

## ISSUE BRIEF

# DOWN TO THE WIRE:

## PROGRESSIVE PERMITTING REFORMS WILL ACCELERATE RENEWABLE ENERGY AND TRANSMISSION BUILDOUT AND HELP MEET U.S. CLIMATE TARGETS

The United States has an essential role to play in the fight to limit global warming to 1.5 degrees Celsius. To that end, the United States has established goals to achieve 100 percent carbon-free electricity generation by 2035 and net-zero greenhouse gas emissions economy-wide by 2050. Both goals will require a considerable increase in clean energy. The 2022 Inflation Reduction Act (IRA) contains significant federal investments that could fund this clean energy buildout at the speed and scale that will put us on the path to reaching our climate goals.

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Solar panels and electrical lines at the LES community solar facility in Lincoln, Nebraska. Generating 5 megawatts of solar energy, the facility was the first utility-scale solar installation in the state.

Unfortunately, the full buildout of clean energy infrastructure promised by the IRA is at risk because of the bottlenecks and barriers built into the current energy infrastructure planning and permitting system. The changes made to the environmental review process as part of the debt ceiling deal did not resolve this. Moreover, there is a growing opposition to these projects and to meaningful permitting reform.

To be sure, careful planning is needed to ensure that the buildout of new clean energy infrastructure at the scale required to meet our climate targets doesn't impact biodiversity, contribute to rising inequality, or burden local communities. These risks are present in large part because our current system of planning and permitting energy infrastructure was designed to build large-scale fossil generation with little to no thought for climate change, biodiversity, or environmental justice. Modernizing and optimizing planning and permitting processes will enable IRA investments in clean energy not only to help mitigate climate change but also to protect and restore wildlife habitat, build wealth in historically marginalized communities, increase economic prosperity in the United States, and improve human health.

This paper outlines four key challenges to quickly advancing clean energy nationwide and recommends steps the administration, Congress, states, and other key stakeholders can take to ensure we don't miss this crucial moment.

## MAXIMIZING THE IRA'S POTENTIAL REQUIRES EXPEDITING A GREAT CLEAN ENERGY BUILDOUT

The passage of the IRA presents a unique opportunity to slash greenhouse gas (GHG) emissions and propel the United States toward our climate goals by accelerating the clean energy revolution. The IRA's unprecedented investments could expand renewable energy and storage deployment nearly fourfold compared with today's levels.<sup>1</sup> This clean electricity could cut coal combustion by more than half and natural gas combustion by 17 percent. Altogether, this would reduce the U.S. power sector's annual carbon dioxide emissions by 80 percent relative to 2005 levels.<sup>2</sup>

These advances would provide enormous benefits not just for the climate but for human health and economic prosperity. IRA investments could prevent nearly 10,000 U.S. deaths from fossil fuel-caused air pollution in 2035 and avoid a cumulative 63,000 premature deaths between now and then.<sup>3</sup> Over that same time span, the IRA is projected to create more than 2.3 million new energy sector jobs.<sup>4</sup> And the law's clean electricity tax credits could save U.S. households \$60 billion on electricity bills over the next 15 years.<sup>5</sup>

But the IRA will be only as good as we make it. To achieve its full potential, by 2035 we need to build approximately 564 gigawatts of renewable electricity and storage.<sup>6</sup> That's enough clean energy to power 130 million homes.<sup>7</sup> In 2022, U.S.

## DEFINITIONS OF KEY TERMS

**Community Benefits Agreement.** A Community Benefits Agreement (CBA) is a legally binding agreement between a project developer and a community that outlines specific benefits the community will receive in return for supporting the project. These are intended to offset any potential negative impacts of the project and to ensure that some of the project's economic benefits are shared with the local community. The specifics of a CBA can vary widely depending on the nature of the project and the community. However, common elements include job creation, infrastructure improvements, environmental protections, financial contributions, and energy benefits. The U.S. Department of Energy has developed a tool kit to help communities negotiate CBAs.<sup>8</sup>

**Permitting.** Permitting refers to the process of obtaining the necessary authorizations, licenses, and approvals from relevant regulatory agencies to build and operate energy facilities or systems. These permits are designed to ensure that the proposed energy project meets various safety, environmental, and social standards before it can proceed.

**Planning.** Planning is the process of deciding how much of different types of energy are needed and where they are needed. The decision about where to locate projects should include a landscape analysis and should engage stakeholder communities early, weighing their input equally with other factors. Planning should also take into account the cumulative impacts of past and future development. The results of a planning process can include identifying areas that should be avoided and/or areas where development is preferred. After the planning process, individual projects still need to go through a siting process to identify their specific proposed location.

**Siting.** Siting refers to the process of choosing a specific location for a project. This is dependent on the availability of resources such as wind and sun and infrastructure such as roads and transmission lines. Siting can be guided by a planning process that puts some areas off limits or promotes others. Even if a site is within a preferred area, it is best practice to engage the local community as there may be factors that were not considered in the planning process.

**Transmission.** Transmission refers to long-distance, high-voltage lines that carry bulk electricity from generation plants to substations with voltages ranging from 60 to 500 kilovolts. Transmission lines are distinct from distribution lines, which are low-voltage lines that carry electricity from substations to end users for residential and commercial use.

developers built 530 large wind, solar, and storage projects, totaling just over 25 gigawatts.<sup>9</sup> To meet the IRA's potential, we need to double the number of projects we permit and build each year. We also must double the rate at which we expand the transmission system and simultaneously shift to building large interstate transmission lines instead of the small local lines that are mostly added today.<sup>10</sup>

However, our current system of planning and permitting cannot support a buildout at the speed and scale needed to take full advantage of IRA funding and equitably meet our climate goals.

