ACCELERATING CLEAN ENERGY: A ROAD MAP FOR REGULATORY REFORM

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SUMMARY

This Article analyzes domestic hurdles to renewable energy development, and explores effective regulatory strategies at both the national and state levels to overcome barriers to clean energy transition. Projections indicate that the United States will need to triple its transmission grid capacity by 2050 to achieve decarbonization at the scale promised under the Paris Agreement. The transition faces major obstacles in permitting and siting, with limited transmission access and complex processes effectively obstructing the transition. This Article proposes a comprehensive set of policy choices at all levels of government, drawing inspiration from successful case studies domestically and internationally. By examining the European Union's approach as a case study, it proposes that the United States adopt comprehensive national policies to tackle the challenges posed by a decentralized permitting system in areas where it retains authority. For state-level challenges, it highlights successfully implemented state-level policies from California, Illinois, and Wisconsin that can be applied more widely to streamline renewable development.

Domestically and internationally, governments are grappling with how to adapt to the changing climate while the international economy remains heavily dependent on fossil fuels, a primary source of carbon dioxide (CO_2).[1] This Article assesses the regulatory mechanisms in place for facilitating the switch to an electrified renewable energy grid, including governmental approaches from the European Union (EU) and United States. These successful approaches illustrate policy considerations that balance the need for a dramatic energy grid overhaul with the need for environmental oversight and community involvement. Specifically, I aim to provide alternative policies to address current regulatory barriers to siting and permitting for both transmission and renewable generation.

Due to wind power's role as the largest source of renewable energy generation in the United States, the Article focuses primarily on challenges facing the wind sector and the applicability of wind-related policies to other renewables facing similar hurdles.[2] The global potential for wind energy exceeds current electricity production, and potential exists in most regions of the world to enable significant wind energy deployment, making it an invaluable resource in combating climate change.[3] Many regions have strong wind speeds, but the best locations for generating wind power tend to be remote areas.[4] This reality necessitates connection between areas of generation and consumption.

The pursuit of national decarbonization goals faces two intertwined challenges to energy generation that demand regulatory changes in siting processes for both transmission and generation facilities. Siting generally refers to the selection of suitable geographic locations for a project, while permitting involves the necessary approvals and review for project installation at a site.[5] Together, these complex processes have significantly hindered grid expansion, impact-

1. *See* Center for Climate and Energy Solutions, *Global Emissions*, https://www.c2es.org/content/international-emissions/ (last visited Dec. 2, 2023) (CO_2 accounts for 76% of greenhouse gas emissions, making it a focus point for emission-reduction targets).
2. *See* American Clean Power, *Wind Power Facts*, https://cleanpower.org/facts/wind-power/ (last visited Dec. 2, 2023).
3. United Nations, *Climate Action: What Is Renewable Energy?*, https://www.un.org/en/climatechange/what-is-renewable-energy? (last visited Dec. 2, 2023).
4. *Id.*
5. *Id.*

ing the connection of renewable energy projects facing similar siting and permitting obstacles.[6]

First, the United States must rapidly expand transmission access to facilitate the integration of new renewable projects into the existing energy grid.[7] In the U.S., high-voltage power lines are responsible for transmitting electricity over long distances to deliver energy to localized distribution systems.[8] The expansion of additional long-distance transmission is necessary to meet growing electricity demands and to facilitate the integration of new renewable projects to the grid.[9] Upgrading the transmission system can ease congestion as electricity demand rises while simultaneously allowing the connection of new renewable projects.[10] Yet, the slow and inconsistent processes involved in siting transmission lines act as major barriers to grid expansion.

Simultaneously, siting challenges in renewable energy generation present their own obstacles to decarbonization efforts. Developers encounter similar hurdles to transmission developers, dealing with high initial costs and lengthy grid connection timelines, especially for smaller-scale projects. Moreover, the sluggish progress in transmission development restricts new renewable projects from accessing crucial infrastructure, hindering their operations and outreach to consumers.[11] Ultimately, without addressing the regulatory barriers in both transmission and generation siting and permitting, achieving the ambitious decarbonization goals set by the Paris Agreement will remain unlikely.

Part I of the Article provides a brief overview of international climate policy and highlights the emission-reduction goals set by the United States that are the driving force behind efforts to electrify the energy grid. Part II looks at current national approaches to climate policy and analyzes the challenges facing the energy sector. Part III offers federal and regional regulatory approaches from the EU, the Federal Energy Regulatory Commission (FERC), and the Bureau of Ocean Energy Management (BOEM); it also considers successful case studies at the state and local levels that could be applied elsewhere. Part IV concludes that without action to streamline siting and permitting of large-scale renewable energy generation and transmission projects, the United States is unlikely to meet its clean energy objectives.

I. The Objective: The Paris Agreement and Power-Sector Decarbonization

The 2015 Paris Agreement established an international commitment to limit global average temperature rise to below 2° Celsius above pre-industrial levels.[12] This agreement has spurred efforts to electrify the energy sector worldwide, serving as a benchmark for climate goals.[13] Initially, the United States pledged to reduce greenhouse gas emissions by 26%-28% below 2005 levels by 2025, but later withdrew under President Donald Trump.[14] In 2021, the United States rejoined and revised its commitments, setting a stricter target of reducing net emissions by 50%-52% below 2005 levels by 2030, achieving net zero by 2050.[15] As the world's second largest emitter, meeting this target would have a significant global impact and demonstrate the United States' commitment to addressing climate change.

The Paris Agreement provides a framework for U.S. efforts to increase renewable energy generation and establishes measurable benchmarks for tracking progress. However, the current timelines for siting and permitting, building, and connecting to the electric grid are not aligned with President Joseph Biden's goals of decarbonizing the economy by 2050.[16] To meet the Paris Agreement targets and mitigate climate change impacts, the United States must at least double its transmission capacity and renewable energy generation.[17] This necessitates comprehensive permitting and siting reform across all levels of government that prioritizes renewable energy development.

A. *Energy Regulation in the United States*

The absence of federal climate legislation in the United States poses a significant challenge to transitioning to an electrified system. To achieve decarbonization and reduce CO_2 emissions, comprehensive policy reforms are needed at the national, regional, and state levels. However, the current regulatory system relies on outdated legislation drafted before widespread acceptance of climate change, and has limited the authority of the U.S. Environmental Protection Agency (EPA) to enforce substantial shifts

6. *See id*.
7. *See* Lori Bird & Katrina McLaughlin, *US Clean Energy Goals Hinge on Faster Permitting*, World Res. Inst. (Feb. 9, 2023), https://www.wri.org/insights/clean-energy-permitting-reform-us.
8. *Id*.
9. *Id*.
10. *See* David Roberts, *Transmission Week: Why We Need More Big Power Lines*, Volts (Jan. 25, 2021), https://www.volts.wtf/p/transmission-week-why-we-need-more (this is because larger, more interconnected grids tend to be more reliable and cost effective than highly localized grids because centralized control is more quick to respond to fluctuations in demand).
11. *See* Rayan Sud & Sanjay Patnaik, *How Does Permitting for Clean Energy Infrastructure Work?*, Brookings (Sept. 28, 2022), https://www.brookings.edu/research/how-does-permitting-for-clean-energy-infrastructure-work/:
> Local governments can also slow down renewable infrastructure deployment due to internal inefficiencies. For example, local permits for rooftop solar can take a month or longer, cumulatively slowing down solar deployment across the country. Further slowing things down, varying requirements and processes for each local government on the path of a renewable energy project have created a 'fragmented' regulatory landscape.
12. Daniel Farber & Cinnamon Carlarne, Climate Change Law 11 (1st ed. 2018).
13. *See* Fact Sheet, White House, President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies (Apr. 22, 2021) (the Joseph Biden Administration has made climate policy a central focus of Biden's presidency, including creating a "National Climate Task Force" to facilitate meeting the nationally determined contributions set under the Paris Agreement).
14. Farber & Carlarne, *supra* note 12, at 13, 16.
15. *Id.* at 19 (achieving net-zero emissions means that the overall emissions produced are effectively canceled out by actions that remove an equivalent amount of greenhouse gases from the atmosphere).
16. *See* Bird & McLaughlin, *supra* note 7.
17. *See id*.

away from fossil fuels. Instead, the transition to renewable energy largely depends on market dynamics influenced by state and regional policies, as EPA lacks the power to shut down existing coal power plants.[18]

The federal government plays a significant role in overseeing and regulating aspects of the energy grid. FERC is the primary federal agency responsible for regulating interstate electricity transmission and wholesale electricity markets pursuant to its authority under the Federal Power Act (FPA).[19] However, FERC does not have authority over transmission siting within states.[20] This has led to states, through public utilities commissions, taking the lead in regulating retail electricity markets and approving transmission lines.[21]

However, this decentralized approach has resulted in a patchwork of policies across states, making it challenging for the national government to address the urgent need for renewable energy with a cohesive strategy. Some states have emerged as renewable energy leaders, demonstrating successful state-level policies that could be applied more broadly. The EU's policies also provide an alternative model worth considering in areas where the federal government retains authority.

