



The Business Case for Rethinking Fracking

2015

INTRODUCTION

Fracking for gas and oil is underway in at least 29 states, from California to Pennsylvania, in urban and rural areas, next to homes, schools, barns, hospitals, and rivers. It is threatening national forests, parks and other public lands, creating short-term economic gains and posing long-term losses. The relatively new combination of hydraulic fracturing and horizontal drilling technologies has made it possible to extract shale gas and oil from previously hard-to-reach depths. Shale development, also known as fracking, is expanding without comprehensive analysis or full-cost accounting of its effects, especially on public health, water usage, climate and the economy. Because fracking is expanding rapidly and under a diverse, sometimes contradictory maze of regulations at all government levels, the potential for serious problems is significant.

While we understand that shale development is vital to current US energy policy, the American Sustainable Business Council (ASBC) supports moratoria on new drill permits for hydraulically fractured wells, both in states where it is already occurring and in those where it is not yet allowed. We will maintain this position until the conditions listed at the end of this document are met, including full disclosure of chemicals, full cost analysis, and the enactment of strict, enforceable safeguards.

The American Sustainable Business Council calls upon the Environmental Protection Agency and other federal agencies to set minimum standards and provide clarifying rules on the conditions and locations under which hydraulic fracturing can be conducted. ASBC also holds that fracking accelerates dangerous climate change and is not a sustainable option.



Fracking & Farming in Pennsylvania

Source: Sara Gillooly, Tyler Rubright, Samantha Malone (July 1, 2013) provided by the FrackTracker Alliance on FrackTracker.org

We believe that fracking contradicts the EPA's important effort to mandate greenhouse gas (GHG) emissions reductions. We also believe that the oil and gas industry's exemptions to key federal and state environmental laws must be rescinded to level the playing field for energy development. Further, ASBC believes federal funding should be used to significantly advance public and private investment in energy efficiency, conservation and renewable sources; and to enhance the job potential demonstrated by this promising sector of the economy.

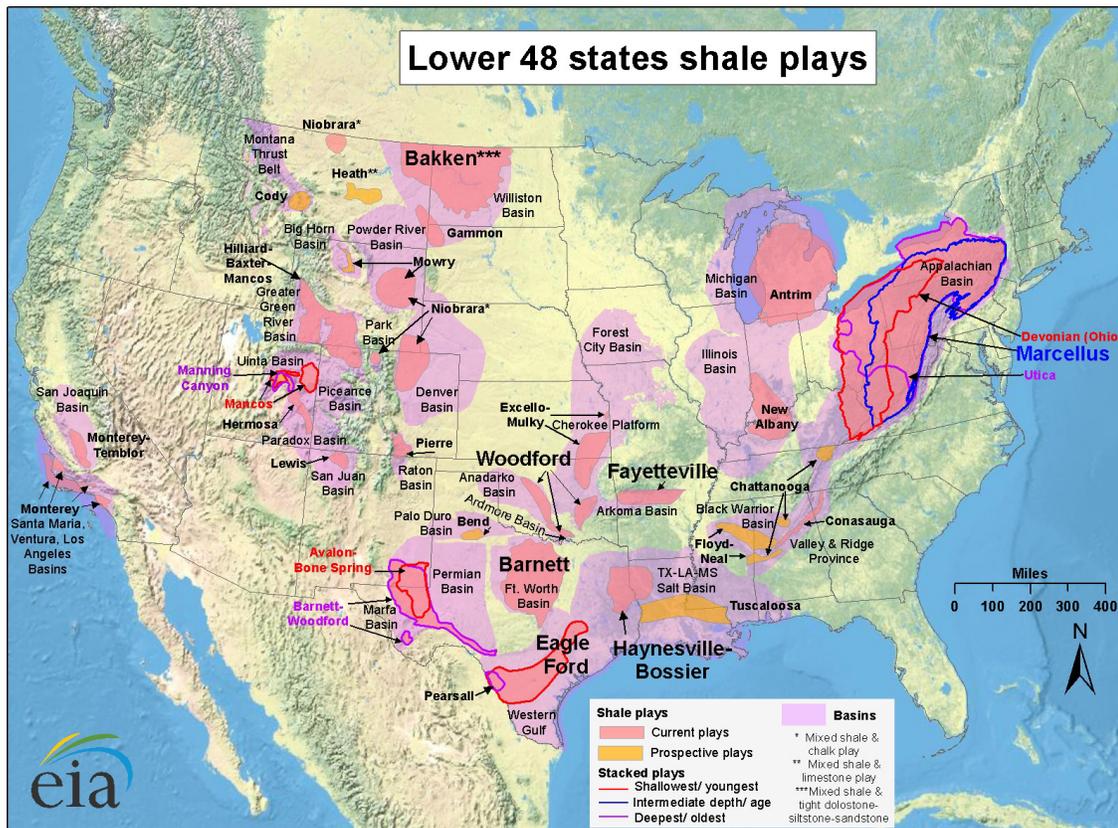
“Over the past 17 years, our clients have shown us the intimate local connections between economies, health, environment, food, energy, and water. In that context, economic development MUST be based on improving those related local components; otherwise the communities will fail.”