## **YESTERDAY'S PLANNING AND PERMITTING SYSTEMS WERE NOT DESIGNED FOR TODAY'S CHALLENGES AND TECHNOLOGIES**

The current energy infrastructure permitting system was largely enacted during the 1970's. Before that, even large fossil fuel projects faced little or no environmental review and were sited near communities and sensitive ecosystems with no regard for the health and environmental impacts.<sup>11</sup> Even as modern environmental laws came into effect, the health impacts on host communities were largely ignored, in no small part because those communities had already been systematically marginalized and silenced. While these laws have reduced the impacts of new fossil fuel projects, the current system was not designed to redress greenhouse gas emissions, pollution, biodiversity, or equity.

Today we are quickly transitioning from an electrical grid based on fossil-fuel generators, which require relatively little land mass, to a system based on renewable generators, which have a much larger footprint and are generally located farther from large urban centers.<sup>12</sup> Bringing them online also requires a larger and more robust transmission system—poles and wires—to link generators to where the electricity is needed. Now, not only do developers of renewable generation need permits from local or state officials, but transmission developers need to obtain multiple permits across multiple jurisdictions where they intend to site their transmission lines. The current permitting system can't keep up.

Furthermore, the large number of renewable projects needed to achieve our climate goals, and the distance between the best locations to site them and our major population centers, mean that these projects and the necessary transmission infrastructure are crossing more jurisdictions and impacting more communities. This increases the opportunities for local opposition to clean energy and transmission, which can arise because of poor planning, insufficient local benefits, or environmental or equity concerns or as the result of misinformation and ideology. As a result, more communities are moving to preemptively prohibit wind and solar facilities, and many projects are delayed or halted by time-consuming permitting fights and litigation.<sup>13</sup>

## **MODERN PLANNING AND PERMITTING MUST CREATE MORE BENEFITS FOR COMMUNITIES AND WILDLIFE TO UNLOCK THE CLEAN ENERGY FUTURE**

We must reform our planning and permitting system in order to move renewable projects through the pipeline at an accelerated pace. This requires centering community and wildlife benefits, both to overcome local opposition and to ensure that our clean energy future is just and equitable. We must ensure that IRA-funded projects conserve critical ecosystems and wildlife and help foster equitable outcomes for communities that host these clean energy projects.

New renewable development—e.g., solar farms and wind facilities and their transmission infrastructure—will require a lot of land, making it a potential driver of habitat loss and the biodiversity crisis. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) has predicted that one million species will face extinction, many within decades.<sup>14</sup> Their loss would have catastrophic impacts on our planet. Climate change and biodiversity are inextricably linked; climate change is one of the main drivers of species and habitat loss. But their solutions are linked as well: Intact and thriving ecosystems absorb and store carbon pollution quickly and cheaply. We cannot solve for climate change at the expense of biodiversity—new renewable energy must go hand in hand with wildlife and biodiversity protections.

At the same time, public policies and industry practices have historically sited fossil fuel energy infrastructure in communities that lacked the resources to oppose these projects or mitigate their harms. These communities—including low-income communities and communities of color—have been disproportionately burdened by pollution and its health impacts and increasingly vulnerable to climate-related disasters caused by these projects' emissions. While clean energy projects don't produce these harmful health and climate impacts, we must ensure, going forward, that the benefits of clean energy infrastructure flow to the communities where this infrastructure is located. Not only is this the right thing to do, but it is also crucial to garnering the necessary support to build the clean energy system we need.

To accelerate the renewable revolution in a way that addresses our climate, biodiversity, and equity crises, the United States must move to a model that more directly benefits the communities that host our clean energy infrastructure. Projects should provide economic opportunity and conservation measures that will leave these communities stronger than they were before the infrastructure was built. Understanding what benefits each community needs means listening to them early in the process and providing these benefits whenever possible. If care is taken to make sure that host communities benefit in the short and long term from the energy projects in their backyards, they will be less inclined to oppose them, leading to faster timelines for clean energy and transmission projects.

In addition to increasing benefits, we must also minimize harmful environmental and health impacts by incorporating “smart from the start” planning. This means planning and siting development in ways that minimize potential impacts and conflict before project-by-project permitting even begins. Ultimately this requires sharing the best information early in the process in a way that can speed the development of multiple projects. It includes applying science, guidance, and best practices to address both environmental and community concerns and is one of our best options for threading the needle to scale clean energy quickly while also protecting and elevating environmental and community concerns.

