FACT CHECK

MARCELLUS SHALE COALITION

Fact-Checking Anthony Ingraffea's Claims

WRONG ON CASING

Claim:

- "As a longtime oil and gas engineer who helped develop shale fracking techniques for the Energy Department, I know these technological advancements have not equated to making oil and gas development a cleaner extractive industry. … Multiple industry studies show that about 5 percent of all oil and gas wells leak immediately because of integrity issues, with increasing rates of leakage over time. … According to a review of industry's own data, 60 percent of oil and gas wells failed within 28 years." (*Casper Star-Tribune*, 10/13)

FACTS:

✓ **Ground Water Protection Council**: An August 2011 report from the Ground Water Protection Council examined more than 34,000 wells drilled and completed in the state of Ohio between 1983 and 2007, and more than 187,000 wells drilled and completed in Texas between 1993 and 2008. The data show only 12 incidents in Ohio related to failures of (or graduate erosions to) casing or cement – **a failure rate of 0.03 percent. In Texas, the failure rate was only about 0.01 percent**. (State Oil and Gas Agency Groundwater Investigations, 8/11)

✓ Via Energy in Depth's research:

- The main source for this data is a decade-old article in Oilfield Review examining what's known as sustained casing pressure, or SCP. There is indeed a graph on the second page detailing that, over a 30 year time span, 60 percent of wells will be affected by SCP. … But what's listed in the caption – and what no activist ever mentions – is just as if not more important: the graph **refers to offshore wells in the Gulf of Mexico**. (Energy in Depth, 10/13)
- The caption also states clearly: "These data do not include wells in state waters or land locations." … Even worse, the documentation explicitly states it does not refer to onshore production, which is where shale development is actually occurring. (ibid)
- Sustained casing pressure (SCP) is a much more complex issue, and simply saying that the presence of SCP is evidence of a leaking well reflects an incredibly poor understanding of even basic facts about well construction. (ibid)

WRONG ON METHANE EMISSIONS

Claim:

- "Natural gas is composed largely of methane, **and 3.6% to 7.9% of the methane from shale-gas production escapes to the atmosphere** in venting and leaks over the lifetime of a well." (*Methane and the Greenhouse-gas Footprint of Natural Gas fro m Shale Formations*; Robert W. Howarth, Renee Santoro, Anthony Ingraffea, 11/10)

FACTS: What Ingrafffea and his team allege here is that 3.6 percent to 7.9 percent of all natural gas produced, leaks into the atmosphere over the life of the well. Think about that for a moment: companies are allowing billions of cubic feet of natural gas escape into the atmosphere. Here are the facts, some of which come from Ingraffea's colleagues who co-authored the report mentioned above.

✓ **Robert Howarth, Cornell University professor** and a co-author of the report mentioned above: "The gas industry can produce gas with relatively low emissions" (*Cornell University*; Department of Ecology and Evolutionary Biology, 9/13)

✓ **The Breakthrough Institute**: "The climate benefits of natural gas are real and are significant." (How Natural Gas Fuels the Clean Energy Revolution, 6/13)

✓ **The Breakthrough Institute**: "The best available studies suggest that leakage rates **do not exceed 2 percent**. Ingraffea ignored the latest data from the US Environmental Protection Agency, which estimated nationwide fugitive methane emissions **at 1.5 percent** of natural gas production and indicated that leaks have been on the decline in recent years. A 2012 study published by the Joint Institute for Strategic Energy Analysis **estimated leakage at 1.3 percent**… **The two leakage studies cited by Ingraffea, which both estimated leakage rates well above 2 percent, are outliers and have been faulted for selective bias and poor measurement and statistical techniques**." (Methane Leakage Not a Deal Breaker for Natural Gas, 7/13)

✓ **Louis Derry, Cornell University professor**: "Even if one accepts the estimates advocated by some of a higher 'global warming potential' for methane by a factor of approximately three, the increase in climate forcing by methane is significantly smaller than for carbon dioxide. … "Using the more standard approach as proposed by the I.P.C.C., the increased 2007-2011 climate forcing from methane is less than 8 percent of the increase in CO2 forcing. Of that 8 percent, **only about 1 percent can be related to U.S. shale gas production**. … "Although some of the numbers remain uncertain, the basic result is robust. Methane, and in particular shale gas methane, is not a major contributor to climate change. (*New York Times*, 7/13)

✓ **Paula Jaramillo, Carnegie Mellon University**: "We don't think they're [Howarth et. al.] using credible data and some of the assumptions they're making are biased. And the comparison they make at the end, my biggest problem, is wrong." (8/11)

✓ **Dave McCabe, Clean Air Task Force**: "This paper is selective in its use of some very questionable data and too readily ignores or dismisses available data that would change its conclusions." (4/11)

WRONG ON CLEAN-BURNING NATURL GAS

Claim:

- "Because of leaks of methane, the main component of natural gas, the gas extracted from shale deposits is not a 'bridge' to a renewable energy future — it's a gangplank to more warming and away from clean energy investments. (*New York Times*, 7/13)

FACTS:

✓ **National Energy Technology Laboratory (U.S. DOE)**: "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." (Life Cycle Greenhouse Gas Inventory of Natural Gas Extraction, Delivery and Electricity Production, 10/11)

✓ **Cornell University**: "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." (A Commentary on The Greenhouse Gas Footprint of Natural Gas in Shale Formations, 3/12)

✓ **University 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." (The Greenhouse Impact of Unconventional Gas for Electricity Generation, 10/11)

✓ **Carnegie Mellon University**: "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." (*Environmental Research Letters*; Life Cycle Greenhouse Gas Emissions of Marcellus Shale Gas, 8/11)

✓ **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." (Shale Gas Production: Potential Versus Actual Greenhouse Gas Emissions,11/12)

✓ **Joint Institute for Strategic Energy Analysis**: "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." (Natural Gas and the Transformation of the U.S. Energy Sector: Electricity, 11/12)