U.S. DEPARTMENT OF
ENERGY

Office of
ENERGY EFFICIENCY & RENEWABLE ENERGY

Solar Energy Technologies Office

The U.S. Department of Energy Solar Energy Technologies Office (SETO) supports early-stage research and development to improve the affordability, reliability, and performance of solar technologies on the grid. The office invests in innovative research efforts that securely integrate more solar energy into the grid, enhance the use and storage of solar energy, and lower solar electricity costs. Through competitive solicitations and attentive project management, the solar office strategically addresses critical research gaps, ensuring the solar industry has the technological foundations necessary to continue growth and preserve American energy choice, independence, and security.

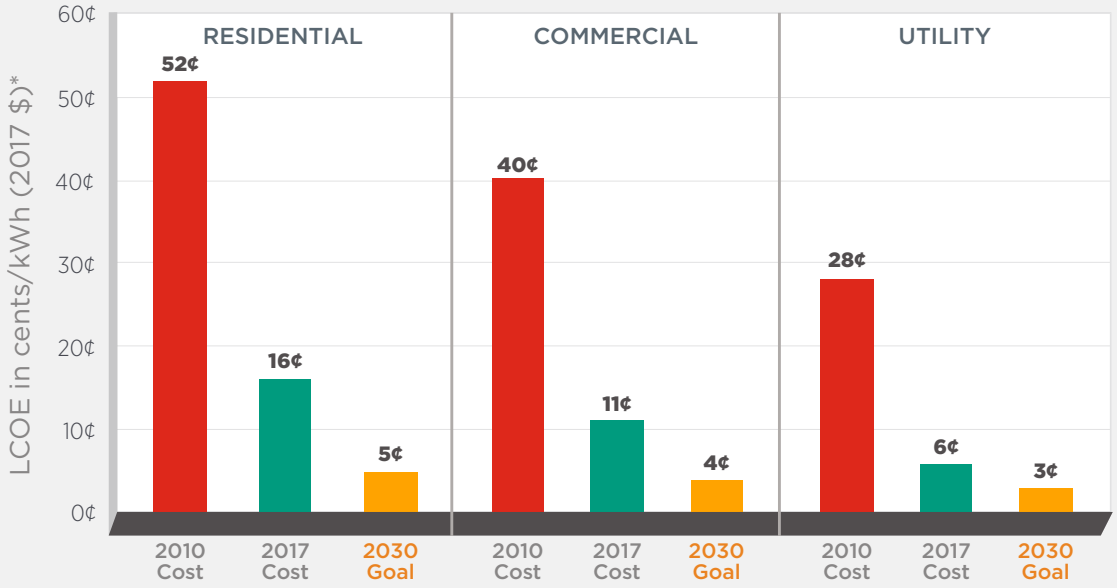
Solar array in Hawaii. *Photo credit Reegan Moen.*