Broadly speaking, shifting our approach to one of more inclusive and authentic engagement with greater community benefits requires:

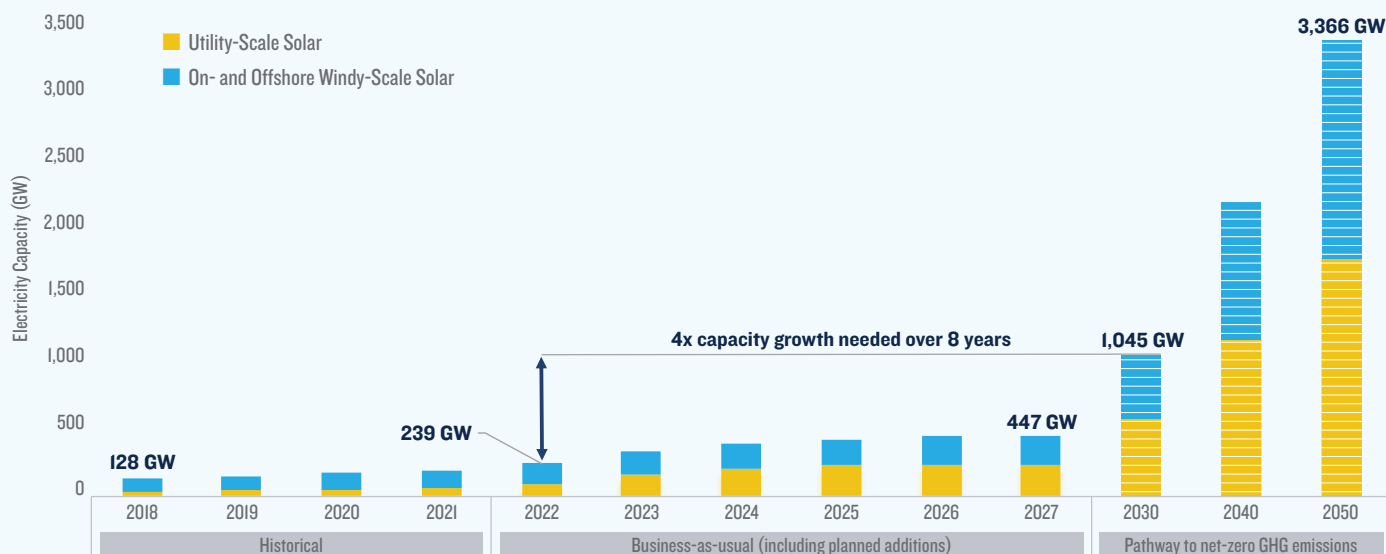
- more comprehensive and better planning using a “smart from the start” approach that places an early emphasis on appropriate siting to avoid impacts, followed by a commitment to identify and mitigate harms that occur;
- ensuring that clean energy and large multistate transmission projects create economic and conservation benefits for the communities that host them;
- enhancing stakeholder involvement so that host communities and other impacted groups are involved early and throughout the planning phase; and
- elevating local community input and engagement, per the goals above.

## THE CLEAN ENERGY GAP WE NEED TO CLOSE

Although the United States has installed 135 GW of wind capacity (12 percent of our energy capacity) and 58 GW of utility-scale solar capacity (5 percent of capacity) as of 2021, fossil resources (coal, gas, and oil) still make up 63 percent of our energy capacity (676 GW).<sup>15</sup> However, this picture is rapidly changing. By 2027, wind capacity is expected to grow by 60 percent—and solar capacity is expected to nearly quadruple—as a result of planned and announced capacity additions. Still, this pace is not nearly fast enough. NRDC’s recent analyses of different energy pathways to net zero conclude that the nation must ramp up solar, wind, storage, and transmission deployment at tremendous speed and scale—even beyond the pace set by the IRA—to meet our 2050 goal of achieving net-zero GHG emissions.<sup>16</sup>

**Figure I: Planned versus projected solar and wind capacity**

Significant solar and wind development beyond approved projects is needed over the next three decades to reach net-zero.

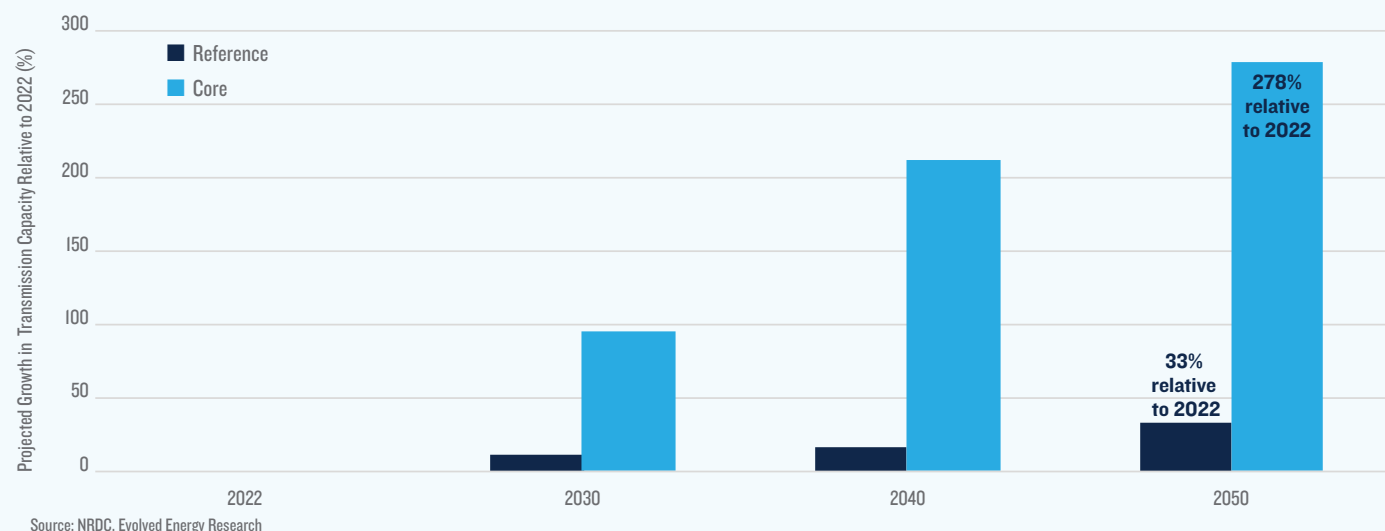


NRDC’s modeling of pathways to net zero concludes that, in addition to these planned capacity additions, solar and wind capacity must *more than double once more* between now and 2030 (Figure I).<sup>17</sup> In other words, this trajectory requires us to build at an unprecedented rate of 60 GW of solar and 40 GW of wind per year for the next decade.