To facilitate the transformation of the grid and accommodate a transition to a net-zero economy, regulatory changes at both the national and state levels are required. These changes should address barriers to development, such as complex and varying siting requirements, by establishing a more streamlined and predictable system. To meet growing electricity needs, new renewable producers will need to enter the electricity market. To allow this, all levels of government must proactively streamline environmental assessments to shorten the process of permitting and siting.

B. How the Grid Works

The electric grid consists of three main components: power generation, transmission, and distribution. Electricity is first produced from an energy source such as fossil fuels, renewables, or nuclear.[22] The generated electricity then enters the transmission phase, where it is carried along high-voltage lines to substations.[23] At substations, transformers lower the voltage for distribution to consumers.[24]

To enable the transmission of new renewable energy from rural areas to consumers, a network of "connector" lines is necessary.[25] These lines connect different transmission systems or networks, facilitating the exchange of electricity.[26] In the United States, the transmission network is organized into three interconnections: the Western, Eastern, and Electric Reliability Council of Texas Interconnections.[27] Connector lines play a crucial role in enhancing the grid's reliability and efficiency by balancing power resources among regions.[28]

The national transmission system is composed of multiple interconnected grids managed by different entities, including regional transmission organizations (RTOs) and independent system operators (ISOs).[29] The patchwork nature of the grid, developed regionally over time, has led to variations in infrastructure, regulations, and operating procedures.[30] While the localized approach may have worked a century ago, modern energy demands require a more centralized system for efficiency and clean energy integration.[31]

Further, most transmission lines currently in operation were built between the 1950s and 1970s despite having a 50-year life expectancy.[32] The effects of this outdated system can be seen in recent extreme weather events, which have caused major power outages and illustrate the vulnerability of the current grid.[33] Modernizing the grid necessitates updates to existing facilities and expansion of transmission lines to handle increased electricity generation.[34] However, interstate expansion faces significant hurdles due to fragmented planning by individual utility companies.[35]

18. *See* West Virginia v. Environmental Prot. Agency, 142 S. Ct. 2587, 2589, 52 ELR 20077 (2022) (holding that EPA does not have congressional authority to limit emissions at existing power plants through generation shifting to cleaner sources).
19. 16 U.S.C. §824(a) (1935).
20. Alexandra B. Klass, *Expanding the U.S. Electric Transmission and Distribution Grid to Meet Deep Carbonization Goals*, 47 ELR 10749, 10756-57 (Sept. 2017):
    > [I]n the late 1930s, Congress granted the Federal Power Commission (now FERC) the right to approve and grant eminent domain authority to natural gas pipeline companies proposing to construct interstate natural gas pipelines and associated infrastructure. . . . But with regard to interstate electric transmission lines, Congress has declined to transfer siting and eminent domain authority from the states to FERC, DOE [U.S. Department of Energy], or another federal agency.

    A few exceptions to the general rule exist, including where transmission lines cross federal lands and where transmission lines are needed to connect federal hydropower projects to the grid.).
21. *Id.* at 10750.
22. *See* American Public Power Association, *Electricity Basics*, https://www.publicpower.org/public-power/electricity-basics (last visited Dec. 2, 2023).
23. *Id.*
24. *Id.*
25. *See* Tyler Lancaster, *Electrifying Everything: It All Comes Down to Transmission*, Energize Cap. (Nov. 19, 2021), https://www.energize.vc/news-insights/electrifying-everything-it-all-comes-down-to-transmission.
26. *See* Marshall Brain, *How Power Grids Work*, Smith Coll., https://www.science.smith.edu/~jcardell/Courses/EGR220/ElecPwr_HSW.html (last visited Dec. 2, 2023).
27. American Public Power Association, *supra* note 22.
28. *Id.*
29. *See* Klass, *supra* note 20, at 10757.
30. *See id.*
31. *See* Ken Silverstein, *If You Want More Wind, Solar, and Electric Vehicles, You Are Gonna Need More Transmission*, Forbes (Nov. 9, 2022), https://www.forbes.com/sites/kensilverstein/2022/11/09/if-you-want-more-wind-solar-and-electric-vehicles-you-are-gonna-need-more-transmission/.
32. *See id.*
33. *See id.*; *see* Rebecca Leber, *Winter Storms Put the US Power Grid to the Test. It Failed.*, Vox (Dec. 27, 2022), https://www.vox.com/energy-and-environment/2022/12/27/23527327/winter-storm-power-outages (outages resulted from an overburdened grid unable to handle an increase in demand brought on by unusual winter weather; similar issues have been narrowly avoided in other states where grid operators have asked consumers to preemptively reduce electricity usage).
34. *See* Saul Griffith et al., The Rewiring America Handbook 44 (2020) (current estimates predict that production will need to more than triple, from the current average of 450 gigawatts (GW) delivered by the U.S. grid to between 1,500 GW and 1,800 GW).
35. *See id.*

Addressing this issue is crucial for renewable energy development and the electrification of the U.S. energy grid.[36]

The ownership and operation of the energy system can vary significantly depending on the region or state and the specific energy source. In many regions, electricity generation is a combination of public and private ownership. Publicly owned utilities, such as municipal or cooperative utilities, operate in some areas, while privately owned companies, often referred to as independent power producers, operate in other regions. The transmission of electricity is overseen by ISOs or RTOs in approximately half of states, with the ownership of transmission lines varying regionally.[37] In the remainder of states, electric utilities gain transmission access through bilateral transactions approved by FERC, creating a disjointed process for developers to navigate.[38]

The current transmission grid can only handle about half of the electricity required in a renewable energy system.[39] To transition away from fossil fuels, the United States must dramatically scale up its transmission system to allow renewable producers to enter the energy grid. Siting and permitting for transmission and energy generation remain the largest obstacles facing renewable generators, and will be the focus of this Article.

C. *Financing the Transition to a Renewable Economy*

Technological improvements made possible by financial investments in recent years have allowed renewable energy to become increasingly cost effective at the same time as fossil fuel costs have increased. For wind, improvements in the size and height of wind turbines have increased the amount of energy generation possible in areas with lower average wind speeds, thus allowing wind energy generation to expand outside of traditionally flat and wind-plentiful areas.[40] The cost of wind generation overall has declined 47% in the past decade, and costs are expected to continue to drop by as much as 37%-49% by 2050.[41]

The price of building new onshore wind projects is nearly 40% less than a new coal or gas plant, making wind a sound investment for regional utilities looking to modernize electricity infrastructure.[42] Onshore wind projects cost approximately $46 per megawatt hour (MWh), while new coal-fired plants and gas plants cost $74 per MWh and $81 per MWh, respectively.[43] Renewable projects have become cost-competitive with fossil fuels in large part due to targeted investments aimed at securing investors' confidence in renewable projects.

One notable investment in clean energy has come from the 2022 Inflation Reduction Act (IRA). The U.S. Department of Energy (DOE) has labeled the IRA the "single largest investment in climate and energy in American history," because of its massive investment in loans and tax incentives aimed at improving and expanding existing infrastructure.[44] The IRA is at the center of President Biden's plan to address climate change with broad-reaching policies aimed at various sectors of the economy.

