# SCIENTISTS SPEAK OUT

**A wide array of highly credentialed scientists and experts are stepping forward to challenge Howarth's reckless claims and explain the faulty methodology that produced his inaccurate conclusion. Even Howarth's own university has raised serious concerns about his methodology.**

## Cornell University

"[O]ur review of their own sources finds no evidence that gas is being vented directly into the atmosphere at rates that could justify their conclusions."

"More reasonable estimates of production losses, and more appropriate bases of comparison (electricity and a 100 year GWP) show natural gas, including shale gas, has half to 1/3rd the [GHG] impact of coal, and thus remains an attractive transition fuel to low carbon alternatives."

Source: A Commentary on "The Greenhouse-gas footprint of natural gas in shale formations," November 2011

## IHS CERA

"If methane emissions were as high as EPA and Howarth assume, extremely hazardous conditions would be created at the well site. Such conditions would not be permitted by industry or regulators. For this reason, if no other, the estimates are not credible."

Source: "Mismeasuring Methane - Estimating Greenhouse Gas Emissions from Upstream Natural Gas Development," August 2011

## Melanie Kenderdine, Executive Director, MIT Energy Initiative

"What he has done in his analysis is deviated from what are accepted standards, accepted by EPA, DOE, the IPCC, European Trading Scheme, California Air Resources Board, where essentially the denominator that they use to calculate the impacts of various greenhouse gases is an agreed-upon hundred years; Professor Howarth uses 20 years."

"They [the scientists at MIT] have looked at the numbers. They've looked at EPA's new numbers on methane emissions and concluded that emissions from natural gas and power generation, for example, are very, very robust compared to coal. They're about half of what you – when you combust natural gas compared to combusting coal for power generation, natural gas emits about half of the emissions of coal and they think that it has a relatively small impact."

Source: CNBC, "Energy Matters," April 12, 2011, http://mediacenter.tveyes.com/downloadgateway.aspx?UserID=39625&MDID=666715&MDSeed=8619&Type=Media

## Carnegie Mellon University

"A recent Carnegie Mellon University study finds that natural gas from the Marcellus shale has 'generally lower' life cycle GHG emissions than other power sources for producing electricity."

Source: Carnegie Mellon University, "Life cycle greenhouse gas emissions of Marcellus shale gas," August 2011

## John Hanger, Former Secretary, PA Department of Environmental Protection

"At this point it is now clear that Professor Howarth was willing to sow cynically scientific confusion in his crusade to ban shale gas development. One can be for prohibiting shale gas, but then one needs to face the ugly fact that doing so would unleash a wave of new coal plants that would emit twice as much carbon as gas plants do. Some folks are allowing their hatred for fracking to distort the truth."

Source: John Hanger's Facts of The Day Blog, "Worldwatch Institute Study Finds Coal Twice As Dirty As Gas," August 29, 2011

## Michael Levi, Senior Fellow, Council on Foreign Relations

"Alas, [Howarth's] analysis is based on extremely weak data, and also has a severe methodological flaw (plus some other questionable decisions), all of which means that his bottom line conclusions shouldn't carry weight."

Source: Council on Foreign Relations blog, "Some Thoughts on the Howarth Shale Gas Paper," April 15, 2011

## Roger Fernandez, Team Leader for O&G Climate Change Programs, EPA

"We are going to update the inventory and I think you'll see some of those numbers come down, because we are going to do some further analysis in regard to what the entire industry is doing rather than just that being reported to us."

Source: Carnegie Endowment May 19. http://www.anga.us/mediaroom/

For more information and resources on this and other issues please visit
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