FRACKING COLORADO:
Illusory Benefits, Hidden Costs

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Coloradans are increasingly aware of the problems that accompany drilling and fracking for oil and natural gas. Communities are working to ban the practice and, of course, the oil and gas industry is fighting back. But the industry's primary argument—that fracking drives economic growth and prosperity in the state—just doesn't add up.

Fracking is short for hydraulic fracturing. It requires drilling down a mile or more to a targeted layer of rock, and then drilling sideways another mile or more through the targeted rock formation, before mixing millions of gallons of water with sand and chemicals and finally injecting it all underground at extreme pressure.[1] This is all done to fracture the rock formation so potentially profitable amounts of tightly held oil or natural gas can be brought to the surface and mostly burned.

The local economic costs that accompany drilling and fracking include damage to public roads, declines in property values and increased demand on emergency and other social services. Health problems from local air pollution, as well as from the stress of constant light and noise pollution, also accompany drilling and fracking. The practice creates massive amounts of toxic waste with no good disposal options. Spills are proving inevitable and contaminating Colorado land and water. Drilling and fracking also pose long-term risks to vital underground sources of drinking water. Finally, massive amounts of carbon dioxide–emitted from burning natural gas, petroleum, and methane emitted at every stage of the drilling, fracking and production process–are changing the climate on which we all depend. Droughts are more prolonged, growing seasons are less predictable and storms are more severe.

Given such impacts, widespread drilling and fracking for oil and natural gas are not in the public interest of Coloradans. This poses a threat to the industry. Unsurprisingly, to protect its bottom line in Colorado, the oil and gas industry is producing commercials that claim fracking is safe.[2] The industry regularly funds and promotes studies that exaggerate how much it contributes to local economies. If Coloradans look closely at all the neglected risks and costs, they will find that the benefits are an illusion.

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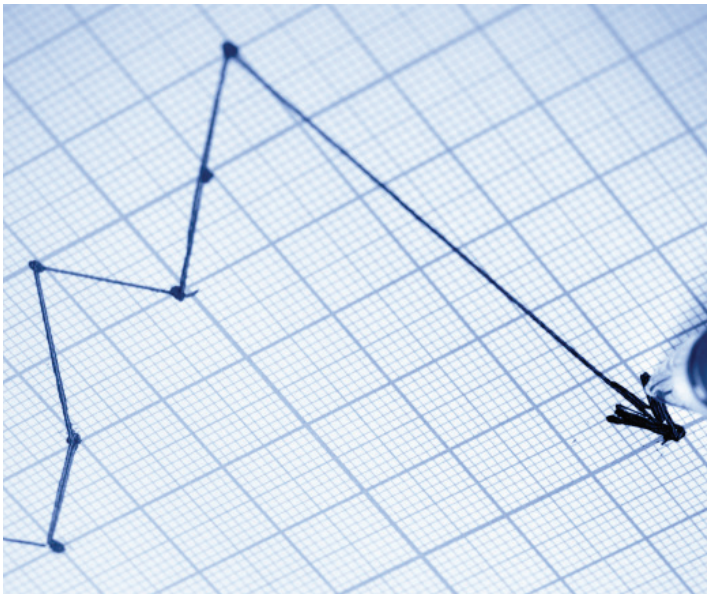
Illusory benefits from fracking Colorado

To create the illusion of benefits from fracking, the industry and its advocates sweep many important facts about oil and gas extraction under the rug. Specifically, Coloradans may be surprised to learn that:

- In 2010, the oil and gas industry activity supported only about 2.3 percent of Colorado's gross domestic product (GDP) and less than one percent of the state's jobs.[3]
- It takes approximately one year to prepare, drill and frack a new onshore oil or gas well, and about 98 percent of the employment associated with each well occurs only during this "pre-production" stage.[4] This means that new wells must be drilled and fracked each year to sustain oil and gas industry jobs, akin to a treadmill.
- The first wells drilled and fracked are typically the most productive ones, and these wells decline rapidly. With output that falls anywhere from 50 percent to 70 percent after the first year, more and more wells need to be drilled and fracked just to maintain production.[5] This means the industry will need to speed up the drilling and fracking treadmill to satisfy investors , and already there are over 50,000 active oil and gas wells bored into the state.[6]
- Drilling and fracking jobs, along with any associated local spending on goods and services, move from town to town as drilling sweet-spots are exhausted, resulting in short-term boom and bust cycles that are often harmful to local communities over the long term.[6]
- Estimates of the amount of oil and gas from shale and other rock formations, and estimates about the productivity of individual shale wells, are highly uncertain.[8] The inevitable bust after the boom in drilling and fracking in Colorado may come sooner than promised.[9]
- Beyond the uncertainty surrounding long-term production, public revenue generated by severance taxes is not dependable, and relying on them makes long-term budgeting impossible. For example, although the recent recession decreased Colorado's state revenue by 10 percent from 2009 to 2010, severance tax revenue from the oil and gas industry nosedived by over 75 percent, then doubled in 2011.[10] Worse, severance taxes may incentivize governments to overlook the negative impacts of expanded oil and gas drilling in order to fill budget needs.
- A study of counties in the western United States found that income inequality typically grows faster in counties with heavy fossil fuel extraction. The economies of these counties grow more slowly compared to those that are less dependent on fossil fuel extraction.[11]



