

COMMITTEE ON  
**SCIENCE, SPACE, AND  
TECHNOLOGY**  
CHAIRMAN LAMAR SMITH



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**Statement of Chairman Lamar Smith (R-Texas)**  
*Innovations in Battery Storage for Renewable Energy*

**Chairman Smith:** Good morning. Today, the Subcommittee on Energy will examine breakthrough technology in battery storage for renewable energy.

Battery storage is the next frontier in energy research and development. Advanced batteries will help bring affordable renewable energy to the market without costly subsidies or renewable energy mandates. Forty-five percent of new U.S. power production last year came from wind turbines, while solar power made up 34 percent of new global power capacity.

But without the capacity to efficiently store the energy produced when the sun isn't shining and the wind isn't blowing, renewable energy makes a minimal contribution to America's electricity needs. Advanced battery technology will enable utilities to store and deliver power produced by renewable energy. This will allow us to take advantage of energy from the diverse natural resources available across the country.

My home state of Texas offers a ready example of the impact battery storage could have on harnessing renewable power. Texas is the top wind producing state in the country. The Lone Star State currently operates more than 12,000 megawatts of utility-scale wind capacity—about one-fifth of the total wind capacity in the United States. In ideal circumstances, wind generates up to 18 percent of Texas' power.

But even with this significant capacity, Texas wind energy cannot produce power on demand. And when energy needs are the highest, wind makes up just 3 percent of Texas power generation. Advanced battery technology could help the U.S. meet its energy needs and effectively manage its power production from conventional and renewable energy resources, which will save money for energy consumers.

Federal research and development can build the foundation for the next breakthrough in battery technology. At the Pacific Northwest National Lab (PNNL), home to one of today's witnesses, researchers are developing new approaches for large-scale energy storage. PNNL conducts research on battery technologies, including innovative battery electrodes to improve energy storage capacity.

Using the powerful transmission electron microscope at the Environmental Molecular Sciences Laboratory, scientists can study damage caused by battery recharging.

This basic research on the fundamental challenges to safe, efficient, and affordable battery technology has incredible value and application for the private sector. It will help the private sector lead the way to bring battery storage technology to the energy marketplace.

Inspired by the fundamental research conducted at the Department of Energy national labs and universities around the country, the private sector is now investing in battery storage technology. American entrepreneurs have invested over \$5 billion in battery research and development over the last decade, which has helped fuel a renaissance in new battery technology.

Just this week, the tech company Tesla announced it will expand into the battery market, manufacturing home batteries to help consumers cut costs and to provide back-up power to their homes. And Tesla's potential large-scale utility batteries can be used for renewable power generation.

Two of our witnesses today represent innovative energy storage companies, with unique battery designs developed through basic research. I look forward to hearing more about the impact these new concepts for battery chemistry and construction can have on our economy and renewable energy production.

While the private sector funding will deploy next generation battery technology into the energy marketplace, the federal government should invest in basic research and development that can revolutionize battery technology.

Prioritizing the ongoing partnership between the national labs and American entrepreneurs can develop next generation battery technologies and keep America at the forefront of battery science. Thank you Mr. Chairman and I yield back.

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