Dueling NY studies over natural gas climate impact

MARY ESCH - Associated Press - Associated Press

Two groups of scientists at Cornell University are dueling over whether natural gas from shale is better or worse than coal when it comes to global climate change.

It's a significant question because proponents of shale gas development using the controversial practice of high-volume hydraulic fracturing argue that natural gas is a cleaner-burning "bridge fuel" from the age of coal to an era of wind, solar and other sustainable energy sources.

The U.S. Energy Information Administration projects that unconventional gas, mainly from shale, will supply nearly half of U.S. gas production by 2035. One of the core benefits of tapping vast shale gas reserves such as the Marcellus Shale beneath southern New York, Pennsylvania, Ohio and West Virginia, is the belief that it produces less greenhouse gas than coal.

Opponents of shale development cite potential damage to health and the environment, especially water supplies, from hydraulic fracturing, or "fracking," which injects a well with chemically treated water to stimulate production. They also have seized on the greenhouse gas study published by Cornell's Robert Howarth in the journal Climatic Change last spring.

In that study, and in a follow-up released on Thursday, Howarth said methane leakage at the well, along aging pipelines and at other points give shale gas development a worse greenhouse gas footprint than that of coal. He estimated that as much as 8 percent of methane from shale gas production escapes into the atmosphere, where it is a far more potent greenhouse gas than carbon dioxide.

Howarth and colleagues Renee Santoro and Anthony Ingraffea wrote that the greenhouse gas footprint of shale gas is "perhaps more than twice as great" as coal when you compare the two energy sources over a 20-year time frame, and comparable to coal over a 100-year time frame.

That flies in the face of previous estimates that the greenhouse gas impact of natural gas is about half that of coal.

Cornell colleague Anthony Cathles countered the Howarth study in the same journal this month, challenging Howarth's calculations and conclusions. He noted that natural gas is widely considered to be cleaner than coal because it doesn't produce hazardous by-products such as sulfur, mercury, ash, and particulates, and it provides twice the energy per unit of weight when it's burned.

"We argue that their analysis is seriously flawed in that they significantly

overestimate the fugitive emissions associated with unconventional gas extraction," Cathles wrote. He said the Howarth study also undervalues the contribution of green technologies to reducing those emissions, and bases its comparison between gas and coal on heat rather than electricity generation.

In his new study, Howarth stands by his analysis and conclusions and said his figures on methane leakage during shale gas production are consistent with new estimates from the Environmental Protection Agency.

Ingraffea said Thursday that shale gas emissions of methane can be reduced, and a proposed EPA regulation to require capture of gas at the time of well completions is an important step. But it will be extremely expensive to reduce methane leakage from aging gas pipelines around the country, he said.

"Should society invest massive capital in such improvements for a bridge fuel that is to be used for only 20 to 30 years, or would the capital be better spent on constructing a smart electric grid and other technologies that move toward a truly green energy future?" Ingraffea said.

Howarth's study was funded by the Park Foundation, an Ithaca-based philanthropic group that has given millions of dollars in grants to anti-fracking groups in the last two years.

Cathles said in an email Wednesday that he has received funding from sources including the Gas Research Institute and oil companies on projects over the years, but he and his colleagues received no funding from any source for their reply to Howarth.

"We spent our own time on this matter because we feel it is important that the issues be presented fairly and felt this is not being done in the Howarth paper," Cathles said.

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