**Figure 2: Projected growth in transmission capacity**

Without further policy intervention, transmission will not grow enough to meet the needs of a highly renewable grid.



To achieve these goals, the transmission system also needs rapid buildout. Under business-as-usual projections (*Reference scenario* in Figure 2), transmission capacity will grow only 12 percent by 2030 and 17 percent by 2040.<sup>18</sup> This is not nearly enough to meet the demands of our transitioning energy system. Under NRDC's net-zero pathway (*Core scenario* in Figure 2), transmission capacity doubles, then triples, then quadruples relative to today's levels over the next three decades.<sup>19</sup>

If we miss these targets, we will be left with an exceedingly narrow range of ways to achieve net zero, relying on riskier and more expensive pathways, which in turn will make it harder to achieve our equity and conservation goals. For example, when NRDC looked at a scenario in which renewables are constrained—as might happen if we cannot modernize our permitting system—we found a higher deployment of natural gas, carbon sequestration, and biofuels to close the gap.<sup>20</sup> Barriers to renewable and transmission buildout will also stifle the benefits of the progress we have already made; Princeton's Jesse Jenkins and collaborators recently showed that more than 80 percent of the potential carbon emissions reductions of the Inflation Reduction Act by 2030 will be lost if transmission growth is limited to its recent growth rate of 1 percent per year.<sup>21</sup>

NRDC's recent modeling of pathways to net zero makes it clear that we must take fast and ambitious steps toward renewable energy growth. Without needed reforms to our renewable energy and transmission permitting and siting, we're unlikely to hit our climate targets.

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Wind turbines at Roscoe Wind Project near Roscoe, Texas, one of the world's largest-capacity wind farms.

## SOLUTIONS TO KEY OBSTACLES BLOCKING THE CLEAN ENERGY BUILDOUT

Achieving the goals of the clean energy revolution will require an immense, long-term effort. However, there are a number of near-term reforms that can and should be implemented immediately to clear some key obstacles. For some, the solutions are clear. For others, the direction is clear, but NRDC is still developing specific solutions. For all obstacles and solutions, we consider this a living list that will evolve over time.

### I. Obstacle: Siloed permitting processes for siting large transmission projects

**Solution: Use existing federal government authority to site, permit, and allocate costs for large interstate transmission lines while increasing community engagement.**

Our country's power grid is a patchwork of regional systems that lack sufficient connections to one another.<sup>22</sup> With more interregional connections, we could move power more easily between regions while reducing blackouts from increasingly common extreme weather. However, there are substantial obstacles to building this connective infrastructure. Currently, planning and permitting for all transmission lines happens at the state and local level, meaning that each state (and in some cases each community) has veto power over transmission lines that pass through its jurisdiction by either denying needed permits or refusing to accept any of the costs.

New transmission lines typically do not generate local economic benefits and are often perceived as eyesores. The benefits that these lines produce, such as climate stability and grid reliability, are primarily provided to those who live far away from project footprints. Given this misalignment of costs and benefits, many communities oppose new transmission lines, particularly when the costs are clear, and the benefits are not immediately apparent. Yet building transmission lines is vital for protecting against the worsening impacts of the climate crisis. The solution, as described below and in Section II, is both to give the federal government more power over transmission siting *and* to incentivize more early community engagement, smart transmission line siting, and more benefits for host communities.

There are more than 2 terawatts of renewable energy waiting to connect to the grid.<sup>23</sup> This is more than the 1.2 terawatts of energy that currently power our grid. While this delay is caused in part by cumbersome interconnection processes that make it difficult for renewables to access the grid, many renewable projects cannot connect without expensive transmission upgrades that in many cases would make the project financially prohibitive without a more equitable allocation of costs.

Existing law gives the Federal Energy Regulatory Commission (FERC) and the Department of Energy (DOE)



Construction Workers putting bolts into the shaft end of a wind turbine blade so that it later can be mounted onto the main drive shaft of a new wind turbine.

authority to permit certain large interstate transmission lines if a state fails to do so. Under authority that was strengthened by the Bipartisan Infrastructure Law (BIL), FERC has backstop authority to site lines within “corridors of national interest”—which DOE must designate—after states deny or do not act on a project within a year.<sup>24</sup> However, this requires FERC and DOE to decide to exercise that authority, and they face stiff resistance from states, which view this as a usurpation of their authority.

In addition, allocating the costs of large transmission projects is a herculean undertaking. Current cost allocation rules fail to consider the multiple benefits of transmission and thus do not fairly allocate costs of transmission across all the beneficiaries. For example, states that receive energy without hosting transmission infrastructure are not required to pay for any portion of building that infrastructure (though some voluntarily agree to do so).

Permitting large interstate transmission at the federal level and allowing the federal government to allocate costs to states that benefit from this transmission would fix the misalignment of costs and benefits caused by state-by-state permitting. As described below, the first order of business is for FERC and DOE to aggressively implement their current authority. A more robust solution will require congressional action.

