



## Cut the Red Tape

*The federal project review process is a daunting obstacle to any clean energy transition. Until Congress reforms the entire permitting system, the goal of a renewable energy economy is almost certainly beyond reach*



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**T**HE United States has the world's most costly, time-consuming, and unpredictable system for authorizing big infrastructure projects. It puts America at a grave competitive disadvantage compared with other industrial powers, including China. The social costs are enormous and are passed on to consumers, who must ultimately pay a premium for elevated risk and constricted supply. It deprives Americans of affordable energy, adequate roadways, and even safe drinking water.

And if you think the climate crisis is “code red for humanity,” as President Biden has said, the hard truth is this: Until Congress reforms the entire permitting system, the goal of a clean energy transition is almost certainly unachievable.

Consider the staggering amount of infrastructure that would be required to meet the administration's goal of a zero-carbon electricity grid by 2035: scores of new nuclear plants, hundreds or thousands of new utility-scale solar plants, tens of thousands of windmills, hundreds of thousands of miles of transmission lines. Under current law and given agency workforce constraints, securing permits for all those projects in time to finish, or in some cases even to start, construction before 2035 is simply a fantasy.

Congress has appropriated nearly \$2 trillion for “green” infrastructure. But money is not the limiting factor in America's ability to deploy major infrastructure projects. The crucial limiting factor today—and the main obstacle to a clean energy transition going forward—is the massive amount of federal agency resources consumed by the struggle to comply with the National Environmental Policy Act in a context of inordinate litigation risk.

Section 102(2)(C) of NEPA requires agencies to prepare an environmental impact statement for any “major federal actions significantly affecting the quality of the human environment.” Any federal permit required for a major infrastructure project usually triggers the requirement of an EIS.

According to a recent survey by the White House Council on Environmental Quality, which was created by NEPA to oversee its implementation, the preparation of a typical EIS takes on average 4.5 years, consumes tens of thousands of agency person-hours, and costs millions of dollars in taxpayer resources. That's on the top of the tens of millions an EIS can cost project proponents. So even with the most lavishly funded bureaucracy on Earth, the entire federal government produces at most 75 or

80 final EISs every year. That pace is woefully short of what is needed to reach the 2035 zero-carbon goal.

To give some sense of what this looks like on the ground, the Bureau of Land Management's Nevada State Office, where dozens of solar projects would have to be evaluated, is totally overwhelmed by the effort to complete one EIS every year or two. The Nevada office has issued a “Prioritization Guidance” to help it select the small handful of applications its staff can handle over the next couple of years from among the flood of solar permit applications.

By the time Senators Joe Manchin (D-WV) and Chuck Schumer (D-NY) agreed to streamline permitting as a side-deal to the Inflation Reduction Act, the 117th Congress had not done much of anything to lay the political groundwork for sweeping reform. Not surprisingly, what emerged from the deal was a potpourri of disconnected measures responding in most cases to the demands of narrow special interest groups and falling far short of what would be required for a clean energy transition by 2035. Even with the most dire stakes imaginable, the most that policymakers have been able to accomplish is tinkering at the margins.

Any serious effort to undertake a clean energy transition must start with a close look at the staggering amount of clean energy infrastructure that would be required. The next step is to wrap one's head around the frightful tangle of red tape that turns the federal permitting process for most such projects into a years-long odyssey. That exercise sheds light on some of what Congress will have to do if it ever gets serious about the obstacles to a clean energy transition.

There are many estimates of the power capacity additions that would be required for a net-zero energy sector, most of them in the same general ballpark. For example, the Electric Power Research Institute estimates that to achieve a zero-carbon electrical system by 2035, the grid would need to add 900 gigawatts of new wind and solar, 80 GW of new nuclear capacity (doubling current nuclear capacity nationwide), and 200 GW of hydrogen-fueled turbines.

