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Agencies With Power to Approve Pipelines Need a Reality Check

Executive Summary

Will a new pipeline erode farmland or harm a waterway? How much methane will leak?

Regulators are often called on to make judgments about such questions. In the absence of hard data, they often turn to theoretical models or the applicant's projections to inform their decisions. When real-world data contradicts the predictions, regulators should reevaluate their decisions in the light of new facts.

But they don't always do that.

In two pending pipeline cases, federal regulators have continued to rely on predictions, even though real-world facts conflict with their conclusions. This type of conduct distorts an agency's analysis in balancing the adverse impacts of a project against its purported benefits, and calls into question the validity of the final decision. Pipeline infrastructure is costly and the effects of a pipeline typically last for 40 years or more. The permitting agency must conduct a robust analysis, and it must not dismiss relevant facts out of hand.

Farmers to FERC: Please Look at the Impact on Our Land

Farmers are challenging the Federal Energy Regulatory Commission (FERC) for its failure to consider the actual effects on their land from the 65-mile Spire STL pipeline as it evaluates whether to allow the pipeline to continue to operate.

Six landowners represented by the Niskanen Center are objecting to FERC conclusions about land and agricultural impacts that are based on the project's pre-construction predictions—not the actual, observable issues that have occurred. In their appeal, they describe severe erosion, ranging from 28 inches to five feet in certain areas, as well as harmful mixing of topsoil with subsoil, and crushed and clogged drain tiles that the farmers report are causing serious drainage issues. They assert crop and livestock production have suffered.[1]

Their concerns are backed by the Illinois Department of Agriculture (IDOA) and the Illinois Farm Bureau. The IDOA informed FERC that the Spire STL pipeline has caused "long term impacts to land use," resulting in crop yield disparities and other

[1] Niskanen Center, *et al. Comments on the Draft Environmental Impact Statement for the Spire SGL Pipeline Project.* Dockets Nos. CP17-40-000 and CP17-40-006. August 8, 2022, pp. 12-17.

issues.[2] The Illinois Farm Bureau complains, "The DSEIS [Draft Supplemental Environmental Impact Statement] reads as if pipeline construction has yet to occur and fails to consider any impacts on the farmland caused by construction of the pipeline."[3]

FERC approved the certificate for construction of the Spire STL pipeline in 2018. The pipeline was built at a reported cost of $287 million,[4] and began operating in late 2019. In 2021, however, the U.S. Court of Appeals for the D.C. Circuit revoked FERC's certificate, based on a lawsuit by the Environmental Defense Fund. The appeals court had criticized FERC's reliance on a single precedent agreement between corporate affiliates as conclusive proof of need, and held that FERC's "cursory balancing of public benefits and adverse impacts was arbitrary and capricious."[5]

The agency must now complete a more comprehensive evaluation of the Spire STL pipeline and decide whether to grant it a new certificate to operate. FERC's draft supplemental EIS, issued in June, concludes that continued pipeline operation would have "less than significant" environmental impacts in most respects.[6] Its conclusion relied on the pre-construction predictions in the original 2017 EIS, based largely on the applicant's promises. FERC did not examine the changed circumstances—the effects on the land.

Ignoring reality in this case, when reality has already occurred, is unreasonable and unjustified.

Mountain Valley Pipeline: A Water Pollution Reality Issue and a Failure to Revisit the Question of Need

The Spire STL case was not the first time a federal agency has based a factual assessment in an environmental impact statement for a pipeline solely on an estimate or prediction without considering actual data.

The proposed Mountain Valley Pipeline is in the news again. FERC granted a second extension of the construction deadline for the project in August.[7] The construction

[2] Illinois Department of Agriculture, Bureau of Land and Water Resources. Response to the Notice of Draft Environmental Impact Statement for the Spire STL Pipeline Project. FERC Docket No. CP17-40-006. Accession no. 20220808-5166. August 8, 2022, p. 3.
[3] Illinois Farm Bureau. Comments on Draft Supplemental Environmental Impact Statement (DSEIS) for Spire STL Pipeline. FERC Docket No. CP17-40-006. Accession no. 20220808-5068. August 8, 2022.
[4] Spire. Securities and Exchange Commission Form 8-K. August 21, 2019, Item 8.01 Other Events. Figure includes "total construction costs to $262.0 million plus estimated Allowance for Funds Used During Construction of $24.9 million." Id.
[5] *Environmental Defense Fund v. FERC*, 2 F.4th 953, 973 (D.C. Cir. 2021).
[6] FERC. Draft Environmental Impact Statement for the Spire STL Pipeline Project, Docket No. CP17-40-006. June 17, 2022, p. ES-5.
[7] Order granting requests for extension of time, *In re Mountain Valley Pipeline, LLC,* 180 FERC 61,117 (August 23, 2022). See Docket No. CP16-10-009.

costs for the proposed 42-inch, 303-mile pipeline to move roughly 2 billion cubic feet per day of natural gas from West Virginia to Virginia have reportedly ballooned from an original estimate of $3.7 billion to $6.6 billion.[8] Yet in its 2022 renewal, FERC explicitly refused to update and revisit information on the question of whether the pipeline is actually needed.

