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From Pipelines to Power Lines: Issues of Energy Infrastructure Siting and Eminent Domain in a Decarbonizing World

Donovan McLaurin planned to retire on a patch of grassy farmland in rural North Carolina. Now, the land has been reduced to dirt and rubble, bulldozed by Duke Energy and Dominion Energy in the process of constructing the 600-mile-long Atlantic Coast Pipeline. Although the pipeline has since been canceled due to regulatory delay, a loophole in the permitting process run by the Federal Energy Regulatory Commission (FERC) allowed Duke and Dominion to acquire easements to and subsequently clear-cut thousands of different properties while legal proceedings were still underway.[1] The resulting environmental damage could take decades, even centuries, to heal.

McLaurin's story is unfortunately not unique. Since the shale gas boom began in 2006, thousands of landowners across the country have been affected by companies constructing interstate natural gas pipelines, which are entitled under the Natural Gas Act (NGA) of 1938 to use eminent domain to seize any property along the pipeline route in a legal process known as condemnation.[2] Stories abound of everyday Americans feeling pressured into selling their land to pipeline companies for far below market value, losing money along with the intangible natural beauty of the forests that once surrounded them.

[1] Lisa Sorg, "Along now-defunct Atlantic Coast Pipeline route, landowners are left in the lurch," *NC Policy Watch*, July 30, 2020, http://www.ncpolicywatch.com/2020/07/30/along-now-defunct-atlantic-coast-pipeline-route-landowners-are-left-in-the-lurch/

[2] Erin Brock Carlson and Martina Angela Caretta, "Living with Natural Gas Pipelines: Appalachian Landowners Describe Fear, Anxiety, and Loss," *The Daily Yonder*, February 8, 2021, https://dailyyonder.com/living-with-natural-gas-pipelines-appalachian-landowners-describe-fear-anxiety-and-loss/2021/02/08/

Siting issues are not limited to pipelines, however. They can create delays in all types of energy infrastructure, such as long-distance high-voltage direct current (HVDC) transmission lines. While pipelines have been an easy target for environmental advocacy groups because of the destructive climate impacts of the methane they transport[3] and the explosive hazards they pose,[4] HVDC lines are relatively benign by comparison, even conveying explicit climate benefits. By transporting renewable energy from remote generating locations to load centers in urban areas, HVDC transmission serves as a critical lifeline to a clean energy economy. The Net-Zero America Project, a study done by Princeton University researchers and published in 2020, found that a 60% expansion in HVDC lines would be needed to get the United States to net-zero carbon emissions by 2050 by decarbonizing the power sector.[5] In his American Jobs Plan, President Biden committed $100 billion to building 20 GW of HVDC lines.[6]

Despite these climate benefits, HVDC lines have faced the same fierce opposition that pipelines have, dividing the environmental community in the process by pitting land preservationists, who oppose the lines, against climate activists, who support them. Legal battles have ensnared several recently proposed HVDC lines to transport clean electricity and put to rest attempts by Congress in 2005 to streamline transmission siting and permitting on the federal level.[7] As a result, transmission siting, unlike pipeline siting, remains a state-jurisdictional issue, posing significant challenges to companies forced to obtain permits from each state through which their proposed HVDC lines would pass.

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[3] Benjamin Storrow, "Methane Leaks Erase Some of the Climate Benefits of Natural Gas," E&E News, *Scientific American*, May 5, 2020, https://www.scientificamerican.com/article/methane-leaks-erase-some-of-the-climate-benefits-of-natural-gas/

[4] Amy Mall, "Pipeline Incident Statistics Reveal Significant Dangers," Natural Resources Defense Council, January 2, 2019, https://www.nrdc.org/experts/amy-mall/pipeline-incident-statistics-reveal-significant-dangers

[5] Eric Larson et al., *Net-Zero America: Potential Pathways, Infrastructure, and Impacts*, Princeton University, December 15, 2020, https://netzeroamerica.princeton.edu/img/Princeton_NZA_Interim_Report_15_Dec_2020_FINAL.pdf