- The industry's job projections come from proprietary and unverifiable economic forecasting models, not from actual employment data.[12] They do not consider the negative economic impacts to the state, such as jobs destroyed in agriculture or tourism during and in the aftermath of drilling and fracking.[13]
- The oil and gas industry's self-promoted economic studies project economic impacts by surveying the industry, estimating the industry's direct spending, and then projecting how that spending spreads through an economy.[14] When the oil and gas industry says it supports over 107,000 jobs in Colorado,[15] it is taking credit for jobs in the fast-food industry, health care, real estate, etc. But spending on truly clean energy solutions likewise creates such jobs.
- When oil and gas companies move in to drill and frack oil or gas in a new region, much of the associated spending happens out-of-state where companies are headquartered.[16] Many of the better-paying jobs at the well go to transient, out-of-state workers who have industry experience, not to residents of the areas targeted for extraction.[17] Meanwhile, the cost of living often increases for local residents, given the influx of transient workers, pushing many to the margins.[18]
- The push to drill and frack anywhere and everywhere has nothing to do with U.S. energy security, and everything to do with the oil and gas industry's bottom line. The price of oil is set on a global market, so fracking for oil will do nothing to reduce prices at the pump. Prices actually need to stay high if companies are going to profit from drilling and fracking for tight oil.[19] As for natural gas, the oil and gas industry aims to export as much as it can to China, Japan, India and Europe, contrary to the rhetoric about fracking for U.S. energy security.[20]

Hidden costs from fracking Colorado

Hiding the many costs of fracking is also essential to maintaining the illusion that widespread drilling and fracking benefit Colorado's economy. Coloradans may be surprised to learn just how far-reaching these hidden costs are.

Real estate

Currently, many banks are refusing to offer mortgages to properties near oil and gas wells, making these properties difficult to sell unless the buyer can pay the full price in cash.[21] In 2012, Nationwide Mutual clarified that it would deny insurance coverage for claims of damages due to fracking-related activities, citing a lack of "comfort level with the unique risks associated with the fracking process."[22] One family in Texas saw their home lose 75 percent of its assessed value after allowing drilling and fracking on their land.[23] Colorado's oil and gas industry has publicized the extent to which it occupies prime office space in Denver, but of course it neglects the other impacts on the real estate sector, which happen to be negative.[24]

Social services and public infrastructure

A report commissioned by local governments in northwestern Colorado estimates that necessary spending on infrastructure, such as on roads, water and sewer facilities, will reach $2.1 billion if gas activities continue unchecked.[25] According to the report, communities in Northwestern Colorado would face "staggering expenses" for street maintenance, high housing costs, and strained local businesses, hospitals, and schools.[26] Colorado's Department of Local Affairs has warned that a rapid boom and bust cycle can greatly increase these negative impacts.[27]

Colorado public health

Widespread drilling and fracking in Colorado amount to an ongoing public health experiment.[28] Numerous Colorado residents are complaining of health problems associated with oil and gas industry pollution.[29] One study in western Colorado tested air quality near fracking operations and detected harmful levels of toxic solvents, 30 of which affect the endocrine system.[30] Another has found that cancer risk increased for residents living closer to drilling and fracking operations, primarily due to potential exposure to benzene.[31] Fracking fluids typically contain chemicals that are known to cause cancer, harm the nervous system, or negatively affect sensory organs and the respiratory and immune systems.[32] The oil and gas industry is able to keep its fracking chemicals a secret, thanks to an exemption in the Safe Drinking Water Act, so the full extent of the public health threat from fracking waste remains unknown.[33]

Workforce impacts

Sickness caused by exposure to air and water pollution—whether from fracking chemicals or other toxic compounds brought to the surface during drilling and fracking—decreases worker productivity, harming local businesses.[34] Oil and gas industry workers face the highest risks. Inhaling silica dust from sand used in frack jobs can lead to silicosis and even lung cancer.[35] The National Institute for Occupational Safety and Health found up to 10 times the recommended levels of silica in the air at 9 percent of the fracking sites it surveyed.[36]

