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POLICY BRIEF | FEBRUARY 2023

HOW TO REFORM FEDERAL PERMITTING TO ACCELERATE CLEAN ENERGY INFRASTRUCTURE

A NONPARTISAN WAY FORWARD

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Executive Summary

As we laid out in a previous article, the process for the permitting of renewable energy generation and electric transmission projects in the United States is multi-layered and often extremely long. If the U.S. is to achieve its climate ambitions and fully implement transformative legislation like the Inflation Reduction Act, Congress will also have to enable a massively accelerated build-out of clean energy infrastructure.

At the same time, valuable environmental safeguards, and the established public participatory and related administrative processes used to adopt and implement them, cannot simply be sidestepped. Congress should approach federal permitting reform in a way that maximizes efficiency in government decisionmaking through shorter timelines for regulatory approvals without sacrificing the value of the current process in protecting the environment and local stakeholders. Further, it is essential that reforms are evidence-based in targeting the major sources of current delays. Our research in this article indicates that striking such a balance is possible—a targeted set of six reforms laid out here could significantly accelerate federal permitting for clean energy infrastructure, without compromising environmental protections.

Permitting reforms will also need to be able to attract bipartisan support to pass through Congress. The most recent high-profile attempt at permitting reform by Senator Joe Manchin (D-WV) was not palatable to both progressive Democrats, who argued it would eliminate environmental protections, and to Republicans, who, among other concerns, argued that it was a federal power grab and that it did not go far enough in reducing regulatory red tape.

In this article, we provide an analysis of the specific points of delay within the federal permitting process for clean energy infrastructure. We then discuss six major areas of potential reform, including evaluations of existing reform provisions on the table, such as Senator Manchin's proposed legislation. In each area, we provide policy options that would make a significant impact on shortening permitting timelines, avoid affecting the integrity of environmental review, and attract support across the political spectrum. We conclude with options for permitting reform at the local and state levels, both of which have important planning and compliance roles in clean energy infrastructure development, making them critical pieces of the puzzle. Below are the highlights of the policy options we present.

Policy Roadmap

1. A **significant expansion of federal planning, general permitting, and programmatic review** would accelerate the permitting process for clean energy infrastructure in the long term.

   a. *Under such a program, Congress could direct federal land-management agencies to prepare national-level maps of environmental sensitivity,* with corresponding pre-designated "go-to areas" for renewable energy projects in areas of lowest environmental sensitivity.

   b. *Congress could also direct federal land-management agencies to prepare programmatic environmental impact statement reports* for low-sensitivity areas with high potential for renewable energy infrastructure, and if it does so, it should appropriate sufficient funding for these mapping and reviewing functions.

   c. *Furthermore, the U.S. Army Corps of Engineers could expand Clean Water Act Section 404 general permitting* to include offshore wind transmission line construction.

2. **Siting authority for all interstate transmission lines could be federalized** with the Federal Energy Regulatory Commission (FERC). Interstate transmission lines are critical for decarbonization of the U.S., but they are frequently rejected by state authorities due to the high local costs. Natural gas pipelines have similar cost-benefit tradeoffs, but they are permitted much faster due to FERC's existing siting authority over them. Expanding FERC's partial, pre-existing backstop authority over transmission lines to complete siting authority is therefore a step with precedent and high expected benefits. FERC could also ensure that interstate transmission lines allocate a fair fraction of their capacity to the states and communities through which they pass, thereby increasing local support for transmission and more equitably distributing its benefits.

3. **The Biden administration could conduct a staff capacity, funding, and technology needs assessment across agencies involved with critical permitting for clean energy.** If the assessment finds substantial gaps, Congress could appropriate funds to increase resources available to these agencies, earmarking them for permitting capacity.

4. **Congress could transfer initial authority for Clean Air Act permitting for offshore wind from the Environmental Protection Agency (EPA) to the Bureau of Ocean Energy Management (BOEM)** within the Department of the Interior. Such a step would help shorten a part of the permitting timeline for offshore wind and bring it on fairer footing with the treatment of Clean Air Act permitting for offshore fossil fuel production, an industry that generates much more pollution. Congress **could also create a separate legislative title for offshore wind** under the Outer Continental Shelf Lands Act (OCSLA), thereby improving planning, permitting, and leasing processes.

5. **Congress could support multi-agency coordination by allocating additional funding to the Federal Permitting Improvement Steering Council (FPISC)**, and by expanding its scope to cover mid-sized as well as large clean energy projects. Further, all agencies could adopt the process of lead agency coordination of multi-agency reviews created by Title 41 of the Fixing America's Surface Transportation Act (FAST-41).

6. **Congress could proceed with narrow reforms to the National Environmental Policy Act (NEPA):**

   a. *Narrow expansions of categorical exclusions under the NEPA*, as detailed by the Bipartisan Policy Center, are likely to accelerate some permitting actions. An overly aggressive expansion of categorical exclusions may not have beneficial effects, as categorical exclusions are already widely used, and misclassifying projects that deserve a higher level of review may not necessarily shorten permitting timelines.

   b. *Strict and automatically-enforced NEPA time limits for pre-designated low-environmental-sensitivity areas for clean energy infrastructure,* modeled on a recent European Union plan, are likely to significantly accelerate clean energy permitting and deployment. Broader time or page limits on NEPA reviews without further study and targeting are unlikely to be helpful.

c. *Congress could direct legal challenges to solar, wind, and transmission infrastructure Environmental Impact Statements (EIS) directly to the federal Court of Appeals for the D.C. Circuit* to expedite approval of large clean energy infrastructure projects, as suggested by James Coleman. Any broader limitations on NEPA litigation may have unintended consequences, as the evidence of excessive frivolous litigation and litigation-induced delay is currently mixed.

Target Areas for Permitting Reform

To guide what policy options to prioritize for permitting reform, we analyze available primary data on the key sources of permitting delay in this section. We find that for major clean energy projects, NEPA reviews and Bureau of Land Management (BLM) permitting are the largest sources of delay. Among clean energy projects, transmission lines and wind projects are especially time-consuming.

First, we examine data on large and national-priority projects from the Federal Permitting Dashboard, and filter for already-completed renewable energy and electric transmission projects with complete data. Only 13 such projects are covered, and these projects are included in the Permitting Dashboard because of their scope, size, and complexity. Therefore, this is not a representative sample. However, it is useful as a rough guide for determining which projects, and which aspects of the permitting process, are deserving of priority treatment.

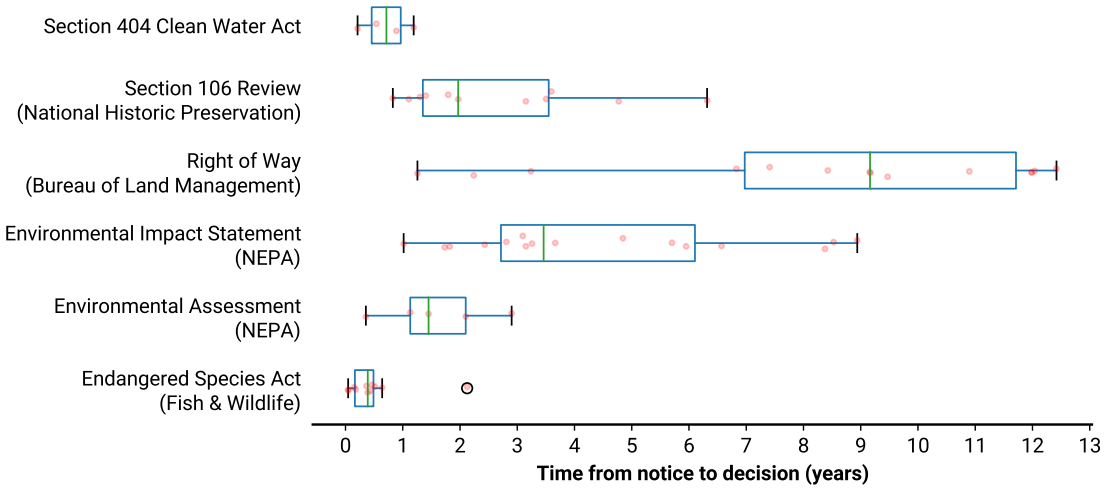
Figure 1 shows a boxplot of the timelines of each permit stage for these projects, where each red dot represents one project. Consistent with popular perceptions, the process of preparing EISs under NEPA is one of the longest-duration steps in federal permitting, taking a median of 3.5 years but up to nine years in some cases.

However, while the persistent focus on NEPA delays is not baseless, in fact the process of obtaining right-of-way (ROW) authorization from BLM tends to be the lengthiest step in the permitting process, with a median of just over nine years from submission of an application to the BLM's approval of a ROW. These approvals

FIGURE 1

Time Taken for Federal Permit Review Stages

For completed transmission & renewable generation projects on Federal Permitting Dashboard, as of 9/23/2022



Source : Federal Permitting Dashboard

Notes : This data only covers federal permitting for certain large, complex projects (n=13 projects) that are tracked on the Federal Permitting Dashboard.

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are necessary for the construction of transmission lines or renewable energy projects on BLM-managed public lands, which are concentrated in the western U.S.

Part of the reason the ROW authorization is such a time-consuming process is that it actually includes a NEPA review. After the BLM begins the permitting process for a ROW authorization, it must initiate the NEPA review process and cannot issue the ROW until the NEPA review is complete. Therefore, for the major projects shown in Figure 1, the time taken for an ROW *includes* the time taken for the relevant EIS. It can also include significant additional delays at the BLM. For example, consider the Ten West Link, a large transmission line between Arizona and California. The BLM completed the final EIS for the Ten West Link in late 2019 and issued an ROW authorization decision in November 2019, but it did not issue final approval allowing the developers to begin construction (a "Notice to Proceed") until July 2022, a 32-month delay.

