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# Department of Energy Releases Energy Storage Grand Challenge Roadmap

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**WASHINGTON, D.C.** – Today, the U.S. Department of Energy (DOE) released the [Energy Storage Grand Challenge Roadmap](#), the Department’s first comprehensive energy storage strategy. Announced in January 2020 by U.S. Secretary of Energy Dan Brouillette, the [Energy Storage Grand Challenge](#) (ESGC) seeks to create and sustain American leadership in energy storage. In addition to concerted research efforts, the Roadmap’s approach includes accelerating the transition of technologies from the lab to the marketplace, focusing on ways to competitively manufacture technologies at scale in the United States, and ensuring secure supply chains to enable domestic manufacturing. The Roadmap includes an aggressive but achievable goal: to develop and domestically

manufacture energy storage technologies that can meet all U.S. market demands by 2030.

“Energy storage has an important role to play in our Nation’s energy future,” said Secretary Brouillette.

“DOE worked closely with a wide range of stakeholders and partners to develop this actionable Roadmap to help bring promising energy storage technologies to market and position the United States as a global leader in energy storage solutions.”

DOE is also releasing two companion ESGC reports: the [2020 Grid Energy Storage Technology Cost and Performance Assessment](#) and the [Energy Storage Market Report 2020](#). These reports provide data that informed the Roadmap and provide accessible and easily referenced information for the entire energy stakeholder community.

The Roadmap outlines a Department-wide strategy to accelerate innovation across a range of storage technologies based on three concepts: Innovate Here, Make Here, Deploy Everywhere. Recognizing the breadth of storage technologies and the ambitious nature of the goal, DOE has identified initial cost targets focused on user-centric applications with substantial growth potential. With six use cases that

identify energy storage applications, benefits, and functional requirements for 2030 and beyond, the ESGC has identified cost and performance targets, which include:

- \$0.05/kWh levelized cost of storage for long-duration stationary applications, a 90 percent reduction from 2020 baseline costs by 2030. Achieving this levelized cost target would facilitate commercial viability for storage across a wide range of uses including: meeting load during periods of peak demand, grid preparation for fast charging of electric vehicles, and applications to ensure reliability of critical services.
- Other emerging applications for stationary storage include serving remote communities, increasing facility flexibility, increasing the resilience of interdependent networks, and facilitating the transformation of the power system.
- \$80/kWh manufactured cost for a battery pack by 2030 for a 300-mile range electric vehicle, a 44 percent reduction from the current cost of \$143 per rated kWh. Achieving this cost target would lead to cost competitive electric vehicles and could benefit the production, performance, and safety of batteries for stationary applications.

The ESGC employs a use case framework to ensure that storage technologies can cost effectively meet specific needs and incorporates a broad range of technologies in several categories: electrochemical, electromechanical, thermal, flexible generation, flexible buildings, and power electronics.

U.S. leadership in energy storage requires an approach that enables American firms to compete in markets around the world. The ESGC provides information and analysis on demand outside the United States and identifies related opportunities for domestic energy storage manufacturing. DOE will engage with the U.S. Department of Commerce and other federal agencies to locate competitive international markets for U.S. firms and develop strategies that ensure sustained U.S. competitiveness in this high-growth sector.

Increased renewable energy generation and a decrease in battery storage costs have led to a stronger global focus on energy storage solutions and grid flexibility services. Energy storage offers an opportunity to identify the most cost-effective technologies for increasing grid reliability, resilience, and demand management.

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