– Sandra McCardell

Current-C Energy Systems, Inc, New Mexico

Defining Fracking: Misconceptions & Misinformation

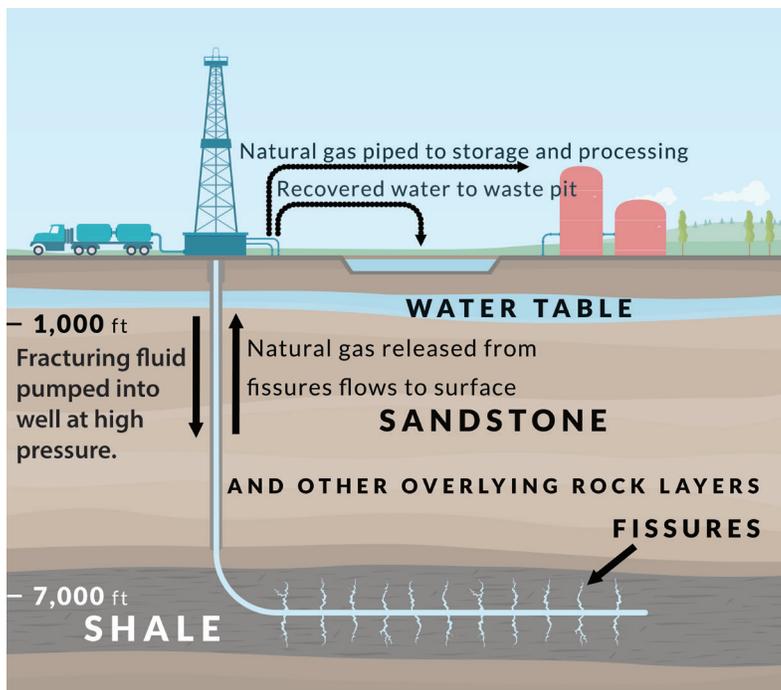
In this report, we use the public's common reference to “fracking” as a general term for producing shale gas and oil. The industry, however, uses a much narrower technical definition that applies only to the specific step during extraction when the shale is fractured. This practice focuses only on the impact of hydraulic fracturing per se and obscures facts about the impact of the total process of shale development. To further minimize public perception of shale development's impact, the oil and gas industry uses public relations strategies similar to those used by the tobacco industry, including positive multimedia ad campaigns and studies published by industry-funded research groups, to assure the public of fracking's safety and benefits. ^{1,2}



Source: Energy Information Administration based on data from various published studies. Updated: May 9, 2011

¹ Miranda Spencer, “Natural Gas and the News: Most messages on fracking ‘brought to you by our sponsors,’” Fairness and Accuracy in Reporting (February 1, 2012) <http://fair.org/extra-online-articles/natural-gas-and-the-news/>

² Jannette M. Barth, PhD, “The Truth About Those Industry-Funded Studies” (March 4, 2011), <http://catskillcitizens.org/learnmore/RESPONSETOINDUSTRY.pdf>



Shale development is a multi-step process from exploration through combustion. Unlike conventional gas drilling, once a site is determined, a well is drilled vertically then horizontally. Approximately 2-8 million gallons of water are mixed with sand and chemicals and injected deep into the earth at an extremely high pressure to hydraulically fracture shale formations and release trapped deposits of natural gas and/or oil. Wastewater or flowback fluids are then either stored in a waste pit or transported off site for disposal. The natural gas travels via pipelines for processing and storage. Sometimes surplus gas is flared, which can result in emissions of methane and other volatile organic compounds. Source: Getty Images

FRACKING CREATES OPPORTUNITIES, BUT AT WHAT COST?

Fracked gas and oil does play an important role in the nation's energy strategy, employing thousands of people, spurring closure of America's aging coal plants and reducing our dependence on foreign oil. We appreciate that natural gas produced from fracking has helped lower carbon dioxide emissions from coal plants, but are concerned that it remains a significant producer of greenhouse gas emissions. Our primary question is: What are the real economic, environmental, public health and other social costs of fracking?

Business leaders are increasingly concerned that the rapid development of shale gas and oil is harming public health and degrading water, air, soil and other resources. They are also concerned that fracking will impose additional tax burdens from externalities, exacerbate climate change, and stall the transition from fossil fuels to renewables. While fracking is touted as a job generator in some sectors, it leads to job losses in others, industrializing the landscape and damaging community character. Commercial, institutional and residential consumers will be increasingly impacted as expanded demand from domestic and export markets, coupled with uncertain estimates of U.S. supply, will put upward pressure on the current low price of gas.³

Generally accepted as a cleaner burning fossil fuel, fracked gas is believed by many to be a bridge to a clean energy economy. However, fracking not only intensifies climate change because it facilitates continued, increasing use of fossil fuels, it also releases heat-trapping methane, a greenhouse gas approximately 25 times more potent than carbon dioxide over a 100-year period and an estimated 72 times more potent over 20 years.⁴

To accurately assess the costs of fracked/shale gas and oil development, every step, from well site exploration to combustion, must be considered for its impact on the economy, local community, environment, climate and public health.

FRACKING IS NOT THE KEY TO A STABLE, SUSTAINABLE ECONOMY

Though fracking for shale gas and oil has been trumpeted as a boon to an ailing US economy, potentially reviving American manufacturing and bringing revenue to cash-strapped rural counties, it is a classic extractive industry with predictable results.

³ Jannette M. Barth, PhD, "Preliminary Comments on 2014 Draft New York State Energy Plan," (March 6, 2014) http://sape2016.files.wordpress.com/2014/02/jmb_comments_2014_nysep_-_preliminary.pdf

⁴ Piers Forster and Venkatachalam Ramaswamy, "Changes in Atmospheric Constituents and in Radiative Forcing," Intergovernmental Panel on Climate Change (Accessed December 15, 2013), <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-chapter2.pdf>

Extractive industries create a boom-and-bust cycle. A rapid increase in local economic activity is often followed by a rapid decrease upon depletion of the recoverable resource, leaving behind damaged infrastructure and economic, environmental and social ills.⁵ Taxpayers, including businesses, are forced to shoulder immediate and long-term costs due to heavy wear on infrastructure, increased demand for public services, from public assistance to police protection, triggered by economic disruption and cleanup of contaminated sites and spills. Following this boom-and-bust pattern, shale development yields immediate benefits by generating jobs and revenues in hospitality, construction and retail, and royalties for some landowners, but these short-term benefits most often last only through the boom of the initial drilling and construction stages.⁶ Communities are experiencing the effects of the bust on the local economy as production declines and investment and activity move elsewhere.⁷

The actual number of jobs created by fracking is far lower than projections made by the industry and its supporters and remains a small portion of overall employment. Exaggerated projections of job creation

have allowed the industry to minimize or altogether avoid taxation, regulation, and even careful scrutiny of shale development. Supporters of fracking in Pennsylvania boasted the creation of 48,000 jobs from the end of 2009 to early 2011, but this significant claim was based purely on new hires. Data revealed that the actual number of new jobs created during the longer period of 2007-2011 was closer to 5,700. And instead of providing employment for local residents, the jobs associated with the fracking boom are often outsourced to skilled workers from out of state.