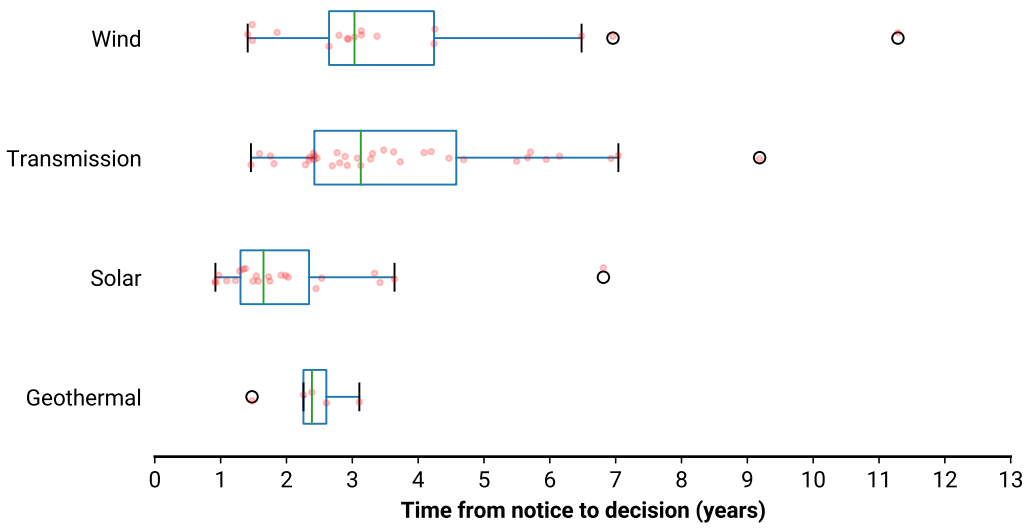
Other permitting requirements have been relatively less problematic, although they remain in need of streamlining reforms. These include Section 106 National Historic Preservation Act permits, Section 404 Clean Water Act permits, Environmental Assessments (EAs) under NEPA, and consultations with the U.S. Fish and Wildlife Service under the Endangered Species Act. All of these have a median time to completion of under two years.

Another way in which we analyze permitting priority is by project type. For this analysis, we use a 2020 database prepared by the White House Council on Environmental Quality (CEQ), covering EISs prepared during the period 2010-2018. In Figure 2, we plot the time from the Notice of Intent, issued when the federal agency begins EIS preparation, to the Record of Decision, which marks the conclusion of the initial EIS process. Here, we do not include other parts of the timeline, such as the time needed to prepare supplemental EISs. Note that the CEQ's database covers a wider sample of projects than the large projects included in the Permitting Dashboard dataset.

FIGURE 2

Time for EIS under NEPA

For renewable energy & electric transmission, from CEQ data for the period 2010-2018



Source : CEQ June 2020 Report

Notes : This data only covers federal EISs under NEPA for renewables & transmission, for which a record of decision was issued (n=80 projects)

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With median timelines of over three years to prepare an EIS, wind energy and transmission lines experience substantially longer delays than solar and geothermal energy projects, suggesting that permitting reforms should be targeted not just by permit type but by project type as well.

Developing a Balanced Policy Roadmap for Permitting Reform

Permitting delays have generated many proposals for reform, with varying likelihoods of efficacy and feasibility. In this section, we examine a few key proposals that have been under debate, summarize relevant evidence, and provide actionable options for implementation. We begin with five major options, including improved federal land planning with pre-designated low-sensitivity areas for renewables, the federalization of interstate transmission permitting, adequately funding and staffing permitting agencies, streamlining the permitting landscape for offshore wind, and increased funding for the existing federal permitting council to facilitate multi-agency coordination. We then provide more narrow options on NEPA reform: a narrow expansion of exclusions from NEPA review, time limits on review in pre-designated areas, and accelerated litigation for large clean energy projects. Due to a lack of supporting evidence, we caution against broader NEPA reforms without further study.

IMPROVED FEDERAL PLANNING, GENERAL PERMITTING, & PROGRAMMATIC REVIEW

The current paradigm for most federal permitting is reactive: Developers design and propose projects and apply for permits, then the federal government studies the environmental impacts of a proposed project and decides whether to issue a permit and, if so, on what terms. There is a range of tools available for the federal government to transition to a more proactive approach to planning, permitting, and reviewing clean energy infrastructure.

Environmental Sensitivity Mapping and Proactive Permitting

A proactive alternative model of government planning for clean energy, currently being rolled out across Europe, has the potential to speed up the entire permitting process.

The European Commission (EC) has released a specific plan for the proactive permitting of renewables, which could serve as a blueprint for U.S. efforts. The REPowerEU plan proposes the designation of "go-to" areas dedicated to renewable energy, which would be subject to streamlined permitting processes and shortened timelines. The Commission proposes to map environmental sensitivity across the EU and prioritize the lowest-sensitivity areas for inclusion as "go-to" areas. In these areas, individual projects for renewable energy would not need a dedicated environmental impact assessment if they comply with a set of specified rules.[1] Spain and Portugal have taken similar approaches.

Such mapping of environmental sensitivity is certainly feasible in the U.S. An existing resource to this end is the RE-Powering America's Land program of the EPA, which maps low-impact sites suitable for renewable energy development, including contaminated land, landfills, and mines. The Bipartisan Policy Center endorsed such a proactive model in 2021.

Further, a September 2022 report from the Nature Conservancy modeled a future net-zero energy system in the western U.S. and found that renewable energy development that avoided high conservation-value land, such as intact grasslands and crucial animal habitats, had "small impacts on energy supply portfolios and modest impacts on costs."[2] Such a planned approach, protecting high-value land, would increase costs just 3%,[3] while allowing for significantly streamlined permitting processes. Based on this report, the Nature Conservancy recommended spatially-explicit planning and streamlined permitting for low-conservation-value "Priority Energy Zones," analogous to the EU's renewables "go-to" areas.

Therefore, the U.S. could see a significant acceleration of permitting on federal lands by adopting such a planned approach based on proactive study and pre-designation of high- and low-sensitivity areas, building on the EPA's RE-Powering America's Land map and relaxing permitting rules in these areas. (Designated low-impact sites could be subject to EIS page and time limits, as discussed later in this article.)

Programmatic Review

Another important existing tool for the proactive study of environmental impacts is the Programmatic Environmental Impact Statement (PEIS) under NEPA. A PEIS is simply a generalized EIS, studying the effects of a broad type of project in a large area.

Typically, each major infrastructure project must have its own, detailed EIS. There is significant potential for the duplication of work between multiple EISs—consider, for example, multiple solar energy projects on nearby patches of desert. The analysis in the PEIS will in some respects need to be general because the exact location, size, and manner of operation of individual projects to implement the program are not yet known at the time of its adoption. Subsequent, project-specific EAs or EISs may be needed to supplement the information supplied in the programmatic review in light of modifications necessary for specific projects or the availability of new information. But those subsequent stage documents can be narrower than they would have been in the absence of a prior PEIS, and duplication of analysis generated during the programmatic review can be avoided.

Programmatic review is not a novel concept. As far back as 2007, the National Academies of Sciences, Engineering, and Medicine recommended that wind energy in particular be subject to programmatic review and anticipatory planning. In addition, CEQ issued guidance in 2014 that explained how agencies should use PEISs to accelerate and improve NEPA review. From 2009-2012, the Interior Department produced PEISs for wind, solar, and transmission on lands managed by the BLM.[4] The Biden administration has made important recent progress towards implementing PEISs, having announced plans to conduct a programmatic review of a region off the coast of New York and New Jersey for offshore wind development. Most recently, Senator Manchin's legislative proposal aims to enable programmatic review.

There is evidence that the PEIS strategy works to reduce permitting timelines. A 2022 study by John Ruple and co-authors noted that programmatic NEPA review helped one BLM office cut its average drilling permit decision time to just 49 days, as compared to 106-220 days at other offices.[5]

This strategy may add to initial additional work for agencies but yield substantial efficiency gains in the long run. It may also enable the streamlining of permitting on designated low-impact lands, mentioned earlier in this section. The expanded use of programmatic review across agencies, particularly for clean energy projects in promising and emerging areas such as offshore wind, is therefore likely to have a major accelerating effect on permitting timelines.

General Permit Programs

There are other opportunities to deploy programmatic review to streamline permitting in U.S. environmental law, such as through the expanded use of "general permits." Under a general permitting program, an agency such as the EPA or U.S. Army Corps of Engineers (USACE) specifies the conditions that make any regulated entity, such as a renewable energy project developer, eligible for a permit. Individual regulated entities that certify compliance with those conditions are then allowed to operate without the need to file an individual permit application (subject to agency oversight to ensure that the certification is accurate).[6] Such a general approach can significantly streamline the permitting process, as project developers need only ensure that they remain in compliance with the pre-specified conditions and do not need to wait for agencies to process and approve their permit applications.

