The High Cost of Fracked Gas Pipelines

U.S. natural gas consumption increased 50 percent between 2005 and 2024, driven in large part by the growth in the share of electricity generation powered by natural gas from 19 percent to 43 percent.[1] This dash to gas has not brought the benefits promised by frackers, with electricity prices exploding 74 percent in the period.[2] That is because energy corporations invest in projects that will make them the most money, not in the options that are cheapest for consumers.[3] This has resulted in a continued expansion of the fossil fuel energy system despite the dramatic cost reductions in renewable energy sources in recent years.[4]

At the heart of this seeming paradox is a deeply flawed system that burdens utility customers with expensive and often unnecessary gas pipelines, while also increasing consumers' exposure to volatile natural gas prices.[5] Pipeline companies are incentivized to spend as much money as possible because the prices that they are allowed to charge are tied to their spending.[6] Although many states have made commitments to phase down their use of natural gas,[7] President Trump has been cutting deals to force through yet more pipeline infrastructure to carry gas to these states.[8] Stopping these pipelines from being built is critical to protect households from unaffordable energy bills.

FERC's Blank Check System for Pipeline Funding

Interstate pipelines are overseen and approved by the U.S. Federal Energy Regulatory Commission (FERC), which is charged with protecting consumers from the inherent monopoly power held by natural gas pipelines.[9] FERC theoretically requires that pipeline developers build only those pipelines that are required for "public convenience and necessity" (i.e., needed to meet product demand). However, FERC rarely rules against the building of new pipelines, having rejected only 2 of more than 400 proposals since 1999.[10] FERC's deference to private companies leads to the overbuilding of unnecessary pipeline capacity, paid for by captive consumers served by monopoly utilities.[11]

To obtain FERC approval to build pipelines, developers typically secure long-term contracts for "firm capacity" that locks in buyers for decades, whether or not they use the capacity.[12] Bidding for this capacity is competitive but is theoretically capped at the cost of the pipeline plus a generous return on equity — typically 10 to 14 percent of the money invested.[13] This is a huge amount of money: at a compounding 14 percent rate of return, investors would double their money in roughly five years.[14] This return on capital has created perverse incentives for builders of natural gas pipelines to "gold plate" their system and to overbuild pipelines to earn a high rate of return.[15]

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In practice, pipeline developers are likely able to leverage their monopolies and to "over recover" the costs of building their pipelines, earning even more than the allowed 10 to 14 percent. The Natural Gas Supply Association (NGSA), a trade organization that represents other large corporations in the natural gas supply chain (frackers, suppliers, and marketers), claims that pipeline developers frequently overcharge customers. The NGSA claims that pipeline corporations receive excessive returns on equity — as high as 35 percent per year.[16] This account is supported by business reports that pipeline companies "target a minimum high-teens percent unleveraged return on their investment."[17] FERC is able to investigate over-earning by these pipelines, but the Commission is only able to set future rates, not order reimbursements.[18]

Overbuilding Pipelines Has Already Cost Ratepayers Billions

The exorbitant returns act as a magnet for billions of dollars in investment, regardless of the long-term cost of these projects to consumers.[19] Local gas utilities pay pipelines to contract for capacity (guaranteed winter use of the pipeline).[20] The cost for this capacity is then charged to ratepayers, whether the supply was needed or not.[21]

In some cases, the buyer is owned by the corporation that owns the pipeline builder, passing the inflated costs on to captive ratepayers (subject to the approval of state regulators).[22] Over half of U.S. natural gas-consuming households buy gas from a utility with ties to a pipeline company.[23] This overbuilding has resulted in an estimated 38 percent excess pipeline capacity and 27 percent excess storage capacity, costing $179 billion in unnecessary investment.[24]

FERC-approved pipelines are sometimes later cancelled for economic reasons, suggesting that FERC is not adequately evaluating project need.[25] Pipeline companies can juke determinations of project need by signing deals with companies affiliated with the builder.[26] In 2016, two pipeline companies cancelled pipelines to New England (a region supposedly in desperate need of pipelines) because they were unable to find buyers.[27] Fast-tracking the approval of legally dubious and economically unnecessary pipelines can leave ratepayers with the costs of incomplete pipelines when courts find that the pipelines should never have been approved.[28]

The rush to fracked gas has exposed electricity ratepayers to monopoly power and highly volatile fuel costs