According to the Bureau of Labor Statistics, direct industry jobs (for onshore and offshore oil and gas operations) have accounted for less than 1/20th of 1% of the overall U.S. labor market since 2003.⁸

History has demonstrated that extractive-energy-focused counties fare worse economically than their peer communities. They are less prepared for future growth due to a less-diversified economy, a less-educated workforce, and greater income disparity.⁹ Areas with the highest levels of long-term poverty tend to be found in places that were once the site of thriving extractive industries.¹⁰

“The exceptional quality of our software services depends on the ability to attract and retain talented software engineers who come to Ithaca for the quality of life, natural beauty, outdoor recreation and vibrant local food system. Shale development would industrialize our pristine landscape severely altering community character.”

*– Elisa Miller Out,
Singlebrook Technology, New York*

FRACKING CREATES BURDENS ON BUSINESS

Businesses, particularly small ones, are harmed by the effects of climate change including disrupted supply chains, damaged infrastructure, and increased insurance and transportation costs. Although prevalence of natural/shale gas has reduced carbon dioxide emissions from coal plants, methane emissions from fracking are also of deep concern when assessing greenhouse gases that impact the climate. An independent poll has revealed that 87% of small business owners across party lines view climate change as potentially harmful to their business. The poll also found that small business owners view accelerating the transition to cleaner, renewable energy sources as vital for America’s economic success.¹¹

⁵ Frank Mauro et al., “Exaggerating the Employment Impacts of Shale Drilling: How and Why,” Multi-State Shale Collaborative (November 2013) <https://pennbpc.org/sites/pennbpc.org/files/MSSRC-Employment-Impact-11-21-2013.pdf>

⁶ Sue Mukherjee, “Presentation to the Economic & Workforce Development Workgroup, Governor’s Marcellus Shale Advisory Commission,” PA Department of Labor & Industry (accessed January 15, 2014), slide 11 <http://files.dep.state.pa.us/PublicParticipation/MarcellusShaleAdvisoryCommission/MarcellusShaleAdvisoryPortalFiles/Workgroups/Marcellus%20Shale%20Sue%20Mukherjee.pdf>

⁷ Stephen Herzenberg, “Drilling Deeper into Job Claims,” Keystone Research Center (accessed January 15, 2014) http://keystoneresearch.org/sites/keystoneresearch.org/files/Drilling-Deeper-into-Jobs-Claims-6-20-2011_0.pdf, 1.

⁸ U.S. Bureau of Labor Statistics (May 8, 2012), http://data.bls.gov/timeseries/CES1021100001?data_tool=XGtable

⁹ Headwaters Economics, “Fossil Fuel Extraction as a County Economic Development Strategy: Are Energy-Focusing Counties Benefiting?,” (September 2008, revised July 11, 2009) http://headwaterseconomics.org/pubs/energy/HeadwatersEconomics_EnergyFocusing.pdf

¹⁰ “Testimony of Jannette M. Barth, PhD., presented before the New York State Senate Democratic Conference Public Forum on Hydrofracking,” (July 8, 2012) <http://www.scribd.com/doc/100844703/Testimony-of-Jannette-M-Barth-Ph-D-Pepacton-Institute-LLC-at-Hydrofracking-Public-Forum-7-18-12>

¹¹ “Poll Results: Small Business Owners’ Views on Climate Change Policy,” American Sustainable Business Council (June 2014) http://asbcouncil.org/sites/default/files/asbcpollreportclimateenergypolicyreform_final.pdf

Uncertainty resulting from fuel price volatility caused by indeterminate supply, pressure to export, and increasing demand, makes long-term planning very hard for business leaders and other energy consumers alike. Vastly different estimates of recoverable resources make it impossible to guarantee current low prices in the long term. And as domestic demand increases while buildings, power plants and vehicle fleets are converted solely to natural gas, there will be additional upward pressure to increase supply and expand drilling.¹²

The Department of Energy reduced its previous estimate of the Marcellus Shale gas reserve by 66%¹³ and, more recently, slashed its initial estimate of the Monterey Shale in California by 96%.¹⁴

The recent pressure to expedite construction along U.S. coasts of massive, billion-dollar export terminals to liquefy and export natural gas contradicts government and industry claims that the exploitation of shale gas is for domestic energy independence. As domestic gas is exported, it is highly likely that the price of natural gas will increase when American product is exposed to

the global market¹⁵ where natural gas prices in some countries are up to five times greater than the US domestic price.¹⁶

Fracking harms sectors in local and regional economies that are not compatible with heavy industry and depend on natural amenities.¹⁷ These economies include tourism, agriculture, food and beverage, real estate, hunting, fishing and outdoor recreation. Upon the construction of well pads, waste pits, access roads, pipelines, compressor stations and other infrastructure, natural and rural landscapes are transformed into industrial zones, altering the character of a community in a variety of ways.