Many estimates don't mention nuclear at all. That's because powerful environmental advocacy groups remain adamantly opposed to it, which may also explain why Democrats have put virtually no effort into advancing nuclear power. That is a major obstacle to the clean energy transition in itself, because most scenarios aim to replace the “dispatch-

able” baseload generation of coal and natural gas plants with intermittent wind and solar, creating significant challenges for reliability and capacity. Utility-scale batteries, smart grids, and similar technologies have come a long way but the challenge of intermittency is why prominent international authorities call for a doubling and even tripling of nuclear power around the world for any chance of meeting the Paris Agreement’s goal of limiting warming to no more than 1.5 degrees Celsius.

The American nuclear fleet is dwindling and there are no plans to build any new nuclear plants in the United States. But even if there were, they couldn’t be part of the clean electricity mix in EPRI’s estimate. The permitting timeline for nuclear is the longest of any infrastructure sector. A nuclear reactor due to open in Georgia in the next couple of years started its odyssey through the federal permitting process in 2006, after many years of project design and development. Nuclear regulatory reform is urgently needed, but Congress has done virtually nothing about it.

One notably optimistic review of 11 studies of non-nuclear pathways to clean electricity by 2030 and 2035, by Energy Innovation LLC, shows a consistent estimate across studies of about one terawatt of solar and wind, plus 100 GW of battery storage. That review notes that this would require an average annual deployment of new renewable energy capacity at double or triple the record rate of 31 GW of wind and solar additions in 2020, “a challenging but feasible pace of development.”

The authors don’t elaborate on why they think that would be “feasible,” perhaps because they have been spared the trials and tribulations of going through the NEPA process. But it isn’t feasible—not remotely. Since the early Obama administration, federal agencies have strained to streamline their permitting processes and increase throughput. They are virtually at the limit of the streamlining that current law will allow without leaving their permits and NEPA reviews vulnerable to court challenge.

As many experts have noted, the fear of litigation risk is the main source of cost, delay, and uncertainty in the NEPA process. It is also the crucial limiting factor in the clean energy transition. Litigation

risk has the entire federal bureaucracy backed up against a wall, struggling to produce permits and EISs that are perfect in every last detail, whether relevant to the agency decisionmaker or not. (The statutory purpose of NEPA, incidentally, is to inform the agency decisionmaker.) This means that without changes in the law, the only way to double or triple the pace of permitting at federal agencies is by doubling or tripling the size of the federal workforce involved in project reviews.

**R**ELIABLE estimates are hard to come by, but a reasonable guess is that on the order of 10,000 federal agency staff spend most of their time involved in processing permit applications for infrastructure projects. To get a sense of how much the federal permitting bureaucracy would have to grow, let’s take a look at the most significant increase in that workforce produced in the entire 117th Congress, namely the Inflation Reduction Act’s provision of nearly \$1 billion to increase permitting staff over five years, including \$350 million for an Environmental Review Improvement Fund at the Federal

Permitting Improvement Steering Council, which was created under the 2015 Fixing America’s Surface Transportation Act to coordinate the permitting of major infrastructure projects. This massive boost in funding would add perhaps five or six hundred full-time equivalents to that workforce. That’s an increase of maybe five percent, assuming agencies can find and train qualified personnel in this highly technical field quickly enough. The added staff would significantly help with the current backlog of applica-

tions, but the total would fall woefully short of the needed doubling of personnel.

As unrealistic as it is to think that we could double the size of the federal permitting workforce quickly enough to make a difference, there is yet another problem with Energy Innovation’s hopeful estimates. Its calculation of the required increase in average permitting pace presupposes a time horizon of 10 or 15 years, depending on whether we’re looking at 2030 or 2035. But that doesn’t take any account of the actual timeline for deploying infrastructure projects,

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*Continued on page 34*

# Gutting Laws Won't Speed Renewables

**T**HE rapid buildout of clean, renewable energy is essential to addressing the climate crisis, but weakening environmental laws to do it is wrongheaded and dangerous. Bedrock laws like the National Environmental Policy Act and the Endangered Species Act are not barriers to renewable energy but vital tools to build it effectively and responsibly to scale. Weakening the laws that protect our air, water, and wildlife would not only cause great harm but also fail to boost the renewables we need.

