



**Statement on EPA Draft Plan Released June 2, 2014 on  
“Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility  
Generating Units”  
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by

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I have carefully read the 645-page Draft Plan. There is much to commend in the Plan’s goals to reduce carbon dioxide emissions and to promote more production of electricity by renewable sources and more efficient end use of electricity. However, the Plan has a fundamental flaw: it addresses only carbon dioxide emissions, and not emissions of methane, another critically important greenhouse gas. This failure to consider methane causes the Plan to promote a very poor policy – replacing coal-burning power plants with plants run on natural gas (see pages 33-34) – as one of the major four building blocks of the Plan. Recent research indicates that the greenhouse gas footprint of generating electricity from natural gas can exceed that of coal-fired plants (Alvarez et al. 2012; Howarth et al. 2014 and references therein). The Plan should be revised to reflect the importance of methane and the extent of methane emissions from using natural gas. While phasing out coal is a desirable goal, replacing coal with natural gas trades one problem for another, reducing carbon dioxide emissions but increasing methane emissions to such an extent as to cause even greater global warming.

“Methane” is mentioned only five times in the 645 pages. The first time is on page 59, where it is stated that EPA could not monetize the consequences of nitrous oxide and methane emissions, and that the Plan therefore focuses only on carbon dioxide emissions. The second time is footnote #13 on page 59, where it is stated that “although CO<sub>2</sub> is the predominant greenhouse gas released by the power sector, electricity generating units also emit small amounts of nitrous oxide and methane....” Note that in both the first and second mention of methane in the Plan, nitrous oxide comes before methane, even though methane is far more important in global warming (IPCC 2013). Further note that the Plan seems to limit the focus to emissions at electric-power generating plants rather than include full life-cycle emissions. The third time is on page 174, where the Plan states “we have also analyzed potential upstream net methane emissions impact from natural gas and coal for the impacts analysis. This analysis indicated that any net impacts from methane emissions are likely to be small compared to the CO<sub>2</sub> emissions reduction impacts of shifting power generation from coal-fired steam EGUs to NGCC units.” And the fourth and fifth times are late in the Plan, where it is mentioned that methane is emitted from landfills and where natural gas is defined.

Early in the Plan (page 19), the focus on carbon dioxide is justified by stating “CO<sub>2</sub> is the primary GHG pollutant, accounting for nearly three-quarters of global GHG emissions<sup>1</sup> and 82 percent of U.S. GHG emissions.<sup>2</sup> These statements do not accurately reflect the most recent and best science on this topic. Footnote #1 refers to the IPCC (2007) report and is based only on comparing methane emissions and carbon dioxide emissions on a 100-year time scale. In the more recent IPCC (2013) synthesis, the IPCC explicitly states that “There is no scientific argument for selecting 100 years compared with other choices,” and that “The choice of time horizon ... depends on the relative weight assigned to the effects at different times.” Because the short-term dynamics of the climate system are far more responsive to methane than to carbon dioxide (UNEP/WMO 2011; Shindell et al. 2012), comparing methane and carbon dioxide on shorter time scales is essential if we are to avoid warming the Earth to temperatures that greatly increase the risk of tipping points in the climate over the coming 15 to 35 years (see Howarth et al. 2014 and references therein). At these shorter time scales, the IPCC (2013) states that the global emissions of methane are actually greater than (slightly, for the 10-year time frame) or 80% of (for the 20-year time frame) those of carbon dioxide in terms of their influence on global warming; at both of these shorter time scales, carbon dioxide is responsible for less than half of global GHG emissions, not three-quarters.

Similarly, the statement that 82% of US greenhouse gas emissions are due to carbon dioxide (referencing footnote #2, which is the EPA greenhouse gas inventory) is highly misleading. This also is based solely on comparing methane and carbon dioxide on a 100-year time scale, and further uses outdated global warming potentials (from earlier versions of the IPCC, not from IPCC 2013, where the global warming potential for methane has been substantially increased). Also, the best available evidence indicates that the EPA estimates for methane emissions in the US are much too low (Miller et al. 2013; Brandt et al. 2014; Howarth et al. 2014). EPA aggravated this by reducing their methane emissions for the natural gas industry by a factor of two in 2013, despite increasing evidence that their estimates were already too low (Miller et al. 2013; Brandt et al. 2014; Howarth et al. 2014). The Inspector General for the EPA has called for an improved approach by EPA for estimating methane emissions from the oil and gas industry (U.S. Environmental Protection Agency Office of Inspector General 2013).

In addition to ignoring the global-warming consequences of methane and natural gas, the Plan does not adequately consider the public health consequences. The Plan states that “actions taken to comply with the proposed guidelines will reduce emissions of CO<sub>2</sub> and other air pollutants, including SO<sub>2</sub>, NO<sub>x</sub> and directly emitted PM<sub>2.5</sub>, from the electric power industry” (page 51). Reducing these pollutants – which largely come from combusting coal – is desirable. However, the use of natural gas is leading to highly elevated levels of ground-level ozone in many areas as well as elevated concentrations of benzene and other toxic and carcinogenic hydrocarbons. The Plan completely ignores these other pollution issues.

A sound government policy on climate simply cannot focus solely on carbon dioxide and ignore methane. The number one source of methane pollution in the US is the natural gas industry (Howarth et al. 2012), and the US should take urgent steps to reduce this methane pollution. The Plan will require substantial revision using better quality and more recent science to consider both carbon dioxide and methane emissions.

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