Networks of independent, location-sensitive businesses are disrupted by the contamination of water, air and soil; loss of natural habitat; fragmentation of land; loss of scenic vistas and open spaces; odors, noise and light pollution; and heavy truck traffic.

It takes approximately 1,200 truck trips to bring one gas well into production, 350 truck trips per year to maintain, and 1,000 truck trips every 5 years to re-fracture the well.¹⁸



Heavy truck traffic crowds village streets.

Source: <http://www.marcellus-shale.us/>

“For thirty years we have grown grapes and made wine. All that we have worked for is threatened by the possibility of hydro fracturing being allowed in our part of NY State. The Finger Lakes region is a world-recognized tourist destination because of the natural beauty and myriad activities available.

Dropping the heavy industry of fracking into the Finger Lakes area would be disastrous.”

– Pete Saltonstall, King Ferry Winery, New York

¹² Jannette M. Barth, PhD, “Preliminary Comments on 2014 Draft New York State Energy Plan,” (March 6, 2014) http://sape2016.files.wordpress.com/2014/02/jmb_comments_2014_nysep_-_preliminary.pdf

¹³ Christine Buurma, “U.S. Cuts Estimate for Marcellus Shale Gas Reserves by 66%,” Bloomberg (January 23, 2012) <http://www.bloomberg.com/news/2012-01-23/u-s-reduces-marcellus-shale-gas-reserve-estimate-by-66-on-revised-data.html>

¹⁴ Louis Sahagun, “U.S. officials cut estimate of recoverable Monterey Shale oil by 96%,” Los Angeles Times (May 20, 2014); <http://www.latimes.com/business/la-fi-oil-20140521-story.html>

¹⁵ “Macroeconomic Impacts of LNG Exports from the United States,” NERA Economic Consulting at request of US Dept. of Energy/Office of Fossil Energy (December 2012) http://energy.gov/sites/prod/files/2013/04/fo/nera_lng_report.pdf

¹⁶ Jannette M. Barth, PhD, “Preliminary Comments on 2014 Draft New York State Energy Plan,” (March 6, 2014) http://sape2016.files.wordpress.com/2014/02/jmb_comments_2014_nysep_-_preliminary.pdf

¹⁷ Pete Morton, “Phased Energy Development and Precautionary Principle: Good for Critters and Communities” Power Point Presentation at Restoring the West Conference on Balancing Energy Development and Biodiversity (October 30, 2012), <https://www.youtube.com/watch?v=VjZH2p5Rajo>

¹⁸ Barton, John. “Presentation to House Appropriations Subcommittee Committee on Budget Transparency and Reform.” Texas Department of Transportation (March 11, 2013) slide 11 http://ftp.dot.state.tx.us/pub/txdot-info/energy/presentation_031113.pdf

Food and Fracking

Some of the country's most productive agricultural regions overlap shale gas plays. The environmental, cultural and economic harm to farming, beverage and food production includes: competition for water resources; potential contamination of surface and ground water, soil and air; reduced crop yields due to ozone pollution; fragmentation, disturbance, and permanent loss of agricultural lands; threats to farm- and food-related livelihoods; and harm to the marketing and sales of locally produced food and beverages, an expanding economic sector. Growing concern about the safety of food from fracked areas has been expressed by consumers, farm organizations, producers, brewers, chefs, and professional food buyers from New York, Pennsylvania, and Ohio to Wyoming, Colorado and California.¹⁹

While data specifically linking fracking chemicals to the poisoning of livestock is not yet available, these links are strongly suggested by research. A 2012 study found significant harm to farm animals associated with spills of fracking fluid in six states.²⁰ Another study highlights the decline of dairy herds and milk production in Pennsylvania counties with the most drilling activity.²¹

Since sustainable farming practices help mitigate climate change by sequestering carbon and decreasing the demand for fossil fuels, the loss of and damage to farms from shale development leads us even further away from climate stabilization and a sustainable economy.²²



Christine Hughes,
owner of the
**Village Bakery
and Cafe,**
Athens, Ohio
Source: Bob O'Neil

Fracking stresses water supply. Hydraulic fracturing requires several millions of gallons per well, raising serious questions about from where and how much water is sourced over the well's productive life. Almost half of U.S. shale gas and oil wells are being developed in regions with high-to-extremely high water supply stress. Overall, 75 % of wells are located in regions with medium-or-higher baseline water supply stress.²³ Especially in areas suffering from drought, such as Texas, California, Colorado, and New Mexico, intense competition for limited resources pits drillers against farmers and communities.²⁴

While some of the toxic wastewater produced by fracking may be recycled, most is disposed of by controversial, dangerous methods that permanently remove it from the hydrological cycle. Chemically-laden wastewater, which can also contain heavy metals, naturally occurring radioactive materials, and other drilling by-products, is being accepted in landfills and water treatment plants, dumped in rivers, injected deep underground (where it has been linked to earthquakes), and used to de-ice roads and control dust, even in states such as New York where fracking is not permitted.²⁵

“Attracting good workers and loyal customers to our business depends on a natural and built environment that is beautiful and inviting, not industrial and contaminated. The new and unconstrained threat of shale drilling and its waste has made our region and its local food-based businesses vulnerable.”