An important opportunity for such general permitting is found under Section 404 of the Clean Water Act. Section 404 permits are commonly required for major clean energy projects, such as offshore wind or transmission lines, when they involve some dredge or fill discharge into a waterway; subsection 404(e) authorizes general permit-

ting.[7] The current USACE list of nationwide general permits under Section 404 covers land-based renewable energy projects, but it could be expanded further to speed up clean energy infrastructure permitting. For example, Robert Newell at the University of California, Berkeley argues that the USACE should introduce general permitting for transmission lines for offshore wind projects, which would significantly speed up permitting for offshore wind overall.

There are many other sectors where an increased general planning role for the federal government could help accelerate clean energy infrastructure permitting. In the case of offshore wind, for example, the current model of transmission infrastructure involves the "generator lead line" approach, where each project developer builds a separate line connecting a wind farm to the onshore grid. This model can be expensive and generate fresh local opposition at each onshore connection point; it can also "complicate landfall connections and transmission planning," according to a 2021 Congressional Research Service (CRS) report. An alternative approach would be to collect offshore wind farms into a planned "mesh" network, where multiple projects are connected to a smaller number of "hubs" or transmission backbones. Such an approach would require a more involved governmental planning role, but it could substantially reduce costs and environmental impacts. There is new funding available to explore and move towards the implementation of such an approach: The Inflation Reduction Act has allocated $100 million for analysis of the transmission system, including the study of an interconnected, planned national grid and an optimized offshore wind farm interconnection system.

ACTIONABLE POLICY OPTION:

A **significant expansion of federal planning, general permitting, and programmatic review** would accelerate the permitting process for clean energy infrastructure in the long term. Under such a program, Congress could **direct federal land-management agencies to prepare national-level maps of environmental sensitivity**, with corresponding pre-designated "go-to areas" for renewable energy projects in areas of lowest environmental sensitivity.

Congress could also direct federal land-management agencies to **prepare programmatic environmental impact statement reports** for low-sensitivity areas with high potential for renewable energy infrastructure, and if it does so, it should appropriate sufficient funding for these mapping and reviewing functions. Furthermore, the U.S. Army Corps of Engineers could **expand Clean Water Act Section 404 general permitting** to include offshore wind transmission line construction.

CENTRALIZED TRANSMISSION PERMIT AUTHORITY

As explained in our previous article, interstate electric transmission projects are critical to enable a rapid build-out of renewable energy generation and to achieve the Biden administration's climate goals. These projects need approval from state-level authorities in addition to the wide range of federal permits and environmental reviews that large projects demand. Multiple transmission lines have been blocked or slowed in recent years due to opposition by state legislators or state public utility commissions. By contrast, interstate natural gas pipelines permits are handled at the federal level and have historically taken far less time to process. In this section, we argue that electric transmission lines are critical, national-level public goods and should benefit from the federalization of permitting authority, similar to gas pipelines.

There have been major recent examples of the state-level hurdles that interstate transmission lines face. The Grain Belt Express transmission line through Missouri was initially rejected by the state Public Service Commission in 2015. Even after it was eventually approved in 2019 and granted the power of eminent domain, the state legislature has repeatedly attempted to limit or eliminate that power, which would kill the project. The New Hampshire Site Evaluation Committee denied an application for the proposed Northern Pass transmission project in 2018. The Rock Island Clean Line through Iowa was stalled when the state legislature made eminent domain land acquisition for transmission much more difficult. The Plains and Eastern Clean Line was delayed when, in 2011, the Arkansas Public Service Commission denied its application to be considered a "public utility."

One major factor in the state-level opposition to these interstate transmission lines is the geographical distribution of their costs and benefits. These projects are public goods, often benefiting a large but diffuse set of customers across a region. Transmission lines make it easier for clean electricity to flow from where it is generated to where it is needed, thereby accelerating decarbonization and making the power grid more resilient, efficient, and economically productive. The benefits, therefore, are typically not confined to a single state.

The costs of interstate transmission construction, by contrast, are borne within the states where they are located, primarily by the small group of landowners who are forced to sell their property so that transmission lines may be constructed (albeit with payment of just compensation to those landowners).[8] Nearby communities and landowners may also face aesthetic costs of large powerlines passing by their homes or farms. Often, an interstate transmission line may be intended to deliver power from (for example) Quebec to Massachusetts, but to do so it must pass through Maine on the way, dropping off only a small amount of electricity in Maine and therefore giving the state little incentive to approve the line. In general, states that fall within the path of electric transmission lines that would not be either the primary exporter or importer of power through a line experience large costs (to landowners whose property is taken through eminent domain proceedings) but enjoy few benefits as electricity consumers.

When approving transmission lines and other public infrastructure, state public utility commissions must balance public benefits against the need to force unwilling landowners to relinquish title. Due to the distribution of costs and benefits outlined above, transmission line projects are often very unpopular in these "pass-through states." Thus these permits are often rejected by authorities in these states, despite being net-beneficial for the U.S. overall.

Federalizing permitting authority for interstate transmission lines is crucial to enable a national-level cost-benefit analysis of these projects. FERC makes the same kinds of tradeoffs for interstate natural gas pipelines, comparing the public benefits and the private costs at the national level, allowing the construction of natural gas pipelines that benefit the U.S. overall.

Given the urgency of building new transmission lines to meet the Biden administration's climate goals and achieve a clean energy transition, many, including Senator Manchin, have proposed federalizing transmission line permitting authority. Under Senator Manchin's original proposal, FERC, not state utility commissions, would be the designated permitting authority for interstate transmission lines deemed to be "in the national interest." Another recent proposal, the SITE Act from Senator Sheldon Whitehouse (D-RI), would similarly give FERC "exclusive jurisdiction" to plan, site, and issue permits for essentially all large interstate transmission projects.

Importantly, these proposals would not create entirely new federal authority. First, FERC already has similar authority for interstate natural gas pipelines, which was granted by the Natural Gas Act of 1938. Second, FERC was granted "backstop siting authority" for transmission lines in 2005, which was subsequently restricted by the courts and then re-established in the IIJA of 2021. (This "backstop" authority gives FERC siting authority when states deny or delay transmission permits, although it has never been used so far.[9]) The proposals to give FERC exclusive permitting authority for interstate transmission lines would therefore build on these existing authorities.[10]

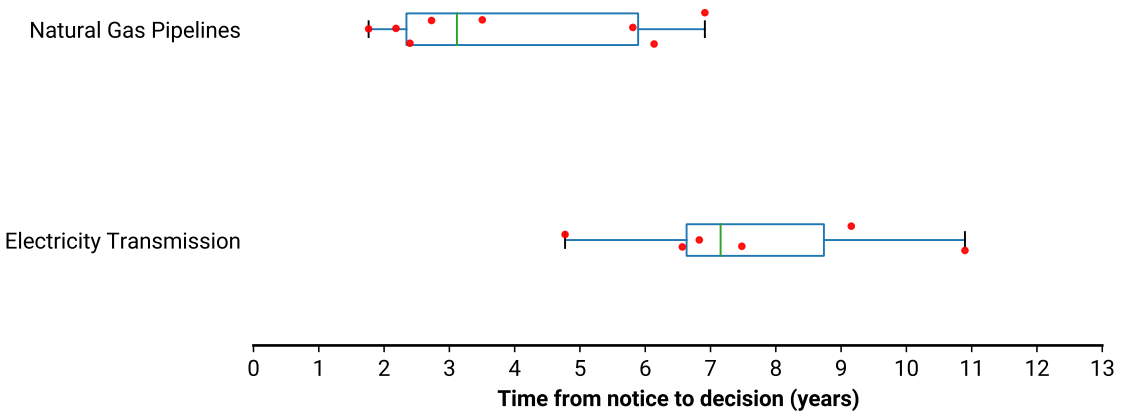
The existing federalized permitting regime for natural gas pipelines suggests that interstate transmission may benefit from the federalization of permitting authority. Data from the Permitting Dashboard covering eight natural gas pipelines and six transmission lines, shown below in Figure 3, shows that permitting for the pipelines took a median of a little over three years, while the transmission lines took a median of over seven years.[11]

While there may be confounding factors explaining this difference in permitting timelines, experts including the FERC Chairman and legal scholars, such as Richard Pierce at Columbia University, Alexandra Klass at the University of Michigan, and Elizabeth Wilson at Dart-

FIGURE 3

Time Taken for Federal Permit Review

For completed transmission & natural gas pipeline projects on Federal Permitting Dashboard, as of 9/23/2022



Source : Federal Permitting Dashboard

Notes : This data only covers federal permitting for certain large, complex projects (n=14 projects) that are tracked on the Federal Permitting Dashboard.

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mouth College agree that federal pre-emption of state authority has been a boon for natural gas pipelines and would similarly accelerate interstate transmission permitting.

Nevertheless, James Coleman, Professor of Law at Southern Methodist University, points out that even if federal siting authority analogous to FERC's authority over natural gas pipelines were extended to transmission, states and other opponents could still slow projects down. Federalizing transmission siting, however, would erode the ability of local and state authorities to block transmission line projects. As noted earlier, interstate transmission lines that aim to connect areas in which clean energy is produced with large electricity consumption markets may run through a state without delivering much power locally. This criticism was levelled at the Grain Belt Express project, which proposed to connect Kansas to Illinois and Indiana by going through Missouri. Similar criticism was directed at the New England Clean Energy Connect, which would have connected hydropower in Quebec to consumers in Massachusetts by going through Maine. In the states that are just being "passed through," like Missouri and Maine in the above cases, land acquisition (especially through eminent domain) can be extremely unpopular, and federalizing permitting authority may exacerbate concerns that local needs are being sacrificed without a corresponding allocation of a share of project benefits to the affected states.

