Fort Collins Sustainability Group Statement on Fracking and Climate Change

Advances in horizontal well drilling since the early 2000s, combined with hydraulic fracturing (fracking) have made it possible to extract "tightly held" oil and natural gas deposits from shale formations economically. These advances have significantly increased the available amount of these fossil fuels and have driven down oil and natural gas prices. Both the fracking process itself and the resulting increased availability of oil and natural gas have serious implications for Earth's climate, as discussed below.

Methane emissions

Natural gas consists primarily of methane, which is a powerful greenhouse gas. On a 100 year time horizon, it is 21 times more powerful than carbon dioxide; on a 20 year time horizon it is 72 times more powerful. Extracting and transporting natural gas to the point of use inevitably results in the loss of some methane into the atmosphere. The Environmental Protection Agency estimates that these losses amount to 2.4% of all natural gas production. However, recent research conducted by Robert Howarth, Renee Santoro, and Anthony Ingraffea of Cornell University suggests that losses are significantly higher for natural gas produced by fracking – ranging from 3.9% to 7.6% of all gas produced using this technique.

The amount of carbon dioxide emitted when natural gas is burned to generate electricity is significantly less than the amount emitted when coal is burned to generate electricity. However, this advantage is offset by the amount of methane released into the atmosphere during extraction and transportation. A recent study conducted by the Environmental Defense Fund (EDF) and Princeton University suggests that equivalent greenhouse gas emissions from gas-fired power plants will be lower than greenhouse gas emissions from coal-fired power plants as long as methane leakage is less than 3.4% of production. The low end of the range provided by Howarth et al. for fracked natural gas is HIGHER than this figure. Therefore, it is likely that burning fracked natural gas to generate electricity results in higher greenhouse gas emissions than burning coal.

Increased availability of oil and natural gas

The increased amount of oil and natural gas that can be economically extracted thanks to horizontal drilling and fracking is a significant component of total proven fossil fuel reserves discussed by Bill McKibben during his "Do the Math" tour in fall 2012. McKibben pointed out that if humanity burns any more than 20% of proven fossil fuel reserves, we will emit enough carbon dioxide to drive global warming beyond the 2° C temperature increase that is widely considered to be catastrophic. According to the Carbon Tracker Initiative, the potential emissions associated with burning the world's proven reserves of oil and natural gas are equal to nearly twice this "carbon dioxide budget." So extracting and burning all of the economically available natural gas and oil would drive the Earth's atmosphere well beyond the point of catastrophe.

Our call on Colorado legislators

Given the severe impacts of fracked oil and natural gas on the atmosphere, **the Fort Collins Sustainability Group calls on the Colorado General Assembly to place an immediate MORATORIUM on fracking in the State of Colorado until the industry can demonstrate that methane leakage during extraction and transportation is significantly less than the break-even figure compared to coal (3.4%) determined by EDF and Princeton researchers.** We also call on the Colorado General Assembly to redouble its efforts to promote energy conservation, energy efficiency, and renewable energy technologies such as wind and solar in order to help avoid catastrophic global climate change.

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P.O. Box 400, Fort Collins, CO 80522, ph. 970-491-8944, http://fcsg.fccan.org/