The Act's investments work both to bolster the existing system by funding private-sector electricity production through subsidies, as well as to encourage shifts in consumer behavior toward renewable energy by offering individual incentives for solar panels and electric vehicles.[45] The private-sector investments are aimed at core financial hurdles challenging the transition, including the need for modernized interstate high-voltage lines to connect renewable resource-rich areas to the grid.[46] The IRA focuses primarily on addressing systemwide issues, with investments focused on the transmission system, but it also makes direct investments in renewables.

For wind producers, the IRA provides a $10 billion tax credit for facilities that manufacture clean technologies like turbines as well as expanding tax credits set to expire after three years to a 10-year window.[47] These tax credits will help continue the trend of wind as a cost-effective alternative to fossil fuels and could provide financial incentives necessary to persuade hesitant investors.

While these policies are helpful for developers facing costly regulatory battles, the IRA does not address the core issues facing development. Major investments like the IRA have eased financial concerns facing developers, yet these

36. *See* Sud & Patnaik, *supra* note 11 ("Most wind energy projects in the pipeline are stuck in the permitting phase, with just 21% of planned projects currently under construction. Major transmission projects have run into hurdles or have even been shelved entirely in recent years.").
37. *See* Kathy Hitchens, *What's the Difference Between ISO and RTO?*, PCI Energy Sols. (Nov. 29, 2022), https://www.pcienergysolutions.com/2022/11/29/whats-the-difference-between-iso-and-rto/.
38. *See* Klass, *supra* note 20, at 10751.
39. *Id.*
40. *See* Montana Environmental Information Center, *Cost of Wind vs. Fossil Fuels*, https://meic.org/cost-of-wind-vs-fossil-fuels/ (last visited Dec. 2, 2023) (In windy Montana, wind energy is less than half as expensive as coal per kilowatt hour, and the switch to a clean energy economy could double Montana's statewide energy jobs by 2030. This is partly due to the increasing cost of coal-fired plant operations, maintenance, and cleanup.).
41. *See Experts Predict 50% Lower Wind Costs Than They Did in 2015*, DOE Wind Energy Techs. Off. (June 2, 2021), https://www.energy.gov/eere/wind/articles/experts-predict-50-lower-wind-costs-they-did-2015-0; *see also* Griffith et al., *supra* note 34, at 35-36.
42. *See* David R. Baker, *Renewable Power Costs Rise, Just Not as Much as Fossil Fuels*, Bloomberg (June 30, 2022), https://www.bloomberg.com/news/articles/2022-06-30/renewable-power-costs-rise-just-not-as-much-as-fossil-fuels.
43. *See id.*
44. DOE Loan Programs Office, *Inflation Reduction Act of 2022*, https://www.energy.gov/lpo/inflation-reduction-act-2022 (last visited Dec. 2, 2023).
45. Justin Badlam et al., *The Inflation Reduction Act: Here's What's in It*, McKinsey & Co. (Oct. 24, 2022), https://www.mckinsey.com/industries/public-and-social-sector/our-insights/the-inflation-reduction-act-heres-whats-in-it. Consumer incentives include:

> [s]ome $43 billion in IRA tax credits aim[ing] to lower emissions by making EVs [electric vehicles], energy-efficient appliances, rooftop solar panels, geothermal heating, and home batteries more affordable. Starting in 2023, qualifying EVs will be eligible for a tax credit of up to $7,500 and $4,000 for new and used vehicles, respectively. Qualifying home improvements will be eligible for a tax credit of up to 30 percent of the total cost, capped at $1,200 per year.

46. *See id.*
47. *See* Bella Isaacs-Thomas, *What the Inflation Reduction Act Does for Green Energy*, PBS News Hour (Aug. 17, 2022), https://www.pbs.org/newshour/science/what-the-inflation-reduction-act-does-for-green-energy.

massive investments do little to address regulatory challenges. Although financial hurdles may not be eliminated, legislation like the IRA proves that there is governmental support for projects. While recognizing the need for continued investment, I focus on analyzing regulatory hurdles that remain despite recent investments.

II. The Problem: Regulatory Barriers to Building New Renewable Generation and Transmission

Despite the substantial reduction in cost associated with wind generation in the past decade, siting and permitting processes for renewables and transmission continue to fall far behind.[48] Even in states where renewables contribute significantly to the energy mix, the lack of adequate transmission infrastructure remains a significant challenge. One example of this is California, where the amount of renewable generation regularly outpaces transmission capacity.[49]

Because renewable sources are often weather-dependent, there are times when these resources produce more electricity than the local demand can absorb.[50] The existing transmission system has limited capacity to carry that excess renewable energy to areas with higher demand, a problem that is sometimes referred to as "transmission congestion."[51] When there is insufficient transmission capacity to transport excess renewable energy to where it is needed, grid operators may curtail (reduce or shut down) renewable energy generation to maintain grid stability and avoid overloading transmission lines.[52] Curtailment essentially means that the generated renewable energy goes unused and is wasted due to lack of transmission.[53] This highlights the pressing need for addressing regulatory barriers to facilitate the development of new renewable generation and transmission systems, thereby enabling a more efficient and sustainable energy grid.

Although investments made under the IRA provided financial incentives to transmission and renewable project developers, the legislation failed to address the regulatory hurdles facing the renewable energy industry. While the allocation of more than $400 billion for clean energy infrastructure and climate initiatives in the 2021 infrastructure bill and the IRA are significant, these efforts are often pursued in isolation from one another and fail to achieve the comprehensive economywide transformation that is needed.[54] Even after a renewable project gains local approval through complex siting and permitting processes, various barriers hinder connecting the energy produced to the grid for consumption. One such hurdle is the varying state-level policies that create obstacles to interconnection for developers.[55] Additionally, the multilevel permitting process can cause significant delays at any stage of development.

The current disconnect between capability, actual production, and consumption is highly inefficient and impractical in addressing climate change. The aging transmission system requires rapid infrastructure development that cannot be met through individual renewable projects alone.[56] While financial hurdles may no longer be the main obstacle stalling development, continued investments paired with regulatory changes are necessary to support expanded transmission across the country.

A. *Transmission: Modernizing an Outdated and Underdeveloped Grid*

Unlike oil and natural gas, the limited electricity storage capacity for renewable energy means that electricity must be transmitted and distributed immediately after it is generated.[57] The transmission grid consists of transmission and distribution lines. Transmission lines cover long distances and transport electricity from power plants or major generation sources to substations and distribution centers.[58] Distribution lines deliver electricity from distribution centers or substations directly to homes, businesses, and other end-users.[59] They cover shorter distances and are designed to supply electricity to consumers in local communities. The term "electric power grid" or "grid" is used to encompass both transmission and distribution systems.[60] To accommodate location-specific renewable projects, a significant expansion of the entire transmission grid is necessary to transfer electricity from energy-producing areas to energy users.[61]

Because the existing electric power grid already operates at full capacity, new transmission lines are needed. To put the transmission issue into perspective, "over 1,000 gigawatts worth of potential clean energy projects are waiting for approval—about the current size of the entire U.S. grid—and the primary reason for the bottleneck is the lack of transmission."[62] The main obstacles to massive transmission development include challenging permitting and regulatory processes, fragmented planning and coordination among different entities, difficulties in securing

48. *See* James Temple, *Our Pathetically Slow Shift to Clean Energy, in Five Charts*, MIT Tech. Rev. (Dec. 24, 2019), https://www.technologyreview.com/2019/12/24/72/our-pathetically-slow-shift-to-clean-energy-in-five-charts/.
49. *See* California ISO, Impacts of Renewable Energy on Grid Operations (2017), https://www.caiso.com/documents/curtailmentfastfacts.pdf; *see also* Naureen S. Malik, *Negative Power Prices? Blame the US Grid for Stranding Renewable Energy*, Bloomberg (Aug. 31, 2022), https://governorswindenergycoalition.org/negative-power-prices-blame-the-us-grid-for-stranding-renewable-energy/.
50. California ISO, *supra* note 49.
51. *Id.*
52. *Id.*
53. *Id.*
54. *See* Malik, *supra* note 49.
55. *Id.*
56. *Id.*
57. *See The Transmission Mission: Building an Infrastructure for Our Clean Energy Future*, DOE (Dec. 16, 2022), https://www.energy.gov/articles/transmission-mission-building-infrastructure-our-clean-energy-future.
58. *See* Brain, *supra* note 26.
59. *Id.*
60. *Id.*
61. *See id.*
62. *See* Bill Gates, *The Surprising Key to a Clean Energy Future*, Gates Notes (Jan. 24, 2023), https://www.gatesnotes.com/Transmission.