### Recommendations

**1. FERC and DOE should move quickly under their strengthened authorities to designate new “national interest” corridors.** DOE has taken the first step of issuing a draft “transmission needs” study.<sup>25</sup> It has also issued a request for information regarding how to designate these corridors.<sup>26</sup> Meanwhile, FERC should quickly finalize its proposed rules modifying its backstop siting regulations, which would allow it to start its pre-filing review of proposed lines in parallel with states.

**2. FERC should perform more robust environmental reviews and provide stronger landowner protections in siting transmission.** Currently, FERC's gas permitting process essentially rubber-stamps nearly all fossil gas pipelines.<sup>27</sup> With respect to siting transmission lines, it should 1) ensure that it accurately defines all impacted environmental justice communities, 2) assess the impacts on environmental justice communities, 3) measure changes in GHG emissions under NEPA, and 4) provide plain-language public notice to all affected landowners and a meaningful opportunity for comment.

**3. DOE should expeditiously use its new authority to take equity stakes in large new interstate or offshore transmission lines.** Financing is often at least as big a barrier as permitting for large transmission lines. The BIL gave DOE the authority to serve as an anchor customer to buy up to 50 percent of a planned transmission line (under what are known as capacity contracts), which can reduce the risk of the project and attract investment. Applications for the first round of such contracts closed February 1, 2023.<sup>28</sup> DOE should move expeditiously to announce those entities that have been selected to move to the next phase of the program and enter into negotiations for the capacity contracts by the end of 2023.

**4. Congress should pass new legislation that explicitly requires FERC to issue new cost-allocation rules that consider all the benefits of transmission and that accurately allocate the costs on the basis of these benefits.** FERC can implement rules to broadly allocate the costs of new transmission to states that benefit from it, but the agency has not yet done so. If FERC does not act, Congress should require it to adopt cost allocation rules that holistically reflect the multiple benefits of transmission. New legislation should also explicitly allow FERC to establish cost-allocation rules for offshore wind transmission.

**5. Congress should pass new legislation that gives clear and exclusive authority for DOE to plan and FERC to permit large, interstate transmission lines.** These new transmission lines should be required to satisfy all of the following: provide 1,000 MW of electricity or more; touch at least two states; and enable renewables, reduce congestion, or improve reliability. As part of this, DOE and FERC should require developers to conduct early and comprehensive community engagement. NRDC and other groups have issued principles, which are available online, to guide the development of this legislation.<sup>29</sup>

## **II. Obstacle: Local opposition to large-scale renewable and transmission projects**

### **Solution: Increase community support for transmission and large-scale renewable energy projects.**

Community opposition to large-scale wind and solar projects is growing across the United States.<sup>30</sup> There are many reasons for this trend, including misinformation

about renewable energy,<sup>31</sup> concerns about project impacts, and concern that most of the benefits flow outside of the community while the burdens fall within.<sup>32</sup> Communities often see hosting renewable energy projects and transmission (which touches multiple communities) as an impediment to their goals, such as preserving community identity, land preservation, and in some cases ensuring ecosystem conservation. While some landowners see these projects as a potential source of revenue from leases, others worry that the projects will reduce the value of their land.<sup>33</sup> Finally, in many communities, while there may be both supporters and opponents of clean energy projects, the opponents are often more vocal, better resourced, and more passionate than the supporters.<sup>34</sup> Because of all these factors, an alarming number of communities are adopting restrictive zoning and land use ordinances that effectively ban the siting of clean energy projects.<sup>35</sup>

This rise in opposition highlights the importance of ensuring that developers and local officials disseminate accurate information about potential projects and that the permitting process allows engagement from a broad range of voices so that decision-makers can accurately assess the environmental impacts as well as benefits of projects. Furthermore, it is important to ensure that host communities share in the benefits of projects in their own backyards.

Several states, including New York, California, Illinois, and Washington, have enacted laws that improve the siting process for large-scale renewable projects and provide potentially powerful models for similar legislation in other states.<sup>36</sup> Among other things, these laws modernize the permitting process and explicitly provide benefits to host communities via mechanisms like utility bill discounts. States should be encouraged to adopt model siting and permitting laws that expand community engagement while limiting the ability of localities to unreasonably ban all wind and solar projects.

Bringing communities from opposition to support—or at least to open-mindedness—is a major challenge to renewable energy growth that needs sustained effort, engagement, and thought. Our recommendations provide a starting point.

## **Recommendations**

**1. States should adopt model siting and permitting laws that expand community engagement while limiting the ability of localities to unreasonably ban all wind and solar projects.** Key provisions for proposed legislation should include the following: 1) specialized state-level agencies focused exclusively on renewables siting; 2) transparent timelines for completeness determinations and project approvals; 3) the ability to bypass overly restrictive local laws under certain conditions; 4) standardized requirements for avoiding, minimizing, and mitigating impacts from projects; 5) public funding that allows impacted groups and communities to intervene in permitting proceedings; and 6) robust community benefits agreements.



**2. Developers should adopt early, active, and informed engagement of all stakeholders.** Where states are adopting siting and permitting laws or new incentives for renewables or in-state transmission, they should require developers to engage early with all stakeholders—project proponents, state and federal agencies, NGOs, community interests, and so on. Where this is not required, developers should, as many do, adopt this as a best practice. This engagement should aim to identify and address potential conflicts as early as possible.