Solar Cost Goals

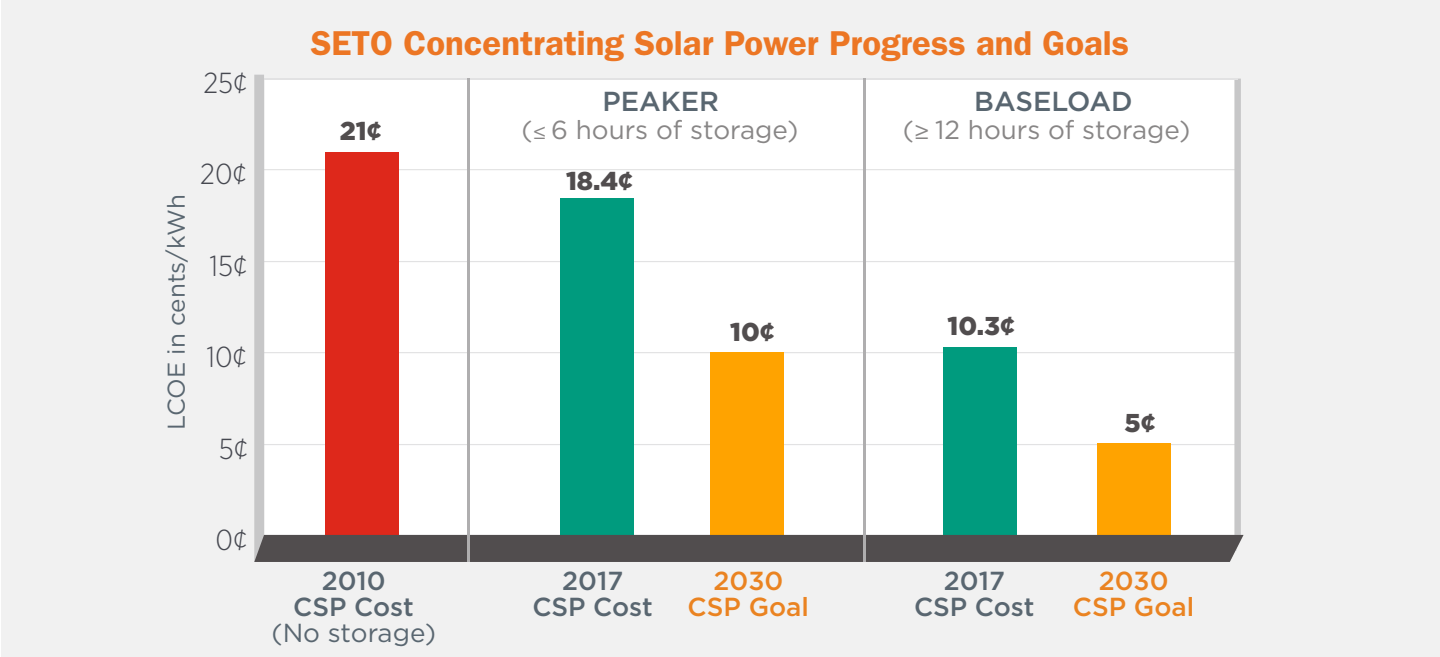
In addition to improving grid reliability, SETO is working to lower the cost of electricity produced by solar technologies. In recognition of the transformative progress of solar technologies to date and the potential for further innovation, SETO aims to reduce the average unsubsidized levelized cost of energy (LCOE) of utility-scale photovoltaics (PV) to 3¢ per kilowatt-hour kWh by 2030. In parallel, SETO is targeting reductions for commercial and residential rooftop PV costs to 4¢ and 5¢ per kilowatt-hour by 2030, respectively.

Along with these PV goals, SETO is working toward separate goals for concentrating solar thermal power (CSP) to enable the technology to be competitive with other dispatchable power generators. The target for CSP peaker plants, which have no more than six hours of energy storage, is 10¢ per kilowatt-hour; the target for CSP baseload plants, which have a minimum of 12 hours of energy storage, is 5¢ per kilowatt-hour.

SETO Photovoltaics Progress and Goals



*Levelized cost of electricity (LCOE) progress and targets are calculated based on average U.S. climate and without the ITC or state/local incentives. The residential and commercial goals have been adjusted for inflation from 2010–17.



Key Activities

SETO projects fall under several focus areas, each of which is awarded an open, highly competitive solicitation process. Projects encourage collaborative partnerships among industry, universities, national laboratories, federal, state, and local governments and non-government organizations. Below is a list of the key activities SETO executes:

- *Photovoltaics* – Research in photovoltaics supports the early-stage research and development of technologies to drive down the cost of solar electricity and contribute to greater energy affordability by improving efficiency and reliability and lowering manufacturing costs.
- *Concentrating Solar Thermal Power* – Research in concentrating solar thermal power (CSP) supports the development of novel CSP technologies that integrate thermal storage, lower cost, increase efficiency, and improve reliability beyond existing performance barriers, thereby enabling on-demand power.
- *Systems Integration* – Research in systems integration works to help industry deploy safe, reliable, and cost-effective solar energy on the nation's electricity grid by addressing the associated technical challenges and regulatory requirements.
- *Prize Competitions* – The office runs several prize competitions to reassert American leadership in the solar energy marketplace.

Why It Matters

SETO's work helps to promote affordable and reliable energy choice for all Americans. Solar installations are projected to triple in the next five years, and SETO is dedicated to enabling America's innovators to develop new value streams and products that can dominate both domestic and global markets.

A future in which the solar program meets its goals will ultimately benefit every American by making clean, low-cost, and reliable solar energy available for all while increasing the resiliency and reliability of the electric grid. Establishing U.S. leadership in clean energy innovation will continue to create jobs in our country through domestic production of solar materials and equipment, manufacturing, distribution, financing, installation, and maintenance.

Follow SETO's Progress

- For more information on SETO's work and to sign up for an email newsletter, visit *energy.gov/eere/solar*
- To see the latest solar news, follow the Office of Energy Efficiency and Renewable Energy on Facebook at *facebook.com/eeregov* ■

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