Local criticisms of such projects, however, may force concessions from developers that ensure positive outcomes for communities in the path of such projects. For example, the Grain Belt Express developers responded to local opposition by substantially increasing the proportion of transmission capacity dedicated to Missouri, while increasing overall proposed capacity.

A future federal transmission authority expansion, then, could ensure that when long-distance transmission lines aim to connect major power production locations with major consumer markets, the communities that such lines pass through are adequately safeguarded. In addition to compensation awarded to the owners of land in the path of the transmission lines, local communities could be compensated through additional allocation of power distribution. Increasing the local spillover benefits of transmission projects could help secure critical buy-in from affected communities, reducing the

chances of obstructionist political action or litigation by state and local governments. Residents may benefit from cleaner, cheaper, and more reliable electricity, while local industry may benefit from increased productivity due to lower costs of purchasing electricity.

ACTIONABLE POLICY OPTION:

Siting authority for all interstate transmission lines could be federalized with the Federal Energy Regulatory Commission (FERC). Interstate transmission lines are critical for decarbonization of the U.S., with national benefits but local costs, that are frequently rejected by state authorities. Natural gas pipelines have similar cost-benefit tradeoffs, but they are permitted much faster due to FERC's existing siting authority over them. Expanding FERC's partial, pre-existing backstop authority over transmission lines to complete siting authority is therefore a step with precedent and high expected benefits.

FERC could also ensure that interstate transmission lines allocate a fair fraction of their capacity to the states and communities through which they pass, thereby increasing local support for transmission and more equitably distributing its benefits.

CAPACITY ASSESSMENT AND FUNDING FOR PERMIT-AGENCY STAFFING

The time it takes for a federal agency to study an issue or decide upon a permit is constrained by the resources available to it. These resources include staff as well as technology and funding. Many studies of the permitting process have found that federal agencies are chronically under-resourced, which slows down NEPA reviews and other aspects of the permitting process. A 2003 interview-based study of 12 federal agencies reported that increasing NEPA workloads and declining staff and budget resources were a common problem.[12] In 2016, the Government Accountability Office (GAO) found that workforce shortages created permitting delays in the Bureau of Indian Affairs in the Department of the Interior.

Another revealing example of the adverse effects of agency resource shortages involves the U.S. Forest Service (USFS), which faced high wildfire suppression costs that were not fully reimbursed by Congress. In 2001, the agency began transferring funds from other management areas to cover firefighting expenses.[13] Subsequent reports from the GAO and CRS found that, for the next two decades, this transfer of funds significantly disrupted the USFS's ability to conduct NEPA reviews, as budget and personnel shortages meant that it was unable to plan, review, or issue permits in a timely fashion.

Further examples abound across the federal government. The Norfolk district office of the USACE reported in 2021 that it was experiencing a project backlog due to "increased workload and reduced staffing levels." Virginia's congressional delegation noted that this backlog had caused substantial permit and review delays. Despite being the primary agency charged with overseeing NEPA compliance across the federal government, CEQ is generally considered understaffed and overworked. The Bureau of Ocean Energy Management (BOEM), the agency in charge of permitting offshore wind projects, has been stretched thin in recent years and, according to project developers, does not have the resources to handle permits for more than five projects at a time. Indeed, BOEM's most recent budget request sought $6.8 million in additional funding and 41 additional full-time employees to help manage the agency's increased workload in conducting permitting processes for offshore wind.

In addition to staffing constraints, a 1997 CEQ study found that training for agency officials was often inadequate, potentially further slowing the NEPA process. Beyond hiring and retaining workers, quick federal permitting depends on ensuring that they have adequate training, skills, and access to technology.

The IRA makes some progress in this direction, as it provides funding to a range of different federal agencies for permitting, including for PEIS reviews, staff, and technology upgrades. Of the $665 million made available for these purposes, the IRA directed $150 million to the Department of the Interior (which includes the

BLM and the BOEM, among other resource management agencies), $125 million to the Department of Energy, $100 million to FERC, and $40 million to the EPA.

ACTIONABLE POLICY OPTION:

The Biden administration **could conduct a staff capacity, funding, and technology needs assessment** across agencies involved with critical permitting for clean energy. If the assessment finds substantial gaps, Congress could appropriate funds to increase resources available to these agencies, earmarking them for permitting capacity.

STREAMLINING PERMITTING FOR OFFSHORE WIND

As noted in an earlier section of this article, wind energy projects face very long permitting timelines. Offshore wind in particular, as a relatively new development in the U.S. and an energy source subject to an especially large number of permitting requirements, demands special attention for permitting reform. Indeed, the Biden administration has set a target of 30 gigawatts (GW) installed by 2030. There is nearly 30 GW of offshore wind in the planning and permitting pipeline, but just under 1 GW of capacity currently permitted,[14] demonstrating a clear need to accelerate offshore wind permitting.

One important permit required for offshore wind projects is an Outer Continental Shelf (OCS) Air Permit under the Clean Air Act. The EPA administers this permit program. The OCS Air Permit process was initially designed for, and historically has been principally used in connection with, offshore oil and gas platforms. However, in 2021, the EPA determined that Vineyard Wind off Massachusetts was a "major source of air pollution," ushering in a new regulatory regime for offshore wind.

Drawing on the Permitting Dashboard, which includes 12 current and planned offshore wind projects, OCS Air Permits are expected to take an average of over two years from application to issuance. The past and projected timelines for these permits are shown in Figure 4.

The OCS Air Permit covers relatively minor sources of air pollution, such as diesel backup generators to cool sensitive electronics inside the turbines and emissions from construction boats.

Offshore wind is a relatively minor source of air pollution, however. For example, Vineyard Wind is projected to emit 70 tons of nitrogen oxides (NOx) annually, a smog-producing air pollutant, for its entire 30-year operational period (for a total of 2,100 tons) and 5,000 tons over the construction period of two years, for a total of 7,100 tons of NOx over 30 years. By contrast, for one particular set of offshore oil and gas lease sales by BOEM off the Texas coast, the EIS projected over 1.2 million tons of NOx emissions over 40 years.[15]

Overall, the BOEM's 2017 Emissions Inventory for the Gulf of Mexico reported over 80,000 tons of annual NOx emissions from oil & gas activities on the OCS.[16] By comparison, the BOEM reported projected construction emissions of just over 42,000 tons of NOx and annual operational emissions of just over 2,200 tons for wind projects off the Massachusetts and Rhode Island coasts.[17] These comparisons show that offshore wind is far less polluting than fossil fuel production, before even factoring in the sizeable avoided air pollution that a supply of renewable energy entails.[18]

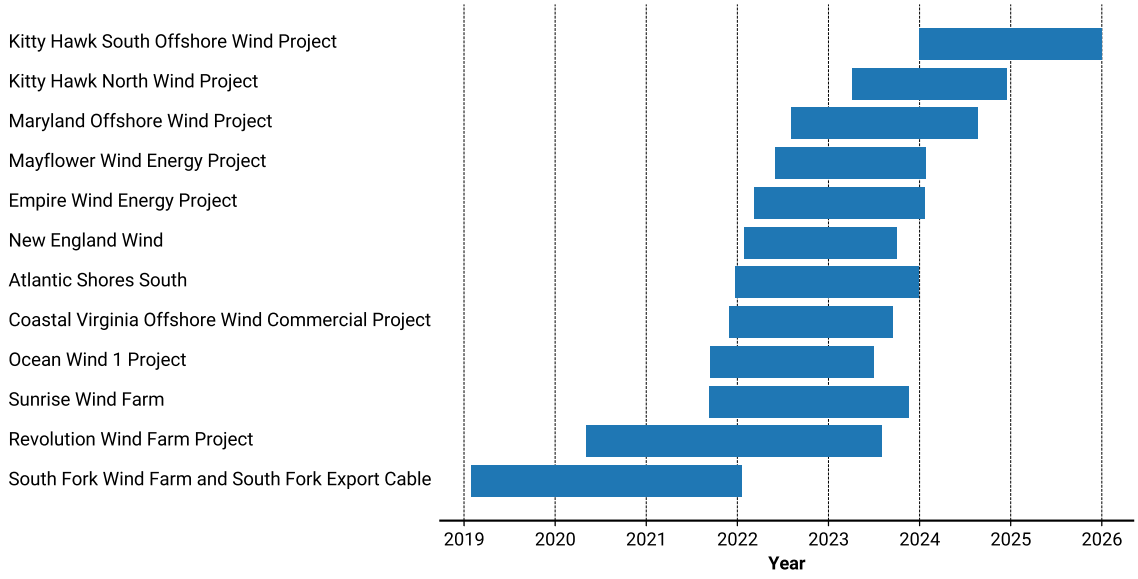
Despite the relatively low air pollution emissions from offshore wind as compared to oil and gas drilling, air pollution from fossil fuel production in the Gulf of Mexico and off the North Shore of Alaska is regulated by the BOEM, not the EPA, and offshore oil and gas operations are subject to far less stringent air quality requirements than those applied by the EPA to offshore wind projects.

Given the relatively limited effects of offshore wind on air quality and the significant benefits that clean wind power can provide through the displacement of fossil fuels, initial jurisdiction over offshore wind Clean Air Act permitting could be moved from the EPA to the BOEM. One way this could work would be to incorporate an air quality section in the Construction and Operations Plan (COP). As the name suggests, the COP details the plans for construction and operation of an offshore wind project, which wind developers are already required to submit to the BOEM for approval. Under our proposal,

FIGURE 4

Timelines for OCS Air Permit for Offshore Wind

For all offshore wind projects on Federal Permitting Dashboard, as of 9/23/2022



Source : Federal Permitting Dashboard

Center on Regulation and Markets at BROOKINGS

developers would assess and submit their plans for air pollutant emissions and management within the COP, which the BOEM could then approve, modify, or reject. The BOEM would also study air quality effects under the EIS for each project.

