

A photograph of a wind turbine and solar panels under a blue sky with light clouds. The wind turbine is a tall, white, three-bladed structure on the right side of the image. In the foreground, there are rows of solar panels on a grassy field. The sky is a clear blue with some light, wispy clouds.

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Renewables

Government-Imposed Barriers
Hinder Clean Energy Development

ACCELERATING RENEWABLE ENERGY DEPLOYMENT

Key Takeaways:

- Cost-competitive renewable energy generation will diversify America’s energy supply and provide families and businesses with affordable, clean power.
- Modernizing and streamlining regulations is essential for allowing the expansion of renewable energy projects and building of new transmission lines.
- Measures that hinder trade, such as tariffs, drive up costs for Americans and hamstring renewable energy development in the U.S. but provide no meaningful economic, national security, or environmental benefit.

Currently, wind and solar make up a relatively small percentage of America’s electricity generation. Wind (10.2%) and solar (3.4%) energy provided 13 percent of the nation’s power generation in 2022.¹ Renewable energy has made incredible strides in cost reduction and deployment over the last 15 years. Subsidies and state renewable portfolio standards aid in some of that growth. Nevertheless, it is clear that private capital is mobilizing toward wind, solar, and other renewable energy technologies and this is likely to continue without preferential treatment. The business case for renewable energy sources is strong. Policymakers should remove barriers that drive up the cost and slow the deployment of renewable energy and should establish a level playing field among all energy sources and technologies.

WIND AND SOLAR

From 2009-2019, the cost of solar and onshore wind declined 89 percent and 70 percent, respectively.² Roughly over that same time, renewables’ share of the global electricity generation mix increased from 20 percent to 29 percent (2010-2020).³

In the United States, wind and solar investments are thriving. While utility-scale solar installations declined slightly in 2022⁴ because of inflationary pressures and supply chain constraints, total private investment in renewable energy increased by 35 percent.⁵ Given the significant cost reductions and the mobilization of private capital toward new wind and solar projects, a new policy strategy is necessary. Rather than distorting markets by subsidizing mature technologies with targeted tax credits, Congress and the administration should fix the policy problems that artificially drive up the cost of renewable hardware, software, and connection. The same holds true for all energy technologies. Of course, the market is far from free. However, the solution is not to layer on more market-distorting interventions, but instead to level the playing field by removing them. For instance, policymakers should phase out targeted tax credits for all energy sources and technologies. A next-best solution would be to provide a technology-neutral tax credit and explore the implementation of a reverse auction that improves economic efficiency and

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delivers better stewardship of taxpayer money. In a reverse auction, the utility (or energy customer) would select the project developer that meets certain criteria and also offers to supply the electricity at the lowest price.

POLICY RECOMMENDATIONS TO EXPAND WIND AND SOLAR DEPLOYMENT

To drive more private sector investment in wind and solar projects, Congress and the administration should:

- **Fully eliminate Section 201 tariffs.** In 2018, President Trump used Section 201 of the Trade Act of 1974 to levy a tariff on certain solar cells and modules. American solar modules are among the priciest in the world, and solar consumers paid an additional \$1.3 billion in higher costs because of the Section 201 tariffs.⁶ The Biden administration extended the tariffs for another four years, though it eased the burden slightly by raising the tariff rate quota and continuing to exclude bifacial panels.⁷ Tariffs have failed to accomplish the objective of growing a domestic manufacturing industry. Wood Mackenzie estimates that the tariffs make solar projects in the United States 55 percent more expensive when compared to projects in Europe.⁸ The administration should reconsider its stance and eliminate the Section 201 tariffs.