While the construction of major new infrastructure and industrial-scale renewable projects is undeniably challenging, in most cases environmental requirements aren't the primary cause of delay. For example, the Palen Solar project in California is often cited for its lengthy approval process. But it was delayed by the developer's choice to pursue a technology that couldn't compete with photovoltaic systems with integrated batteries. After two bankruptcies and a change to photovoltaic solar panels, the project was quickly approved and is now fully operational.

Most large renewable energy projects are consistently approved on time without shortcutting NEPA. For years these projects have been eligible under the Federal Permitting Council and the Fast-41 Act for expedited review and approval. The Biden administration has added a Permitting Action Plan that would help further fast-track clean energy projects—with environmental protections. And only 1 out of every 450 NEPA reviews is challenged in court.

There's no need to short circuit NEPA to speed approval of renewables. The Biden administration just needs to fully implement the tools it already has and give agencies the resources to get it done. It should also shift resources spent approving new fossil fuel projects that are “moral



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and economic madness” toward renewables.

Nor does the Endangered Species Act actually prevent renewable energy development. On the contrary, these projects are routinely built in the habitat of endangered species, killing many imperiled creatures. But because of the law, which has prevented the extinction of 99 percent of species listed to date, far worse wildlife harm has been avoided.

To responsibly scale up renewable energy, we need more Endangered Species Act compliance, not less. The law can help steer these projects away from endangered species habitat toward areas like depleted farmland, where they'll do little damage and can even provide environmental benefits.

The real barriers to renewable buildout are decades-long disinformation and obstruction campaigns from fossil fuel and utility companies. They have produced many state and local laws that particularly choke off the development of rooftop solar.

Eliminating these perverse anti-solar laws should be the top legislative priority to accelerate renewable energy and realize the many benefits of distributed energy generation.

A recent study showed that distributed energy paired with storage avoided summer blackouts in Cali-

fornia in 2020 and winter blackouts in Texas in 2021, highlighting the importance of distributed energy to keep the lights on in disasters. Building rooftop solar faster will also reduce the need for transmission lines—among the most complex and challenging projects—and save energy lost in moving electricity.

Eliminating renewable-resistant laws pushed by the fossil fuel industry may seem harder than targeting environmental laws, but it's what will actually work.

In the meantime President Biden doesn't need to wait for Congress. He should declare an emergency and use untapped executive powers to speed deployment of renewables. Using laws like the Defense Production Act and Stafford Act, the president can grow domestic energy manufacturing. By using the substantial fiscal tools provided, he can spur distributed energy buildout in the communities hardest hit by the climate crisis and air pollution.

While it's cloaked in bipartisan appeal, “streamlining permits” is greenwashing code for gutting bedrock environmental protections. But it won't work, it distracts from real solutions, and it will benefit only the oil, gas, and coal industries that knowingly caused the climate crisis and continue to block solutions.

which entails several years of preapplication and has to be followed by several years of actual construction.

Between the bookends of preapplication and construction, permitting time for solar projects, according to the Solar Energy Industry Association, can be between three and five years. That means that to achieve net-zero by 2030 is already impossible: Projects that begin pre-application in this coming year generally won't be coming online until 2030 at the earliest. And even for a clean electricity transition to occur by 2035, all the projects necessary for a roughly one terawatt addition of renewable electricity would have to finish pre-application and file their permits by 2027 at the latest. Then all those permits would have to be processed and the environmental reviews completed within three or four years. Hence the effective permitting window for a clean energy transition by 2035 is 2025-2032, a period of just seven years, not 15 as in the Energy Innovation's estimates.

So during that main wave of permit processing and environmental review, the processing rate would have to be at least four times the rate of the record year of 2020, and perhaps significantly faster than that. In other words, Congress would have to at least quadruple or quintuple the size of the federal permitting workforce.

**N**OW consider the hurdles facing the actual projects. Taking solar as an example, most studies suggest that the United States would have to add on the order of 500 GW of utility solar capacity. Suppose that each solar project in that total is very large, with a nameplate capacity of 500 MW. Adding 500 GW of solar capacity would require 1,000 such projects. Judging by the largest currently in operation, each such solar project would cover perhaps 5,000 acres, for a total of 5,000,000 acres. That's the entire state of New Jersey—covered in solar panels.