sufficient financing and investment, and opposition from communities and environmental groups concerned about potential impacts.[63]

Complex laws govern the approval of interstate electricity generation, transmission, and distribution, often referred to as the "siting process."[64] States generally grant authority over the siting process to public utility commissions or similar state agencies, allowing them to review and approve both interstate and intrastate power lines once a showing of "need" for the lines has been met.[65] An additional hurdle remains for renewable projects that must pair with a new transmission connection line and enter a "queue" process, which requires additional review by overseeing regulatory bodies, including FERC, RTOs, and state utility commissions.[66]

The queue process involves developers submitting applications to RTOs for evaluation of technical and economic feasibility. Interconnection studies assess the project's impact on the transmission grid and determine its priority in the queue.[67] Once approved by regulatory bodies like FERC and state utility commissions, the project enters into a connection agreement that allows its integration into the grid.[68] Renewable projects become constrained by the slow interstate battles over transmission siting, which leads to long interconnection queues holding up a renewable energy generation supply with nowhere to go.[69]

The multilevel government review of new transmission projects based on the project's position in the queue leads to a highly inefficient process, with an average wait time of two to three-and-a-half years.[70] This wait time is especially harmful to small renewable developers attempting to enter into competitive markets where existing companies and fossil fuels are financially able to weather the siting storm.[71] The current state-specific processes are inefficient and untenable long-term, with only one in four projects ever making it to commercial operation.[72] Even after overcoming the interconnection hurdle, developers must still navigate local permitting and siting requirements that can vary by municipality.

The IRA represents a dramatic shift in national climate policy, promising to invest nearly $400 billion in federal funding for clean energy development and highlighting a growing acknowledgement of the need to respond to climate change.[73] These investments provide a strong start for much-needed transmission grid upgrades, with nearly 60% of localized distribution lines being out of date, but similar investments will need to continue to support the transition.[74] The United States will need to invest an estimated $2 trillion by 2030 to modernize existing lines and alleviate stress on the grid while at the same time ramping up electricity generation.[75] Creating a viable transmission system to connect renewable energy producers to the electric grid will require not only rapid infrastructure modernization,[76] but also a dramatic increase in siting approval for transmission line projects and the renewable producers that depend on them. With improving technologies and national investment in the transmission system, electrification of the grid is feasible, but will continue to depend on solutions to the current regulatory system.

B. *Renewable Projects: Inefficient Processes for Permitting and Siting*

Renewable energy development, like transmission projects, faces significant challenges during the siting and permitting process before being connected to the grid. The process involves multiple layers of approval from federal, state, and local authorities. At the state and local levels, an average renewable development project may need local zoning and land use permits to comply with regulations and address community impacts, right-of-way approval for line location, and approval from private landowners.[77] Additionally, state and federal environmental permits are often required to address specific concerns related to natural resources, wildlife, water quality, and endangered species.

The National Environmental Policy Act (NEPA)[78] can also play a role in federal permitting, requiring federal agencies to assess the environmental impacts of their proposed actions through an environmental review process, such as an environmental impact statement (EIS) or an environmental assessment (EA). NEPA has recently undergone minor changes to address lengthy wait times for projects subject to federal permitting requirements.[79] However, these changes are not expected to substantially reduce wait

63. *See* Sud & Patnaik, *supra* note 11.
64. *See* Klass, *supra* note 20, at 10756:
> [T]he fact that states are primarily responsible for siting and eminent domain for interstate transmission lines often severely limits the ability of utilities, merchant transmission lines, and others to obtain approval to construct lines needed to integrate new electricity generation into the grid . . . these problems are exacerbated by the fact that many state laws do not allow—or are not clear whether they allow—merchant transmission lines and other utility transmission owners to obtain siting permits and exercise eminent domain authority.

65. *Id.* at 10757.
66. *See* Lancaster, *supra* note 25.
67. *Id.*
68. *Id.*
69. *See id.* ("Currently, 500 GW of solar, 200 GW of wind and 200 GW of storage across 5,600 unique projects are stuck in transmission interconnection queues, an exponential rise since 2015.").
70. *See* Office of Policy, DOE, Queued Up . . . But in Need of Transmission (2022), https://www.energy.gov/sites/default/files/2022-04/Queued%20Up…But%20in%20Need%20of%20Transmission.pdf.
71. *Id.*
72. *Id.*
73. Badlam et al., *supra* note 45 (The IRA is not the only recent legislation signaling a federal focus on transmission. The Bipartisan Infrastructure Law and the CHIPS and Science Act were both recently passed, adding up to a $2 trillion investment in infrastructure.).
74. *See* Silverstein, *supra* note 31.
75. *See id.*
76. *Id.* ("for carbon neutrality to happen, the grid needs to expand 2% to 3% yearly, which occurred between 1978 and 2020").
77. *See* Lancaster, *supra* note 25.
78. 42 U.S.C. §§4321-4370h, ELR Stat. NEPA §§2-209.
79. *See* NEPA.gov, *Amendments to NEPA From the Fiscal Responsibility Act of 2023*, https://ceq.doe.gov/laws-regulations/fra.html (last visited Dec. 2, 2023).

times for projects, prompting ongoing consideration of further federal reform.

Locally, renewable energy and transmission projects require land use permits that depend on rules set forth by local planning commissions, zoning boards, city councils, or county boards of supervisors. At the state level, transmission line construction can often involve time-consuming eminent domain disputes when lines cross private property and additional permits may be required from state governments as well as tribal governments in certain circumstances.[80] States can elect to have heightened environmental review requirements under state and regional environmental review laws, which can add additional mitigation and analysis to projects.[81] To enter the interconnection grid, renewable projects often operate regionally under RTOs or ISOs, adding an additional layer of permitting and approval through the "queue" system.[82] Governed by these regional operators, the process establishes equipment and upgrades that may be required for a project through technical studies.

Larger renewable energy projects must secure federal permits for aspects such as wildlife protection, air and water protection, and federal/protected land usage.[83] Developers often cite NEPA's EA requirement and the Endangered Species Act's (ESA's)[84] restrictions on listed species as time- and resource-consuming federal requirements.[85] The permitting process for renewable energy projects faces significant delays due to these procedural requirements, leading to a bottleneck in development.[86] These projects face challenges from community opposition, backlogged interstate grid operators, and slow permit granting across all governmental levels.[87] The regulatory process for developers has become fragmented, resulting in higher costs for new projects. To improve the system, permitting reform should prioritize predictability, establish a unified process, and implement expedited permitting to meet the increasing energy infrastructure demands.

The passage of the Fiscal Responsibility Act in June 2023 brought significant changes to NEPA for the first time in almost four decades.[88] NEPA requires the federal government to assess major federal actions that impact the quality of the human environment.[89] NEPA applies to a wide range of projects, including infrastructure development, federal land management decisions, and projects requiring permits issued by federal agencies.[90] The Fiscal Responsibility Act implemented several reforms to expedite the NEPA review process. Key changes include the adoption of the One Federal Decision framework to coordinate permitting schedules for projects involving multiple agencies, page and time limits for completing environmental documents (75 pages for EAs and 150 pages for EISs), and a narrowed definition of "major Federal action" to ensure more certainty in triggering NEPA review.[91]

The Fiscal Responsibility Act also included clarification of the definition of "major Federal action" under NEPA.[92] Previously, the broad definition allowed agencies considerable discretion in asserting federal jurisdiction.[93] The U.S. Congress has now narrowed the definition to actions that are determined to be subject to "substantial federal control and responsibility."[94] This change sets a higher bar for federal actions triggering NEPA review, offering more certainty and potentially reducing the number of projects subject to the review process.[95]

Overall, the changes were intended to prevent prolonged review periods and provide project applicants with a clearer process timeline. While the Act introduces measures to expedite environmental reviews, it does not address certain issues impacting the permitting process.[96] For example, the legislation does not address the issue of permitting new transmission line projects.[97] Instead, it provides the North American Electric Reliability Corporation and FERC two-and-a-half years to comply with mandated further study of transmission need, further pushing off true permitting reform.[98]

The complexity and variation in permitting processes across regions and government levels can cause delays and increased costs for renewable projects.[99] While some argue that state-level oversight is necessary to prevent local harm, the broader impact of climate change necessitates a streamlined process at both federal and state levels. State governments should take greater control over permitting to ensure efficient environmental oversight and timely emission reduction.