– Christine Hughes

¹⁹ Elizabeth Royte, “Fracking our Food Supply,” *The Nation* (December 17, 2012), <http://www.thenation.com/article/171504/fracking-our-food-supply#>

²⁰ Michelle Bamberger and Robert E. Oswald, “Impacts of Gas Drilling on Human and Animal Health,” *New Solutions* 22, no. 1 (2012), 51-77 http://www.psehealthyenergy.org/data/Bamberger_Oswald_NS22_in_press.pdf

²¹ Madelon L. Finkel et al., “Marcellus Shale Drilling’s Impact on the Dairy Industry in Pennsylvania: A Descriptive Report,” *New Solutions: A Journal of Environmental and Occupational Health Policy* 23, no. 1 (2013): 189-202; <http://catskillcitizens.org/learnmore/NS23-1Binder1copy.pdf>

²² Jeff Schahzenski and Holly Hill, “Agriculture, Climate Change and Carbon Sequestration,” (National Sustainable Agriculture Information Center (2009) <https://attra.ncat.org/attra-pub/viewhtml.php?id=297>

²³ Monika Freyman and Ryan Salmon, “Hydraulic Fracturing & Water Stress: Growing Competitive Pressures for Water,” *Ceres* (May 2013) <https://www.ceres.org/resources/reports/hydraulic-fracturing-water-stress-growing-competitive-pressures-for-water/view>

²⁴ Elizabeth Freyman and Salmon, “Hydraulic Fracturing & Water Stress: Growing Competitive Pressures for Water.”

²⁵ Riverkeeper, “The Facts about New York and Fracking Waste,” (accessed December 20, 2013) <http://www.riverkeeper.org/campaigns/safeguard/gas-drilling/the-facts-about-new-york-and-fracking-waste/>

An independent poll of small business owners across party lines commissioned by ASBC in 2014 revealed ²⁶:

- 71% of small business owners believe clean water is needed for a healthy economy and local jobs
- 67% are concerned that water pollution could hurt their businesses in the future
- 62% agree that government regulation is needed to prevent water pollution
- 60% believe that complying with clean water regulations is more economical than risking harm from neglecting safety practices

Fracking creates competition for scarce economic inputs, such as labor, housing and transport. Costs to all industries for materials and services rise when the oil and gas industry can afford to pay higher market prices, for transport, hotel rooms, accounting services, etc. ²⁷ The influx of industry workers during the construction and production phases can trigger increased demand for limited housing stock and a surge in rental prices. ²⁸ Hotels and motels are also increasing their rates and being booked to capacity by drillers, hampering tourism and businesses requiring accommodations for clients. ²⁹

Fracking endangers health. The cost of doing business increases for non-fracking companies when their employees and their families experience health problems associated with fracking-related activities. ³⁰ People who live or work near drilling operations, compressor stations, pipelines and other infrastructure report a variety of health problems that harm business, including higher health care costs, workplace absenteeism and reduced productivity. ³¹ Each day of reduced activity costs the economy roughly \$50, while a missed day of work costs approximately \$105. ³²

The primary pathways of exposure include inhalation and skin absorption of air emissions and ingestion of contaminated water. Throughout the processes of shale gas and oil exploration, extraction, processing, transport, disposal and use, the public is exposed to harmful pollutants released into the air including methane, diesel, ozone, benzene, and silica dust. ^{33,34} There is an urgent need for more research and monitoring of the impact on air quality throughout all stages of fracking operations. ³⁵

At least 15.3 million Americans (about 5% of the population) live within one mile of a well that has been drilled since 2000. ³⁶

Methane gas, most commonly the source of contamination in private drinking wells, can cause household explosions and asphyxiation and can be impossible to detect without testing. ³⁷ Contamination of groundwater has been associated with fracking in many states, and has been confirmed by state authorities in at least Pennsylvania, Ohio, and West Virginia. ³⁸

²⁶ "Small Business Owners Favor Regulations to Protect Clean Water," American Sustainable Business Council (July 2014) http://asbcouncil.org/sites/default/files/asbc_clean_water_poll_report_july2014_sv_final_140721v2sm.pdf

²⁷ David Kay, "The Economic Impact of Shale Gas Drilling: What Have We Learned? What are the Limitations?," Cornell University Working Paper Series: A Comprehensive Economic Analysis of Natural Gas Extraction in the Marcellus Shale (April 2011): 26, http://greenchoices.cornell.edu/downloads/development/shale/Economic_Impact.pdf

²⁸ Christopherson and Rightor, "How We Should Think About the Economic Consequences of Gas Drilling?," 22.

²⁹ James Lowenstein, "Skyrocketing rent in Bradford County: Influx of gas workers creating shortage of affordable housing," The Daily Review (January 22, 2010) <http://thedailyreview.com/news/skyrocketing-rent-in-bradford-county-influx-of-gas-workers-creating-shortage-of-affordable-housing-1.563248>

³⁰ Wilma Subra, "Human Health Impacts Associated with Chemicals and Pathways of Exposure from the Development of Shale Gas Plays," Presentation (Accessed January 13, 2014) http://www.earthworksaction.org/files/publications/SUBRA_3_Shale_Gas_Plays-Health_Impacts_sm.pdf

³¹ Tony Dutzik, et al. "The Costs of Fracking: The Price Tag of Dirty Drilling's Environmental Damage." Environment America Research and Policy Center (Fall 2012) <http://www.environmentamerica.org/sites/environment/files/reports/The%20Costs%20of%20Fracking%20vUS.pdf>

³² Calculation based on methodology described in U.S. Environmental Protection Agency, Control of Hazardous Air Pollutants from Mobile Sources: Regulatory Impact Analysis, February 2007, with median wage data from U.S. Social Security Administration, Automatic Increases: Measures of Central Tendency for Wage Data, downloaded from www.ssa.gov/oact/cola/central.html, 3 July 2012. Also see Dutzik, "The Costs of Fracking," 16-17.