This proposal would reduce the number of agencies involved in the permit approval process, eliminate the EPA's multi-year permitting process for offshore wind, and bring offshore wind onto comparable footing with offshore fossil fuel extraction projects.

As a safeguard layer, EPA could retain discretionary authority to review the BOEM's air quality permit decisions. The day-to-day permitting process for offshore wind would be handled by the BOEM, but the EPA could step in to review individual cases if it felt the BOEM had made a significant error. This structure could mirror Section 404 permitting under the Clean Water Act, where the USACE administers the day-to-day program and specific permit decisions while the EPA retains broad guidance, comment, and review authority.[19]

Further, other legislative updates would also help bring offshore wind on par with offshore oil and gas. For example, the Center for American Progress recommends that the OCSLA should be amended to require that BOEM prepare five-year plans for offshore wind, as the statute currently mandates for oil and gas projects. In addition, the OCSLA addresses offshore wind almost as an afterthought, with its main focus being on offshore oil and gas operations. The Ocean Conservancy therefore recommends that a separate title for offshore wind be created under the OCLSA which addresses the permitting needs and leasing process for offshore wind projects.

ACTIONABLE POLICY OPTION:

Congress could transfer initial authority for Clean Air Act permitting for offshore wind from the Environmental Protection Agency (EPA) to the Bureau of Ocean Energy Management (BOEM) within the Department of the Interior. Such a step would help shorten a part of the permitting timeline for offshore wind and bring it on

fairer footing with the treatment of Clean Air Act permitting for offshore fossil fuel production, an industry that generates much more pollution.

Congress **could also create a separate legislative title for offshore wind** under the Outer Continental Shelf Lands Act (OCSLA), thereby improving planning, permitting, and leasing processes.

MULTI-AGENCY COORDINATION

Inter-agency coordination problems are an important contributor to permitting delays. The largest, most complex clean energy infrastructure projects typically require permits from and consultations with multiple federal agencies. To illustrate this fact, we present in Figure 5 data from the Federal Permitting Dashboard and filter only for completed renewable energy generation and electric transmission projects.[20] The data show that every covered project required at least two to four agencies to coordinate, with six projects requiring five to seven agencies. On the upper end, the South Fork Wind project required nine different federal agencies to sign off.

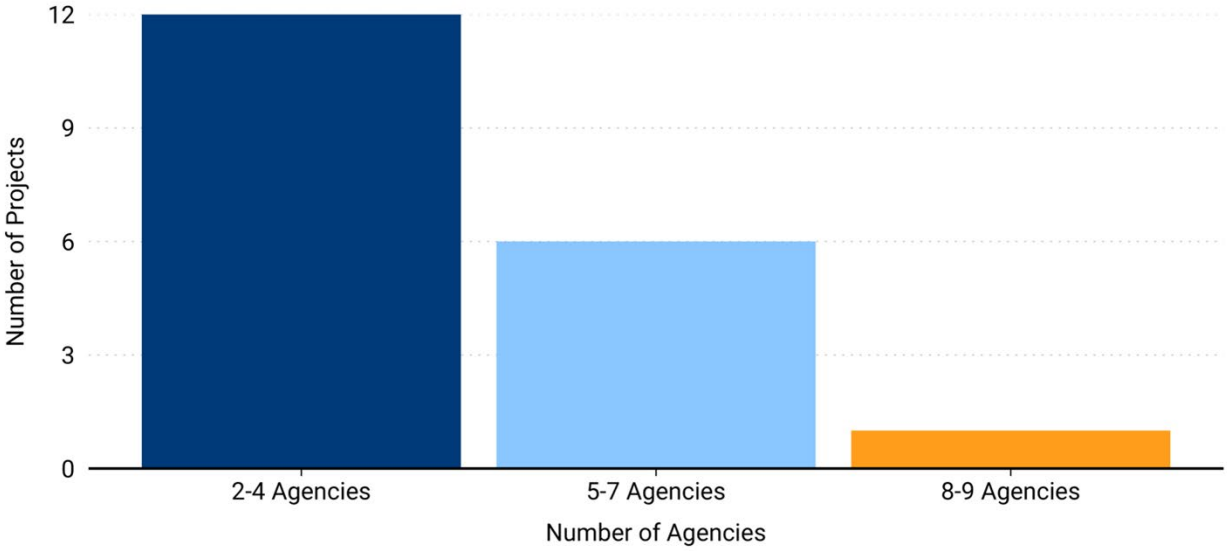
The most important problems in inter-agency collaboration were identified years ago, and substantially streamlined for a subset of large projects under the Federal Permitting Improvement Steering Council (FPISC). David Hayes of Stanford Law School has argued that many NEPA review delays came about because of a linear approach to multi-agency EISs.[21] One agency would be designated as the "lead" agency and be the entity primarily responsible for driving the project through the entire permitting and review process. Other "cooperating" agencies may only become involved late in the process. These cooperating agencies may have critical comments or flag important issues, but if they are not involved early in the process, precious time is lost as the project is modified later on to incorporate changes that respond to their comments. Hayes also explained that the EIS may not adequately cover the issues within the jurisdiction of the cooperating agencies and that a linear approach may result in the duplication of work across agencies.

An important recommendation Hayes made to resolve these issues was the creation of the FPISC. Hayes proposed that, under a coordinated process headed by the

FIGURE 5

Number of Agencies Involved in Project Permitting

For completed renewable energy and electric transmission projects on Federal Permitting Dashboard, as of 9/23/2022



Source: Federal Permitting Dashboard

FPISC, all "agencies with a stake in reviewing major projects come to the table early, and in a meaningful way."[22]

The FPISC was created by Congress in 2015 and is composed of federal agencies and White House offices relevant to permitting. Projects worth over $200 million and falling under one of 18 major categories, including renewable energy production and transmission, can be "covered" by the FPISC. The FPISC facilitates multi-agency coordination and strives for transparency in the permitting timeline by maintaining a public dashboard updated with permit process milestones. In practice, coordination between agencies involves the development of standardized workflows and protocols, establishing lines of communication between agencies, and the early identification of issues across agencies.

The GAO in 2018 promoted enhanced inter-agency coordination, arguing that designation of a lead coordinating agency and execution of interagency cooperation agreements could result in more efficient permitting processes. A 2021 report by the Bipartisan Policy Center agreed, arguing that for each project, a lead agency should be designated to coordinate simultaneous permitting review by all affected agencies. It is important to note that these recommendations have already been implemented for the limited subset of projects covered by Title 41 of the Fixing America's Surface Transportation Act (FAST-41), which improves inter-agency coordination for major projects. Expanding this coordinating process to cover *all* clean energy projects that demand multi-agency permitting is likely to make the overall process more efficient. Among other things, inter-agency coordination allows for the pooling of resources and expertise, information sharing, and harmonization of approaches. Designating a lead agency to oversee the efforts of all participating agencies also enhances accountability.[23]

Indeed, evidence suggests that the FAST-41 program is effective. The FAST-41 report for the 2020 fiscal year concluded that the coordinated permitting process saved nearly two years on average for EIS completion time, taking 45% off the average of 4.5 years from 2010-2018.

A promising strategy for accelerating permitting timelines would be to apply the provisions of FAST-41 to mandate a coordinated permitting process for more clean energy infrastructure projects. At present, while the majority of active FAST-41 projects are already in the renewable energy and electric transmission sectors, only large projects worth over $200 million are ordinarily eligible. Indeed, one of the provisions in Senator Manchin's draft permitting reform legislation would reduce the minimum project size for energy infrastructure from $200 million to $50 million, and thereby enable many more energy projects to benefit from FPISC oversight. Some funding for such an expansion already exists—the Inflation Reduction Act gave the FPISC $350 million over ten years, which is more than three times its existing annual budget. In concert, these moves have the potential to significantly accelerate permitting for large and mid-sized clean energy infrastructure projects.

ACTIONABLE POLICY OPTION:

Congress could **support multi-agency coordination by allocating additional funding to the Federal Permitting Improvement Steering Council (FPISC)**, and by expanding its scope to cover mid-sized as well as large clean energy projects. Further, all agencies could adopt the process of lead agency coordination of multi-agency reviews created by Title 41 of the Fixing America's Surface Transportation Act (FAST-41).

NEPA REFORM

NEPA is perhaps the most frequent target for critics of the federal permitting process, and consequently is a frequent target for reform efforts, as we discuss in our previous article. NEPA was a part of a wave of environmental laws that followed the environmental movement of the 1960s including the Clean Air Act, Clean Water Act, and Endangered Species Act. According to Nicholas Yost at the Environmental Law Institute, NEPA was intended to be an "action-forcing" mechanism that requires agencies who might otherwise be inclined to ignore the environmental consequences of their decisions to give them serious consideration. It mandates that federal agencies take a "hard look" at the environ-

mental impacts of any significant actions they take and consider reasonable alternatives, although it does not impose any substantive mandates on federal agencies.