**3. Developers, states, and the federal government should make sure that host communities receive direct benefits from clean energy projects.** Where states are adopting siting and permitting laws or new incentives for renewables or in-state transmission, they should require developers to ensure that their projects directly benefit communities. These benefits will necessarily vary by project and community, but common elements include job creation, infrastructure improvements, environmental protections, financial contributions, and energy benefits. Some developers already routinely negotiate community benefit packages for their projects. States should incentivize or require this as a best practice. (For more information on community benefit agreements, see the “Definitions” text box, above.) Alternatively, states should consider providing incentives

directly to these communities. Some funds for this type of incentive were included in the IRA.<sup>37</sup> Congress should increase and broaden this funding.

**4. Developers, states, and the federal government should ensure that clean energy projects result in quality jobs.** Developers should also be required or incentivized to provide quality jobs for large-scale clean energy projects. This includes prevailing wage and project labor agreement provisions. States like New York and New Jersey provide potential models for how states can require developers to provide these benefits in order to bid for projects supported by state funds.<sup>38</sup>

**5. Coalitions should work together to build support for well-sited projects that benefit the host community.** In cases where developers have done their due diligence as outlined in the preceding recommendations, environmental and conservation groups, labor groups, local landowners and businesses, and other stakeholders—including, where relevant, environmental justice and tribal groups—should form coalitions and work together to support the project. A key part of this support should be highlighting the community benefit agreements, payments in lieu of taxes or other mechanisms for benefit sharing, the creation of local jobs, and addressing other ways to compensate local landowners for any perceived or actual diminution in property values.



Utility scale wind turbines and transmission lines at the Cedar Creek Wind Farm in Grover, Colorado, on July 18, 2014.



### III. Obstacle: Insufficient federal agency resources, coordination, and accountability for environmental reviews

#### **Solution: Improve federal coordination, accountability, and staffing of clean energy permitting and environmental reviews.**

Targeted reforms to current planning, siting, and permitting procedures will help to meet the Biden administration's climate goals of a carbon-free power sector by 2035 and net-zero emissions economy-wide by 2050. But broad claims by some that the system is "broken" and that environmental review under the National Environmental Policy Act (NEPA) is the major cause of clean energy project delays are simply incorrect. Unfortunately, NRDC anticipates that the changes made to NEPA as part of the debt ceiling deal will only increase litigation and weaken the defensibility of environmental assessments and environmental impact statements.<sup>39</sup> (See the NEPA text box below for further information.)

Nevertheless, there are ways to improve the coordination, accountability, and efficiency of clean energy permitting at the federal level without undermining core parts of NEPA. Environmental reviews can be made much more efficient through increased agency resources, greater use of programmatic reviews, and permitting solutions that are tailored specifically to clean energy projects.

According to analysis of 16 years of U.S. Forest Service decision-making under NEPA, two important sources of delays in reaching final decisions under NEPA are the lack of staff generally and the lack of staff with expertise in environmental reviews.<sup>40</sup> While the IRA provides approximately \$1 billion for project planning and permitting, the Biden administration must first fill the existing vacancies left by the previous administration in agency staffing to ensure that these projects can be reviewed and permitted in a timely manner.

Further research into agency staffing and resources is needed to fully round out our recommendations. The information generated through the first recommendation below would help, and in the meantime, NRDC looks forward to compiling the best publicly available data and best practices.

#### **Recommendations**

**1. Fill current federal permitting agency vacancies with a balance of generalists and experts and be prepared to pay them more.** President Biden should require all federal agencies involved in planning and permitting of renewables and transmission to submit and publicly report on updated workforce plans that include current data on overall staff and identify any key expertise gaps that are limiting the agency's ability to plan or permit projects in a timely manner. Relevant staff capacity may include members of human resources departments. These workforce plans should lay out how the agency will use existing and new IRA resources to attract a diverse

pool of top talent, train staff members on relevant skills necessary to expand capacity, and retain qualified staff so that institutional knowledge stays within the agency. The president should also require annual public updates to the workforce plans and staffing data.

**2. Use IRA and BIL funds to augment agency capacities with a focus on speeding smart planning and permitting of renewables and transmission.**

Investments should be directed toward greater agency transparency and accountability (e.g., expanding the information provided through the Federal Infrastructure Permitting Dashboard, which lists active projects and their timeline<sup>41</sup>) and coupled with clear and up-front direction on expectations for timelines, agency coordination (including lead agency authority), and early access to accurate and current data on land, water, and wildlife resources. Practices like early stakeholder engagement and pre-application meetings have contributed to a more efficient permitting process within the FAST-41 program and should be broadly encouraged.<sup>42</sup>

**3. The Federal Permitting Improvement Steering Council (FPISC) should drive coordination.** FPISC should take full advantage of its authority to disburse a portion of the \$350 million that it received from the IRA to facilitate permitting coordination with Native tribes and states, as it has begun to do.<sup>43</sup> FPISC's executive director also should use the discretion that the BIL provided the agency to track many of the smaller—but vitally important—clean energy projects on the Permitting Dashboard in the interest of transparency. The president's proposed FY24 budget, particularly for the FPISC, would make important and helpful investments in this direction.<sup>44</sup>

**4. The White House Council on Environmental Quality (CEQ) and the Bureau of Land Management (BLM) should also focus resources on clean energy-specific functions.** In the broader federal permitting context, CEQ should continue efforts to identify and facilitate targeted efficiency gains for agencies that are part of the permitting process for clean energy projects. As noted above, this could produce significant dividends because the need to coordinate among agencies is often the source of permitting delay. NRDC further encourages BLM to fully staff the recently reestablished Renewable Energy Coordinating Offices, as Congress required in the Energy Act of 2020.<sup>45</sup> During the Obama administration, these offices were an effective one-stop shop and source of needed expertise to move renewable energy permits forward on public lands.

