulkner-county-exxonmobil-sacrifice-zone-tar-sands-pipelines-fracking>

²⁸ Disclosing the Facts 2015: Transparency and Risk in Hydraulic Fracturing, Community Impacts table, p.34, <http://disclosingthefacts.org/2015/>

²⁹ Apache website, Stakeholder Engagement (2016), http://www.apachecorp.com/Sustainability/Society/Communities/Community_involvement/index.aspx.

³⁰ Hess 2014 CSR Report, p. 20, <http://www.hess.com/docs/default-source/sustainability/2014-sustainability-report.pdf?sfvrsn=2>

³¹ BHP Billiton 2015 Hydraulic Fracturing Case Study, p. 6, http://www.bhpbilliton.com/~media/bhp/documents/society/reports/2015/150922_society_environment_responsiblymanaginghydraulicfracturing.pdf?la=en

³² "2016 Proxy Statement", ExxonMobil, April 13, 2016, p. 73. http://cdn.exxonmobil.com/~media/global/files/investor-reports/2016/2016_proxy_statement.pdf

occurring at each of Exxon's natural-gas hydraulic fracturing and drilling operations. Similarly, Exxon's report, *Unconventional Resources Development, Managing the Risks*, treats a range of general issues related to hydraulic fracturing, providing arguments for why hydraulic fracturing is beneficial, industry actions and studies, and non-specific statements about Exxon's operations. *It does not disclose information about Exxon's actual practices as requested by this proposal, including how Exxon is minimizing risks associated with hydraulic fracturing operations.*

Exxon claims that its environmental performance is managed through its Operations Integrity Management System (OIMS). While Exxon's OIMS system provides general guidelines for operational decision making, it does not set forth actual practices.

Exxon's argument that play by play (i.e., local) data will not help shareholders flies in the face of logic. In hydraulic fracturing operations, *impacts and actions at the local level are what matter*. Communities in Pennsylvania or Texas experiencing air quality problems are not interested in whether Exxon reduced air pollution in Europe. Local concerns are relevant in community actions to ban or reduce hydraulic fracturing activities. Exxon in fact demonstrated the importance of providing local information to support its case for hydraulic fracturing in Germany. The publication Natural Gas Europe reports that, when forced to cease operations in the province of North-Rhine Westphalia, Germany, after a moratorium on hydraulic fracturing went into place, Exxon responded to the controversy by launching a website solely to provide information on its German shale operations (<http://www.erdgassuche-in-deutschland.de/>).³³ Exxon did so in recognition that "though ExxonMobil had faith in the safety of the process, it was aware that many others did not share that faith."³⁴

In addition, laws vary state by state. Where companies adopt measures only when required to do so by law, which often appears to be the case with Exxon, communities and the environment may not be appropriately protected. That is why shareholders ask for reporting on whether companies are adopting best management practices even where not required to do so by law. Companies that implement best management practices across the board are the companies that are most likely to avoid spills, releases, air pollution, community opprobrium, litigation, or other problems.

As Exxon notes, shareholders have been asking for disclosure of specific, quantitative information from Exxon for many years in a row. The fact that Exxon has so far refused to respond to nearly a third of shareholders who have voted in favor of this proposal is not an argument that weighs in Exxon's favor. Each year, Exxon falls farther behind its peers in providing this important data.

In sum, Exxon seeks to substitute superficial, generalized, or industry-related information for the specific reporting of Exxon's practices requested by the proposal and required by investors.

CONCLUSION

Exxon currently fails to provide the transparent reporting necessary for shareholders and the public to assess Exxon's progress towards achieving best practices. As highlighted in proponents' resolution, the Department of Energy panel has urged companies to "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." (emphasis in

³³ *Transparency and Trust, ExxonMobil and Shale Gas in Germany*, Natural Gas Europe, Sept. 2012, <http://www.naturalgaseurope.com/exxonmobil-and-shale-gas-in-germany>

³⁴ *Id.*



original).³⁵ We urge shareholders to vote in support of the proposal, and call on the company to provide quantitative reporting on the results of its procedures and practices in order to measure the company's effectiveness in minimizing the adverse environmental and community impacts of its hydraulic fracturing operations.

³⁵ "Shale Gas Production Subcommittee Second Ninety Day Report", *US Department of Energy*, November 18, 2011, p. 9, http://www.shalegas.energy.gov/resources/111811_final_report.pdf,