



# Better Energy Storage Technology Act

<< Found throughout the United States, **White-breasted Nuthatches** stand to lose 78% of their current summer range by 2080.

## Better Energy Storage Technology Act of 2019

The Better Energy Storage Technology (BEST) Act of 2019 (S.1602/H.R. 2986) **supports the research, development, and deployment (RD&D) of grid-scale energy storage systems.**

Energy storage is a key technology needed to building an efficient, resilient, and reliable grid that can support a greater share of renewable energy, like wind and solar.

### If passed, the BEST Act would:

- Authorize an RD&D program within the Department of Energy's (DOE) Office of Electricity. Funded at \$60 million per year from FY20 through FY24.
- Direct DOE to produce a 10-year strategic plan that includes timelines for the commencement and completion of important milestones for grid-scale energy storage research.
- Direct DOE to focus research around and set cost targets for energy storage systems that meet demands across different time scales: daily, weekly, and seasonally.
- Require DOE to enter into agreements to carry out up to 5 grid-scale energy storage demonstration projects in collaboration with the National Laboratories.

## Audubon's Birds and Climate Change Report: 389 Species on the Brink

The changing climate poses a tremendous threat to the birds we love and the places they need. In October 2019, Audubon published *Survival by Degrees*, which found that **nearly two-thirds—389 out of 604 species—of North American birds** will lose more than 50 percent of their current range by 2080. However, if we limit warming to 1.5C, we significantly **lessen the risk of extinction for 76%—290 of 389—vulnerable bird species.**

To address our changing climate at the speed and scale birds and people need, we must advance meaningful policies that significantly reduce carbon emissions. This solution set includes supporting innovation of new technology needed to decarbonize our economy.



<< One of the most recognizable water birds in North America, the **Common Loon** stands to lose over half of both its summer and winter ranges, making it hard to spot throughout the southeastern US.

## SunShot: Reducing Technology Costs through Federal Investment

In 2011, the Department of Energy launched the “SunShot” Initiative, which aimed to reduce the cost of photovoltaic solar energy systems by about 75% by 2020. At the goal cost of \$0.06 per kilowatt-hour, solar energy systems are cost competitive with other forms of energy. In fall 2017, DOE announced that the initiative had met its goal three years early. This case shows the power of investment from the federal government to make dramatic technological progress over a short period of time.

**Through the SunShot Initiative, federal investment in research and development helped reduce the cost of solar energy by 75% — three years ahead of schedule.**

### Energy Storage Time Scales

The BEST Act invests in storage systems at three different time scales, which meet different needs for balancing the grid.

**Day-scale:** to balance demand throughout the day, for instance in the evenings when people come home and turn on lights.

- 6 hours of storage, over a lifetime of 8,000 cycles/20 years of operation

**Week-scale:** to balance demand through the week, for instance as demand drops on weekends when most industry closes.

- 10-100 hours of storage, over a lifetime of 1,500 cycles/20 years of operation

**Seasonal-scale:** to balance demand throughout the year, for instance as energy demand spikes with air conditioner use in the summer or lighting and heating needs in the winter.

Sources: 1. “U.S. renewable electricity generation has doubled since 2008.” U.S. Energy Information Administration (EIA). 2. “Clean Jobs America.” E2.org 3. Fact Sheet: Energy Storage (2019). Environmental and Energy Study Institute (EESI).

>> Currently found wintering in forests throughout the United States, the **Hairy Woodpecker** is projected to shift northward. The non-migratory bird, however, may have trouble finding suitable forest in its new range.

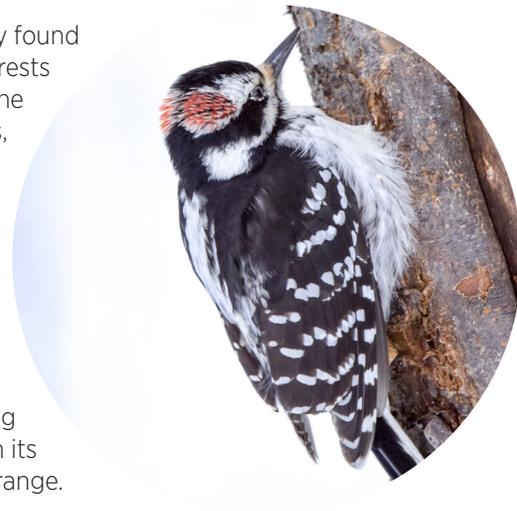


Photo: Hairy Woodpecker. Betsy Bass/  
Great Backyard Bird Count.

## Energy Storage is Good for Birds and People

The renewable energy landscape in the United States is shifting dramatically. In fact, U.S. renewable electricity generation has doubled since 2008, with nearly 90% of the increase coming from wind and solar. At the end of 2018, there was 94 GW and 51 GW of wind and solar generating capacity operating on the grid, respectively.<sup>1</sup>

While these massive changes present challenges for the grid—especially around the question of adequate storage—they also provide ample opportunity in form of jobs, innovation, and domestically-produced clean energy.

- At the end of 2018, there were more than 3.26 million jobs in clean energy throughout the US, including about 335,000 jobs in solar, over 111,100 jobs in wind, and over 64,300 jobs in grid modernization. There are opportunities for jobs in clean energy in all but two of America’s counties.<sup>2</sup>
- The cost of energy storage and renewable energy has declined steadily over the last decade. Many states—including Arizona, Oregon, New Jersey, and Hawaii—have recognized the benefits and set mandates to get energy storage onto the grid.<sup>3</sup>

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