Analysis of HB 17-1124

By Kristine McLaughlin

The private market overvalues energy production because it does not account for the negative externalities associated with pollution. Local governments across Colorado have enacted zoning ordinances as well as impact fees and other regulatory codes to account for this failureof the private market. These solutions limit trade and are, thus, inefficient. However, to require local governments to compensate the private oil and gas companies for any resulting losses, as House Bill 17-1124 proposes, will not only fail to correct those inefficiencies, it will likely exaggerate them.

The negative effects hydraulic fracturing has on air and water quality are well documented. Drawing from over twenty-five peer reviewed studies, the Environmental Protection Agency concluded that there was "scientific evidence that hydraulic fracturing activities can impact drinking water resources."[1] Work done at the University of Colorado's School of Public Health found that "[negative] health effects result[ed] from air emissions during development of unconventional natural gas resources" in Garfield County, Colorado. [2] Additionally, hydraulic fracturing can deteriorate wildlife and soil quality. It can increase traffic, and light and noise pollution. Plus, quite simply, the drills are ugly and disrupt the natural scenery.[3]

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[1] U.S. EPA. Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-16/236F, 2016.

[2] : McKenzie LM, et al, Human health risk assessment of air emissions from development of unconventional natural gas resources, Sci Total Environ (2012), doi:10.1016/j.scitotenv.2012.02.018

[3] Castelli, Matthew (2015) "Fracking and the Rural Poor: Negative Externalities, Failing Remedies, and Federal Legislation," Indiana Journal of Law and Social Equality: Vol. 3: Iss. 2, Article 6. Available at: http://www.repository.law.indiana.edu/ijlse/vol3/iss2/6

None of these negative effects are accounted for in the energy market. The public incurs a cost, in the form of declining health and worsening environments, for every unit of oil and gas produced. They incur a cost but unlike in a typical market interaction, they cannot charge the energy companies to account for that cost. When people buy oil and gas they do not consider the negative impact its production had on the communities surrounding the hydraulic fracturing activity, so those negative effects do not impact the amount of oil and gas they choose to buy. Therefore, the private market overvalues the production of one of these units. As with all cases of negative externalities, it becomes the government's responsibility to make sure that local communities' costs are accounted for in the transaction between buyer and seller.

With local government bargaining on behalf of the local residents, the only state intervention that may increase total welfare is intervention that facilitates trade, allowing these two parties to negotiate and agree on the optimal amount of pollution. According to the Coase Theorem, named for Nobel Laureate Ronald Coase, this optimal pollution level will be reached regardless of whether the local governments or the energy companies are assigned the property rights as long as bargaining is unrestricted.

Say that, absent any regulation, the companies could optimize their profits by polluting the water supply by 500 parts per million (ppm) but the local governments have to spend $1 on water filters for every ppm of pollution. Then if the local governments are granted the property rights, the oil companies could pay the governments $1 for every ppm of pollution they wish to produce. Since this increases the cost of polluting the companies' new optimal pollution rate would be lower than 500 ppm, perhaps 300 ppm. If the energy

companies were assigned the land rights, the governments could pay the companies up to $200 to produce at 300 ppm. Thus, the question that government, seeking to optimize energy production, should ask is not “who should have the property rights?” It is “how do we facilitate bargaining?”

In some areas of Colorado, local governments have been resistant to bargaining. This is largely because in reality quantifying the societal cost of pollution is much more difficult than in my simplified example. The long term health risks of pollution are still not perfectly understood and different individuals will have different health reactions and will appraise traffic and light and noise pollution costs differently. So it is easier for local government, in many instances, to prohibit drilling (or severely restrict it) rather than negotiate over the optimal levels. Since we do know that the optimal amount of pollution is not zero, we know that this is inefficient.

However, House Bill 17-1124 does not correct this inefficiency. As surely as the optimal level of pollution for society is not zero, it is also not whatever is optimal for the energy companies. Even though the negative effects of pollution are hard to quantify they undoubtedly exist, which means the total cost of production is higher than energy companies’ private cost. The bill calls for the local governments to allow the companies to drill at their private optimal level or else compensate them in the amount of the full market value of the restricted oil. Hence, the bill does not facilitate bargaining any more than the zoning restrictions do.

Additionally, the status quo is preferable to the compensation solution because the vague language of the bill could be abused in the energy companies’ favor, throwing the

market even further off equilibrium production levels. The bill, as written, fails to define how the compensation prices would be determined. It calls for the local governments to "compensate oil and gas operators, mineral lessees, and royalty owners for all costs, damages, and losses of fair market value," but fails to define "fair market value".

Since the restrictions raise the price of oil and gas if the local governments were to compensate based on the current prices, the companies would receive more money than they would absent the restrictions. Further complicating matters, the current prices of oil and gas change constantly as a result of several factors that have nothing to do with the restrictions. Oil prices are so volatile that *The Economist* concluded, "Forecasting the oil price is a mug's game.[4]" Trying to predict what price these companies could have received for a set amount of oil a very difficult thing to do and the bill specifies no method for doing it.

Moreover, there is no good method for measuring what that set amount of oil would be. As horizontal drilling methods improve, the amount of oil that restrictions make inaccessible is constantly changing. If the local governments were made to pay for oil that these companies will access later, the companies would get paid twice for the same oil.

Thus, the vague language of the bill could make it so the companies would receive more in compensations than they would from the oil and gas sales. This would almost certainty mean that the companies would make several claims regarding their drilling rights and, if left unchecked could incentivize the companies to actually encourage zoning restrictions. In this case, the market could undervalue the production of a unit of energy,

[4] "Who's Afraid of Cheap Oil?" The Economist, January 3, 2016.

because when calculating the the cost of producing more oil, the companies would have to consider the opportunity cost of not receiving the compensations.

Representative Perry Buck, who is sponsoring House Bill 17-1125, wrote in defence of a similar bill, “this bill does not allow or ban hydraulic fracturing, but instead reinforces mineral ownership as a real property right that deserves compensation for loss of potential income if property development is limited by local government regulations.[5]” The bill does allow for hydraulic fracturing by making it significantly more expensive to restrict hydraulic fracturing.

Furthermore, from an economic standpoint, there is no substantial difference between the potential profits that drilling companies lose to zoning restrictions and the profits that any other company or private citizen loses. Every business is affected by zoning regulations. For example, there are zoning regulations that control how high an apartment complex can be. The owner of the complex bought the land and paid to build the complex but her potential profits are limited by the local government, which has decided that it is worth controlling the building's height because there is a public cost to obstructed views. There is nothing that distinguishes this from limiting an energy company’s potential profits because the company does not provide any positive non-pecuniary externalities that warrant government protection.

House Bill 17-1124 would not increase total economic welfare. It would only increase the energy companies’ welfare at the expense of local residents. By limiting the local governments’ ability to bargain over pollution emissions, it allows the companies to

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[5] "Perry Buck for Colorado House District 49." Perry Buck for Colorado. 2015. Accessed February 15, 2017. http://www.perryforcolorado.com/.

operate without concern for the costs incurred by the local residents. It singles out energy companies as victims of zoning when every business is affected by zoning ordinances without compensation. Lastly, the language of the bill would, potentially, allow for these companies to drastically overcharge the local governments for their zoning restrictions and could even perversely incentivize the oil companies to seek even more local regulation. Put simply, the bill does not correct any of the problems with the status quo and it would almost certainly create even more.