[6] "FACT SHEET: The American Jobs Plan," The White House, March 31, 2021, https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/31/fact-sheet-the-american-jobs-plan/

[7] Frederick Eames, "Resurrecting Federal 'Backstop Siting' Authority for Interstate Transmission," *National Law Review*, January 27, 2021, https://www.natlawreview.com/article/resurrecting-federal-backstop-siting-authority-interstate-transmission

Moving forward, transmission siting in the United States will require significant reform, like what the NGA did for pipelines, to enable the levels of HVDC line construction necessary to rapidly decarbonize the economy. As I argue in this paper, however, enacting reforms similar to the NGA's federally-administered pipeline siting process will be incredibly difficult in the messy aftermath of the destructive pipeline expansions over the past decade. Landowners and environmental groups alike have been left with a deep mistrust of federally-run siting, with concerns of interference with states' rights and abuse of eminent domain. A different model of reform is necessary.

In this paper, I first outline the siting challenges that long-distance HVDC lines have faced in the past decade. I then draw on lessons learned from FERC's botched handling of interstate pipeline cases to propose a regional siting framework for HVDC lines as an alternative to a national one, allowing for landowner concerns to be balanced with the pressing need to decarbonize America through the expansion of transmission.

Interstate Transmission: The "Giant Extension Cord"

No matter how boring they may seem on face value, power lines—especially large HVDC ones—are a highly contentious topic in the United States. Tall, gangly, and unsightly, they are detested by local landowners for their visual impacts and by environmental preservationists for their destructive impact on wildlife. Yet the transition to a clean energy economy is going to require miles and miles of transmission: 3.5x the current capacity on the grid, according to Princeton researchers.[8] To transmission opponents, however, the *type* of electricity on the line, green or dirty, is of little importance.

Consider the example of Northern Pass, a 192-mile HVDC line that would have brought hydropower from Québec to Massachusetts as part of a competitive clean energy procurement

[8] Larson et al., *Net-Zero America*, December 15, 2020.

process initiated by Massachusetts to comply with a 2016 state law mandating the solicitation of 1,200 MW of renewable energy. Facing opposition from local residents and environmentalists concerned about its impacts on the White Mountain National Forest, the New Hampshire Site Evaluation Committee unanimously rejected the Northern Pass project in 2018.[9] A year later, upon appeal, the New Hampshire Supreme Court upheld the Committee's decision. As the director of the Electricity Law Initiative at Harvard Law School, Ari Peskoe, wrote, it's "really hard to beat the state in court on a siting denial."[10]

New Hampshire's rejection of Northern Pass is a classic example of the challenge facing every HVDC transmission line being proposed in the U.S. to date: state-level siting authority. Because states have the ability to single-handedly strike down transmission projects, transmission lines crossing multiple states must secure permits from each state siting commission. If even one state says no, the entire project gets shut down.[11] Moreover, for many states that lie along the path of HVDC lines, there is no incentive to approve these lines, which are designed to transport power from point A to point B without providing any power or benefits to intermediate destinations along the way.[12] As one opponent to the Northern Pass line put it, the project would "turn New Hampshire into a giant extension cord to Southern New England."[13] Other states have voiced opposition, including in Arizona, where a state regulator said in response to a proposal for an HVDC line transporting nuclear power to southern California, "I don't want Arizona to become an energy farm for California. This project, if we approved it, would use our land, our air and our water to provide electricity to California."[14]

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[9] Robert Walton, "Massachusetts ditches Northern Pass, looks to CMP for clean energy goals," Utility Dive, March 28, 2018, https://www.utilitydive.com/news/massachusetts-ditches-northern-pass-looks-to-cmp-for-clean-energy-goals/520194/
[10] David Brooks, "N.H. Supreme Court agrees with state's rejection of Northern Pass transmission line," *Concord Monitor*, July 19, 2019, https://www.utilitydive.com/news/massachusetts-ditches-northern-pass-looks-to-cmp-for-clean-energy-goals/520194/
[11] Russell Gold, *Superpower: One Man's Quest to Transform American Energy* (New York: Simon & Schuster, 2019).
[12] Jim Rossi, "The Trojan Horse of Electric Power Transmission Siting Authority," *Environmental Law* 39 (2009): 1020.
[13] James Coleman and Alexandra Klass, "Energy and Eminent Domain," *Minnesota Law Review* 104 (2019), 732-33.
[14] Jim Rossi, "The Trojan Horse of Electric Power Transmission Siting Authority," *Environmental Law* 39 (2009): 1020.

