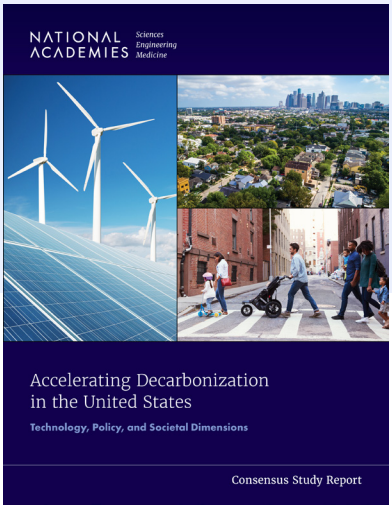
Accelerating Decarbonization in the United States



Technology, Policy, and Societal Dimensions

THE ESSENTIAL ROLE OF CLEAN ELECTRICITY

Addressing climate change is essential and possible, and it offers a host of benefits—from better public health to improved economic opportunity. To avoid the worst consequences of climate change and reach the nation's interim goal of 50 percent emissions reduction by 2030 and the ultimate goal of net zero by 2050, it is critical to pursue all opportunities for decarbonization.

The National Academies of Sciences, Engineering, and Medicine have released a comprehensive report with sector-by-sector recommendations to guide policymakers on decarbonizing the U.S. economy over the next decade and beyond. Learn more and download the report at **https://nationalacademies.org/decarbonization-report.**

The power sector is the second-highest source of greenhouse gas emissions in the United States, and demand for electricity is likely to grow to support decarbonization efforts such as electric vehicle (EV) charging and the electrification of buildings and industrial processes. **Decarbonizing power generation is therefore essential to meeting the nation's emissions reduction goal.**

Everyone should be able to count on an electricity system that provides around-the-clock clean energy. Decision makers should ensure in particular that disadvantaged communities get access to clean, affordable electricity; energy bill savings; and reliable power. The committee recommends that policymakers prioritize planning, siting, and permitting electricity transmission facilities—while meaningfully engaging the public—to expedite new electricity transmission infrastructure.

KEY RECOMMENDATIONS

By balancing societal, environmental, and economic considerations, the nation can expect an energy transition that benefits everyone. For a full list of findings and recommendations, download the report at **https://nationalacademies.org/decarbonization-report.**

NECESSARY ACTIONS	ANTICIPATED RESULTS
Because clean electricity is essential to decarbonizing the transportation, buildings, and other sectors, **Congress should adopt a clean electricity standard for the power sector, designed to reach roughly 75 percent clean electricity share by 2030 and net-zero emissions by 2050.**	
Because clean electricity will require a substantial upgrade of the transmission grid to connect users to supply sources like solar and onshore/offshore wind, **federal and state agencies should take action to expedite planning, siting, and permitting of new high-voltage transmission infrastructure.** This must be done with meaningful, inclusive participation of affected communities.	*More affordable energy*
Expansion of the transmission grid will produce billions of dollars of savings for consumers and represent a cost-effective means of reducing emissions, but only if policymakers create, enhance, and expand wholesale regional power markets. **Congress and the Federal Energy Regulatory Commission should expand regional wholesale power markets consistent with decarbonization objectives.**	*A resilient grid that offers protection from extreme weather*
Flexible demand options, such as incentivizing EV charging when grid demand is lowest, will help ease the transition to a reliable, resilient grid while helping rate payers save money. **Utilities should provide rate options to encourage flexible demand while ensuring affordable electricity.**	*Reliable, around-the-clock power*
Distributed energy resources such as community solar, rooftop solar, and battery storage represent an opportunity for communities and individuals to access and own their own energy—and in some cases, inject power onto the grid when it is not being used onsite. With the increasing frequency and severity of extreme weather threatening to knock out the grid, distributed energy resources help to keep electricity resilient and reliable. **States, localities, and tribal governments should use the technical assistance, funding, and financing opportunities offered in the Inflation Reduction Act to deploy distributed energy resources and enable low-income households and disadvantaged communities to access and own these opportunities.**	*Healthy, empowered communities with greater control over energy availability*
Well-functioning local grids will be even more important in a decarbonized energy system, which may involve more complex electricity distribution and planning. Local grids will need to be able to accommodate new energy sources and technologies, such as two-way flows of power from distributed energy resources. **Utilities should carry out planning, public participation, investment projects, rate proposals, and other actions to modernize and ready local distribution systems to operate and maintain the local grid under more complicated conditions than in the past.**	
Research, development, demonstration, and deployment (RDD&D) is essential to create on-demand electric generating technologies, long-duration storage technologies, and supply chains. **Congress should increase funding of RDD&D to innovate and commercialize these technologies so communities have the tools needed to create a modern, resilient clean energy grid of the future.**	

COMMITTEE ON ACCELERATING DECARBONIZATION IN THE UNITED STATES: TECHNOLOGY, POLICY, AND SOCIETAL DIMENSIONS

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FOR MORE INFORMATION

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