**5. Congress should tweak two permitting-related measures.** To produce better and more expedited permitting outcomes, Congress should both lower the monetary threshold for "covered projects" that are tracked on the Permitting Dashboard and provide clear authority to FPISC to use IRA funds to facilitate the participation of interested parties—including frontline and disadvantaged communities—in permitting processes.

#### IV. Obstacle: A lack of planning to identify, avoid, and mitigate impacts on sensitive habitat and wildlife

##### **Solution: Embrace “smart from the start” planning to ensure that clean energy projects deliver conservation benefits and mitigate impacts.**

To achieve the Biden administration’s goal of 100 percent carbon-free electricity generation by 2035, we must build renewable capacity at an unprecedented rate of 60 GW of solar and 40 GW of wind per year for the next decade. Princeton’s *Net-Zero America* study projects that wind and solar farms can be installed on areas equivalent to the size of Missouri by 2030 and Texas by 2050.<sup>46</sup> Some of these projects can be built on degraded lands, and a lot of transmission infrastructure can be built on existing rights of way. Regardless, this scale has profound land use implications, which is part of why we must dramatically increase planning, conservation, and early community engagement with “smart from the start” planning. For example, in the case of wind farms, the wind turbines themselves use only a modest portion of the lands on which they are sited. Especially for wind and increasingly for solar, much of this land is likely to have a second use, such as agriculture, and “smart from the start” planning can help capitalize on those opportunities.

“Smart from the start” planning was born out of decades of experience among advocates and regulators in protecting natural resources from industrial development coupled with an urgency to find environmentally responsible pathways forward for clean energy deployment. It encompasses the following high-level steps:

- conduct early and robust stakeholder engagement;
- undertake planning at a landscape level;
- conserve lands with important natural resource and cultural values;
- guide development to low-conflict areas with preferred development criteria;
- coordinate with transmission planning; and
- integrate regional strategic mitigation.

“Smart from the start” is designed to make permitting more efficient and to protect high-value lands by strategically focusing on regional or landscape-level efforts to mitigate the impact of renewable energy resources. These larger mitigation efforts often produce greater conservation outcomes than disparate project-level mitigation.<sup>47</sup> NRDC is applying lessons learned from federal applications of “smart from the start” on public lands and in the offshore wind context to our advocacy for efficient permitting of clean energy that also delivers conservation benefits.

NRDC was a core member of the California Desert Renewable Energy Working Group, a collaborative effort comprising representatives of the renewable energy industry, electric utility sector, and environmental community that developed joint recommendations and significantly shaped the

Department of the Interior’s (DOI) and DOE’s 2009 Solar Programmatic Environmental Impact Statement (Solar PEIS) as well as the California Desert Renewable Energy Conservation Plan.<sup>48</sup> These two efforts embraced “smart from the start” planning and demonstrated a proof of concept for balancing protections for ecosystems, landscapes, and species while supporting the timely development of renewable energy resources in the California desert. The Solar PEIS, also known as BLM’s Western Solar Plan, cut the permitting timeline for several utility-scale solar projects in the Southwest in half, with the average permitting time dropping from 20.1 months to 9.7 months.<sup>49</sup> The California Desert Renewable Energy Conservation Plan brought stakeholders together to identify and agree up-front on lands that should be prioritized for conservation as well as lands for renewable energy development, thereby lessening project-level opposition down the road and securing immediate habitat protections.

While the Biden administration appears poised to continue “smart from the start” for public land holdings, more can be done, particularly with respect to private lands and offshore wind. In addition to adopting the “smart from the start” framework for clean energy planning at all levels, including protecting high-value and sensitive areas and directing development to areas of lower conflict like already degraded lands, more resources and focus must be directed to the creation of science-based standards and guidelines for responsible permitting. Investing in science and standards will enable more effective planning and environmental review processes and associated efficiency gains, because such information is a prerequisite for good decision-making and informed engagement. Another focus area for delivering conservation benefits—and one that NRDC intends to further explore—is durable mechanisms that directly tie responsible clean energy development to conservation dollars and other community investments. The recommendations and planning processes highlighted below provide near-term opportunities to double down on such efforts.

#### **Recommendations**

##### **1. DOI should finalize updates to the BLM Western Solar Plan and other planning processes that embrace “smart from the start” and use programmatic environmental impact statements (EISs) to engage communities early in the process.**

Strong programmatic EISs can provide the basis for multiple, potentially faster, project-level EISs. A programmatic EIS can be incorporated in multiple project-level EISs by reference, through a process known as tiering. This process would allow agencies to analyze issues across a landscape, technology, and/or species impact. It would then provide options and guidelines for addressing concerns (e.g., mitigation measures or best management practices) that individual project proponents and agencies can later rely on, saving time and resources. This practice should be replicated elsewhere whenever possible.



**2. DOE and the Environmental Protection Agency (EPA) should work with other agencies (such as the U.S. Department of Agriculture and DOI) and states to identify contaminated sites and nonviable agriculture land for potential renewable energy development that would be preferred by the local community and practical for developers.** Through its RE-Powering Initiative, EPA has identified and mapped more than 11,000 potentially contaminated sites, representing nearly 15 million acres with renewable energy potential.<sup>50</sup> State and federal agencies should site renewables as an economic development strategy in transitioning regions, for example siting on agricultural land that will no longer be productive due to lack of water across the West.<sup>51</sup>

**3. DOI, DOE, and EPA should partner with state agencies to develop and share the best data, best management practices, mitigation options, and guidance.** This is resource-intensive work that strains the capacities of many state agencies. Federal agencies should ensure that IRA funds earmarked for planning are implemented in a way that also helps states permit clean energy more efficiently, such as by creating high-quality data sets and other information that can be used at the federal level and also be shared with state agencies.