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80. *See* Sud & Patnaik, *supra* note 11.
81. *See* NEPA.gov, *State and Local Jurisdictions With NEPA-Like Environmental Planning Requirements*, https://ceq.doe.gov/laws-regulations/states.html (last visited Dec. 2, 2023).
82. *See* Sud & Patnaik, *supra* note 11.
83. *See* Lisa Daniels, *Chapter 6: Permitting Basics*, Windustry Cmty. Wind Toolbox (Dec. 15, 2007), https://www.windustry.org/community_wind_toolbox_6_permitting_basics (federal agencies that may be involved in permitting at this level include federal land management agencies like the Bureau of Land Management or the U.S. Forest Service as well as the Federal Aviation Administration for projects more than 200 feet tall).
84. 16 U.S.C. §§1531-1544, ELR Stat. ESA §§2-18.
85. *See* News Release, Competitive Enterprise Institute, Comprehensive Permitting Reform Is Vital to Unleashing America's Energy Abundance (Sept. 27, 2022), https://cei.org/news_releases/comprehensive-permitting-reform-is-vital-to-unleashing-americas-energy-abundance/.
86. *See id.*
87. *See id.*
88. NEPA, 42 U.S.C. §4321.
89. *Id.*
90. *Id.*
91. *Id.*
92. Fiscal Responsibility Act of 2023, H.R. 3746, 118th Cong. (2023).
93. *Id.*
94. *Id.*
95. *See* News Release, Competitive Enterprise Institute, *supra* note 85.
96. Mark Shenk, *US Urged to Carve Out Wind, Solar Build Zones to Curb Delays*, Reuters (July 10, 2023), https://www.reuters.com/business/energy/us-urged-carve-out-wind-solar-build-zones-curb-delays-2023-07-10/.
97. Owen Minott et al., *How Does the Fiscal Responsibility Act Reform Permitting and Environmental Review?*, Bipartisan Pol'y Ctr. (June 2, 2023), https://bipartisanpolicy.org/blog/fiscal-responsibility-act-permit-reform/.
98. *Id.*
99. *See* Daniels, *supra* note 83:

> [W]hen wind energy expands into a new region, cities, countries, and even states may formulate new zoning and permitting laws specifically to address the siting of wind turbines. These laws can significantly influence the pace and practicality of wind energy development, as well as determine how the broader community will benefit from wind energy investment.

Lack of uniformity among states leads to investment uncertainty and developmental delays, exacerbating disparities in renewable production. A streamlined approach, similar to that of the EU and states like California and Illinois, is essential to reduce the average "soft costs" associated with local permitting, which can account for nearly 30% of upfront capital costs for wind projects.[100] I am not calling for a complete removal of these obligations; rather, I am advocating for a more efficient approach that finds balance between the concerns of local communities and the necessity for clean energy generation.

III. Solutions Across All Levels of Government

Improved siting and permitting processes for renewable generators and transmission facilities are crucially linked due to the need for these generators to connect to the transmission grid. Addressing the timing, costs, and complex regulations adopted in each state requires reforms at state, regional, and local levels, as renewable energy siting falls under state and local jurisdiction. Without tackling the flaws in permitting and siting processes, meeting emission-reduction targets for 2030 will be challenging, despite the potential of renewable resources to replace fossil fuels.

Section A of this part looks at solutions to common hurdles facing transmission across all levels of government. Recently, there has been some national progress made regarding transmission siting under the FPA. Additionally, a notice of proposed rulemaking has been introduced to further empower FERC in exercising backdrop authority under the statutory changes.[101] However, these steps are still in the early stages of development.

Regionally, the queue process for interconnection must be amended to improve access and reliability for renewable generators. At the state and local levels, a major roadblock impeding development has been local opposition to projects. Texas' competitive renewable energy zones (CREZ) and California's Renewable Energy Transmission Initiative (RETI) both offer possible reforms to these processes.[102] Therefore, a solution at the state and local levels calls for a more streamlined state approach that acknowledges local concerns while prioritizing clean energy development.

Section B examines permitting reform for renewable developers. Nationally, this means permitting that looks more like the EU's "go-to" zones and BOEM's offshore wind process. At the state level, several prominent examples, including Wisconsin's and Illinois' state-level policies, can provide solutions to be adopted more widely.[103] In these states, the permitting process has been shortened by designating large resource-rich, high-wind areas as energy zones that do not require additional permitting approval by individual projects.[104] This approach applied more broadly could provide a complementary state process in areas where land is not federally controlled to national preemptive permitting that designates areas well suited for renewable production. These solutions are by no means all-encompassing but provide examples of policies that are alleviating some of the challenges to the clean energy transition.

A. Modernizing and Expanding Grid Transmission

1. Exercising Federal Authority to Expand the Grid

At the national level, solutions must include removing regulatory barriers to allow for streamlined permitting and siting for both generation and transmission. This includes coordinating a national permitting process and proactively siting areas of land for transmission lines. Congress and the Biden Administration have shown some willingness to act on clean energy permitting reform at the national level, with a particular focus on power lines crossing state borders.[105] However, while these actions may be successful in addressing some elements of siting reform, they do not offer sufficient solutions to issues facing the energy industry. Even with recent changes, discussed below, it will still take many years to build the level of transmission capacity necessary to meet climate goals. Therefore, additional solutions are suggested, including similar approaches to the EU, which has addressed permitting concerns at the multistate level.

The Energy Policy Act of 2005 (EPAct 2005) introduced a limited federal role in transmission siting by adding §216 to the FPA.[106] This section divides federal siting authority between DOE and FERC. FERC is authorized to issue permits for constructing electric transmission facilities in areas designated by DOE as national interest electric transmission corridors (NIETCs) in areas with high transmission congestion.[107] While states retain the primary authority over siting decisions, §216 allows FERC to step in and issue permits where a state authority has withheld approval of an application for more than one year.[108]

However, courts have narrowly interpreted FERC's authority under §216, leading to some initial NIETC designations being invalidated on procedural grounds.[109] In

100. Klass, *supra* note 20, at 10757.
101. *See* FERC, Applications for Permits to Site Interstate Electric Transmission Facilities, 88 Fed. Reg. 2770 (proposed Jan. 17, 2023) (to be codified at 18 C.F.R. pt. 50).
102. *See* Powering Texas, Transmission & CREZ Fact Sheet (2018), https://www.poweruptexas.org/wp-content/uploads/2018/12/Transmission-and-CREZ-Fact-Sheet.pdf; RETI 2.0 Gateway, *Home Page*, https://reti.databasin.org (last visited Dec. 2, 2023).
103. *See* Public Service Commission of Wisconsin, *Wind Siting Rules*, https://psc.wi.gov/Pages/ServiceType/Energy/Renewables/WindSitingRules.aspx (last visited Dec. 2, 2023).
104. *See* Powering Texas, *supra* note 102.
105. *See* Bird & McLaughlin, *supra* note 7.
106. Pub. L. No. 109-58, §1221, 119 Stat. 594 (2005) (amended 2021).
107. *Id.*
108. *Id.*
109. *See* California Wilderness Coal. v. U.S. Dep't of Energy, 631 F.3d 1072, 41 ELR 20078 (9th Cir. 2011) (invalidating NIETCs designated by DOE for failure to consult with states); *see also* Piedmont Env't Council v. Federal Energy Regul. Comm'n, 558 F.3d 304, 39 ELR 20036 (4th Cir. 2009) (invalidating FERC rule permitting agency approval of transmission lines in NIETCs where state denied a siting permit). Since the decision in 2011, DOE has not designated any national corridors, and the Commission has not received applications for permits to site transmission facilities.