The initially lower costs of natural gas have led to more consumption and to higher prices over the long term.[29] Volatility is in part a feature of gas, since natural gas is a fuel that — unlike electric storage, coal, or oil — must be delivered just in time to be used.[30] In the Northeast, gas generators initially piggy-backed on pipeline capacity that had been built to serve local gas utilities, buying transmission rights in periods of low demand without securing long-term, guaranteed access to their fuel.[31]

However, an increased reliance on natural gas-fired power plants has created severe volatility in local gas markets, straining pipeline capacity as these plants buy transmission rights from the secondary market on short notice.[32] Secondary sellers of transmission rights are not constrained by the same price controls applied to pipeline developers, enabling them to extract very high prices when selling to gas generators.[33] Electricity price spikes then result from merchant gas plants

bidding for that scarce capacity as price takers, sending that cost (rather than the raw commodity cost) through to high electric rates.[34]

Even though this process is immensely costly for consumers, these periods are very profitable for the industry. Gas generators enjoy what is known as a "natural hedge" against periods of extreme fuel costs, because in many electricity markets the price of electricity is set by the most expensive gas generator in use.[35] In fact, comparatively more efficient natural gas plants can become much more profitable as a result of high natural gas prices, which lift the electricity price faster than their own operating costs.[36] On the other hand, gas plants choosing to contract against this price risk put themselves at a competitive disadvantage by paying for unnecessary price stability.[37]

Academic research broadly concludes that an electricity system that is based on 100 percent renewable energy and storage is not only feasible, but would be comparable or cheaper for consumers than the current electricity grid.[38] The results of a 2019 literature review of 180 peer-reviewed studies is unambiguous: "The great majority of all publications highlights the technical feasibility and economic viability of 100% RE [renewable energy] systems."[39] Technological improvement continues to widen the cost gap between fossil fuels and renewables. For example, a 2025 study modeling 100 percent renewable energy across the Americas found that the levelized cost of electricity in a 100 percent renewable scenario would be nearly half the cost of the "business as usual" fossil fuel scenario.[40]

Even efforts that are short of a full switch to 100 percent renewable electricity can produce significant savings. Displacing natural gas electricity generation with wind and solar greatly reduces the electricity price volatility for consumers by reducing fuel demand and eliminating price run-ups from choke points.[41] Electrifying building heating with efficient air-source heat pumps would also reduce gas consumption, even if the new electricity demand were met by an increase in gas generation.[42]

New Pipelines Are a Short-Sighted Decision Likely to Saddle Ratepayers With Billions in Costs as Renewable Energy Takes Over

FERC approves pipelines on the assumption that they will remain economically useful for at least 35 years.[43] However, state renewable energy mandates and the electrification of buildings undermine the medium- and long-term justification for more pipeline capacity.[44] New natural gas infrastructure is clearly incompatible with meeting the climate goals legislated by numerous states.[45]

Natural gas distribution companies are well aware of this problem. For example, Corning Gas sought unsuccessfully to accelerate the recovery of its existing natural gas system by saying that the New York Climate Leadership and Community Protection Act would shorten the lifespan of its system.[46] Normally, natural gas utilities charge ratepayers for the cost of building pipelines across the life of these assets.[47] Fearing an early end to its system, Corning sought to raise rates in order to pull the money back out early.[48]

Once gas-fired power plants are displaced by renewable energy and storage, a huge amount of pipeline infrastructure will become "stranded."[49] This would leave ratepayers stuck paying for obsolete infrastructure in addition to renewable energy.[50] In New England, local distribution gas companies finance interstate gas transmission infrastructure by charging ratepayers.[51] This will be

further exacerbated by increasing electrification. As households go electric and end their gas service, utilities are authorized to recover the same investment costs from a smaller customer base, resulting in potentially dramatic increases in delivery costs.[52] Low-income people have historically been slower adopters of electrification and will likely bear the brunt of these costs.[53]

Conclusion

State and federal energy policy must weigh the costs to people above the profits to industry. The solution to the increasingly expensive natural gas-powered electricity system is a transition to renewable energy, not more natural gas infrastructure. Rejecting future pipelines will ensure that ratepayers do not pay the price for exorbitantly expensive infrastructure that is incompatible with climate goals.

In the short term, increased investment in energy efficiency and renewable energy can ease the pressure on volatile natural gas systems, which grant the holders of transmission rights significant market power during periods of high demand. Over a longer period, a transition to a 100 percent renewable electricity grid has the potential to produce even more cost savings.[54]

Endnotes

1 Food & Water Watch (FWW) analysis of U.S. Energy Information Administration (EIA) data. U.S. Natural Gas Total Consumption. Net Generation, All Sectors, Annual. Accessed May 2025.