Despite all the attention on NEPA reviews, it is not clear that it is necessarily the primary bottleneck in federal infrastructure permitting. Multiple independent studies have found that other factors such as funding or local opposition are more often to blame. A Congressional Research Service (CRS) report from 2011 states that "there is little data available to demonstrate that NEPA currently plays a significant role in delaying federal actions" and that "factors 'outside the NEPA process' were identified as the cause of delay between 68% and 84% of the time." A University of Utah study of more than 41,000 NEPA decisions suggested that only 25% of the variation in NEPA timelines could be explained by NEPA-specific factors, such as the level of project analysis, indicating that "most often, there are factors outside of NEPA that cause these delays." Further, according to a CRS report from 2012 and a CRS memorandum from 2017, delays in federal infrastructure projects are more often tied to project-specific factors, such as funding, complexity, or local opposition, than NEPA compliance.

There are also good reasons to proceed with caution when reforming NEPA. For example, NEPA defenders point to potential cost savings from NEPA reviews that help avoid environmental damage, identify cheaper and less-harmful project alternatives, and facilitate multi-agency action. Before NEPA, major infrastructure projects often proceeded without environmental study and led to serious damages, sometimes necessitating expensive remediation. For example, the pre-NEPA diversion of Florida's Kissimmee River in the 1960s created "monumental environmental destruction,"[24] with restoration taking over two decades and costing nearly $600 million. NEPA's requirements help make potential damages from such projects transparent to policymakers and the public. Jim Murphy at the National Wildlife Federation has argued that NEPA has actually saved taxpayers hundreds of millions of dollars because it has helped identify cheaper, more environmentally sound project configurations. Similarly, the Environmental Law Institute and the Natural Resources Defense Council list sets of projects in which NEPA review and public comments led agencies to less environmentally harmful project alternatives, reducing ecological damage. NEPA's framework may also help speed some permitting actions, as an umbrella "structure" to coordinate multi-agency action and facilitate compliance with other environmental laws. For example, a natural experiment of Endangered Species Act rules found that those that went through the NEPA review process were actually completed three months *sooner* than those did not. Therefore, any NEPA reform effort should undergo significant advance study to ensure it outweighs NEPA's existing benefits.

With these caveats in mind, there are some evident areas in which narrow, targeted NEPA reforms would be appropriate. Although the NEPA process frequently induces agencies to modify project designs or choose alternative means of achieving their goals in ways that reduce environmental damage, the process can be abused by those opposed to agency projects for reasons having nothing to do with their desire to minimize environmental harms. In such cases, project opponents deploy NEPA litigation as an obstructionist tactic, as has been suggested in the case of the president of solar power developer Allco Renewables bringing a NEPA suit against an offshore wind project. The original lawsuit included complaints against the loss of his "recreational" and "aesthetic" benefits from the wildlife and waterways around the project as well as a "significant decrease in solar energy investment that would otherwise occur," among others.[25] Professor Oliver Houck of Tulane Law School noted, although that NEPA was enacted to protect public environmental interests, "the statute is routinely used by non-environmental interests to challenge, through the impact statement process, projects and proposals that they oppose."[26]

Thus, NEPA reviews can create delays and add to the expense of clean energy infrastructure projects, and NEPA litigation has sometimes been prompted by the private interests of litigants that do not necessarily correspond to the broader public interest, suggesting that legislative reforms may be desirable. We therefore consider three sets of narrow NEPA reform options: an expansion of clean energy "categorical exclusions" from further review, enforceable time limits for projects in pre-designated low-sensitivity areas, and expedited judicial review for clean energy EISs.

However, broader NEPA reform proposals should be treated with caution. As we have argued above, the delays and economic harms attributed to NEPA may be overstated and may not outweigh the considerable environmental benefits it generates. Excessively weakening NEPA could lead to unexpected ecological damage, as agencies miss out on cheaper or less environmentally harmful project designs that would be revealed by the review and public comment process. It could also lead to slower permitting in some cases, as agencies have to comply with all other existing environmental laws but would lack NEPA's organizing framework.

Categorical Exclusion Expansion

One way environmental review may be largely bypassed under NEPA is in the case of projects that fall under "categorical exclusions" (CEs), which are lists of federal actions that have little environmental impact and are largely exempt from NEPA environmental review processes. The CEQ, the agency in charge of overseeing NEPA compliance by all other federal agencies, defines a CE as "a category of actions that [an] agency has determined ... normally do not have a significant effect on the environment."[27]

CEs typically cover routine maintenance, paperwork, emergency actions, and similar obviously non-controversial and environmentally negligible classes of actions. CEs can also cover small-scale projects that, in the view of the concerned agencies, will not have "significant" effects on the environment.[28] In the case of renewable energy, for example, the Department of Energy (DOE) grants CEs to rooftop solar and small wind projects, subject to certain conditions. The provision that projects must not have "significant" environmental impacts applies not just to each individual project but to the cumulative effect of all covered projects.

Proposals for NEPA reform, such as Senator Manchin's draft legislation, have called for agencies to expand the kinds of agency actions to which CEs apply. In certain limited cases, a careful expansion of CEs may be warranted. The Bipartisan Policy Center (BPC) issued a list of recommendations on the expansion of CEs in September 2022 and suggested that agencies should share CEs, especially for decarbonization-relevant activities. The BPC proposed that existing CEs adopted by one agency should be adopted by other agencies. BPC also suggests the identification of new cross-agency CEs, prioritizing projects with climate benefits and without significant detrimental environmental impacts.[29] Such a limited expansion of CEs, targeted to clean energy infrastructure, is likely to be quite helpful in accelerating permitting for a small class of projects.

However, further efforts to expand the list of CEs should proceed with similar caution and narrow scope. As the BPC has acknowledged, CEs are not a permitting panacea, and are not likely to be suitable for the large, complex projects that are most likely to be held up by permitting challenges. Indeed, a large transmission line or renewable generation project is precisely the kind of action to which the full-blown NEPA evaluation was designed to apply. Exempting such a project from the obligation to prepare either an EA or an EIS excuses the agency proposing it from engaging in the fact-finding process with multiple important benefits: it helps reveal adverse environmental effects and gives the agency the opportunity to build in mitigation measures or identify alternatives so that unintended or unnecessary environmental harms can be avoided.

Overly aggressive CE expansion may be counterproductive. Indeed, large-scale expansion of existing categories of CEs may not be necessary. The GAO and a study of U.S. Forest Service NEPA reviews found that the vast majority (81%-95%) of federal actions covered by NEPA are already classified as CEs. Further, forcing larger projects into lower levels of analysis may actually *increase* NEPA compliance time or may increase the potential delay risk from litigation.

These findings suggest that expansion of CEs should be undertaken with caution. Narrow CE expansions such as those suggested by the BPC are likely to be beneficial. However, instead of broader CE expansion that would lead to moving projects around to inappropriate levels of environmental review, Congress could focus on improving the process for *every* level of environmental review. With other reforms laid out in this article, such as increased staffing and better multi-agency coordination, we expect shortened timelines for projects ranging from CEs to EISs.

Time & Page Limits

A similar and closely related approach to accelerating federal permitting is to directly limit the time that may be spent on and the pages that may be devoted to environmental reviews. Combined with improved federal planning and pre-designation of low-sensitivity areas for renewable energy, targeted time limits may accelerate permitting in some cases, although further study and caution are warranted before proceeding with broader time limits.

The European Union (EU) has embraced permitting time limits in certain cases, which can be a good model for U.S. reforms. Building on a 2018 renewable energy directive, which recommended a one-year time limit on small projects and a two-year limit on larger ones,[30] a proposed 2022 EU directive would set even more ambitious timelines for renewable energy projects. For example, permits to "repower" existing renewables projects should take one year or less, and permits for solar energy on artificial structures should take under three months.[31]

A striking feature of some of these European time limits is the recommendation that if an authority does not reply to a permit request in time, the administrative silence should result in the acceptance of the request by default.[32] This automatic approval applies only to pre-designated "renewables go-to areas," which have been mapped out in advance and have limited environmental sensitivity. In this limited context, where the environmental impacts of projects have been anticipated and determined to be minimal in certain areas, an automatic deadline-based permit approval is a plausible way to pressure agencies into completing their review processes on a timely basis. If they exceed the applicable limits, they forfeit the opportunity to provide input and impose conditions on the project (although judicial review remains as a safeguard). Earlier in this article, we argued that an expanded role for the federal government in land planning, programmatic review, and pre-approval would speed up clean energy permitting. In conjunction with such an expanded role, environmental review time limits for pre-designated low-sensitivity areas could be a complementary accelerating reform.

Several recent policy efforts in the U.S. have also attempted to establish time limits on environmental reviews. President Trump issued an executive order establishing a goal of completing major NEPA reviews within two years. In revising its NEPA regulations in 2020, CEQ stated that agencies must complete EAs within a year and EISs within two years, unless a senior agency official of the lead agency approves a longer period in writing. (To date, the Biden administration has not modified or repealed these provisions, although it is in the process of undergoing a comprehensive review of the 2020 regulations.) The bipartisan IIJA directed agencies to develop schedules for major environmental reviews such that the process takes no more than two years. Senator Manchin's proposed legislation for permitting reform would also codify a requirement that, to the maximum extent practicable, schedules for major project EISs and EAs take an average of two years and one year, respectively. In addition to time limits, page limits are seen as a way of limiting the burden of NEPA review. CEQ's 2020 regulations, for example, cap the text of an EIS at 150 pages (300 pages for proposals of unusual scope or complexity). The IIJA limits EISs on projects covered by that legislation to 200 pages. It is important to note, however, that all these efforts involve constraints on goals and schedules only, and there is no evidence yet to suggest that they are rigidly enforced.