**4. DOI and its partner agencies should start off strong with renewables projects, with clear, robust, proactive environmental protections in place, coupled with both monitoring and adaptive management.** In an effort to lessen impacts and build trust with communities, agencies should comply with strong guidance specifically designed to avoid, minimize, and mitigate anticipated environmental impacts during all stages of project development and operations. Similarly, as we move to build out clean energy quickly, agencies need to learn as they go. Regional monitoring and research can help answer key wildlife conservation questions, and adaptive management will allow agencies to quickly course-correct while growing the renewables industry in a way that protects the environment and wildlife.

**5. Grid planners should use “smart from the start” principles to expand transmission system capacity.** This includes upgrading the system within existing transmission rights-of-way whenever possible, fully considering the use of non-wires alternatives like advanced conductors and other engineering solutions where practicable, and choosing routes likely to have the least community and resource impacts.<sup>52</sup>

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WindConnect workers construct the base of a 300 foot tall wind turbine at the Milford Wind Corridor Project on May 20, 2009 just north of Milford, Utah.



## NEPA MUST NOT BE MADE A SCAPEGOAT

The National Environmental Policy Act (NEPA) process plays a key role in most transmission and many large energy projects. For more than 50 years, NEPA has supported essential environmental safeguards, guaranteed a voice for frontline communities, and provided a structure for considering improvements and alternatives to major public projects. NEPA's purpose is neither to hold up such proposals nor to rubber-stamp them. Rather, its purpose is to identify and analyze environmental impacts of a project and ways to avoid, minimize, and mitigate these impacts.

Claims by some that NEPA is the main source of permitting delays are unsupported by data. The Council on Environmental Quality estimated that 95 percent of projects are granted categorical exemptions under NEPA, meaning no review is needed. Fewer than 5 percent require environmental assessments, which are significantly less involved than the full environmental impact statements (EIS) required of the remaining projects—less than 1 percent of the total.<sup>53</sup> A Forest Service NEPA review found that 2 percent of the agency's NEPA decisions involve EISs, and only 0.06 percent of all Forest Service NEPA reviews were challenged.<sup>54</sup> In short, the data show that the NEPA process works well for well-designed projects.

Half of all EIS reviews take 3.5 years or less, and 25 percent of reviews take no more than 2.2 years.<sup>55</sup> However, EIS reviews for a few projects have taken an unusually long time.<sup>56</sup> Those few cases not only skew the average higher (4.5 years) but dominate the discourse around permitting. Unfortunately, these few projects are too idiosyncratic to provide much insight into the real-world challenges to building renewables and transmission at the pace and scale needed.

Based on this misinformation about NEPA reviews, the NEPA revisions that were included in recent debt ceiling legislation undermine key parts of the statute without clear evidence that these changes will speed up project timelines.<sup>57</sup> For example, one revision allows federal agencies to decide whether their projects meet the definition of a “major federal action.” By making this change, the bill gives agencies the discretion to decide whether their projects are covered by NEPA and sweeps aside decades of court decisions applying NEPA broadly. In another example, programmatic reviews, which can provide critical efficiency by analyzing information that is relevant across a landscape or program, have historically not been substitutes for site-specific analysis later. The debt ceiling legislation allows an agency to rely on analysis included in programmatic reviews under certain circumstances without additional analysis. Finally, the debt ceiling legislation limits environmental impact statements to 150 pages and requires that they be completed in two years, and environmental assessments must be completed within one year. Any extension is at the agency's discretion.

A survey of Department of Defense reviews found that factors outside the NEPA process (such as permits controlled by other agencies) were responsible for delays most of the time. It also found that one of the strongest indicators of NEPA review duration was agency staffing and capacity and the complexity of the issues that a project presented.<sup>58</sup>

This means that arbitrarily shorter page limits or timelines for an EIS such as those in the debt ceiling legislation will do little for speeding complicated projects and may instead lead to more poorly documented decisions and thus more legal risk.<sup>59</sup> This is especially true if agencies aren't given significantly more resources or tools to actually address the complexity of the issues, which ultimately would unlock the greatest efficiency gains for NEPA.

## CONCLUSION

The IRA presents a once-in-a-generation opportunity to make real progress toward a clean energy future for all. It will require us to build renewable energy generation and transmission over the next decade at an unprecedented speed and scale. By making it easier to site and pay for the transmission lines necessary to get this clean energy to all areas of our country, by addressing local barriers to clean energy projects through early engagement and the sharing of benefits with host communities, by improving the permitting process for clean energy projects, and by utilizing “smart from the start” planning to maximize conservation benefits and mitigate the impacts of these projects, we can realize this clean energy future with health, environmental, and economic benefits for all Americans. This work needs to begin now, and these recommendations are practical first steps.



Cattle graze under solar panels at Jack's Solar Garden in Longmont, Colorado on September 29, 2022. Jack's Solar Garden is a 1.2 megawatt, 5 Acre community solar farm designed and built by Namasté Solar and is the largest agrivoltaic research project in the U.S.

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