Since state regulatory authorities (often in the form of Public Utility Commissions, or PUCs) are required by law to prioritize their own citizens, many state commissions routinely reject interstate HVDC lines that do not connect to their state's power grid on the grounds that these lines do not provide intrastate benefits. Several state courts have upheld these rejections, including *Point of Pines Beach Ass'n. v. Energy Facilities Siting Bd.*, in which the Massachusetts Supreme Judicial Court held that "the state's Energy Facilities Siting Board was without authority to site a line within the state unless the entirety of the benefits of the transmission line accrued to in-state customers,"[15] and *Miss. Power & Light Co. v. Conerly*, in which the Supreme Court of Mississippi found that a utility seeking to build an interstate transmission line could not use eminent domain authority to obtain land access "because some of the beneficiaries of the line for which condemnation powers were being used were out of state."[16] Many states also explicitly prohibit the use of eminent domain by merchant transmission lines, i.e., those lines built by non-incumbent utilities (long-distance HVDC lines usually fall into this category).[17] Although legal scholars have hypothesized that these state laws violate the dormant Commerce Clause of the Constitution by inhibiting interstate transmission (and thus commerce),[18] no legal challenges have been successful on these grounds to date.

Congress, recognizing the thorny barrier that states pose to transmission expansion, has tried in the past to streamline the siting process, as they did for pipelines with the Natural Gas Act (NGA), when they assigned federal "backstop" transmission siting authority to the Federal Energy Regulatory Commission (FERC) in the Energy Policy Act of 2005. Under Section 216 of

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[15] *Point of Pines Beach Ass'n. v. Energy Facilities Siting Bd.*, 644 N.E.2d 221, 223-24 (Mass. 1995), quoted in Jim Rossi, "The Trojan Horse of Electric Power Transmission Siting Authority," *Environmental Law* 39 (2009): 1026.
[16] *Miss. Power & Light Co. v. Conerly*, 460 So. 2d 107, 112-13 (Miss. 1984), quoted in Jim Rossi, "The Trojan Horse of Electric Power Transmission Siting Authority," *Environmental Law* 39 (2009): 1026.
[17] Alexandra Klass and Jim Rossi, "When Do State Transmission Siting Laws Violate the Constitution?," *Electricity Journal* 28, no. 7 (2015): 7.
[18] Ibid., 9.

the Act, FERC was given permission to issue permits for a transmission line in a National Interest Electric Transmission Corridor (these would be designated by the Department of Energy (DOE) based on need for factors like renewable energy transmission) if a state "withheld approval for more than 1 year" after a transmission line company filed a siting application.[19] Yet a 2009 decision by the Fourth Circuit Court in *Piedmont Environmental Council v. FERC* essentially gutted Section 216, ruling that the word "withheld" did not include instances in which a state expressly rejects a transmission line's permit application.[20] Based on this, state rejections will continue to govern the fate of interstate HVDC lines without new legislative action.

Applying Lessons from Pipelines to Power Lines

The need for national-level reform is clear. Congress has recently suggested that it will revisit the issue of transmission siting,[21] and President Biden has proposed establishing a Grid Deployment Authority in the DOE as part of his American Jobs Plan,[22] but nothing concrete has been done yet. With this in mind, I argue that it is essential that Congress and Biden closely consider the related issue of interstate natural gas pipeline siting in determining how to solve the problems of interstate transmission siting. Natural gas pipelines have had "first stop" federal siting authority (i.e., federal approval supersedes state approval) since Congress enacted changes to the Natural Gas Act in 1947, in response to state-level barriers imposed on natural gas pipelines.[23] Yet over the past decade, as America has begun producing significantly more shale gas as a result of the expansion of hydraulic fracturing, we have seen federal siting authority wreak havoc on local landowners. FERC has been nicknamed the "Federal Energy Rubber-stamp