Accidents, spills and water contamination

Water pollution likewise creates costly public health risks and occupational hazards for first responders. In one notorious case, an emergency room nurse in Durango became ill after treating a worker soaked in fracking fluid, but the company refused to disclose to her doctors the chemicals in the fluid.[37] A leak from a gas plant into Parachute Creek, which feeds into the Colorado River, spilled over 65,000 gallons of oil and hydrocarbon material, resulting in benzene levels above safe drinking water standards and costly clean-up efforts, yet months later, the gas company had paid no fines.[38] According to *The Denver Post*, 2,078 industry spills were reported to the Colorado Oil and Gas Conservation Commission over the last five years, with 17 percent contaminating groundwater statewide.[39]

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Governor Hickenlooper has authorized the spending of taxpayer dollars to support two lawsuits against the City of Longmont, which acted to protect citizens from fracking within the city. His pro-fracking stance threatens the health, safety and property of ordinary Coloradans across the state.

Competition for water

Colorado's farmers can expect increased competition from the oil and gas industry for the state's water resources. Of the 64 counties in Colorado that lie above potential oil and gas resources, 40 account for about 85 percent of Colorado's agriculture value.[40] If drilling and fracking continue to increase, as Governor Hickenlooper envisions, then competition between farmers and the oil and gas industry will increase as well. Most of these 40 Colorado counties faced drought conditions in August of 2012.[41] At a 2012 auction of Colorado water rights, oil and gas companies were the top bidders, driving up water prices for the state's farmers during severe drought conditions.[42] In neighboring New Mexico, farmers have all but given up in the face of severe drought conditions, and are selling water to the oil and gas industry without cultivating anything.[43]

Farms, food and beer

Constructing new access roads, drilling pads, pipelines and compressor stations to support widespread drilling and fracking can also take agricultural lands out of production, as can accidents such as leaks and toxic waste spills.[44] Across the country, air and water pollution has negatively impacted livestock and pets living near drilling and fracking operations.[45] One recent accident led to a mix of crude oil and hydrocarbon gases being sprayed over 800 feet onto a farmer's land in Weld County.[46] If fracking operations continue to accelerate, the agricultural and cultural heritage of Northwest Colorado will suffer.[47] Colorado's craft beer industry is among those concerned about how water pollution from drilling and fracking will impact its brand.[48]

Tourism

Finally, Colorado has cultivated a lucrative tourism brand. The state is well known for its snow-covered peaks, clean whitewater rivers and ample opportunities for outdoor recreation. Colorado tourism accounts for over $16.6 billion in direct travel spending and supported 144,600 jobs in 2011.[49] Drilling and fracking threaten this brand along the Front Range and on the Western Slope. Towering, well-lit and noisy drilling rigs operate 24 hours a day, marring the wild and scenic landscapes that attract tourists and generate local tourism receipts.[50] Drilling and fracking operations, along with the new roads built to reach them, mar scenic landscapes and fragment forests.[51] These impacts, combined with air and water pollution from drilling and fracking, can persist long after the oil and gas stops flowing, and long after any of the economic benefits from drilling and fracking end.[52]

Coloradans at a crossroads

Rather than allow the industry to continue turning our state into a pincushion of aging and leaky fracked oil and gas wells, Coloradans should achieve long-term energy security and economic prosperity by choosing a different path.

We need to act aggressively to deploy existing energy efficiency and renewable energy solutions, and to invest in future technological innovations that will improve and expand on these already existing solutions.[53] This path would put a stop to the hidden costs of burning fossil fuels, resulting in enormous environmental and public health benefits.[54] Acting aggressively now will ensure that our state would reap the benefits of being a global leader in supplying clean energy technologies to the rest of the world.[55]

This is an opportunity to lead, and we need to take it, but the oil and gas industry is standing in the way.

Its public relations scheme of exaggerating economic benefits and hiding the costs to Colorado communities threatens to delay the necessary remaking of our energy system, just for the sake of its bottom line. And the industry has a willing ally in Governor Hickenlooper. He has already authorized the spending of taxpayer dollars to support two lawsuits against the City of Longmont, which acted to protect citizens from fracking within the city. He has also threatened to take legal action against any local government that passes a ban on fracking within their jurisdiction.[56]

These actions are shortsighted. In the face of global climate change, and in light of the many hidden costs that accompany drilling and fracking, Coloradans need to fight to protect their health, safety and property from fracking.

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