Piedmont Environmental Council v. Federal Energy Regulatory Commission, FERC interpreted "withheld approval" to include a denial by the state authority.[110] Various stakeholders challenged this interpretation, arguing it was unreasonable.[111] The court held that FERC could not exercise jurisdiction over permit applications where the state authority had denied them.[112] FERC's interpretation was deemed unreasonable because withholding approval is different from denying an application, and the court reversed FERC's interpretation of the FPA.[113]

In response to similar challenges, the Infrastructure Investment and Jobs Act of 2021 (IIJA) made several changes aimed at expediting permitting and siting for transmission and offshore wind projects.[114] These changes amended existing language related to the siting of electric transmission facilities established under the EPAct 2005. The amended language empowers FERC to issue permits for transmission lines within priority corridors if states fail to act within one year.[115]

Under the Act, FERC's authority to approve transmission facilities is triggered when a state commission or other authorized entity (1) has not made a determination on an application by the date that is one year after the later of the date on which the application was filed and the date on which the relevant national corridor was designated; (2) has conditioned its approval such that the proposed project will not significantly reduce transmission capacity constraints or congestion in interstate commerce or is not economically feasible; or (3) has denied an application.[116]

This amendment addresses the jurisdictional issue raised in court cases by granting FERC siting authority when a state denies an application.[117] In response to the IIJA's changes, FERC issued a proposed rule to revise its regulations, reflecting the Act's language that states FERC "may issue a permit for the construction or modification of electric transmission facilities in National Corridors if a State has denied an applicant's request to site transmission facilities."[118] FERC has expressed optimism that the proposed changes will align with the amendments made to FPA §216 under the IIJA.

Additionally, the revisions aim to tackle the legal challenges that previously hindered efforts related to NIETCs and backstop authority by clarifying when the authority can be used.[119] Further, the proposed rule would eliminate the one-year delay for pre-filing with FERC currently facing developers, instead allowing simultaneous filing with a state and FERC.[120] While this proposed rule offers a promising solution to the transmission siting challenge, it does not provide a permanent solution for developers, as it could be reversed by future administrations. Further actions may be needed to grant the national government lasting power over siting review.

Congress could also amend the FPA or enact new legislation that would fully transfer siting and eminent domain authority from states to FERC or DOE. This happened with interstate natural gas pipelines in the 1930s.[121] Congress could transfer exclusive siting authority for interstate transmission lines to FERC as it did in the EPAct 2005 for liquified natural gas (LNG) import and export terminals, which would remove state approval requirements and limit the power of states to block projects.[122] A legislative change of this scale is unlikely, but is still worth mentioning. The more recent use of legislative action involving LNG illustrates the possibility of adopting more extreme measures when a perceived energy emergency exists.

2. Updating Regional Transmission Operator Processes

The expensive and time-consuming process of entering the interconnection queue currently affecting renewable producers could be addressed at a regional level. Streamlining the interconnection system with an emphasis on prioritizing renewable developers will be important in the transition to a zero-carbon economy. To do this, RTOs and ISOs need to modernize their interconnection processes to accommodate state and federal policies that support the rapid transition to zero-carbon electricity and its enabling grid infrastructure, newer transmission lines, and energy storage resources. FERC has recently taken action to remove barriers preventing distributed energy resources from accessing the wholesale energy markets administered by RTOs and ISOs.[123]

Beyond FERC rules mandating market and interconnection access, RTOs and ISOs could adopt a variety of new practices to promote the integration of new renewable resources to the grid like streamlining interconnection procedures, optimizing transmission line capacity, and encouraging the deployment of distributed energy and energy storage. In March 2022, FERC approved a proposed plan from the Midcontinent Independent System Operator (MISO), the RTO that covers 15 states in the central United States, to expedite its interconnection process and

110. *Piedmont Env't Council*, 558 F.3d at 309.
111. *See id.*
112. *Id.*
113. *Id.*
114. *See* Bird & McLaughlin, *supra* note 7.
115. *Id.*
116. 16 U.S.C. §824p(b)(1)(C) (as amended by IIJA §1221).
117. *See id.*
118. Applications for Permits to Site Interstate Electric Transmission Facilities, 88 Fed. Reg. 2770 (proposed Jan. 17, 2023) (comments closed April 17, 2023).
119. *See* John Decker et al., *The Federal Government's High-Wire Act: Setting FERC Up to Employ Its Transmission Siting Backstop Authority*, Vinson & Elkins LLP (June 6, 2023), https://www.velaw.com/insights/the-federal-governments-high-wire-act-setting-ferc-up-to-employ-its-transmission-siting-backstop-authority/.
120. *Id.*
121. Natural Gas Act, 15 U.S.C. §717f (1938).
122. Regulations Implementing Energy Policy Act of 2005; Pre-Filing Procedures for Review of LNG Terminals and Other Natural Gas Facilities, 70 Fed. Reg. 60426 (Oct. 18, 2005).
123. FERC, *FERC Order No. 2222: Fact Sheet*, https://www.ferc.gov/media/ferc-order-no-2222-fact-sheet (last updated Sept. 28, 2020) (distributed energy resources are small-scale power generation or storage technologies used to enhance the electric power system).

bring online projects that are ready to serve the grid.[124] The proposed plan provides an alternative path for new generators that would allow them to proceed to interconnection agreement negotiations before having all facility studies completed. The more flexible default plan is expected to result in an interconnection timeline of about 373 days, roughly 100 days shorter than the traditional timeline.[125]

In regions of the country without RTOs or ISOs, several options exist for similar regional streamlining. First, Congress could create a multistate regional siting authority to improve interstate transmission access in certain critical regions. This would allow for retained regional control, as opposed to complete federal authority, giving local decisionmakers a level of control over energy projects. At the state level, states could choose to enter into interstate compacts essentially forming RTOs and ISOs, allowing states to preserve regional goals while improving access to the grid in a larger area. Both of these options would allow for streamlined interconnection because of FERC's authority to regulate regional entities. This would allow for greater consistency in interconnection and make it easier for renewable projects to expand across state lines.

To improve regional interconnection processes, it is essential to prioritize renewable projects in the queue system. FERC has introduced a "first-ready, first-served" rule with the goal of expediting proposed renewable projects' online integration. Currently, the interconnection queue review process takes an average of 3.7 years, leading to a significant dropout rate of about three-quarters of projects.[126] FERC's proposed solution involves evaluating interconnection requests in groups rather than individually and imposing penalties on transmission providers for missing review deadlines.[127]

The current transmission operating process lacks efficiency and varies regionally. To address this, FERC and RTOs should focus on enhancing the process by prioritizing renewable projects, implementing clear project review deadlines, and investing in energy storage solutions. These measures will streamline grid integration, accelerate renewable project deployment, and foster a more efficient and sustainable energy landscape.

B. Enabling Renewable Development Through Siting and Permitting Reform

1. Streamlining Federal Regulations With Proactive Support

The EU has been a leader in emission reductions, aiming to reduce its greenhouse gas emissions by 40% from 1990 levels by 2030 through a combination of decarbonizing the energy sector and enhancing energy efficiency.[128] Notably, the EU increased its renewable energy consumption to 21.1% in 2020, with further rapid growth anticipated.[129] This progress is attributed in part to the EU's renewable energy directive, initially introduced in 2009 and becoming legally binding in 2021, setting ambitious targets for renewable energy at the European level, currently aiming for 32% by 2030.[130]

To further these efforts, the EU adopted a rule requiring the designation of "go-to" areas, where renewable permits must be awarded within one year of application.[131] This streamlined process is made possible through large-scale environmental assessments, akin to EISs under NEPA, to identify regions with low environmental risk.[132] As a result, individual renewable projects in these designated areas are no longer required to go through a separate permitting process, expediting their development and contributing to the EU's ambitious renewable energy goals.

The rule also allows governments to label renewable projects as "overriding public interest" to enable a simplified assessment, shortening the process for developers.[133] This policy has not removed the strict environmental regulations in place across the EU, but has instead streamlined environmental review while prioritizing renewable development. Instead of removing regulation to hasten development, the renewable energy directive addresses environmental review at a high level and forces individual governments to accelerate the timeline for project approval by centralizing the process. Instead of individual renewable developers applying for permits within a specific area, the government can retain control over environmental degradation by picking areas it deems best suited for energy production.