[19] Federal Power Act, 16 U.S.C. § 824p (2005).
[20] Piedmont Environmental Council v. FERC, 558 F.3d 304 (2009).
[21] *Solving the Climate Crisis: The Congressional Action Plan for a Clean Energy Economy and a Healthy, Resilient, and Just America*, House Select Committee on the Climate Crisis, June 2020, https://climatecrisis.house.gov/sites/climatecrisis.house.gov/files/Climate%20Crisis%20Action%20Plan.pdf
[22] "FACT SHEET: The American Jobs Plan," The White House, March 31, 2021, https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/31/fact-sheet-the-american-jobs-plan/
[23] Alexandra Klass, "Eminent Domain Law as Climate Policy," *Wisconsin Law Review* 49 (2020): 59-60.

Commission" by pipeline opponents because it is known to almost always approve pipeline certificate applications, having rejected only two pipelines out of 400 between 1999 and 2017, in a notoriously opaque permitting process.[24] The Commission's use of the "tolling order" loophole allowed them to delay formal legal challenges on pipeline certificates for longer than the 30-day legal limit, during which time pipeline companies could continue to secure easements and deforest properties to prepare for construction even while their projects were not fully approved. When the DC Circuit Court struck down the "tolling order" practice in 2019, Judge Patricia Millett wrote that the FERC pipeline review process had become "Kafkaesque," creating a "bureaucratic purgatory that only Dante could love."[25]

Attempting to expand transmission siting authority in the way it was for natural gas pipelines will, I predict, end only in disaster. The past fumbling by FERC of pipeline approvals—ignoring landowners' appeals and being overall unresponsive—has left a sour taste in the mouths of many Americans, making federal-level siting of energy infrastructure extremely difficult. At a time when significant transmission expansion is required for decarbonization goals, however, leaving siting purely up to the states, as it is now, is clearly insufficient.

The best solution in my mind is to grant siting oversight and "backstop" authority to regional entities, instead of FERC or DOE. This has been previously proposed by Alexandra Klass, a law professor at the University of Minnesota specializing in energy infrastructure siting issues, who writes: "…a regional siting approach better matches the physical aspects of the grid, as well as existing electricity markets and energy resources, all of which are or are becoming regional in scope, and leaves siting authority closer to the communities that the transmission

[24] Steve Horn, "FERC, Which Rejected 2 Gas Pipelines Out of 400 Since 1999, to Review Approval Policy," DeSmog, December 26, 2017, https://www.desmog.com/2017/12/26/ferc-2-gas-pipelines-denied-400-approved-1999-rule
[25] Allegheny Def. Project v. Fed. Energy Reg. Comm'n., 932 F.3d 940 (D.C. Cir. 2019). Through Klass, "Eminent Domain Law as Climate Policy," *Wisconsin Law Review* 49 (2020): 66.

lines will impact."[26,27] As Klass alludes to, much of the electricity world is already highly regionalized. Under past rulings by FERC, such as Orders 888 and 2000, electric utilities were required to coordinate regional transmission planning, and transmission planning regions formed across the U.S.[28] In many parts of the country, groups called Independent System Operators (ISOs) and Regional Transmission Organizations (RTOs) emerged in response to this coordination mandate. ISOs and RTOs already perform transmission planning, cost allocation, and operation functions.[29] Allocating transmission siting oversight to them, in my view, is a sensible extension of their jurisdiction. Because ISOs and RTOs are frequently made up of local stakeholders as part of the decisionmaking process, they also may be seen as a more transparent and responsive siting authority.