In the case of these broader time limits in the U.S. context, we recommend caution and further study due to their potential unintended consequences. On one hand, time and page limits may force reviewing agencies to work more efficiently. Jamie Pleune at the University of Utah has argued that time limits may increase agency accountability as long as they are flexible enough to provide "escape hatches" for unforeseen circumstances or justifiable, unavoidable delays. However, it is unclear that agencies would actually be able to comply with time limit targets, especially if the only consequence of missing the target is a requirement to notify federal agency and Congressional officials. Further, time limits could cause shorter NEPA review preparation times to be offset by increased litigation time. A 2019 analysis of NEPA litigation from the University of Utah found that time spent on EIS preparation appeared to be inversely correlated to the likelihood of the EIS being challenged in court. While this study had a small sample size of

agencies and did not establish that higher NEPA lawsuit rates are *caused* by shorter EIS preparation times, it suggests that hastily prepared reviews may not satisfy NEPA's legal requirements.

Therefore, following the EU's example, time limits with automatic approvals for enforcement can be a great tool in low-environmental-sensitivity zones. Broader time or page limits might not meaningfully shorten clean energy permitting timelines however, and they may actually lengthen them by reducing the quality of work and thereby increasing the likelihood of litigation. Therefore, better targeting and further study is warranted before the imposition of broader NEPA time or page limits.

Litigation Limitations

Litigation may cause a significant delay in federal permitting, often as a result of lawsuits challenging agency NEPA reviews. An analysis of nearly 1,500 NEPA lawsuits from 2001-2013 by John Ruple and Kayla Race from the University of Utah found that an average of 115 cases were filed each year.[33] David Adelman and Robert Glicksman found that, during the George W. Bush administration, NEPA litigation in district courts took a median of two years.[34] Further, in addition to causing direct delays, the CRS noted in 2011 that the threat of litigation forces agencies to prepare "litigation-proof" NEPA reviews, a major factor in the long timeframe and page counts of EISs in recent years. Reducing NEPA litigation may thus have the combined effect of shortening EIS preparation time and reducing litigation delays.

James Coleman has proposed a promising modification to the NEPA litigation process, suggesting that legal challenges to NEPA reviews of all energy projects, including renewables and transmission, be expedited by skipping federal district court review and channeling NEPA challenges directly to the Court of Appeals for the D.C. Circuit. Congress could implement this proposal exclusively for challenges involving the preparation or adequacy of an EIS for a solar, wind, or transmission project, to speed up the litigation timelines for such projects.

We focus on expediting challenges for EISs only, since large, prominent clean energy projects are the most likely to require them, and Adelman and Glicksman find that about a quarter of EISs produced are challenged in court.[35] These are relatively high rates of litigation, which can be quite time-consuming. Further, given the relatively small number of cases (under 30 annually, on average) in question, fast-tracking of litigation over EISs is feasible.

Such a step recognizes the importance of clean energy infrastructure and would accelerate lawsuit timelines, skipping over a district court stage without eliminating the accountability checks that judicial review provides. It may also have the added benefit of concentrating environmental review expertise in one court, potentially yielding longer-term improvements in the speed and quality of NEPA lawsuit evaluation. It would additionally put clean energy infrastructure on the same footing as natural gas pipelines, as Coleman notes.

This approach would largely confine judicial review to the administrative record compiled during the NEPA process, eliminating opportunities to supplement that record with Freedom of Information Act requests and discovery. These are tools that can assist project opponents in identifying environmentally problematic aspects of a project that the sponsoring agency would prefer to remain hidden. With that caveat in mind, such a judicial expediting remains a promising NEPA reform for clean energy infrastructure.

Scholars and policymakers have proposed alternative ways to curtail NEPA litigation. Senator Manchin's draft legislation calls for a drastically shortened statute of limitations, limiting the time for filing a legal challenge to a NEPA review. James Coleman argues in favor of a different, more stringent form of judicial time limit under which a project that exceeds a time limit for federal review would be exempt from court challenges.[36]

However, these proposals come with potentially serious challenges, and the adoption of shorter statutes of limitations may be a permitting reform cure in search of a problem. The arrangement that Coleman proposes would create a perverse incentive for agencies who want to issue permits without facing judicial challenge,

as they could simply deliberately delay permits past the time limit. As for Senator Manchin's proposal, as the Institute for Progress and others point out, shortening the statute of limitations is likely to lead to challenges being filed faster. Most challenges under NEPA are already filed less than two years after completion of the relevant reviews.

Further, imposing short time limits for seeking review of energy infrastructure project approvals would likely disproportionately limit legal challenges brought by parties with fewer resources, such as individuals or grassroots groups, which may be harmed but unable to organize a lawsuit in a short time. As David J. Hayes at New York University School of Law notes, restrictions on judicial review may also shield federal agencies from being held accountable for violations of their environmental obligations. For example, in the case of the Mountain Valley Pipeline, a federal appellate court repeatedly found that environmental reviews conducted on the project did not comply with foundational environmental laws such as NEPA and the Clean Water Act.

In addition, while we note that lawsuits against EISs are substantial, litigation involving all tiers of NEPA review is relatively limited, at just 0.22% of NEPA-covered actions ever being challenged, representing just 0.043% of civil environmental lawsuits against the federal government. A GAO report from 2014 similarly argued "most NEPA analyses do not result in litigation." The number of NEPA cases filed each year, as well as the fraction of NEPA documents challenged each year, declined from 2001 to 2013.[37]

Finally, there is little conclusive evidence on whether NEPA litigation is frivolous or not. The limited evidence that does exist suggests that NEPA cases are primarily initiated by environmental groups (at nearly 80% of cases filed) who prevail in 27-35% of their NEPA cases, as compared to a 14-16% success rate of other plaintiffs.[38] Courts therefore side with federal agency defendants most (65%-73%) of the time, a statistic that should prompt further study and close examination of the state of NEPA litigation.[39] Still, in around a third of cases, courts agree that environmental organizations have identified genuine government noncompliance,[40] suggesting that we should proceed with caution before establishing stringent statute of limitations on NEPA challenges or other litigation limitations, especially, given the risks of disempowering affected communities and papering over noncompliance with environmental law. Absent more extensive evidence of frivolous lawsuits, we argue that a narrow expediting of EISs for clean energy projects, which retains the benefits of judicial review while saving time and not imposing excessive burdens on the courts, is likely the best balanced option to speed permitting litigation.

ACTIONABLE POLICY OPTION:

Narrow expansions of categorical exclusions under the National Environmental Policy Act (NEPA), as detailed by the Bipartisan Policy Center, are likely to accelerate some permitting actions. An overly aggressive expansion of categorical exclusions may not have beneficial effects, as categorical exclusions are already widely used, and misclassifying projects that deserve a higher level of review may not necessarily shorten permitting timelines.

Strict and automatically-enforced NEPA time limits for pre-designated low-environmental-sensitivity areas for clean energy infrastructure, modeled on a recent European Union plan, are likely to significantly accelerate clean energy permitting and deployment. Broader time or page limits on NEPA reviews without further study and targeting are unlikely to be helpful.

Congress could direct legal challenges to solar, wind, and transmission infrastructure Environmental Impact Statements (EIS) directly to the federal Court of Appeals for the D.C. Circuit to expedite approval of large clean energy infrastructure projects, as suggested by James Coleman. Any broader limitations on NEPA litigation may have unintended consequences, as the evidence of excessive frivolous litigation or excessive litigation-induced delay is currently mixed.

Conclusion

Reforming the federal permitting process for energy infrastructure projects has received significant attention recently and for good reason. Despite a recent influx of funding for clean energy infrastructure from the Inflation Reduction Act and the Infrastructure Investment and Jobs Act, an unprecedented pace of construction of transmission lines and renewables will be necessary to decarbonize the U.S. economy. Achieving this goal will require action across the government and across sectors to take on major roadblocks in areas that include inadequate funding, staffing shortages, and the multi-year, multi-agency federal permitting process.

There are, however, straightforward and potentially bipartisan ways forward. Democrats are likely to be in favor of policies that can accelerate renewable energy development while retaining protections for environmental protection and justice, while Republicans are likely to support the reduction of permitting burdens in general. The role of federal planning and programmatic review could be significantly expanded to study and pre-approve areas for clean energy infrastructure, reducing the need for comprehensive NEPA review of aspects common to a particular type of clean energy project and clearing the way for strict, enforceable time limits. Siting authority for interstate electric transmission could be federalized, multi-agency reviews could be accelerated by increasing funding for the FPISC, and chronic agency under-resourcing could be assessed and corrected. Litigation involving challenges to agency treatment of clean energy projects could be expedited by sending cases directly to a federal appellate court, categorical exclusions to NEPA review could be narrowly expanded, and unnecessarily stringent air quality rules for offshore wind could be aligned with the regulatory regime that governs oil and gas platforms.

This article has primarily discussed legal and regulatory federal-level challenges to permitting for clean energy infrastructure. In addition, there are important state and local permitting roadblocks that must be addressed, and potential technological solutions to these roadblocks that can work at the federal, state, or local levels. There is a wide range of potential policy action on these fronts, as well: State governments may centralize and expedite siting authority for renewables, as New York and California have recently done; states may use pre-emption and overriding powers to force local governments to be more permissive in permitting, as California has recently done for affordable housing; local governments may adopt technology for the automatic permitting of rooftop solar; wind developers may be required to adopt technologies such as tagged-bird geofencing or artificial-intelligence-based curtailment to reduce impacts on birds; and transmission line developers may be incentivized to build underground transmission lines along existing rights-of-way or upgrade existing lines with Inflation Reduction Act loan money, rather than build new lines.