This policy has come at a critical time not only for energy production in the EU, but internationally. The Russian

124. *See* Zack Hale, *FERC Approves MISO Plan to Expedite Interconnection Timelines for New Generators*, S&P Glob. (Mar. 15, 2022), https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/ferc-approves-miso-plan-to-expedite-interconnection-timelines-for-new-generators-69380972.
125. *See id.*
126. *See* Ethan Howland, *FERC Proposes "First-Ready, First-Served" Interconnection Rules to Help Spur New Generation, Storage*, Util. Dive (June 17, 2022), https://www.utilitydive.com/news/ferc-interconnection-reform-proposal-extreme-weather/625702/ (reply comments to the proposed rule were set to be due in February 2023).
127. *Id.*
128. Farber & Carlarne, *supra* note 12, at 13.https://knoema.com/infographics/mynafrd/which-countries-have-the-most-ambitious-2030-emissions-reduction-targets
129. *See* Statista, *Share of Renewable Energy in the Gross Consumption of Energy in the European Union From 2012 to 2021*, https://www.statista.com/statistics/864900/share-of-renewable-energy-electricity-consumption-european-union-eu28 (last visited Dec. 2, 2023).
130. *See* European Commission, *Renewable Energy Directive*, https://energy.ec.europa.eu/topics/renewable-energy/renewable-energy-directive-targets-and-rules/renewable-energy-directive_en (last visited Dec. 2, 2023).
131. *See EU to Set Out One-Year Permitting Rule for Renewables; Biden Directs Staff to Speed Up Approvals*, Reuters Events (May 18, 2022), https://www.reutersevents.com/renewables/wind/eu-set-out-one-year-permitting-rule-renewables-biden-directs-staff-speed-approvals.
132. *Id.*
133. *Id.*

invasion of Ukraine in early 2022 sparked the beginning of a major disruption to the energy supply across Europe. To offset the disruption to fossil fuel supplies from Russia, the European Commission proposed a temporary emergency regulation to accelerate renewable energy development.[134]

The regulation calls for fast-tracking of permitting by recognizing renewable energy plants as an "overriding public interest" and allowing for simplified environmental assessments. By recognizing that lengthy and complex administrative procedures are a main factor contributing to slow renewable development, the EU's regulation to accelerate the deployment of renewable energy is another step in the right direction for faster development. This new regulation is consistent with previous policies, while acknowledging the critical need for a larger energy supply free from geopolitical sway.[135]

President Biden has introduced a similar approach in the Permitting Action Plan. The action plan outlines the Biden Administration's approach to improving the efficiency and transparency of federal government environmental reviews and permitting procedures, with the goal of keeping stakeholders informed about project developments.[136] The plan aims to streamline the permitting process by coordinating actions across multiple federal agencies, establishing specific goals and deadlines for permitting schedules, and improving agency responsiveness.[137] While the plan creates guidelines and recommendations aimed at increasing support throughout the permitting process, it lacks actual statutory or regulatory changes that could enhance the process and reduce permit-related litigation.[138]

Congress should create a permitting program more closely aligned with the EU's successful approach. Effectively transforming the current national permitting system will require more than funding and supervision; it requires a change to the status quo. Implementing significant statutory or regulatory changes to the permitting framework could expedite project development, address transmission issues, and promote the adoption of cleaner energy sources across the United States. By drawing inspiration from the EU's success, Congress can work toward establishing a more efficient and effective permitting process that aligns with the nation's renewable energy goals and infrastructure needs.

Another example of a successful federal streamlined siting process is BOEM's approach to offshore wind development.[139] BOEM's process could serve as an analogy for other federally controlled areas, including the vast federal lands in the western United States. In response to Executive Order No. 14008, which aims to double offshore wind capacity by 2030, BOEM has implemented policies that proactively promote offshore wind development in federal waters and streamline the siting process.[140]

By proactively identifying areas suitable for offshore wind leasing, BOEM has facilitated the process for developers, leading to the anticipation of seven new offshore lease sales by 2025.[141] The new plan preserves environmental review through increased agency transparency while recognizing the critical need for expanded offshore wind development. This success highlights the potential for similar approaches to be adopted in other federally controlled regions, such as federal lands in the western United States, to accelerate renewable energy projects and achieve national sustainability goals.[142]

Siting and permitting reform are critical for the level of renewable energy development necessary to transition toward a carbon-neutral grid. Through policies like the EU's and BOEM's proactive environmental review and permitting, changes could be made at the regional and national levels to improve these processes for renewable developers. The solutions offered provide an approach that balances both localized environmental concerns as well as the global-level need to combat climate change. The current presidential administration has taken actions in some areas, like offshore wind, but similar permitting reforms should continue to be applied more broadly in states and on national lands.

134. *See* Press Release, European Commission, REPowerEU: Commission Steps Up Green Transition Away From Russian Gas by Accelerating Renewables Permitting (Nov. 9, 2022), https://ec.europa.eu/commission/presscorner/detail/en/ip_22_6657.

135. *See id.* (the new plan builds upon the "REPowerEU" Plan that was already an attempt to speed up and scale up renewable energy in power generation).

136. *See* White House, The Biden-Harris Permitting Action Plan to Rebuild America's Infrastructure, Accelerate the Clean Energy Transition, Revitalize Communities, and Create Jobs (2022), https://www.whitehouse.gov/wp-content/uploads/2022/05/Biden-Harris-Permitting-Action-Plan.pdf.

137. *Id.*

138. *See* Jeffrey Porter, *The White House's Permitting Action Plan Is Long but Unlikely to Streamline the Permitting of Renewable Energy Infrastructure Projects*, JD Supra (May 12, 2022), https://www.jdsupra.com/legalnews/the-white-house-s-permitting-action-4039186/.

139. *See* BOEM, *Regulatory Framework and Guidelines*, https://www.boem.gov/renewable-energy/regulatory-framework-and-guidelines (last visited Dec. 2, 2023):

> In 2009, the Department of the Interior announced the finalization of regulations governing BOEM's OCS [Outer Continental Shelf] Renewable Energy Program. These regulations provide a detailed structure to govern how BOEM manages its Renewable Energy Program, ensure that BOEM meets its statutory obligations, and provide both certainty and flexibility for overseeing the nascent offshore renewable energy industry.

140. *See* Catherine Morehouse, *Biden Order Aims to Double Offshore Wind, Boost Transmission, End Fossil Fuel Subsidies*, Util. Dive (Jan. 28, 2021), https://www.utilitydive.com/news/biden-order-aims-to-double-offshore-wind-boost-transmission-end-fossil-fu/594101/.

141. *See* Press Release, U.S. Department of the Interior, Secretary Haaland Outlines Ambitious Offshore Wind Leasing Strategy (Oct. 13, 2021), https://www.doi.gov/pressreleases/secretary-haaland-outlines-ambitious-offshore-wind-leasing-strategy.

142. *See* Fact Sheet, White House, Biden Administration Jumpstarts Offshore Wind Energy Projects to Create Jobs (Mar. 29, 2021), https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/29/fact-sheet-biden-administration-jumpstarts-offshore-wind-energy-projects-to-create-jobs/ (BOEM's plan includes a new priority "Wind Energy Area" designation, the advancement of new lease sales, complete review of at least 16 Construction and Operations Plans by 2025, and environmental review for Ocean Wind, which would become America's third commercial-scale offshore wind project).

2. Eliminating the Patchwork: Consistent Siting and Permitting Rules

☐ *Michigan: Local control and NIMBYism.* State and local governments play a critical role in siting and permitting of energy projects that ultimately impact outcomes for renewable producers in that state. One example of a state whose permitting and siting processes have stalled development is Michigan, which allows each county to create its own siting ordinances.[143] This patchwork has allowed a small number of citizens to effectively prevent wind and solar development through opposition to ordinances and local referenda. In one survey of Michigan voters, 67% were in favor of increasing the state's use of renewable energy.[144] Despite a majority of voters in favor of renewable development, Michigan development remains slow.

