

Advanced Wind and Solar Energy Recommendations

Over the past decade, the U.S. electric power industry has deployed gigawatts (GW) of new onshore wind and solar energy generation capacity. Even with successful deployment to date, transformational innovations to increase efficiency and dispatchability and to reduce the costs of onshore wind and solar are still possible.

Offshore wind is at a much earlier stage of commercial maturation, as the first commercial-scale projects in the United States are just getting under way. Innovation to improve the efficiency, cost, and performance of offshore technologies is needed, along with other steps, such as investments in supporting infrastructure and workforce training.

Additional steps, such as deploying energy storage and new grid operations capabilities (see separate recommendations on Advanced Energy Storage and Demand Efficiency), also are necessary to facilitate the continued integration and higher penetration of variable generation resources.

Advanced offshore wind technologies have rapidly advanced in recent years, but projects need immediate certainty and sustained federal support in the coming decade to address infrastructure siting and permitting. Federal leadership on deployment through goals and additional incentives, paired with continued investment in research and development for advanced renewables, should also be a priority.

FY22 (Authorized Funding Levels and Programs)	FY22 (Recommended Funding Levels for Current and New Program Authorizations)	FY22-25 (Cumulative Recommended Funding Levels for Current and New Program Authorizations)
\$425,000,000	\$425,000,000	\$1,700,000,000

**bracketed numbers represent funding levels that do not have corresponding authorizations*

A federal policy agenda for advanced wind and solar will include action on research, development, demonstration, and deployment, but the highest priority should be placed on addressing infrastructure and siting barriers.

Infrastructure & Siting Barriers

- Increase appropriations to support Department of the Interior (DOI) offshore wind siting and permitting activities.
 - \$32.5 million per fiscal year to the Bureau of Ocean Energy Management (BOEM) Renewable Energy for offshore wind permitting and leasing.
 - Additional \$3 million to invest in resources for competitive lease auctions/sales.
 - Additional \$3 million to review site assessment and construction and operations plans.

- Increase appropriations for the National Marine Fisheries Service to strengthen consultation and permitting capacity required to ensure timely review of offshore wind development projects while meeting species and habitat protection mandates and continue investments in permitting capacity to reduce the burden on developers by providing more timely, consistent, and clear consultations and authorizations.
- Encourage BOEM to take steps to identify additional wind energy areas and hold lease auctions for developers.
- Create a federal task force with single permitting authority to coordinate design and construction of a network of offshore wind logistics ports.
- Coordinate build-out of transmission backbone (e.g., planned, open-access transmission grid) for offshore wind interconnections.
- Address challenges with siting wind facilities near radar or military training routes.
- Establish mechanisms for DOE to provide technical support to ISO/RTOs and other grid operators regarding the use of power electronics and ancillary services.

Deployment

- Establish a national offshore wind deployment goal of 12.5 GW by 2025 and 25 GW by 2030.
- Provide economic incentives that reward investment in, and integration and deployment of, innovative/next-generation wind and solar technologies, such as: increased tax credits for facilities that incorporate innovative technologies for demonstration; new incentives and loan guarantees for supply chain development and activities involving transportation, construction, and installation; and new offshore wind tax incentives and loan guarantees for expansion of port infrastructure, expansion of supply chains, and offshore installation vessels.

Research, Development, & Demonstration

- Increase appropriations for advanced wind energy and solar energy program authorizations included in the Energy Act of 2020 and identify specific targets and timetables for cost reductions across the whole value chain for advanced renewables R&D. Ensure specific funding levels necessary to achieve cost targets by 2030.
- Increase appropriations to support Department of Energy (DOE) RD&D programs related to advanced renewables.
- Amend DOE priorities regarding the ongoing R&D of technologies to reflect priority technologies related to onshore wind, offshore wind, solar, grid modernization, and end-of-life reuse.

About the Carbon-Free Technology Initiative

The Carbon-Free Technology Initiative (CFTI) is focused on implementation of federal policies that can help ensure the commercial availability of affordable carbon-free, 24/7 power technology options by the early 2030s to help the electric power industry meet net-zero carbon reduction commitments. Participants in the CFTI include the Edison Electric Institute (EEI) and its member companies, Clean Air Task Force, Bipartisan Policy Center, Center for Climate and Energy Solutions, ClearPath, Great Plains Institute, Information Technology & Innovation Foundation, Nuclear Energy Institute, and Third Way.