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- **Extend Master Limited Partnerships to renewable projects.** Under a Master Limited Partnership (MLP), firms have the tax structure of a partnership or a limited liability company, but ownership equity trades publicly on a securities exchange. The combination of the partnership tax status and the liquidity of a publicly traded company make MLPs an attractive investment vehicle. In the energy sector, MLP formation is available for mineral extraction, oil and gas pipelines, processing, transportation, and storage, as well as for the transportation and storage of ethanol, biodiesel, and other alternative fuels.⁹ MLPs are also available for geothermal energy.¹⁰ Congress and the administration should extend MLP structures to all renewable energy projects.
- **Repeal the Jones Act or waive Jones Act requirements to increase the competitiveness of offshore wind.** The Jones Act mandates that goods shipped between two ports in the U.S. must be transported on a U.S.-built, U.S.-flagged vessel with a crew that is at least 75% American. That includes vessels used to build and service offshore wind projects. *The Washington Post* highlighted that the lack of Jones Act compliant vessels made an offshore wind project off Virginia's coast logistically more difficult and more expensive. Rather than using a closer port, "supplies shipped from Europe were first staged in Canada before being ferried on repeated trips to the construction site."¹¹ Using Jones Act ships is pricier, adds to the cost of projects, and could delay projects from coming online.¹² Congress should repeal the Jones Act or at the very least repeal the foreign-build requirement.
- **Increase revenue sharing for offshore wind.** Through the Outer Continental Shelf Renewable Energy Program, the Department of Interior conducts competitive and noncompetitive lease sales.¹³ The company that wins the bid or negotiates the contract with DOI pays bonus bids, rent, and royalties. These revenues accrue to the federal and state governments.¹⁴ Congress should increase the revenue sharing for offshore energy development to be a 50/50 split among the federal government and states. Coastal states and adjacent coastal states receive 27 percent of revenues generated from qualified projects.¹⁵ Increasing the states' share would attract more buy-in, and states could allocate those resources toward coastal protection and restoration, or however they see fit.

TRANSMISSION POLICY

To expand renewable energy generation, additional transmission capacity is necessary to deliver electricity to consumers. As with other energy infrastructure, however, transmission lines can take up to a decade to build.¹⁶ Through the years, Congress and the Federal Energy Regulatory Commission (FERC) have taken several actions to improve transmission planning, siting, and permitting.¹⁷ In July 2021, FERC issued a Notice of Proposed Rulemaking on reforms for electric regional transmission planning, cost allocation, and generator interconnection.¹⁸ FERC's rulemaking would take a longer-term approach to transmission buildout and would help ensure the transmission investment is more competitive and cost effective. R Street electricity experts Jennifer Chen and Devin Hartman stress that the proposed rulemaking would reform flawed transmission and generator interconnection regulations that "constrain trillions of dollars' worth of productive investment and skew capital deployment toward inefficient applications, all to the detriment of consumers, innovation and the clean transition."¹⁹

Making transmission more transparent, holistic, and independently administered would help consumers and reduce emissions. The creation of an Independent Transmission Monitor could significantly help to carry out these objectives. Furthermore, consumer-focused groups including the Electricity Consumers Resource Council recommend setting minimum criteria for FERC to consider for further improving transparency and better assessing what transmission investments are needed. The recommended minimum criteria include: grid enhancing technologies and other measures to increase the performance and capacity of existing infrastructure; the frequency and intensity of extreme weather; anticipated energy resource mix taking into account federal, state, local, utility, industrial, and commercial clean energy goals; age and potential retirement of existing generation and transmission; anticipated increase in levels of electrification in the transportation, home heating, and manufacturing sectors; anticipated load profiles; future penetrations of distributed energy resources; increased use and cost-effectiveness of energy storage; and existing rights-of-way including usage of highway and railway corridors to inform siting decisions.²⁰

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GEOTHERMAL

Geothermal energy uses the earth's heat to power homes and heat buildings. Geothermal taps into steam and hot water reservoirs below the earth for direct heat or to power generators. The potential for geothermal to supply affordable, reliable, and clean heat and electricity is enormous. In contrast to intermittent sources of electricity such as wind and solar, geothermal is an "always-on" renewable resource. Traditional geothermal systems used heat and water close to the surface, like hot springs, along with natural fractures in the earth. However, advancements in smart extraction technologies, like those used in the oil and gas industry, have increased the potential for geothermal as a firm, clean energy source. Innovation is taking geothermal from a geographically constrained clean power source to being accessible across the globe.