Importantly, if a state denies a permit, the ISO or RTO should be able to overrule their decision and still issue the permit. I believe this ability is firmly justified under the U.S. Constitution's Commerce and Supremacy Clauses, as interstate transmission is a vital part of national commerce.[30] In fact, it seems to be only a matter of time before a state's siting laws are challenged in court for violating the Constitution by impeding interstate commerce, as Klass and other legal scholars have observed.[31] The emphasis of a regional siting approach, however, should be on interstate cooperation through, for instance, stakeholder forums and the examination of alternative routes that are less harmful, with "backstop" overriding authority exercised by the regional authority only when absolutely necessary.

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[26] Alexandra Klass, "The Electric Grid at a Crossroads: A Regional Approach to Siting Transmission Lines," *University of California Davis Law Review* 48 (2015): 1954.
[27] Kevin Decker, a practicing lawyer, provides a similar regional proposal. Kevin Decker, "Allocating Power: Toward a New Federalism Balance for Electricity Transmission Siting," *Maine Law Review* 66, no. 1 (2013).
[28] "RTOs and ISOs," Federal Energy Regulatory Commission, accessed April 27, 2021, https://www.ferc.gov/electric/power-sales-and-markets/rtos-and-isos
[29] Ibid.
[30] Klass and Rossi, "When Do State Transmission Siting Laws Violate the Constitution?," *Electricity Journal* 28, no. 7 (2015).
[31] Klass and Rossi, "When Do State Transmission Siting Laws Violate the Constitution?," *Electricity Journal* 28, no. 7 (2015), 9.

This regionalized approach still does not solve all of the challenges seen in pipeline siting, like landowners feeling like they weren't heard when their land was forcibly condemned under eminent domain. For this reason, I also suggest that the regional entities, RTOs/ISOs or otherwise, who gain siting oversight should initiate stronger landowner engagement and protection policies. One provision, for instance, could prevent transmission companies from commencing construction on disputed property tracts until they have obtained all necessary permits and all legal challenges have been resolved. This deals with the problem that landowners like Donovan McLaurin in the case of the Atlantic Coast Pipeline have seen, where pipeline companies condemn and deforest land using eminent domain only to have their permits denied or projects canceled due to administrative delays.

Another provision could increase the money landowners are entitled to receiving as a result of eminent domain condemnations. In several pipeline projects, for instance, landowners have reported receiving offers from pipeline companies that are significantly lower than what they originally paid for the land. Klass and another author, James Coleman, have proposed that landowners be paid the full value of their entire property, no matter the portion of the property which was seized.[32] Another option is for landowners to receive a stake in the revenues of the project resulting from the transmission line or pipeline crossing their property.[33] While these may seem extreme, I believe there should at least be a clear appeals process by which landowners can seek adjustments to the fair market value compensation proposed by construction companies.

Conclusion

In conclusion, stronger landowner protection policies, combined with regional "backstop" siting authority, will be essential to successfully building out HVDC transmission

[32] Coleman and Klass, 2019, 732-33.
[33] Ibid., 734.

lines at the pace and scale necessary to rapidly decarbonize the United States' economy. Without these transmission lines, notably, it will be incredibly difficult to decarbonize the American energy sector, as our current transmission grid is built for a centralized generation model in which power was produced from locally-sited fossil fuel generating stations. Now, with the highly distributed and remote nature of renewable energy, additional transmission will be critical to reduce congestion on existing lines and connect disparate areas of the country where renewables are plentiful, like the windy Midwest and Great Plains, to load centers, largely along the East and West coasts.

However, as transmission siting policy currently stands, states hold a disproportionate amount of power in being able to shut down transmission line proposals, posing key barriers to transmission expansion. Following in the footsteps of FERC's interstate natural gas pipeline siting process will only lead to disaster. It is therefore extremely important that as the new federal administration decides how to resolve interstate transmission siting issues, they carefully consider the "lessons learned" from FERC and natural gas pipelines, adopting alternative models, like the regional one I have discussed in this paper, that are more responsive to local concerns. If the community-level resistance that has become apparent from pipeline siting challenges is not acknowledged and mitigated for transmission, siting setbacks will continue to plague the transmission projects that are vital to rapid decarbonization, creating delays that we as a society just cannot afford in combatting climate change.

This paper represents my own work in accordance with University regulations.
[x] Claire Wayner