2 FWW analysis of EIA data. Average Retail Price of Electricity, Annual, Residential. Accessed May 2025; Knight, Helen. "Wonderfuel: Welcome to the age of unconventional gas." *New Scientist.* June 9, 2010; Harvey, Fiona, "Fossil fuel firms use 'biased' study in massive gas lobbying push." *Guardian.* April 20, 2011.

3 Christophers, Brett. "Fossilised capital: Price and profit in the energy transition." *New Political Economy.* Vol. 27, No. 1. 2022 at 147; Gross, Robert et al. "Risks, revenues and investment in electricity generation: Why policy needs to look beyond costs." *Energy Economics.* Vol. 32. 2010 at abstract.

4 Christophers (2022) at 147; FWW analysis of EIA data. U.S. Natural Gas Total Consumption. Net Generation, All Sectors, Annual. Accessed May 2025.

5 Carter, Richard et al. Los Alamos National Laboratory. "Impact of Regulatory Change to Coordinate Gas Pipelines and Power Systems." Pipeline Simulation Interest Group 2016 Conference. May 5, 2016 at 1 and 8.

6 Dimenstein, Libby and Burçin Ünel. "Regional planning for just and reasonable rates: Reforming gas pipeline review." *Columbia Journal of Environmental Law.* Vol. 49. 2024 at abstract and 16.

7 Klass, Alexandra B. "Evaluating project need for natural gas pipelines in an age of climate change: A spotlight on FERC and the courts." *Yale Journal on Regulation*. Vol. 39. 2022 at 664, 675 to 676, and 677.

8 Soraghan, Mike. "Williams restarts push for major Northeast gas pipelines." *E&E News.* May 30, 2025.

9 Dimenstein and Ünel (2024) at abstract and 4 to 6.

10 *Ibid.* at 4 and 5.

11 *Ibid.* at abstract and 16.

12 *Ibid.* at 4, 5, 11, and 36.

13 *Ibid* at 15 to 16; Glick, Richard. FERC Commissioner. "Dissenting in part in Mountain Valley Pipeline, LLC Docket No. CP19-14-000." June 18, 2020 at 16 and 17.

14 Calculation: $\text{Log}_{1.14}(1.14)/\text{log}_{1.14}(2) = 5.29$

15 Dimenstein and Ünel (2024) at abstract and 16.

16 Vann, Adam et al. Congressional Research Service. Letter to Mooney, Brandon. House Energy and Commerce Committee. "The Natural Gas Act: Overview, Analysis, and Comparison With Federal Power Act Ratemaking Authority." February 4, 2020 at 8; Crowe, Betsy. Foresite Energy Services, LLC. Prepared for Natural Gas Supply Association. "2024 Pipeline Cost Recovery Report." July 2024 at 4.