³³ "Hazard Alert," National Institute for Occupational Safety and Health (accessed December 14, 2013), https://www.osha.gov/dts/hazardalerts/hydraulic_frac_hazard_alert.html

³⁴ Lisa M. McKenzie et al, "Human Health Risk Assessment of Air Emissions from Development of Unconventional Natural Gas Resources," Sci Total Environ (2012) <http://cogcc.state.co.us/library/setbackstakeholdergroup/Presentations/Health%20Risk%20Assessment%20of%20Air%20Emissions%20From%20Unconventional%20Natural%20Gas%20-%20HMcKenzie2012.pdf>

³⁵ Gretchen Goldman and Daniel Tormey, "Fracking and My Community's Air Quality: Is There Something in the Air?" Union of Concerned Scientists (September 26, 2013) <http://blog.ucsusa.org/fracking-and-my-communitys-air-quality-is-there-something-in-the-air-254>

³⁶ Russel Gold and Tom McGinty, "Energy Boom Puts Wells in America's Backyards," Wall Street Journal (October 25, 2013) <http://online.wsj.com/news/articles/SB10001424052702303672404579149432365326304>

³⁷ "Facts on Fracking." Alliance of Nurses for Healthy Environments (accessed January 15, 2014), <http://envirn.org/pg/pages/view/79719/fact-sheets-and-resources>

³⁸ Kevin Begos, "Some States Confirm Water Pollution from Drilling," Associated Press (January 5, 2014), <http://bigstory.ap.org/article/some-states-confirm-water-pollution-drilling>

“When we turn on the tap, the water reeks of hydrocarbons and chemicals. Our drinking water now comes from five-gallon jugs. We wonder how we’re going to support our families and pay our bills if the contamination affects our livestock and farming operations. Selling out is no longer an option because property values in the Pavillion area have declined to nothing. Homes and farms can’t even be used as collateral.”

—John Fenton



John Fenton on his ranch in Pavillion, Wyoming
Source: Denny Larson, Global Community Monitor

Fracking impacts property values. In some regions, fracking has greatly reduced or even wiped out property values.³⁹ One study found that, as a result of potential groundwater contamination due to fracking, reductions in home prices eclipse any gains property owners receive from leases or other economic benefits.⁴⁰

Some banks and all federal agencies, including Wells Fargo, Provident Funding, GMAC, Fidelity, and Freddie Mac, have placed restrictions on, or outright refuse

loans for, residential properties leased for heavy industrial and commercial activity.⁴¹ Many owners who did not get prior consent from their lender before signing a lease are now in “technical default” under the terms of their mortgages.⁴² Insurance companies also recognize the sizable risk of damages posed by shale development. In an internal memo, Nationwide Mutual Insurance Co. explained they would not provide policies because “the exposures presented by hydraulic fracturing are too great to ignore.”⁴³



Natural gas being flared at a Pennsylvania fracking site

Source: J Henry Fair

“I work with businesses looking to develop Zero Waste Plans to lower costs and to lower impact on the environment. Governments should empower and reward these practices rather than provide special exemptions and subsidies that allow the oil and gas industry to externalize costs and perpetuate our dependence on the inefficient, polluting and unsustainable use of fossil fuels.”

—Gary Liss, Gary Liss & Associates, California

³⁹ Dutzik, “The Costs of Fracking,” 35.

⁴⁰ Lucija Muehlenbachs et al, “Shale Gas Development and Property Value: Differences Across Drinking Water Sources,” Resources for the Future (July 2012) <http://www.rff.org/RFF/Documents/RFF-DP-12-40.pdf>, 30.

⁴¹ Elisabeth N. Radow, “Homeowners and Gas Drilling Leases: Boon or Bust?” New York State Bar Journal 83, no. 9 (November/December 2011) http://www.s-oacc.org/resources/NYSBA_Journal_nov-dec2011_lead_article_with_reprint_info.pdf

⁴² Roger Drouin, “How the Fracking Boom Could Lead to a Housing Bust,” The Atlantic (August 19, 2013) <http://www.theatlanticcities.com/politics/2013/08/how-fracking-boom-could-lead-housing-bust/6588/>

⁴³ Mary Esch, “US Insurer Won’t Cover Gas Drill Fracking Exposure,” Bloomberg BusinessWeek (July 12, 2012) <http://www.businessweek.com/ap/2012-07-12/us-insurer-wont-cover-gas-drill-fracking-exposure>

FRACKING AND THE ROLE OF FEDERAL GOVERNMENT

While ASBC appreciates that states are the primary regulators of unconventional drilling operations, we believe that minimum federal regulatory standards must be in place and enforced to mitigate the known risks of hydraulic fracturing operations to our water supply, air quality, climate, and public health. The EPA was established to perform this role, hold states accountable, and thus guarantee baseline protection for the American public and our shared environment.

Although oil and gas operations have been exempted from key federal safeguards since the 1980s, the 2005 Energy Policy Act went even further to strip the EPA of its authority to oversee these companies' production, disposal and cleanup processes.⁴⁴ These legal loopholes essentially give jurisdiction to the states over many regulatory aspects including disclosure of chemical information, monitoring of air and water emissions, and disposal of waste.

The lack of coordinated federal oversight hampers oil and gas companies' understanding of existing regulations, their compliance, and their accountability. One example is the transport of hydraulic fracturing fluids, chemicals, wastewater, and crude oil across state lines and international borders. The increased use of railroads, heavy trucks, and barges, in conjunction with the overlapping jurisdiction of the EPA, Departments of Energy and Interior, Federal Highway Administration, Federal Railroad Administration, National Coast Guard and other entities and individual states, allows gaps

and confusion that ultimately harm the environment, public safety, and as a consequence, the economy.⁴⁵

A comprehensively regulated, fully accountable oil and gas industry could benefit a wide range of businesses. One way to facilitate this benefit is to close oil and gas industry loopholes and eliminate exemptions and subsidies. An independent poll revealed that 62% of small business owners across party lines oppose the continuation of subsidies to oil, gas and coal companies, which creates a non-level playing field for all industries.⁴⁶ However, we cannot rely solely on the enforcement of government regulations; the industry must better police itself, establish best practices, and address the full costs imposed by shale development.