Many of those solar projects won't require federal permits at all, particularly if they aren't built on federal land. But where the sun shines for 365 days a year is in the deserts and high plains of the western states—where the federal government owns virtually all the land. And every solar project built on federal land requires its own permit and its own EIS.

The NEPA process is tailor made for NIMBYism. "Scoping" allows local opponents to lodge issues that agencies must explore at length, and which can later be litigated. Each solar project application entails political trauma for regional agency staff and often for the agency headquarters as well. Worse still, covering an area the size of New Jersey with solar panels will have a myriad of environmental consequences, each of which must be studied in detail and avoided, minimized, or mitigated if possible—and many of which might impel the reasonable conservationist to ask, "Is this really worth it?" Anyone who has seen the leach fields for disposal of lithium batteries, where birds die within seconds of alighting, should wonder.

Then those solar and wind projects need to be connected to the grid by a network of new transmission lines. Linear projects such as transmission towers and pipelines are among the most resource-intensive permits for agencies to process. That's because linear projects trigger permit requirements—and fierce local opposition—all along their route. All of this slows the already slow permitting process to a crawl. To give one example, the Transwest Express Transmission

Line, running for 700 miles and with a capacity of 3 GW, was designed to transmit wind power from Wyoming to Nevada and California. It took 15 years to get the permits required for construction to begin.

The clean energy transition will entail transmission lines on a scale that most Americans can't imagine. Wind and solar must be built where the wind blows and the sun shines, not where consumers are. Hence each megawatt of renewable capacity will require orders of magnitude more transmission line miles than each megawatt requires currently, and average length will grow exponentially as developers go looking further and further afield from their target markets for suitable sites. According to a National Academies report, the net-zero 2050 goals would require construction of one million miles of transmission lines by 2050.

Given the much longer lead times on transmission lines compared to renewable energy power plants, it's easy to see another looming problem: solar plants sitting idle in the middle of nowhere for years on end, waiting for transmission lines to

**Between preapplication and construction, the permitting process and NEPA review take perhaps 3.5 years for renewable energy projects. Achieving net-zero by 2030 is already impossible**

*Continued on page 36*

# NEPA Means Better Agency Decisions

**C**ONSISTENT with its stated purposes, NEPA implements national environmental policy, and its regime for environmental impact assessment provides a remarkably stable framework for a transparent, evidence-based public process for agency decisions. An eloquent statute, NEPA has straightforward implementing regulations that were developed by the Council on Environmental Quality as directed by President Carter, updated as directed by President Trump, and amended as part of President Biden’s regulatory review to restore (so far) three aspects of the Carter rules.

It remains the centerpost of interagency coordination for efficient implementation of all applicable environmental laws. It ensures that federal departments are not working at cross purposes with states, tribes, local governments, and the myriad of stakeholders in civil society. When implemented by competent professionals with support from agency leadership, the NEPA process can help to resolve or reduce the conflicts that may be inevitable when the federal government makes decisions, such as allowing the use of public land for renewable energy generation and transmission.

Every day, in hundreds of decisionmaking processes around the government, the NEPA process provides the authority and mandates for federal agencies to collaborate with stakeholders who would be affected, and consider alternatives that avoid, minimize, or compensate for real environmental impacts. Most of these decisions are improved through the NEPA process and never litigated—an indicator of this law’s success that otherwise defies easy measurement—and agencies that use the



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process well are prepared for going to court if it cannot be avoided. CEQ’s survey of NEPA litigation found that agencies are infrequently sued and win the majority of claims brought against them.

So, what’s so controversial about a statute that promotes harmony with our environment, informed decisions, and conflict resolution? Objections focus on the time it can take. In 2020, CEQ found that across all federal agencies, the median environmental impact statement completion time from “Notice of Intent” to “Record of Decision” was 3.5 years and that the majority of that time was spent producing a draft EIS for public review. In its 2020 rulemaking, CEQ established a presumptive two-year goal for EISs and a one-year goal for environmental assessments, with provisions for oversight of the process by senior officials to ensure that their agencies’ NEPA activities get the prioritization, resources, and resolution of issues that they need to make a final decision.