In one instance, rural voters halted plans for a 375-MW wind farm in mid-Michigan, defeating several local renewable energy ordinances.[145] While some opposition to renewable projects may be based on legitimate concerns, much local resistance boils down to NIMBYism.[146] Opposition to the projects rested largely on concerns over aesthetics, with protestors holding "Not in My Backyard" signs and calling turbines an "eyesore" and a threat to property values despite the wind project's projected $118 million for leasing property owners and $80 million for local governments and schools over 30 years.[147] In contrast, states like Wisconsin have streamlined siting and "are seeing less issues because they put in place a statewide solution," says Charlotte Jameson, the chief policy officer for the Michigan Environmental Council.[148]

☐ *Wisconsin: Uniform siting and permitting rules.* Wisconsin has taken a unique approach to its siting rules by establishing a level of regulation that local governments cannot supersede. Wisconsin Act 40 directed the Public Service Commission to establish administrative rules specifying restrictions a political division (city, village, or town) may impose on the development or use of a wind project.[149] Instead of attempting to create statewide wind siting requirements, Wisconsin's policy creates a regulation ceiling and provides the strictest possible requirements developers will face, allowing industry to avoid municipal roadblocks.[150] Other states could adopt a similar approach, requiring their public utility commissions to set the maximum regulatory requirements, allowing developers to anticipate regulations at one level rather than through a piecemeal approach.

The approach taken by Wisconsin would also be helpful in addressing the growing issue of bans on industrial wind developments. Since 2015, more than 375 wind projects have faced either rejections or restrictions across the United States.[151] Restrictions include local ordinances requiring setbacks that designate a minimum distance between the wind project and buildings, roads, public transmission lines, and landmarks.[152] These setbacks can vary dramatically by locality, and add additional uncertainty to development. By adopting Wisconsin's maximum restriction approach, local cities and counties could not implement a stricter standard than what was set by the state commission, removing the ability of a single community to stall a project.[153] States with standardized siting processes are better positioned to support wind projects and can attract greater investment in infrastructure, which benefits the state energy system as a whole.

☐ *Illinois and California: State-level streamlining.* On January 7, 2023, both houses of the Illinois Legislature passed a bill during the lame-duck session that aims to streamline permitting and siting for renewable projects throughout the state.[154] The bill sets new statewide standards for wind and solar energy generation facility siting and gives counties 120 days to bring their ordinances into compliance with these new standards.[155] The bill was created in response to growing disparities across counties stemming primarily from local restrictions and aims to create a statewide baseline for renewable projects siting, including minimum

143. *See* Garret Ellison, *Voters Defeat Michigan Wind Energy Project, Toss Supportive Officials*, MLive (Nov. 9, 2022), https://www.mlive.com/public-interest/2022/11/voters-defeat-michigan-wind-energy-project-toss-supportive-officials.html.
144. *See Survey Shows Michigan Voters Want More Clean Energy to Improve Public Health*, Mich. League Conservation Voters (Feb. 16, 2021), https://michiganlcv.org/news/survey-shows-michigan-voters-want-more-clean-energy-to-improve-public-health/.
145. *See id.*
146. NIMBY, or "not in my backyard," is the idea that someone does not want something to be built or done near where they live, despite it needing to be built or done somewhere.
147. *See* Ellison, *supra* note 143.
148. *Id.*
149. *See* Public Service Commission of Wisconsin, *supra* note 103.
150. Public Service Commission of Wisconsin, Wind Siting—Frequently Asked Questions, https://psc.wi.gov/SiteAssets/WindSitingFAQs.pdf.
151. *See* Robert Bryce, *Renewable Rejection Database*, https://robertbryce.com/renewable-rejection-database/ (last visited Dec. 2, 2023); *see also* Robert Bryce, *Voters Veto Big Wind in Ohio and Michigan: Rejections Now Total 375 Since 2015*, Real Clear Energy (Nov. 11, 2022), https://www.realclearenergy.org/articles/2022/11/11/voters_veto_big_wind_in_ohio_and_michigan_rejections_now_total_375_since_2015_864316.html.
152. Jaclyn Kahn & Laura Shields, *State Approaches to Wind Facility Siting*, Nat'l Conf. State Legislatures (Sept. 2, 2020), https://www.ncsl.org/energy/state-approaches-to-wind-facility-siting.
153. *See also* News Release, New York State Energy Research and Development Authority, New York State Announces Passage of Accelerated Renewable Energy Growth and Community Benefit Act as Part of 2020-2021 Enacted State Budget (Apr. 3, 2020), https://www.nyserda.ny.gov/About/Newsroom/2020-Announcements/2020-04-03-NEW-YORK-STATE-ANNOUNCES-PASSAGE-OF-ACCELERATED-RENEWABLE-ENERGY-GROWTH-AND-COMMUNITY-BENEFIT-ACT-AS-PART-OF-2020-2021-ENACTED-STATE-BUDGET (New York State has introduced similar legislation aimed at establishing uniform standards through the Office of Renewable Energy Siting by consolidating environmental review and providing a single siting forum for predictable decisions).
154. *See* Kevin Bessler, *Legislation Restricting Illinois Counties' Decisions on Wind Farms Ready for Governor*, Daily J. (Jan. 14, 2023), https://www.daily-journal.com/news/illinois/legislation-restricting-illinois-counties-decisions-on-wind-farms-ready-for-governor/article_03dc801a-938a-11ed-bcb0-5b0acc61855e.html (whether the bill will become law is still in the air, as Illinois Gov. Jay Robert Pritzker has voiced opposition to statewide controls).
155. *See id.*

setback requirements and height and sound limitations.[156] These types of statewide standards are a good example of siting and permitting processes for new wind and solar facilities that other states should consider adopting.

California recently adopted a similar approach as part of its 2022 budget process. There, California enacted Assembly Bill 205, which provides a single agency, the California Energy Commission, authority to oversee a consolidated permitting process.[157] This streamlined approach replaces almost all federal, state, and local permitting requirements, instead creating a consolidated process.[158]

The Commission was previously using this approach for fossil fuel thermal plants, and has now expanded similar authority to wind, solar, and energy storage.[159] In addition, this new approach hopes to limit the permitting timeline to one year by requiring the Commission to decide on a project's permit application completeness within 30 days of receipt.[160] Once approved, the Commission acts as the lead agency for the California Environmental Quality Act process and must prepare an environmental impact review. That review process must be finalized within 270 days of the completeness finding.[161]

Approaches like the ones introduced in Illinois and California prevent each county from having to develop an expertise in energy permitting, especially since counties often lack resources to build out regulatory and programming staff. Consistency among counties will also eliminate the county-by-county referenda that can occur and block projects that otherwise would meet sensible and practical siting and permitting standards.

IV. Conclusion

The challenges surrounding transmission and renewable energy development in the United States are intricate and often vary by region, underscoring the need for a multifaceted approach to address them. While federal-level changes, including amendments to legislation like NEPA, remain important, it is increasingly apparent that the primary focus should shift toward state and local governments. To effectively combat climate change and achieve our clean energy goals, a concerted effort from both national and state levels is essential to expedite the construction of new renewable generation and transmission infrastructure.

Taking inspiration from successful models both internationally, such as the EU's streamlined approach, and successful state policies, this Article proposes a series of solutions. These include streamlining permitting processes at the regional and national levels, establishing state-level transmission standards, and making further adjustments to the EPAct 2005. Common threads across these reforms involve the creation of a centralized office for expediting processes, the enforcement of strict timelines for project approvals with clear consequences for noncompliance, and enhanced coordination among jurisdictions to foster uniformity.

Prioritizing the modernization of energy infrastructure is crucial to meet the increasing demand for electricity while staying on track with clean energy targets. The United States must strike a balance between addressing localized social and environmental concerns and the broader imperative of mitigating the impacts of unchecked climate change. By empowering state and local governments to take the lead, we can pave the way for a sustainable, resilient, and carbon-neutral energy future.

156. *See* Bird & McLaughlin, *supra* note 7.
157. A.B. 205, 2021 Leg. (Cal. 2021).
158. *See* Bird & McLaughlin, *supra* note 7.
159. *See id.*
160. *Id.*
161. *Id.*