Fracking on federal and Indian lands. Though approximately 90 percent of wells drilled on federal and Indian lands in 24 states, including national forests and wildlife refuges, are stimulated using hydraulic fracturing techniques, the Bureau of Land Management's regulations were not written to address modern hydraulic fracturing operations. Revisions to the rule applying across millions of acres and last revised in 1988 were proposed in 2013⁴⁷ and have become the focus of a national campaign to ban fracking on all public lands.⁴⁸ A comprehensive regulatory framework that applies to both federal and Indian lands is required to ensure there is no "race to the bottom" to deregulate and compete for drilling projects, and that adequate compensation for resources is provided by oil and gas companies.

Oil and gas industry activities, including hydraulic fracturing, are specifically exempted from the:

- Safe Drinking Water Act
- Clean Air Act
- Clean Water Act
- National Environmental Policy Act
- Resource Conservation and Recovery Act
- Emergency Planning and Community Right to Know Act
- Comprehensive Environmental Response, Compensation, and Liability Act

⁴⁴ William J. Brady, "Hydraulic Fracturing Regulation in the United States: The Laissez-Faire Approach of the Federal Government and Varying State Regulations," 14 Vermont Journal of Environmental Law 40 (2013), <http://www.law.du.edu/documents/faculty-highlights/Intersol-2012-HydroFracking.pdf>

⁴⁵ "Regulatory complexity governs rail, truck oil field transportation," Oil & Gas Journal (January 6, 2014) <http://www.ogj.com/articles/print/volume-112/issue-1/transportation/regulatory-complexity-governs-rail-truck-oil.html>

⁴⁶ "Poll Report: Small Business Owners' Views on Energy & Environmental Policy Reform." American Sustainable Business Council (June 2013) http://asbcouncil.org/sites/default/files/library/docs/asbc_energy-enviro_poll_report_final_june_2013.pdf

⁴⁷ Bureau of Land Management, "Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands," Department of the Interior (accessed December 20, 2013) http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications_Directorate/public_affairs/hydraulicfracturing.Par.91723.File.tmp/HydFrac_SupProposal.pdf

⁴⁸ "Protect Our National Parks and Forests from Fracking," Sierra Club (accessed October 9, 2014), <https://secure.sierraclub.org/site/Advocacy?cmd=display&page=UserAction&id=11123>

STATE GOVERNMENTS: AN UNEVEN PATCHWORK OF RULES

State governments that allow fracking have developed regulations and enforcement mechanisms of varying complexity. In addition, as state budgets have become more constricted, agencies do not have enough resources or technical expertise to adequately enforce them. ASBC appreciates that states are allowed to implement different regulatory approaches, but the patchwork of state regulations, and the fact that many of fracking's effects cross state lines, demonstrate the critical need for federal minimum requirements to mitigate the known risks.

Critical to location-sensitive businesses and local economies, 21 states are battlegrounds for the rights of counties, cities, and towns to make their own decisions to allow hydraulic fracturing.⁴⁹ In 2014, the highest court in New York upheld towns' authority to utilize zoning and land-use controls to block fracking and other heavy industry from within their boundaries under the provision of Home Rule, allowing the more than 170 bans and moratoria to stay in

place.⁵⁰ In support of local democratic autonomy, the Pennsylvania Supreme Court affirmed a similar right for local communities in 2013.⁵¹

HOLDING THE INDUSTRY FINANCIALLY ACCOUNTABLE

Existing laws are inadequate to ensure upfront financial accountability by the gas and oil industry.⁵²

Failing to hold the industry accountable to the same financial assurance requirements as other industries externalizes their costs to the public. It also eliminates market-based pressure on drillers to implement best practices and technologies that prevent costly accidents and environmental contamination and can slow reparation to those harmed.

State and federal financial assurance requirements must be significantly improved to protect the public, environment and local economies over the long term by making stronger bonding rules, eliminating exemptions and integrating the financial assurance rules into a comprehensive regulatory framework.⁵³



Aerial view of well pads, feeder pipelines, and access roads in Dimock, PA

Source: J Henry Fair

⁴⁹ "Local Resolutions Against Fracking," Food & Water Watch (accessed January 13, 2014) <http://www.foodandwaterwatch.org/water/fracking/fracking-action-center/local-action-documents/>

⁵⁰ Opinion of New York State Court of Appeals on Cases 130 & 131 (June 2014), <https://www.nycourts.gov/ctapps/Decisions/2014/Jun14/130-131opn14-Decision.pdf>

⁵¹ Charles Taylor, "Pa. High Court Upholds Local Control over Fracking," County News 46, no. 1 (Jan 13 2014) <http://www.naco.org/newsroom/countynews/Current%20Issue/1-13-14/Pages/Pa-high-court-upholds-local-control-over-fracking.aspx>

⁵² Dutzik, "The Costs of Fracking," 4.

⁵³ Dutzik, "The Costs of Fracking," 4.

INVESTING IN RENEWABLE ENERGY BENEFITS THE ECONOMY AND GENERATES JOBS

Today's public and private investment in renewable energy will play a critical role in limiting the increase of global temperature 2 degrees Celsius as agreed upon by world governments in 2010; but only if investment is dramatically increased. After reaching a record high of \$318 billion in 2011, investment in renewable energy fell to an estimated \$254 billion in 2013, far below the threshold needed to avoid the worst effects of climate change. Investment is alarmingly low, partly due to lower costs for solar panels and wind farms and the uncertain and discontinuous nature of tax credits,⁵⁴ but also because shale oil and gas have lured investment away from clean renewable energy sources.⁵⁵

A transition away from fossil fuels is not only necessary to protect business from disruptions due to climate change, but “would create more jobs per unit energy than coal and natural gas.”⁵⁶

Researchers at the University of Massachusetts found that “for every million dollars spent on energy production in the United States, oil and gas creates 3.7 direct and indirect jobs, whereas wind and solar produce 9.5 and 9.8 jobs, respectively.”⁵⁷

Despite the job creation, stability, domestic production, and environmental and health benefits of a renewable energy system, the federal government has prioritized fossil fuel development by contributing more than \$100 million in research, and billions more in tax breaks, to develop fracking nationwide over the past three decades. Federal exemptions, investments and subsidies have helped push shale development into full commercial competitiveness, creating a non-level playing field for alternatives and allowing the price of fossil fuels to remain artificially low.