Finally, this article has not discussed permitting challenges for fossil fuel infrastructure, particularly for hydrogen and carbon dioxide pipelines. In some cases, such as when the alternatives are dirtier sources such as coal or fuel oil, accelerating permitting for such infrastructure could be important for energy supply security or beneficial for the climate.

Ultimately, if the United States is to achieve its climate goals while minimizing the environmental impact of energy infrastructure projects, Congress will need to balance careful, targeted action to preserve the environmental benefits of the permitting process with the extensive clean energy build-out needed to advance meaningful efforts to address climate change.

Endnotes

1 Proposed EU Directive 2022/0160(COD), Article 16a paragraph 3.

2 Wu, Grace C., Ryan A. Jones, Emily Leslie, James H. Williams, Andrew Pascale, Sophie Parker, Brian Cohen, Joseph E. Fargione, Julia Prochnik, Maya Batres, Mary Gleason, Michael Schindel, and Charlotte Stanley. 2022. "Minimizing Conservation Impacts of Net Zero Energy Systems in the Western United States". The Nature Conservancy. pp. 6-7. http://dx.doi.org/10.2139/ssrn.4202442.

3 Ibid., p. 15

4 For a detailed account of the BLM's solar PEIS and specific recommendations on zoning low-impact public land for renewable energy development, see: Glicksman, Robert. 2012. "Solar Energy Development on the Federal Public Lands: Environmental Trade-Offs on the Road to a Lower Carbon Future." San Diego Journal of Climate & Energy Law 3, no. 1: 107–58.

5 Ruple, John C., Jamie Pleune, and Erik Heiny. 2022. "Evidence-Based Recommendations for Improving National Environmental Policy Act Implementation." Columbia Journal of Environmental Law 47 (S):336. https://doi.org/10.52214/cjel.v47iS.9479.

6 For further information on the use of general permits, see: Biber, Eric, and J. B. Ruhl. 2014. "The Permit Power Revisited: The Theory and Practice of Regulatory Permits in the Administrative State." Duke Law Journal 64 (2): 133–234.

7 For more information on general permitting under Section 404 of the Clean Water Act, see: Davison, Steven. 2009. "General Permits Under Section 404 of the Clean Water Act." Pace Environmental Law Review 26 (1): 35. https://digitalcommons.pace.edu/pelr/vol26/iss1/3.

8 For discussion of the use of the power of eminent domain to facilitate energy infrastructure projects, see generally James W. Coleman and Alexandra B. Klass. 2019. "Energy and Eminent Domain," Minnesota Law Review 104, no. 2:659. https://minnesotalawreview.org/article/energy-and-eminent-domain/

9 In a promising initial step, however, FERC recently began the process of rulemaking to implement this authority

10 Alexandra Klass and Elizabeth Wilson present alternative models that would increase federal authority over transmission without entirely stripping states of their power. If complete federalization of transmission permitting proves politically infeasible, their recommendations to constrain local siting decisions with some federally imposed process rules and to incentivize interstate transmission should be considered as incremental improvements. Klass, Alexandra B., and Elizabeth J. Wilson. 2012. "Interstate Transmission Challenges for Renewable Energy: A Federalism Mismatch." Vanderbilt Law Review 65, no. 6: 1865-1869. https://heinonline.org/HOL/P?h=hein.journals/vanlr65&i=2029

11 An unpaired, unequal variance Welch two-sample t-test for the difference of group means confirms that the mean permitting time for electric transmission lines (mean=7.62 years, SD=1.90 years) is significantly greater than the mean permitting time for natural gas pipelines (mean=3.93 years, SD=1.96 years), with p=0.004, t=-3.255.

12 Smythe, Robert, and Caroline Isber. 2003. "NEPA in the Agencies: A Critique of Current Practices." Environmental Practice 5 (4): 292. https://doi.org/10.1017/S1466046603031284.

13 Ruple, Pleune, and Heiny, pp. 327-329

14 The operational utility-scale projects in the U.S. are the 30 MW Block Island Wind and 12 MW Coastal Virginia Offshore Wind. The permitted and under-construction projects are the 800 MW Vineyard Wind and the 132 MW South Fork Wind. All four projects add up to a capacity of 974 MW, slightly under 1 GW.

15 See Table A-5 (p. A-13) of BOEM's Gulf of Mexico OCS Oil and Gas Lease Sales: 2014-2016, Western Planning Area Lease Sales 238, 246, and 248, Final Supplemental Environmental Impact Statement

16 See Tables 6-1 (p. 88) and 6-2 (p. 95) of BOEM's Gulf of Mexico OCS Region, Year 2017 Emissions Inventory Study

17 See Tables E4-8 (p. E4-17), 3.3.1-4 and 3.3.1-5 (p. H-7) of BOEM's South Fork Wind Farm and South Fork Export Cable Project Final Environmental Impact Statement

18 Ibid., Table 3.3.1-3

19 For a detailed breakdown of EPA and USACE responsibilities under Section 404 permitting, see EPA's breakdown of Agency Roles and Responsibilities

20 We filter for completed projects to avoid picking up incomplete projects, as projects are likely to involve more agencies as they proceed towards completion.

21 Hayes, David J. "Leaning on NEPA to Improve the Federal Permitting Process," Environmental Law Reporter News & Analysis 45, no. 1 (January 2015): 100221. https://law.stanford.edu/publications/leaning-on-nepa-to-improve-the-federal-permitting-process/

22 Ibid.

23 Camacho, Alejandro E. and Robert L. Glicksman. 2019. Reorganizing Government: A Functional and Dimensional Framework. New York: New York University Press. Pages 44-46, 50.

24 Karp, James P. 1974. "NEPA: Major Federal Action Significantly Affecting the Quality of the Human Environment," American Business Law Journal 11, no. 3 (Winter 1974): 209-242. https://heinonline.org/HOL/P?h=hein.journals/ambuslj11&i=218

25 Allco et al vs Haaland et al, Case No. 1:21-cv-11171 in the United States District Court, District of Massachusetts, Document 1, Filed 07/18/21. pp. 7-8, 12. https://storage.courtlistener.com/recap/gov.uscourts.mad.236466/gov.uscourts.mad.236466.1.0.pdf

26 Houck, Oliver A. 2007. "Standing on the Wrong Foot: A Case for Equal Protection." Syracuse L. Rev. 58, no. 1:22. https://heinonline.org/HOL/P?h=hein.journals/syrlr58&i=9.

27 Agencies create CEs by adopting regulations that define the categories of actions for which agencies do not need to prepare either an EA or an EIS. Agencies must then determine, on a case-by-case basis, whether a particular project fits into one of the excluded categories.

28 Federal agencies determine what classes of actions and impacts are considered "significant," with provisions for review by CEQ and challenges in the courts.

29 Notably, the CEQ regulations already authorize an agency to establish a process that allows it to use a CE listed in another agency's NEPA procedures after consulting with that agency to ensure that the CE is appropriate. The process should ensure documentation of the consultation and identify to the public those CEs the agency may use for its own proposed actions.

30 Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources. Article 16, paragraphs 4-7.

31 Proposed EU Directive 2022/0160(COD), Article 16a paragraph 1 and Article 16c

32 Proposed EU Directive 2022/0160(COD), Article 16a paragraph 6

33 Ruple, John C., and Kayla M. Race. 2020. "Measuring the NEPA Litigation Burden: A Review of 1,499 Federal Court Cases." Environmental Law 50, no. 2: 479-522. https://dc.law.utah.edu/cgi/viewcontent.cgi?article=1008&context=stegner_pubs.

34 Adelman, David E, and Robert L. Glicksman. 2018. "Presidential and Judicial Politics in Environmental Litigation." Arizona State Law Journal 50: 36-38. https://arizonastatelawjournal.org/wp-content/uploads/2018/05/Adelman_Pub.pdf.

35 Adelman and Glicksman, p. 415.

36 Coleman, James W. 2019. "Pipelines & Power-Lines: Building the Energy Transport Future," Ohio State Law Journal 80, no. 2 (2019): 304-305. https://kb.osu.edu/handle/1811/87999.

37 Ibid., pp. 501-504

38 Adelman, David E, and Robert L Glicksman. 2020. "Reevaluating Environmental Citizen Suits in Theory and Practice." University of Colorado Law Re-

view 91, no. 2: 418, notes 132 and 133. http://lawreview.colorado.edu/wp-content/uploads/2020/02/AdelmanGlicksman_Final.pdf.

39 Although the win rate of environmental organizations appears low, it is not drastically different from the civil plaintiff average across the federal court system. According to Alexandra Lahav & Peter Siegelman at the University of Connecticut, in adjudicated civil cases in federal courts, plaintiffs win only around 30% of cases, a sharp and systemically unexplained fall from a 70% win rate in 1985. This number is approximately the same as the win rate of environmental organizations bringing NEPA cases. Lahav, Alexandra, and Peter Siegelman. 2019. "The Curious Incident of The Falling Win Rate: Individual vs System-Level Justification and the Rule of Law." UC Davis Law Review 52, no. 3: 1371-1428. https://lawreview.law.ucdavis.edu/issues/52/3/articles/52-3_Lahav_Siegelman.pdf

40 Adelman and Glicksman., "Reevaluating Environmental Citizen Suits," p. 420.

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