

August 29, 2013

Mr. Jon Jarvis  
National Park Service  
1849 C Street NW  
Washington, DC 20240

Director Jarvis,

Recently, your agency submitted comments<sup>1</sup> to the U.S. Bureau of Land Management (BLM) in response to the BLM's proposed rules for hydraulic fracturing on Federal and Indian lands. The rules, once finalized, could have an enormous impact on the ability of independent oil and natural gas producers to operate on public lands. By one recent estimate, the cost of the BLM rules would amount to \$345 million per year, an enormous price tag that will result in less energy production and significantly fewer American jobs.

Given this enormous projected cost, it is important that the federal government speak honestly to the American people not only about the impact of the BLM's proposed rules, but also the issues surrounding hydraulic fracturing itself, and indeed all oil and natural gas development on Federal and Indian lands.

Unfortunately, in comments that the National Park Service (NPS) submitted to the BLM regarding its proposed rules, your agency chose to ignore the overwhelming conclusion of the scientific community with respect to methane emissions from oil and natural gas operations. Instead, the NPS cited a *New York Times* opinion article<sup>2</sup> from Cornell Professor Anthony Ingraffea, which suggested methane "leakage" rates were as high as 17 percent, based on limited studies from the National Oceanic and Atmospheric Administration (NOAA). Dr. Ingraffea also cited his own study from 2011 that came to a similar conclusion. These leakage figures have been extrapolated to suggest that natural gas has a higher life-cycle greenhouse gas impact than coal.

But these claims have all been categorically and systematically rejected by multiple independent scientists and even experts within the U.S. Department of Energy. Just this month, in response to an audience member who said shale gas development could have a worse impact on the environment than coal, none other than Secretary of Energy Ernest Moniz said: "**The current data suggest that that is an incorrect statement.**"<sup>3</sup>

A quick review of the scientific community's conclusions on this issue demonstrates why Dr. Moniz expressed so much confidence in his statement:

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<sup>1</sup> NPS Comments on Proposed Rule 43 C.F.R. Part 3160: Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, August 23, 2013.

<sup>2</sup> Anthony Ingraffea, "Gangplank to a Warm Future," *New York Times*, July 28, 2013.

<sup>3</sup> As quoted by Andrew Restuccia, "Moniz takes on GOP energy criticisms," *POLITICO Pro*, August 26, 2013.

- Cornell Univ.: “Using more reasonable leakage rates and bases of comparison, **shale gas has a GHG footprint that is half and perhaps a third** that of coal.”<sup>4</sup>
- Univ. of Maryland: “GHG impacts of shale gas are...**only 56%** that of coal.... [A]rguments that shale gas is more polluting than coal are largely unjustified.”<sup>5</sup>
- Carnegie Mellon Univ.: “**Natural gas from the Marcellus shale has generally lower life cycle GHG emissions** than coal for production of electricity in the absence of any effective carbon capture and storage processes, by 20-50% depending upon plant efficiencies and natural gas emissions variability.”<sup>6</sup>
  - \*NOTE: This study was partially funded by the Sierra Club.
- Mass. Institute of Technology: “Although fugitive emissions from the overall natural gas sector are a proper concern, it is **incorrect to suggest that shale gas-related hydraulic fracturing has substantially altered the overall GHG intensity** of natural gas production.”<sup>7</sup>
  - \*NOTE: The coauthor is a lead author of the forthcoming Fifth Assessment Report for the IPCC.
- National Energy Technology Laboratory (U.S. Dept. of Energy): “Natural gas-fired baseload power production has **life cycle greenhouse gas emissions 42 to 53 percent lower** than those for coal-fired baseload electricity, after accounting for a wide range of variability and compared across different assumptions of climate impact timing.”<sup>8</sup>
- Joint Institute for Strategic Energy Analysis and NREL (U.S. Dept. of Energy): “Based on analysis of more than 16,000 sources of air-pollutant emissions reported in a state inventory of upstream and midstream natural gas industry, life cycle greenhouse gas emissions associated with electricity generated from Barnett Shale gas extracted in 2009 were found to be very similar to conventional natural gas and **less than half those** of coal-fired electricity generation.”<sup>9</sup>
- AEA Technology (for the European Commission): “In our analysis, **emissions from shale gas generation are significantly lower (41% to 49%)** than emissions from electricity generated from coal. This is on the basis of methane having a 100 year GWP of 25. This finding is **consistent [with] most other studies into the GHG emissions arising from shale gas.**”<sup>10</sup>
- Worldwatch Institute: “[W]e conclude that on average, U.S. natural gas-fired electricity generation still **emitted 47 percent less GHGs** than coal from source to use using the IPCC’s 100-year global warming potential for methane of 25.”<sup>11</sup>

<sup>4</sup> Lawrence Cathles, "A commentary on 'The greenhouse-gas footprint of natural gas in shale formations' by R.W. Howarth, R. Santoro, and Anthony Ingraffea," *Climatic Change*, October 2011.

<sup>5</sup> Hultman et. al., "The greenhouse impact of unconventional gas for electricity generation," *Environmental Research Letters*, October 2011.

<sup>6</sup> Jiang et. al., "Life cycle greenhouse gas emissions of Marcellus shale gas," *Environmental Research Letters*, August 2011.

<sup>7</sup> O'Sullivan et. al., "Shale gas production: potential versus actual greenhouse gas emissions," *Environmental Research Letters*, November 2012.

<sup>8</sup> Timothy J. Skone, "Life Cycle Greenhouse Gas Inventory of Natural Gas Extraction, Delivery and Electricity Production," National Energy Technology Laboratory, October 2011.