Increased investment and consistent government policy can move business and industry towards transitioning to a renewable energy future. Results would include new, higher quality jobs to replace and surpass employment in the current fossil fuel-based energy system, long-term energy independence, and the ability of existing industries incompatible with shale development to flourish.

Independent polls in 2013 of small business owners across party lines commissioned by the American Sustainable Business Council found that:^{58, 59}

- 72% think incentives for clean energy are a priority
- 62% oppose continuing subsidies to oil, gas and coal companies
- 92% support regulations to protect air and water from pollution by toxic chemicals
- 87% of business owners named one or more consequences of climate change as potentially damaging to their businesses



Well pad during drilling process in Dimock, PA
Source: J Henry Fair

⁵⁴ Ehren Goosens, “Clean Energy Support Falls Again to \$254 Billion in 2013,” Bloomberg BusinessWeek (January 15, 2014) <http://www.businessweek.com/news/2014-01-15/clean-energy-investment-declines-for-second-year-to-254-billion>

⁵⁵ “Golden Rules for the Golden Age of Natural Gas,” International Energy Agency (May 29, 2012), <http://www.worldenergyoutlook.org/goldenrules/#d.en.27023>

⁵⁶ Max Wei, et al., “Putting renewables and energy efficiency to work: How many jobs can the clean energy industry generate in the US?” Energy Policy 38, (2010) http://rael.berkeley.edu/sites/default/files/WeiPatadiaKammen_CleanEnergyJobs_EPolicy2010.pdf

⁵⁷ Robert Pollin, et al., “The Economic Benefits of Investing in Clean Energy,” Department of Economics and Political Economy Research, University of Massachusetts (June 2009), http://www.peri.umass.edu/fileadmin/pdf/other_publication_types/green_economics/economic_benefits/economic_benefits.PDF

⁵⁸ “Poll Report: Small Business Owners’ Views on Energy & Environmental Policy Reform,” American Sustainable Business Council (June 2013) http://asbcouncil.org/sites/default/files/library/docs/asbc_energy-enviro_poll_report_final_june_2013.pdf

⁵⁹ “Businesses Fear Climate Change, New Poll Shows Business Owners Worried,” American Sustainable Business Council (June 25, 2014) <http://asbcouncil.org/news/press-release/businesses-fear-climate-change-new-poll-shows-business-owners-worried#U6xZlYeYbIV>

CONDITIONS THAT MUST BE MET

ASBC supports moratoria on new drill permits for hydraulically fractured wells, both in states where it is already occurring and in those where it is not yet allowed, until the following conditions are met:

- Long-term, transparent, unimpeded and independent research and analysis must be conducted to account for full economic costs of shale development on national and local economies, public health and the environment.
- Full disclosure of all practices during production and post-production must be made available to health professionals, scientists and the public, including: advance notice of intent to frack and composition of fracking fluids, measures to ensure well integrity, water usage, reuse and disposal of fluids, and transport.
- Since there are suspected risks to water, air, climate and local economies in the long-term, the burden of proof that expansion of shale development is not harmful must be borne by those promoting it.
- Special exemptions from key environmental safeguards must be eliminated for the oil and gas industry at the federal and state levels.
- Federal agencies must enact minimum standards to mitigate known impacts while allowing the states to implement varying regulatory approaches. Stakeholders, including local governments and business owners, must be involved in the process of deciding where and how activities may occur.
- Regulators must have sufficient resources and expertise for enforcement of well-defined, environmentally rigorous regulations and adequate monitoring of water and air quality, including methane leakage, and be willing to accept supplementary community monitoring. At sites where oil and gas operations have not yet occurred, baseline conditions of air and water quality must be established before development.
- Waste must be disposed of responsibly to prevent toxic chemicals, heavy metals, and radioactive materials from spilling, leaching, or evaporating into the atmosphere. Wastewater disposal wells, open storage pits, processing by water treatment facilities, and road-spreading for dust control and de-icing purposes must be prohibited until proven safe.
- Oil and gas companies must be held responsible for remediation by providing up-front financial assurances for clean-up of accidents or contamination and compensation for affected individuals, businesses and communities.

CONCLUSION

While fracking is creating a worldwide boom in fossil-fuel based energy production, it is not a long-term solution. The American Sustainable Business Council believes the U.S. must work actively to reduce its greenhouse gas emissions and to transition away from fossil fuels through public policy and government-supported research as well as private investment in renewable energy. The development and implementation of an energy policy based on efficiency, conservation and renewable sources -- and tied to a national water management policy -- will deliver the greatest long-term economic and job creation benefits. While natural gas will undoubtedly remain an important source of domestic energy for the foreseeable future, fracking must not be allowed

to inflict lasting harm on the nation's economy, environment, communities, and public health.

Our national priority must be to incentivize investment in clean energy technology and renewables, end exemptions and subsidies to the oil and gas industry for further fossil fuel development, and improve and enforce existing laws and regulations. The current shale gas and oil boom cannot distract us from its ultimate bust: irrevocable harm to our country's resources and people. Instead of promoting fracking globally, the U.S. government should advance a sustainable economic and energy policy and lead the world's transition from an energy system based on fossil fuels to one powered by renewable sources.