Hydraulic Fracturing and Economics

The Problem:
Hydraulic fracturing, commonly referred to as fracking, is the risky practice of forcing high volumes of water and chemicals underground at pressures high enough to break up rock formations, allowing oil or gas to flow into a well. Fracking is already widespread in California. However, state oil and gas regulators enforce no fracking-specific regulations, nor do they even collect basic information such as where fracking is occurring, what chemicals are used, or where wastewater is disposed.

Speculation about the potential economic gains from fracking the Monterey Shale ignores numerous costs which communities in several states have already discovered. A fracking boom in California will not only endanger public health and the environment, but will carry a major price tag for years to come.

- **Overstated economic claims:** A report funded by the Western States Petroleum Association and released by the Communications Institute and USC has been widely cited for the proposition that fracking boom could create new jobs in California. However, this study examines only the supposed benefits of fracking the Monterey Shale, and ignores all of the costs, including risks to our air, water, health, and other industries like agriculture and tourism. Moreover, the authors admit that their job estimates are “tentative and possibly very optimistic” and that any jobs that are created will be filled, for the most part, by out of state workers.

- **Threat to California’s multi-billion dollar agricultural industry:** As the country’s largest food producer, Californian farmers need clean and affordable fresh water. Fracking threatens water access, water and land quality, livestock health, and organic certification. Fracking typically requires one to five million gallons of water per well, though as much as 13 million gallons has been reported for a single well in Texas. Competition for water is often intense; last year at a water auction in Colorado, farmers were outbid by water haulers who supply hydraulic fracturing wells. An increase in fracking in California could lead to increased competition and prices for water. Unlike water used in agriculture and landscaping which remains in the water cycle, water used in hydraulic fracturing in the western U.S. is usually “gone for good.”

Contamination of groundwater and surface water associated with fracking can harm crops and livestock. Cattle, sheep, and chickens have fallen ill or died near fracking operations in states like Pennsylvania and Texas.

Contamination from oil and gas wastewater is already a problem in California. In 2009, a Kern County almond farmer was awarded $8.5 million in damages after a jury found wastewater from drilling operations contaminated his irrigation water, killing many of his almond trees.

- **Water cleanup costs:** Spills and leaks can easily occur, and reports of illegal dumping are numerous. The cost of cleaning up contaminated water is so expensive that it is often left polluted. In a small Pennsylvania community where methane contaminated well water for 14 households, Cabot Oil & Gas spent over $300,000 to provide methane treatment systems and temporary replacement water supplies. These costs can be multiplied many times over when contamination of water supplies for larger municipalities occurs.

- **Public health problems:** More than 75% of the hundreds of chemicals known to have been used in fracking can affect the sensory organs and respiratory system; 52% can harm the nervous system; 40% can affect the immune system; and 25% can cause cancer. Exposure to air and water pollution from fracking has been linked with a variety of health problems ranging from respiratory illnesses like asthma to headaches, eye and throat irritation, and cancer. In Arkansas’ Fayetteville Shale region, fracking-associated ozone precursor and particle pollution likely burdened a sparsely populated area with public health costs of more than $10 million in 2008 alone. Publicly funded emergency services are footing larger bills, too. Counties in Pennsylvania’s fracking region...
experienced increases in 911 calls, with one county seeing an increase of nearly 50 percent over three years. The illnesses described above can result in reduced productivity from employees, which can cause local businesses to lose revenue, for instance, due to increases in sick days.

- **Increased demands on infrastructure:** Fracking relies heavily on trucks to transport water, service wells, and haul away wastewater. On average, the truck traffic needed to deliver water for one well causes as much damage to roads as nearly 3.5 million car trips. Local communities are often stuck with the repair bill for strained roads and bridges. Texas’s Department of Transportation estimated repair costs of $2 billion for roads damaged by drilling trucks.

Population booms associated with fracking place new demands on other infrastructure ranging from sewage and water systems to schools and housing. Communities are often ill equipped to handle these new burdens, and cannot afford infrastructure costs. In Williston, North Dakota, where workers can be found living at camps and in vehicles, officials anticipate a cost of $625 million for roads, the airport, water supplies, and other facilities. Increased demands on housing drive rents up. As affordable housing disappears, low-income residents face displacement, resulting in further demands on social services.

- **Depreciation in property values:** Homes near fracking can see their value drop. In Wise County, Texas, one property near fracked wells lost 75 percent of its value. In Texas, a 2010 study found that homes worth $250,000 or more and located within 1,000 feet of a drilling site saw their values drop by up to 14 percent. One realtor noted that the true loss is often far greater, and nobody wants to buy homes near gas wells, “not even for a 10 percent price cut.” Numerous banks have refused to offer mortgages for properties near fracked wells. In 2012, Nationwide Mutual clarified that it would deny 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.”

- **Weakened local economies:** Fracking brings a boom-bust cycle, which can leave communities worse off than before. One study of 26 rural counties in the Western U.S. found counties with high rates of fossil fuel extraction fared worse than counties without in a host of areas including employment, income, and investment. Additionally, factors like less-diversified economies and greater wage disparity mean these counties are not on the road to thrive in the future. As is common in other communities where extractive industries boomed, once the frack jobs are complete, the areas left behind can suffer from long-term poverty. With fracking, the booms may be short-lived since 98 percent of the work occurs in the period during which the well is prepped, drilled, and fracked. Of those employed by the industry, a high percentage come from out-of-state since the industry requires specialized workers. Another blow comes to the fracked communities when these workers send portions of their earnings back home rather than spend locally.

**The Solution:**

Last year renewable energy accounted for almost half of all the new domestic energy created in the U.S. for the first time. One analysis found that, when accounting for several factors, including subsidies, wind energy is now the cheapest form of energy. The true job creator is the renewable energy sector. For every $1 million invested, fracking creates about 6.5 jobs while solar produces 13.7 and wind brings in 13.3. In a detailed study led by Mark Jacobson of Stanford, researchers map out what an energy future that relies upon wind, water and sunlight would look like in New York. They conclude that it is technically and economically feasible to completely convert New York’s all-purpose energy infrastructure, while creating local jobs and saving the state billions in pollution-related costs. Jacobson and his colleagues will soon release a similar study for California.

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2 Id. at 5.
3 Id. at 67, 42.
17 Shlachter, Barry. “Drilling trucks have caused an estimated $2 billion in damage to Texas roads.” Star-Telegram. 3 Jul. 2012.
26 Id.
30 See Jacquet 2011 at 14.