Permits are issued with construction deadlines precisely because of the issue of changing conditions. The analysis gets stale. A proposal that made sense five years ago might not make sense today. Continued issuance of construction deadline extensions without an updated analysis undermines the very purpose of construction deadlines.

IEEFA documented in a 2021 report that gas demand had plummeted since the 2017 approval of the Mountain Valley Pipeline. FERC had failed to scrutinize the need for the project before it granted its approval in October 2017, and the commission failed to conduct a robust reassessment in 2020 when it granted an extension of time for construction.[9]

Since then, market uncertainties have increased. The International Energy Agency (IEA) expects natural gas demand to shrink in 2022, with 60 percent less demand growth through 2025 than the previous five-year period.[10] Although some proponents of the project have asserted the pipeline could be used partly to increase the export of natural gas,[11] the argument has not been evaluated. Also, IEEFA's recent analysis of the Asia liquefied natural gas (LNG) import market finds high natural gas prices are spurring increased interest among Asian countries in alternative energy sources, possibly eroding its demand for U.S.-generated LNG exports.[12]

Ignoring the substantial transition that is occurring in energy choices is irresponsible.

The pipeline has another fact-based problem. The U.S. Court of Appeals for the Fourth Circuit remanded the pipeline's EIS back to the U.S. Department of Agriculture's Forest Service and the Department of the Interior's Bureau of Land Management for their failure to use real-world information about its effects on a river.

The proposed Mountain Valley Pipeline would cut through the Jefferson National Forest, where the Roanoke River provides important fish habitat for endangered

[8] E&E News. FERC gives win to Mountain Valley pipeline, grants extension. August 24, 2022. Also see: Equitrans Midstream. Investor Presentation, 2d Quarter. August 2022, p. 10.
[9] IEEFA. Mountain valley Pipeline Faces Uphill Struggle to Financial Viability. March 2021.
[10] IEA. Gas Market Report, Q3-2022. July 2022.
[11] RBN Energy LLC. Will it go round in circles? – MVP's prospects improve, but will it be enough? May 9, 2022. Also see: The Roanoke Times. Pipeline turnabout: Gas could be sent to India. June 25, 2015. Also see: Argus Media. Mountain Valley sticks to 2023 target. August 2, 2022.
[12] IEEFA. The Economic Case for LNG in Asia Is Crumbling. August 2022.

species. The feeding, mating and reproduction of the fish could be affected by turbidity conditions from pipeline construction.

In response to combined cases brought by Wild Virginia, Appalachian Voices, Sierra Club, Cherokee Forest Voices and others, assisted by Appalachian Mountain Advocates, the Fourth Circuit found the agencies had relied only on a model predicting a 2% increase in turbidity from construction, while ignoring real-world data gathered by another federal agency at a nearby site that the pipeline construction had already increased turbidity by 20%—a 10-fold larger impact.

The court stated, "There is no reason to think (and the agencies have provided none) that the factors that could affect sedimentation … will be any different inside the Jefferson National Forest than outside it."[13] It ruled the agencies must evaluate the data.[14]

No amount of wishful thinking will change the economic or environmental risks of the Mountain Valley Pipeline project, and the facts should matter.

The Methane Information Gap That Affects All Natural Gas Pipeline Evaluations

Making matters even worse, FERC certified both the Spire STL and the Mountain Valley projects without determining the significance of their potential to increase greenhouse gas (GHG) emissions—even though methane (the primary constituent of natural gas) is 80 to 86 times more powerful as a climate change chemical than carbon dioxide over a 20-year period.[15] FERC's draft supplemental EIS for the Spire STL, for example, states the environmental impact of the pipeline's operation "would be less than significant, with the exception of climate change impacts resulting from GHG emissions that are not characterized as significant or insignificant."[16]

This is FERC's standard procedure at this time. It fails to evaluate the significance of GHG emissions for all projects because it suspended a guidance document on GHG evaluation that it had issued in February 2022. The suspended guidance document has been subjected to a second comment period,[17] and FERC reportedly is still evaluating the comments.

