

Fracking: A Bridge to Catastrophic Climate Change

Fracking proponents have misled the public by touting natural gas as a “bridge fuel” to move from traditional fossil fuels to renewable energy. But after more than a decade of fracking, it is clear that natural gas is incapable of driving substantive emissions reductions. More than ever, climate action is needed. The 2018 Intergovernmental Panel on Climate Change (IPCC) report warns that rapid warming would bring ecological and humanitarian crises by 2040.¹ Only a dramatic economic reorientation to 100 percent clean, renewable energy can stave off climate catastrophe.² Fracking merely locks in greenhouse gas emissions and delays this critical transition.

Fracking has not delivered on “bridge fuel” promises

The “bridge fuel” pitch (coined by the American Gas Association in 1988) holds that gas lowers emissions by closing coal and paving the way for clean technologies.³ But natural gas has barely moved the needle on emissions. Between 2007 and 2013, U.S. carbon dioxide (CO₂) emissions fell by a modest 11 percent, driven in large part by the recession.⁴ Meanwhile, global emissions increased as CO₂-intensive production of U.S. consumer goods was offshored.⁵ Power sector reductions are also unremarkable. Over the past decade, the combined emissions from coal and gas power plants declined only 10.4 percent.⁶ If emissions continued to decline at this slow pace, greenhouse gas emissions would not reach zero by 2100.

Shale reserves power dirty growth, breaking the carbon budget

High-profile methane emissions investigations typically focus on the use of gas for electricity,⁷ although only about a third of natural gas is actually used to generate electricity.⁸ For example, fracking is enabling the construction of up to 350 new liquefied natural gas export facilities and petrochemical plants.⁹ Fracking also powers the production of plastic, responsible for nearly 4 percent of global emissions in 2015.¹⁰ Abundant gas breaks the carbon budget for the insufficient Paris Agreement climate targets.¹¹ An International Energy Agency report

predicted that fracking could produce a “golden age of gas” with production levels that guarantee more than 3.5 degrees Celsius of warming in the long term.¹²

Methane leakage eliminates the benefits of coal-to-gas switching

Natural gas mostly comprises methane, a greenhouse gas that is 86 times as potent as CO₂ in the short term.¹³ Recent research finds that natural gas supply chains leak 4.0 percent of produced shale gas and 2.67 percent of other gases.¹⁴ Food & Water Watch modeled the benefits of replacing coal with gas (accounting for methane leaks) and found that if all coal plants were decommissioned by 2030 and if the electricity they produced were replaced solely by gas-powered electricity, greenhouse gas emissions would still continue to rise.¹⁵ If natural gas remains the dominant energy source through 2050, annual greenhouse gas emissions from the power sector will be higher in the coming decades than they are today.¹⁶



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Gas generation competes with renewable electricity, not coal

Technology exists to support a transition to 100 percent clean, renewable energy backed up by storage and transmission at prices lower than current energy costs.¹⁷ While natural gas generation and some renewables are comparable in cost, new coal generation is substantially more expensive than both.¹⁸ Major coal capacity has not been added to the grid since 2013.¹⁹ However, abundant gas has been shown to reduce investment in renewables.²⁰

Fracking locks in emitting technologies for decades

As coal plants close slightly earlier than planned, they are replaced with gas plants that typically have lifespans of 40 to 50 years.²¹ New fracked gas infrastructure locks in the economics for continued fossil fuel use.²² However,

significant carbon reductions are impossible if even 11 percent of the grid is powered by natural gas.²³ Building new gas plants means that one of two things will happen: 1) these gas plants could operate for their economic and technical lifetimes, pushing us over the brink of climate chaos, or 2) the plants could be closed early, becoming stranded economic assets.²⁴ Weaning off gas later would actually be more expensive than doing it now.²⁵

Conclusion

The only way to stave off the worst effects of climate change is through bold, systemic change, which involves investment in a New Deal-scale green energy public works program that fosters a rapid, fair and just transition to 100 percent clean, renewable energy by 2030. Absent a national ban on fracking, natural gas will torpedo the effectiveness of any climate half-measures.

Endnotes

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