<sup>9</sup> Logan et. al., "Natural Gas and the Transformation of the U.S. Energy Sector: Electricity," National Renewable Energy Laboratory, November 2012.

<sup>10</sup> AEA Technology, "Climate impact of potential shale gas production in the EU," European Commission, July 2012.

<sup>11</sup> Fulton et. al., "Comparing Life-Cycle Greenhouse Gas Emissions from Natural Gas and Coal," Worldwatch Institute, August 2011.

- The Breakthrough Institute: “The climate benefits of natural gas are real and are significant. Recent lifecycle assessments studies confirm that **natural gas has just half as much global warming potential** as coal.”<sup>12</sup>

In direct response to Dr. Ingraffea's op-ed, several climate scientists and environmental experts addressed his claims head on. For example, Dr. Raymond Pierrehumbert, a climate scientist from the University of Chicago, said this of Dr. Ingraffea's position on methane leakage:

“[W]hat Ingraffea is doing in continuing to claim that natural gas is as bad as coal is not a matter of looking at the same data as everybody else and drawing different conclusions. It is more a matter of **distorting science in order to support a preconceived political agenda.**”<sup>13</sup>

Dr. Richard Muller from the University of California at Berkeley accused Dr. Ingraffea of making methane leakage “sound scarier than it really is.”<sup>14</sup> Michael Levi, an energy and climate expert at the Council on Foreign Relations, said Dr. Ingraffea “badly misrepresents” a study in the op-ed, before asking bluntly and rhetorically: “Is there value in debating people who don't want to think?”<sup>15</sup>

As for the NOAA studies that Dr. Ingraffea referenced, the Breakthrough Institute – an Oakland-based environmental think tank – described them as “outliers” that “have been faulted for selective bias and poor measurement and statistical techniques.”<sup>16</sup> The Environmental Defense Fund said “conclusions should not be drawn about total leakage based on these preliminary, localized reports.”<sup>17</sup>

Meanwhile, earlier this year, the U.S. Environmental Protection Agency released its latest report on greenhouse gas emissions in the United States. The data from EPA show methane emissions from natural gas systems have actually declined by 11 percent since 1990, even as natural gas production has grown substantially. As reported by the Associated Press:

“In a mid-April report on greenhouse emissions, the agency now says that tighter pollution controls instituted by the industry resulted in an **average annual decrease of 41.6 million metric tons of methane emissions from 1990 through 2010**, or more than 850 million metric tons overall. That's about a 20 percent reduction from previous estimates. The agency converts the methane emissions into their equivalent in carbon dioxide, following standard scientific practice.”<sup>18</sup>

<sup>12</sup> Trembath et. al., “Coal Killer: How Natural Gas Fuels the Clean Energy Revolution,” The Breakthrough Institute, June 2013.

<sup>13</sup> As quoted by Andrew Revkin, “Two Climate Analysts Fault Gas Leaks, but Not as a Big Warming Threat,” *New York Times*, August 2013.

<sup>14</sup> Ibid.

<sup>15</sup> Accessed via Twitter (@levi\_m), July 29, 2013.

<sup>16</sup> Alex Trembath and Max Luke, “Methane Leakage Not a Deal Breaker for Natural Gas,” The Breakthrough Institute, July 29, 2013.

<sup>17</sup> Stephen Hamburg, “Measuring Fugitive Methane Emissions,” Environmental Defense Fund – Energy Exchange, January 4, 2013.

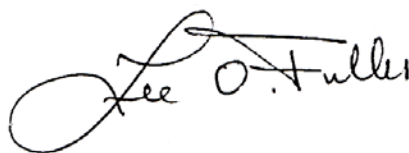
<sup>18</sup> Kevin Begos, “EPA methane report further divides fracking camps,” Associated Press, April 28, 2013.

It is also worth noting: Dr. Ingraffea has been an outspoken critic of hydraulic fracturing, and has willingly participated in countless anti-fracking activist efforts, many of which advance claims that are deliberately deceptive or blatantly false. For example, Dr. Ingraffea appeared in the activist film *Gasland Part II*, a movie that Alan Krupnick of Resources for the Future described as an “unabashed and one-sided bashing of the oil and gas industry.”<sup>19</sup> Dr. Ingraffea has also claimed that 50 percent of all shale wells will leak over a 30 year period.<sup>20</sup> His source for that information is decade-old data from the now-defunct U.S. Minerals Management Service, which was examining deep offshore wells in the Gulf of Mexico, and which explicitly excluded any onshore data. Worse yet, the data referred to what’s known as sustained casing pressure (SCP), which is not the same thing as a leak.

It is appalling that the National Park Service – a well-respected and taxpayer-funded agency – would refuse to acknowledge the conclusions of other federal agencies, such as the EPA and the Department of Energy, on an issue related to environmental protection and U.S. energy production. It is absolutely inexcusable that the NPS would lend credence to activist theater and transparently flawed conclusions, especially given the amount of credible scientific literature publicly available.

Federal agencies should be committed to sound scientific research, especially as it may influence the creation of new federal regulations that could have an enormous impact on the entire U.S. economy. The comments submitted from the NPS suggest that commitment was either temporarily suspended, or perhaps never existed in the first place.

Sincerely,

A handwritten signature in black ink that reads "Lee O. Fuller". The signature is written in a cursive style with a large, looping initial "L".

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<sup>19</sup> Alan J. Krupnick, “Gasland II: Not Truthland,” Resources for the Future – Common Resources, July 10, 2013.

<sup>20</sup> Tony Ingraffea and Mark Ruffalo, “Don’t Frack Illinois (or North Carolina, Georgia, Maryland, New York, Virginia, or Florida),” *Huffington Post*, April 4, 2013.