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[13] Wild Virginia v. U.S. Forest Service, 24 F.4th 915, 928 (2022).
[14] *Id.*
[15] Intergovernmental Panel on Climate Change (IPCC). Climate Change 2021. The Physical Science Basis. 2021. Also see: IPCC. Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report. 2014, p. 87. Also see: G. Myhre, *et al.* Anthropogenic and natural radiative forcing, in IPCC. Climate Change 2013: The Physical Science Basis. 2013.
[16] FERC. Draft Environmental Impact Statement for the Spire STL Pipeline Project, *op. cit.* p. 5-1.
[17] FERC. FERC seeks comments on draft policy statements on pipeline certification, GHG emissions. March 24, 2022.

While the guidance remains in limbo, however, FERC and other agencies can and should move forward to address quantifying GHG emissions from pipeline projects.

Aerial and satellite data show the amount of methane released from natural gas extraction and transport is higher than the U.S. Environmental Protection Agency (EPA) model for estimating such emissions suggests. A study of oil and gas production, processing, and transport using ground-based measurements validated by aircraft observations and atmospheric studies found methane emissions were roughly 60 percent greater than EPA's model would estimate.[18] A subsequent academic study of local gas distribution and use based on data from research flights over East Coast urban centers found methane emissions that were more than double the EPA model estimate for four of six areas observed.[19] In an expanded follow-up study that included satellite data, aggregated methane emission rates were 2.8 times higher than the EPA model estimate.[20] A team of Stanford University researchers identified leaks from equipment and liquid storage tanks as likely culprits for the disparity between the model and measurements.[21]

FERC and other agencies that evaluate natural gas pipeline projects must develop a more rigorous protocol for assessing a project's benefits and impacts that considers the large gap between EPA modeling estimates and real-world measurements.

The issue is also relevant for pipeline corporations' carbon offsets claims. The primary sponsor of the Mountain Valley Pipeline, for example, asserts that it has a plan to offset all the greenhouse gas emissions from operation of the pipeline itself and from generation of purchased electricity.[22] Yet the final EIS for the project, while estimating fugitive GHG emissions from the compressor stations at almost 11,000 tons per year, asserts that fugitive GHG emissions are "considered negligible for the pipeline."[23]

As science and technology increase in scope and precision, they can tell us more about how to evaluate threats to health and safety. The longer government delays in incorporating such new information to correct outdated assumptions, the more likely that agencies will make wrong decisions.

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[18] Ramon A. Alvarez, *et al.*, Assessment of methane emissions from the U.S. oil and gas supply chain, Science 361:186-88, 2018.
[19] Genevieve Plant, *et al.*, Large fugitive methane emissions from urban centers along the U.S. east coast, Geophysical Research Letters 46 (14): 8500-8507, July 28, 2019.
[20] Genevieve Plant, *et al.* Evaluating urban methane emissions from space using TROPOMI methane and carbon monoxide observations. Remote Sensing of Environment. 268. January 2022.
[21] J. Rutherford, *et al.*, Closing the methane gap in US oil and natural gas production emissions inventories. 2021.
[22] Equitrans Midstream. Investor Presentation, 2d Quarter, *op. cit.*, p. 11. Also see: Mountain Valley Pipeline, LLC. Mountain Valley Pipeline Announces Plan to Offset Carbon Impacts. July 12, 2021.
[23] FERC. Final Environmental Impact Statement for Mountain Valley Project and Equitrans Expansion Project. June 2017, pp. 4-507 to 4-508 and 4-620.

Conclusion

Agency approvals or denials of gas pipelines have far-reaching and long-lasting effects. Such decisions will lack credibility if they are not based on rigorous analysis. Taking shortcuts today can have adverse effects tomorrow. Certainly, it is more work to gather and assess actual data, but government agencies must properly balance the enormous costs of massive natural gas infrastructure projects against their real-world impacts, whether on farmers, rivers, or our climate.

About IEEFA

The Institute for Energy Economics and Financial Analysis (IEEFA) examines issues related to energy markets, trends and policies. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. www.ieefa.org

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Suzanne Mattei, an attorney (Yale Law School) and consultant with Lookout Hill Public Policy Associates, has over 30 years' experience in environmental policy. As Regional Director for the NYS Department of Environmental Conservation for four years, she led permitting and enforcement in New York City. Her widely cited report for IEEFA on a proposed fracked gas pipeline in New York found significant flaws in proponents' arguments, and her reports and commentary on the Federal Energy Regulatory Commission have identified weaknesses in its approach to energy market issues.