17 S&P Global. "Industry Credit Outlook 2025: Midstream Energy." January 14, 2025.
18 Vann et al. (2020) at 2 and 3.
19 Christophers (2022) at 147; EIA. "Natural Gas Pipeline Projects." April 2025. Available at https://www.eia.gov/naturalgas/pipelines/EIA-NaturalGasPipelineProjects_Apr2025.xlsx. Accessed June 2020.
20 New Hampshire Department of Energy. "Factors That Impact Your Gas Supply Rate." Available at https://www.energy.nh.gov/utilities-providers/regulated-utility-services/gas/factors-impact-your-gas-supply-rate. Accessed April 2025.
21 *Ibid.*
22 Safavi, Leila. University of California at Berkeley. "Can Vertically Integrated Firms Evade Pricing Regulation? Evidence From Energy Utilities." Energy Institute at Haas Working Paper 344. November 2023 at abstract; Davis, Lucas W. and Erich Muehlegger. "Do Americans consume too little natural gas? An empirical test of marginal cost pricing." *RAND Journal of Economics*. Vol. 41, No. 4. Winter 2010 at 793.
23 Safavi (2023) at abstract.
24 Doan, Thuy et al. University of Hawaii. "Are We Building Too Much Natural Gas Pipeline?" Working Paper No. 2022-2. April 25, 2022 at abstract.
25 Klass (2022) at 663 and 670.
26 *Ibid.* at 662.
27 Christin, Robert et al. "Considering the public convenience and necessity in pipeline certificate cases under the Natural Gas Act." *Energy Law Journal.* Vol. 38, No. 115. 2017 at 117; Carr, Housley. RBN Energy. "Please Come to Boston — New England Needs More Natural Gas Pipelines." January 2, 2014.
28 Klass (2022) at 663.
29 Kaufmann, Robert K. and Edward Hines. "The effects of combined-cycle generation and hydraulic fracturing on the price for coal, oil, and natural gas: Implications for carbon taxes." *Energy Policy.* Vol. 118. 2018 at 604.
30 Carter et al. (2016) at 8.
31 Makholm, Jeff D. "Gas industry's version of demand response cures its 'duck curve'." *Natural Gas & Electricity.* February 2019 at 31 and 32; Carter et al. (2016) at 8.
32 Carter et al. (2016) at 1 and 7 to 8.
33 *Ibid.*; Makholm, Jeff D. and Laura T. W. Olive. "The politics of U.S. oil pipelines: The first born struggles to learn from the clever younger sibling." *Energy Law Journal*. Vol. 37. 2016 at 419 and 420.
34 Carter et al. (2016) at 3.
35 Guo, Xiaojia et al. "The natural hedge of a gas-fired power plant." *Computational Management Science.* Vol. 13. 2016 at abstract; Gross et al. (2010) at abstract; ISO New England. "How resources are selected and prices are set in the wholesale energy markets." Available at https://www.iso-ne.com/about/what-we-do/how-resources-are-selected-and-prices-are-set. Accessed June 2025.
36 Ogra, Rohit and Andre Templeman. "Finance — electric generation: Comparison of new-build economics for PJM and ERCOT shows varying outcomes." *Climate & Energy.* Vol. 30, Iss. 2. September 2013 at abstract.
37 Voelkel, Kevin. "The cost of reliability: Reconciling natural gas and electric power markets in New England." *George Washington Journal of Energy & Environmental Law*. Vol. 8, No. 3. Winter 2018 at 230.
38 Breyer, Christian et al. "On the history and future of 100% renewable energy systems research." *IEEE Access.* Vol. 10. July 2022 at 78202; Aghahosseini, Arman et al. "Energy system transition pathways to meet the global electricity demand for ambitious climate targets and cost competitiveness." *Applied Energy.* Vol. 331. February 2023 at 1, 3, and 16.
39 Hansen, Kenneth et al. "Status and perspectives on 100% renewable energy systems." *Energy.* Vol. 175. May 2019 at abstract and 476.
40 Breyer, Christian et al. "On the role of solar pv for the energy-industry transition in the Americas." *IEEE Journal of Photovoltaics.* Vol. 15, No. 1. January 2025 at abstract.
41 Jenkin, Thomas et al. National Renewable Energy Laboratory (NREL). "The Use of Solar and Wind as a Physical Hedge Against Price Variability Within a Generation Portfolio." NREL/TP-6A20-59065. August 2013 at 2, 3 14, 19, and 20.
42 Woldekidan, Korbaga. NREL. "End-Use Savings Shapes Measure Documentation: Boiler Replacement With Air-Source Heat Pump Boiler and Electric Boiler Backup." NREL/TP-5500-86199. May 2024 at iv; EIA. "What is the efficiency of different types of power plants?" May 15, 2024; FWW analysis of EIA data. Electric Power Annual. Table 8.1. Average Operating Heat Rate for Selected Energy Sources. Available at https://www.eia.gov/electricity/annual/table.php?t=epa_08_01.html.
43 Dimenstein and Ünel (2024) at 41.
44 Klass (2022) at 664 and 675 to 677.
45 Kemfert, Claudia et al. "The expansion of natural gas infrastructure puts energy transitions at risk." *Nature Energy.* Vol. 7. July 2022 at abstract; Klass (2022) at 664 and 675 to 677.
46 Dimenstein and Ünel (2024) at 41 to 42.

47 Davis and Muehlegger (2010) at 793; Federal Energy Regulatory Commission. "Cost-of-Service Rates Manual." June 1999 at 19 and 20.
48 Dimenstein and Ünel (2024) at 41 to 42.
49 Kemfert et al. (2022) at abstract and 584.
50 Klass (2022) at 659.
51 Makholm (2019) at 31 and 32.
52 Wilson, Eric J. H. et al. "Heat pumps for all? Distributions of the costs and benefits of residential air-source heat pumps in the United States." *Joule.* Vol. 8. April 2024 at 1010 to 1011.
53 Edwards, Morgan R. et al. "Assessing inequities in electrification via heat pumps across the US." *Joule.* Vol. 8. December 2024 at 3290.
54 Breyer et al. (2022) at 78202; Aghahosseini et al. (2023) at 1, 3, and 16.