For instance, companies like Fervo have enhanced geothermal systems, which "applies proven technologies— such as horizontal drilling and distributed fiber optic sensing – to geothermal reservoir development, unlocking geothermal power in previously uneconomic locations and dramatically increasing the resource potential for geothermal globally."²¹ GreenFire Energy deploys

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geothermal heat with a closed-loop system using much less water for power generation, direct use, and industrial purposes.²²

In a closed-loop system, “fluids are circulated through the system and heated by high underground temperatures, forming what they call a ‘massive radiator.’”²³ According to DOE, these modern closed-loops systems have lifecycle greenhouse gas emissions four times lower than solar photovoltaics and six to 20 times lower than natural gas.²⁴

POLICY RECOMMENDATIONS TO EXPAND GEOTHERMAL ENERGY

One way to improve the economic outlook for geothermal is to address the policy barriers that stifle its development. A 2019 DOE study concludes that putting geothermal permitting on equal footing with small oil and gas well exploration on federal lands would more than double geothermal electricity generation capacity (from six gigawatts in the business-as-usual case to seven gigawatts).²⁵ A 2023 Western Governors Association report on geothermal identifies several ways which policymakers can provide regulatory certainty for geothermal projects in the U.S.²⁶ To expand geothermal generation, policymakers should:

- **Expand the use of categorical exclusions to bypass the National Environmental Policy Act reviews for geothermal exploration activities (similar to oil and gas exploration wells).**
- **Require the Secretary of Interior to identify priority areas for geothermal development on federal lands.**²⁷
- **Open a central permitting office within the Bureau of Land Management and require BLM to process geothermal drilling permits at a similar pace for permits on state- and privately-owned lands.**²⁸
- **Ensure that no less than 25 percent of the revenue generated from geothermal generation on federal lands goes to the county and no less than 50 percent goes to the state where the production is occurring.**

HYDROPOWER

Hydropower provided 6.3 percent of America’s power generation in 2021, roughly one-third of the country’s renewable electricity.²⁹ As a low-cost, reliable, and flexible power source, hydropower will be a critical resource in supplying affordable energy and meeting decarbonization objectives. Pumped storage hydropower offers utility-scale backup power to complement intermittent wind and solar resources. Pumped storage uses two water reservoirs: a company pumps water to an upper reservoir as a source of energy storage, and the water flows down through a turbine to the lower reservoir to generate energy.³⁰

The main priorities for policymakers should be to make it easier to relicense the existing hydropower fleet and make it easier to capitalize on America’s hydropower potential. In a January 2022 testimony before the Senate Energy and Natural Resources Committee, Malcolm Woolf, President and CEO of the National Hydropower Association, outlined some noteworthy statistics that underscore the need for reform. Woolf points out that:

- **281 hydropower and pumped storage facilities, about 30 percent of active licenses, are set to expire by 2030.**
- **Relicensing takes on average 7.6 years and routinely takes more than a decade, according to the Department of Energy.**
- **Relicensing a hydropower plant takes longer than relicensing a nuclear plant.**
- **The processing of a license for a 100-megawatt hydropower facility can cost upwards of \$100 million.**³¹

POLICY RECOMMENDATIONS TO EXPAND HYDROPOWER

Expanding the use of pumped storage would provide additional supply and storage, which would be particularly beneficial to accompany future wind and solar buildout.³² The Infrastructure Investment and Jobs Act allocated \$700 million to “improve efficiency, maintain dam safety, reduce environmental impacts, and ensure generators continue to provide emission-free electricity.”³³ To stretch taxpayer dollars further and incentivize investment in existing fleet upgrades and increasing new hydropower generation, deeper regulatory improvements are necessary. These reforms include:

- **Designate the Federal Energy Regulatory Commission as the lead agency for federal permitting and improving interagency coordination.**
- **Expedite licensing for small and next generation hydropower projects that are unlikely to affect critical habitat or endangered species and for technologies that enhance environmental protection.**
- **Require a report to Congress to further reduce barriers for conventional, pumped-storage, conduit, and emerging hydropower technologies.**
- **Include hydropower in the definition of renewable power, which would allow hydropower to count towards the federal government's renewable power procurement requirements.**³⁴
- **Allow the U.S. Army Corps of Engineers to engage in private-sector financing for the federally owned fleet of power projects.**³⁵ The Army Corps is the largest owner of hydropower in the United States, and while Congress should require a study to examine which parts could be privatized, incorporating private financing could be beneficial for maintaining and expanding the government's hydropower fleet.
- **Empower states to manage their water resources while preventing them from abusing Section 401 of the Clean Water Act to block projects for non-water issues.**³⁶

Even without legislative fixes, the Federal Energy Regulatory Commission could reduce timeframes, improve coordination, extend licenses for longer durations, eliminate duplicative processes, and implement more dispute resolutions to avoid litigation.³⁷ Such fixes should instill more regulatory discipline, reduce costs for companies and the taxpayer, keep existing hydropower online longer, and provide more certainty for new hydropower investment.

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