

Natural Gas and LNG Exports are NOT “Climate Solutions”



The climate impacts of producing natural gas and exporting liquefied natural gas (LNG) have been scientifically analyzed. We now know: 1) Natural gas consumption worsens greenhouse-gas pollution; and 2) Natural gas production and LNG exports are no better than other fossil fuels. Therefore, **natural gas cannot be a “bridge to the future.”** Here’s why.

► Methane Leakage is Pervasive in the Supply Chain

Methane leakage has a massive greenhouse-gas impact, and natural gas is predominantly methane. Leakage occurs in drilling and production, transmission, processing and refining, and distribution (including liquefaction into LNG, its transport, regasification and redistribution). These fugitive methane emissions are critical factors in the life-cycle pollution of natural gas.

► Methane is More Dangerous than Carbon Dioxide

Natural gas is sold as the ideal long-term transition fuel to a distant renewable-energy economy (“the bridge to the future”). This comes from the contention that it is the least-polluting fossil fuel. True, burning methane directly releases significantly less carbon dioxide than burning other fossil fuels. But unburned methane is 86 times more potent at trapping heat in the atmosphere than coal over a 20-year period.

► Time is of the Essence

The next two decades are critical, and methane emissions are a serious short- and long-term problem. Official predictions are that heat increases may reach 3.6° F (2° C) within decades. The dramatic climate impacts we’ve seen so far come from atmospheric heat increases of only 1.5° F. Because methane is such a devastating greenhouse gas, even a tiny percentage of leakage creates enormous climate disruption.

► Scientists Sound the Alarm on Methane Leakage

In July 2014, scientists called on the Obama administration to account for methane emissions in global warming: “As evidence continues to mount that serious climate change impacts are already upon us, research indicates that mitigation of short-lived pollutants such as methane can play a significant role in slowing the rate of climate change....” The scientists’ letter urges the U.S. Environmental Protection Agency (EPA) and Department of Energy (DOE) to use a 20-year timeframe for evaluation and planning on methane because of the urgency of the climate crisis.

► Governmental Analyses are Deficient

DOE has published a draft “life-cycle analysis of natural gas destined for export” (LNG exports) including methane leakage rates that the EPA is also currently using. Evaluations by major environmental analysts and attorneys show that the DOE and EPA assumptions contain significant gaps and flaws. As a result, the destructive impact of methane leaks is seriously underestimated by the Federal Government.

► The Industry Has Failed to Monitor and Stop Methane Leakage

A 2013 study in Texas directly measured methane leaks from wells chosen by the industry. These wells are likely to have some of the best controls and lowest emissions, and yet still show significant leakage. EPA and DOE estimate the industry average leak rates to be about the same as the Texas best-case examples – a severe underestimate of realistic leakage methane leakage rates and counter to other studies.

► **Top-Down versus Bottom-Up Makes a Difference**

Studies looking at methane in the atmosphere (“top-down” studies) give compelling evidence that methane leakage estimates based on wells, pipelines, and refineries (“bottom-up” reviews) have dramatically underestimated total methane leaks. Two recent studies from Harvard and Stanford found emissions levels are much higher than EPA estimates, and atmospheric evaluations in the fracking fields of Colorado and Utah found the same problem.

► **Federal Perspectives Must Change**

The science makes it clear that we have to look at the markets that would import LNG and consider leaks there. DOE has ignored this. DOE also cannot assume that U.S. LNG exports will automatically reduce the burning of other fossil fuels overseas. The International Energy Agency (IEA) predicts that U.S. LNG exports would cause reductions in renewable energy development in other countries – leading directly to more greenhouse-gas emissions and climate disruption.

► **Market Economics Alone Cannot Reduce Climate Impacts**

Methane, like coal and oil, is a market commodity, but its economic impacts also are core to energy choices and climate evolution; these three spheres connect. A study of energy-economic-climate interactions by DOE’s own Pacific Northwest National Laboratory found that natural gas is not a global climate solution on that basis. International teams evaluated the affects of dramatic increases in global gas consumption through 2050. This showed that long-term gas expansion escalates the climate crisis because gas would replace both other fossil fuels and renewable energy. The study points out that public policies expanding and protecting renewables are vital to prevent the market push for gas superiority.

► **LNG Exports Require More Fracking**

LNG export terminals and pipelines proposed for Oregon are targeting Asian markets. One agonizing result of West Coast LNG exports to the Pacific Rim would be opening up most of Western North America to much more fracking. The Jordan Cove Energy Project proposed in Oregon even highlights that as a major plus, to “balance supply and demand...in the current market environment of [natural gas] oversupply and low prices.” A Jordan Cove consultant states, “LNG exports... should be seen as instrumental in providing the increased demand to spur exploration and development of gas shale assets in North America.” Gulf and Atlantic coast projects would also spur more fracking.

► **Climate-Change Mitigation Efforts Would be Undone by LNG Exports**

The current science makes a compelling case: LNG exports are not a climate solution. Oregon should reject proposals to make the Pacific Northwest a throughway for fracked-gas exports. LNG proposals on the U.S. Atlantic and Gulf Coasts claiming climate benefits are equally misguided. The bottom line: Urgent near-term action against methane and other high-intensity greenhouse gases must go hand-in-hand with major reductions in direct carbon-dioxide output. We will negate efforts to curb climate disruption if we permit LNG exports.

In November 2014, the U.N. Intergovernmental Panel on Climate Change (IPCC) released a synthesis report warning that greenhouse gas levels are at the highest they have been in 800,000 years. IPCC Chairman Rajendra Pachauri said of the report: “We have little time before the window of opportunity to stay within the 2C of warming closes. To keep a good chance of staying below the 2C, and at manageable costs, our emissions should drop by 40 to 70 percent globally between 2010 and 2050, and falling to zero or below by 2100.”

► *America’s natural gas system is leaky and in need of a fix, new study finds.* (February 13, 2014). <http://news.stanford.edu/news/2014/february/methane-leaky-gas-021314.html>

► *The Washington Post on DOE LNG Life-Cycle: Exporting U.S. Natural Gas isn’t as “Clean” as You Think.* (June 9, 2014). <http://www.washingtonpost.com/blogs/wonkblog/wp/2014/06/09/exporting-u-s-natural-gas-isnt-as-clean-as-you-think/>

► *Scientific American* discusses a new NOAA study showing leakage rates double or triple the DOE estimates and Texas findings. <http://www.scientificamerican.com/article/leaky-methane-makes-natural-gas-bad-for-global-warming/>.

For detailed references and the full synopsis, visit: <http://tinyurl.com/l46jq68>

Contributions from the following Oregonians:

Ted Gleichman, Editor, *Sierra Club*, ted.gleichman@oregon.sierraclub.org. 503-781-2498.
Lesley Adams, *Waterkeeper Alliance*; Bob Barker; Susan Jane Brown, *Western Environmental Law Center*; Julia DeGraw, *Food & Water Watch*; Forrest English and Robyn Janssen, *Rogue Riverkeeper*; Francis Eatherington, *Cascadia Wildlands*; Doug Heiken, *Oregon Wild*; Phillip Johnson, *Oregon Shores Conservation Coalition*; Courtney Johnson, *Crag Law Center*; Cameron LaFollette, *Oregon Coast Alliance*; Rhett Lawrence and Nathan Matthews, *Sierra Club*; Steve McCoy, *1000 Friends of Oregon*; Daniel Serres, *Columbia Riverkeeper*; John Ward, *Rogue Flyfishers*.