

Natural Gas Generation is Not a Good Short Term Climate Solution

Overall Climate Impact from Natural Gas Almost as Bad as Coal Over 20 Years

Natural gas is often called the “bridge to clean energy,” but once the leaked gas from extraction and processing and transportation is accounted for, natural gas is nearly as bad for the climate on a 20-year basis as coal. If we are to make progress toward protecting our climate, the full life cycle impact of fuels must be included in analyses of energy options.

Key Facts:

- Over 100 years, methane is 34 times as powerful as CO₂ in its ability to trap heat in the atmosphere – over 20 years it is 86 times as powerful as CO₂.⁶
- A new study shows that about 3% of all natural gas leaks into the atmosphere during extraction, processing and transportation – about twice what EPA thought.³
- Methane leakage occurs at all points of the natural gas extraction and distribution chain. Only comprehensive regulation will fix the problem.
- Climate change is already happening, making the 20 year impacts important.
- Natural gas should only be used sparingly to support renewables.

20-Year Climate Impact		
	Fayette Coal Plant	New Combined Cycle Natural Gas Plant
Production (MWh/yr)	4,482,492	4,482,492
Combustion CO₂ (tons/yr)	3,480,801 ¹	1,792,997 ²
20-yr CO₂ Equivalent of Methane Leaked (tons/yr)*	625,640	1,725,623
Total CO₂ Equivalent (tons/yr)	4,037,056	3,518,620

*Calculated using a 3% methane leakage rate for natural gas,³ a 0.3% leakage rate for coal mining⁴ and IPCC's global warming potential factor for methane over 20 years (x86)⁵

Climate Change Has Real Costs

• Drought:

- Texas agricultural losses due to the 2011 drought reached \$7.62 billion, making it the most costly drought in history.⁷ A multi-year “drought of record” such as that of the 1950s, it could cost Texas businesses and workers \$116 billion in income by 2060.⁸
- Lack of water impacts industrial facilities that need cooling water. The 2011 drought and heat forced power plants to ramp down.⁹

- **Wildfires:** As happened in 2011, drought can lead to devastating wildfires, taking lives and property. 31,453 fires burned over 4 million acres across Texas.¹⁰ Total damage in Texas alone due to loss of property, timber and agriculture exceeded \$750 million.¹¹

Fracking is Harming Our Resources and Our Communities

- Fracking uses billions of gallons of water each year, which is removed from the hydraulic cycle and contributes to water shortages.¹²
- Fracking wastewater is disposed of by injecting the water deep into the ground.
 - Disposal wells can contaminate aquifers with hazardous fracking chemicals.
 - Studies have scientifically linked this wastewater disposal with an increase in seismic activity (earthquakes¹³), even here in Texas.¹⁴
- Emissions from fracking equipment, gas leakage, and dust are harming human health.¹⁵
- A new study shows that living near fracking sites greatly increases birth defects.¹⁶

Citations

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³ Miller, Scott, et al. “Anthropogenic Emissions of Methane in the United States.” PNAS. Oct 18, 2013. www.pnas.org/content/early/2013/11/20/1314392110.abstract

⁴ Organisation for Economic Co-operation and Development / International Energy Agency (OECD/IEA) (1995) Energy Statistics of OECD Countries 1992-1993. OECD, Paris.

⁵ Myhre, G., et al. “2013: Anthropogenic and Natural Radiative Forcing.” In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.* www.climatechange2013.org/images/uploads/WGIAR5_WGI-12Doc2b_FinalDraft_All.pdf

⁶ Thinkprogress.org “More Bad News For Fracking: IPCC Warns Methane Traps Much More Heat Than We Thought.” Oct 2, 2013. <http://thinkprogress.org/climate/2013/10/02/2708911/fracking-ipcc-methane/>

⁷ AgriLife Today. “Updated 2011 Texas agricultural drought losses total \$7.62 billion.” March 21, 2012. <http://today.agrilife.org/2012/03/21/updated-2011-texas-agricultural-drought-losses-total-7-62-billion/>

⁸ Susan Combs, Texas State Comptroller’s Office.

⁹ National Geographic Daily News. “Record Heat, Drought Pose Problems for U.S. Electric Power.” <http://news.nationalgeographic.com/news/energy/2012/08/120817-record-heat-drought-pose-problems-for-electric-power-grid/>.

¹⁰ Texas A&M Forest Service. “Current Texas Wildfire Situation.” <http://txforestservice.tamu.edu/main/article.aspx?id=12888>.

¹¹ National Oceanic and Atmospheric Administration. “Extreme Weather 2011.” www.noaa.gov/extreme2011/wildfire.html.

¹² McKenzie, Lisa, et al. Ceres. “Hydraulic Fracturing and Water Stress: Water Demand by the Numbers.” Feb 2014. www.ceres.org/resources/reports/hydraulic-fracturing-water-stress-water-demand-by-the-numbers/view

¹³ USGS. “Man-Made Earthquakes Update.” Jan 17, 2014. www.usgs.gov/blogs/features/usgs_top_story/man-made-earthquakes/

¹⁴ State Impact. “How Oil and Gas Disposal Wells Can Cause Earthquakes.” <http://stateimpact.npr.org/texas/tag/earthquake/>

¹⁵ Center for Public Integrity, InsideClimate News and The Weather Channel. Fracking the Eagle Ford Shale: Big Oil and Bad Air on the Texas Prairie. <http://stories.weather.com/fracking>

¹⁶ National Institute of Environmental Health Sciences. “Birth Outcomes and Maternal Residential Proximity to Natural Gas Development in Rural Colorado.” Jan 28, 2014. <http://ehp.niehs.nih.gov/wp-content/uploads/122/1/ehp.1306722.pdf>