Time alone is no measure of success of a decisionmaking process. Some projects are revealed to be fundamentally flawed through the NEPA procedure. Approximately 25 percent of the 2010

Notices of Intent to prepare an EIS had yet to result in a draft by 2020, indicating that one in four EISs that started “scoping” were postponed or abandoned. If the reason the decisionmaking process takes so long is because the proposed action has serious technical, economic, or political problems, blame should not be placed on NEPA.

Yet in response to demands for faster decisions, this foundational statute has become a convenient foil. For example, in 2018 the Department of Transportation was scheduled to release its final EIS for the Hudson River tunnel project. NEPA analysis of the “No Action” alternative showed the dire need for replacement of the freight and passenger rail tunnel. But due to a political dispute over federal funding, the final EIS was delayed for years. The lead agency official involved in the project blamed the NEPA process.

Unfortunately, blaming NEPA for the challenges of decisionmaking on major infrastructure projects is a convenient—but ultimately anti-democratic—way to avoid agency accountability. Experience shows that this law is effective in highlighting and minimizing environmental impacts, and that effective agency leaders can follow the law in a timely manner.

arrive. Indeed this is already happening, as in the case of the Cardinal-Hickory Creek transmission project in Iowa and Wisconsin.

**A** SERIES of interrelated structural problems combine to create inordinate delays, costs, and uncertainties for infrastructure projects. Of those impacts the worst by far is uncertainty, the major source of risk to capital formation and hence a principal source of the significant social losses caused by the NEPA process.

Unfortunately, that uncertainty has many sources, most important of which is litigation risk, which maximizes the amount of time and resources agencies devote to processing permit applications out of all proportion to the environmental costs and benefits at stake.

The uncertainty begins with the inordinate litigation risk that hangs like a cloud over every EIS from the start. The problem has been years in the making. It started in the 1970s, with the invention of Court-ordered “hard look” NEPA review, which along with *Chevron* deference—another decision, requiring courts to favor agency positions where statutes are unclear—a few years later turned the standards of review spelled out in Section 706 of the Administrative Procedure Act upside down. (Where Section 706 specifies that courts are to review questions of law *de novo* and set aside agency actions only if they are “arbitrary and capricious,” courts now defer to agencies on questions of law and second guess agency findings on technical matters that judges struggle to understand at all.)

A related problem is that there is no doctrine of substantial performance or materiality: An agency may get an EIS 99.9 percent perfect, but if it forgot to study the habitat needs of the butterfly that one person casually mentioned in a town hall meeting during scoping—boom, permit vacated. Agencies have to think of literally everything, because the omission of one paragraph in a 1,000-page document could be “arbitrary and capricious.” The purpose of NEPA is to inform the decisionmaker, which creates an implied standard of materiality for every impact and alternative under consideration. Alas,

federal courts have combined with the CEQ regulation of NEPA to require agencies to study impacts well upstream and downstream of the project—even if those impacts are entirely in the control of other governments, in much greater detail than is remotely relevant to the permitting decision. And because of the loose wording of the NEPA regulations, agencies devote hundreds of pages in EISs to studying alternatives to the proposed project when what the statute requires is consideration of alternatives to the proposed action, which in the case of an infrastructure project is just the up-or-down permitting decision.

It’s no surprise that agencies only win about 70 percent of cases in court. Defenders of NEPA tout this as evidence that agencies prevail “most of the time” so litigation isn’t that big a deal, but in reality it’s an atrocious figure, considering the endless time and resources agencies devote to complying with every last detail that the law might require. District courts face a similar rate of reversal on appeal, but of course only a tiny fraction of judgments get appealed, whereas the litigation risk for a final EIS is virtually 100 percent. And district courts don’t spend 4.5 years, tens of thousands of hours, and millions of dollars trying to make absolutely certain that they get everything right, and thankfully so because if they did you’d have a complete breakdown in the administration of justice—an apt description of NEPA litigation.

