

Fracking, Power Plants and Exports: Three Steps for Meaningful Climate Action

Climate change, largely fueled by burning fossil fuels, threatens our planet, water resources, food supply and general livelihoods. Scientists have found that exceeding the 1.5° Celsius warming threshold could cause irreversibly destructive climate change.¹ Despite this, we are investing more and more into fossil fuels, including fracked oil and gas and its infrastructure.

Surging fracked oil and gas production has collapsed prices — a collapse compounded by the coronavirus pandemic — spawning a global glut. While it would make more sense to ditch fossil fuels, we are instead funneling money into new infrastructure like power plants and export facilities that artificially prop up demand so that frackers can keep drilling.

Fortunately, there are three steps that can be taken now to lower the amount of greenhouse gases bombarding the atmosphere. They are: banning fracking; prohibiting new fossil fueled power plants (including those with carbon capture); and banning crude oil and natural gas exports.

First step: Ban fracking nationwide

Fracking (hydraulic fracturing) is an unconventional method for extracting oil or natural gas from previously inaccessible rock formations. In addition to its known environmental and public health consequences, fracked gas production is associated with significant leaks of methane. These natural gas leaks are inevitable and occur in every stage of the natural gas network — from wells to pipelines to compressor stations to power plants. While no single national estimate reveals how much methane is leaked throughout the natural gas supply chain, science shows that even low leak rates (as low as 2.4 percent) erase gas' purported "climate benefits."²

Second step: Prohibit the construction of new fossil-fueled power plants

Power plants release harmful air pollutants and greenhouse gasses like methane, carbon dioxide and nitrogen oxides (NO_x).³ Although natural gas-fired plants release fewer air



pollutants than coal- or oil-fired plants, they are major NO_x emitters, they contribute to ground-level ozone and smog, and they threaten human health.⁴

The sunk investment costs in these new greenhouse gas emitters not only discourage investments in clean, renewable energy, but also encourage more fracking, pipelines and associated leaks of methane.⁵ Like all infrastructure, power plants are prone to escaping methane emissions. A study of three gas power plants found that the leak rate was between 0.1 percent and 0.42 percent, which was 21 to 120 times more leakage than the facilities estimated.⁶ When gas plants have to be restarted, some vent remaining methane into the atmosphere for safety purposes.⁷

Power plant carbon capture technology

Despite billions in government handouts, power plant carbon capture and sequestration (CCS) technology remains unproven and expensive. Even with decades of support, cost estimates for power plants with CCS remain substantially higher than they were in 2005.⁸ CCS can only reduce a fraction of the emissions from electricity generation. The most ambitious forms of CCS capture only 90 percent of emitted carbon; however, when emissions associated with the operation of capture facilities are considered, reductions fall to near 80 percent.⁹ Realistically, CCS plants have to burn more fuel to power the equipment to capture the carbon. When methane emissions from increased produc-

tion are factored in, CCS is only capable of reducing electricity sector emissions by 39 percent.¹⁰ From transportation to injection, CCS requires huge amounts of electricity.¹¹

Third step: Ban oil and gas exports

Exporting oil and gas encourages continued drilling and fracking and locks us into more leaky infrastructure.

Natural gas is super-cooled into a liquid because it's nearly impossible to ship in its gaseous state.¹² When liquefied natural gas (LNG) is stored in tanks, the vastly different air and storage temperatures lead to pressure buildup and require venting to release, or "boil-off" gas.¹³ Observed leak rates of LNG facilities can be as high as 10 percent, which more than offsets any climate advantage relative to coal combustion.¹⁴ Moreover, it's been estimated that if the U.S. reinstated the crude oil export ban, global carbon reductions would roughly translate to closing 19 to 42 coal plants.¹⁵

Recommendations

Continued reliance on fossil fuels like fracked oil and gas, and continued investment in their infrastructure, is dangerous for our climate. As science shows, greenhouse gas emissions could be drastically reduced by implementing a strategic shift away from fossil fuels and relying on renewable power for energy generation, accompanied by increased use of energy efficiency technologies in buildings.¹⁶

By taking three common-sense steps — immediately banning fracking, prohibiting new leaky fossil fueled power plants and stopping exports that unload dirty fuels into overseas markets — we can curtail the climate crisis. One model that would do this is the Future Generations Protection Act in Congress. Without delay, we must move off of fossil fuels.

Endnotes

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