Many judges appear to be operating on an unstated and perhaps unconscious premise that environmental advocacy groups represent the public interest but agencies do not. This manifests in a damaging relaxation of procedural protections that defendants

normally enjoy. Courts have bent over backwards to confer standing on virtually anyone who wants to oppose a project. NEPA creates no right of action, so courts had to find one in the stopgap enforcement provision of the APA. That requires “legal harm” for standing, but courts look past that for environmental advocacy groups, by resort to the “zone of interest” theory of “procedural standing,” piling one ancillary stopgap on another. So if you go boating on a lake you have standing to sue FERC over a transmission line that will be partly visible from the lake, despite that the transmission line is urgently needed to connect a small city to a renewable power source that is sitting idle after \$100 million of investment.

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Once in court, the red carpet treatment continues. When asking for a preliminary injunction, a plaintiff must normally post a bond to protect the defendant against losses resulting from the injunction should the plaintiff ultimately lose. Courts waive that for environmental litigants, because of the “public interest.” And when it comes time to balance the equities in granting the injunction, courts give short shrift to the public interest in effective agency action, or ignore it entirely. Indeed, in the 9th Circuit, stopping a project is considered to cause no harm to the agency because ipso facto stopping a project won’t harm the environment—as if environmental losses are the only losses we need to worry about when deciding to stop an infrastructure project of urgent national importance, where developers have invested tens or hundreds of millions of dollars.

Another major problem is the very existence of the CEQ regulation of NEPA, which dramatically increases the litigation target area of every project review. This is a fascinating issue, because CEQ has no rulemaking authority. The regulation is arguably nothing more than an executive order, like E.O. 12866, which establishes the Office of Management and Budget rulemaking process for federal agencies. Teleporting the “legal harm” and “procedural standing” doctrines into a document that creates no private rights or obligations, courts have transformed the CEQ regulation into a compendium of legally enforceable requirements. Hundreds of federal permits have been vacated by courts because of agencies’ failures to comply with supposed NEPA requirements that are not in the statute and that were invented by CEQ out of thin air. But without foundation in delegated rulemaking authority, the regulation of NEPA is just a set of directives to agency heads. Presidential directives such as executive orders have never been considered enforceable *de jure* and draw the entirety of their compelling force from the president’s removal power, which does not extend to independent agencies like FERC. In the key NEPA case of *Public Citizen v. Department of Transportation*, Justice Clarence Thomas wrote that “CEQ was established by NEPA with authority to issue regulations interpreting it,” but the statute doesn’t say that anywhere, and it’s simply not true. Plus, even if courts defer to the council’s statutory

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interpretations, it’s another thing entirely for CEQ to use purely presidential directive authority to instruct an agency to discuss “cumulative impacts” (a concept nowhere to be found in the statute) and then have courts treat that directive as if it were legally enforceable in a lawsuit brought by a private party. It’s the exact equivalent of the president instructing federal staff to observe a business dress code and a private citizen suing because some agencies have casual Friday.

Another major problem with the permitting process is the hydra-headed nature of agency permitting authorities. The description is not totally apt because the hydra at least had a single body, whereas the permitting processes of federal agencies are almost completely disconnected—despite manifold interdependencies. Efforts by multiple administrations to establish a coordinated process quickly run up against the reality of statutory structure, a problem that only Congress can fix. The CEQ regulation’s provisions on a “lead agency” to prepare a single NEPA document in coordination with “cooperating agencies” doesn’t relieve the project developer of basically having to create an interagency process from scratch among a bunch of agencies that often couldn’t care less what the developer has to say on any subject.

A related problem is the fact that agencies take it on themselves to prepare environmental documents that the developer could prepare instead, much faster and just as well, subject to agency verification and approval, as is done in Australia for example. That is one of the most important changes in the 2020 Trump revisions to NEPA, which were partly pulled back by the Biden administration to placate environmental advocacy groups, despite the fact that renewable energy companies were the disproportionate beneficiaries of the Trump reform.

The problems I’ve described create a mountain of obstacles to any clean energy transition, and only Congress can remove them. Although polls show significant public concern with the effects of climate change, the issue is not the most important for most Americans, who are primarily worried about inflation and other issues. Perhaps that explains why Congress has failed thus far to enact comprehensive reforms of the sort that would be needed for a successful clean energy transition. **TEF**