

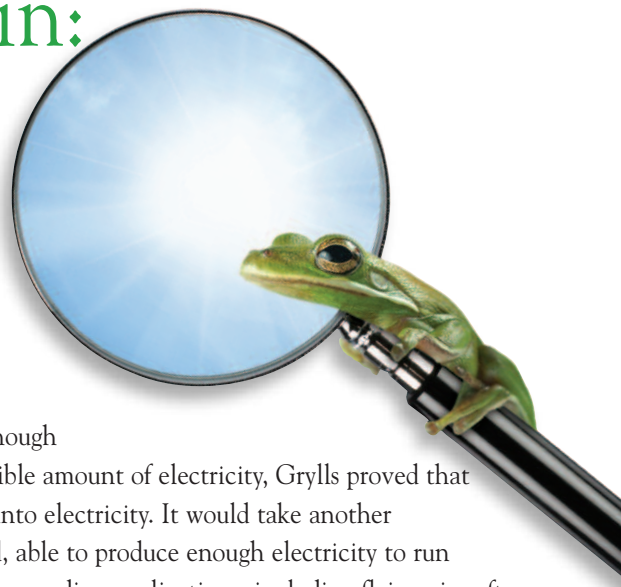
# Green Power

from Santee Cooper

## Let the Sunshine in:

### Examining the Global Growth of Solar Power

In this edition of Green Power, we take a closer look at solar power from a state, national and global perspective. But first, did you know that the history of solar energy goes all the way back to 1876? That was when an electricity expert named William Grylls Adams discovered that when selenium—a photosensitive element derived from copper refining—was exposed to light, it produced electricity. Although the selenium cells were not efficient in producing any tangible amount of electricity, Grylls proved that light—without heat or moving parts—could be converted into electricity. It would take another 77 years before the first silicon solar cell would be invented, able to produce enough electricity to run small electrical devices. Today, solar energy is used in ever expanding applications, including flying aircrafts and charging batteries to solar lighting and energizing homes and businesses around the world.



**To shine a brighter light on this alternative energy source, learn some of the most common terms associated with solar energy:**

**MW – megawatt.** One megawatt (MW) is equal to one thousand kilowatts (kW).

**GW – gigawatt.** A unit of power equal to 1 billion watts; 1 million kilowatts, or 1,000 megawatts.

**DC – direct current.** A type of electricity transmission and distribution by which electricity flows in one direction through the conductor, usually relatively low voltage and high current.

**PV – photovoltaic.** Pertaining to the direct conversion of light into electricity.

**PV array – photovoltaic (PV) array.** An interconnected system of PV modules that function as a single electricity-producing unit.

**PV cell – photovoltaic (PV) cell.** The smallest semiconductor element within a PV module to perform the immediate conversion of light into electrical energy.

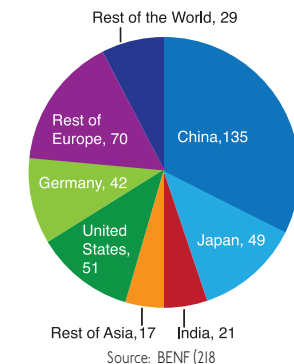
Source: U.S. Department of Energy

### Solar Power Around the World: The Global Perspective

Since the 1990s, renewable energy has emerged as a major source of the world's energy resources. Just last year, the International Renewable Energy Agency reported that global renewable energy generation capacity grew by 167 GW, representing a stable growth rate of 8.3%. Solar photovoltaic (PV) capacity grew by 32%, followed by wind energy at 10%, driven by significant cost reductions since 2010. Another report found that new solar capacity in 2017 exceeded combined new capacity installations of coal, gas and nuclear plants—with the United States having the second largest PV market in terms of annual and cumulative installations.

Cumulative PV Deployment–2017

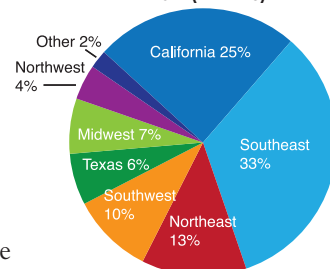
(415 GW)



### The National Perspective

As stated above, the United States had the second largest PV market in terms of annual and cumulative installations last year. Breaking that number down, new PV installations have had a fair geographic mix across the United States, with 5 GW-DC installed east of the Mississippi.

U.S. PV Installations by Region –2017 (MW-DC)



Sources: GTM Research/SEIA, U.S. Solar Market Insight 2017 Year-in-Review

### The South Carolina Perspective

Solar power continues to heat up in South Carolina as more people see the obvious advantages of using this clean energy resource. With Santee Cooper, electric cooperatives and other utilities embracing green energy, the total solar investment in South Carolina has risen from \$546.06 million dollars in 2017 to \$843.67 million in the first half of 2018. To date, other solar data for South Carolina includes the following impressive numbers:

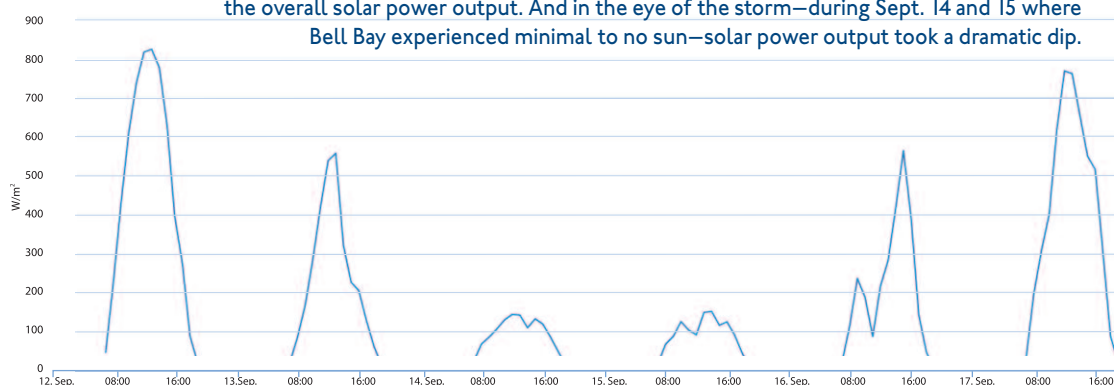
- Total State's Solar installed: 591.14 MW (up from 410.19 MW in 2017)
- State Homes Powered by Solar: 64,866
- Percentage of State's Electricity from Solar: 0.38%
- Price Declines in State's Solar Installation: 47% over last 5 years

Source: U.S. Department of Energy

### How Hurricane Florence Affected Local Solar Power

The Bell Bay Solar Farm, Santee Cooper's 10-acre solar energy project next to its Bucksville substation on US 701, has been in operation since 2017. It has nearly 6,000 solar panels. Even though the power of solar energy is now a major source of energy for local homes and businesses, it's still no match for the devastating effects of a major weather event.

The graph below shows the solar irradiance (the density of radiation incident on a given surface) between Sept. 12 – 17. As you can see, bright sunny days were registered on Sept. 12 and the 17. However, as Hurricane Florence approached on Sept. 13 and left on Sept. 16, dark cloudy days caused a dip in the overall solar power output. And in the eye of the storm—during Sept. 14 and 15 where Bell Bay experienced minimal to no sun—solar power output took a dramatic dip.



2018



celebrate the season.

## A Green Power Holiday Event

Celebrate the Season is an annual charitable holiday event organized by Santee Cooper, Old Santee Canal Park and the Town of Moncks Corner, honoring the communities of the Lowcountry and Santee Cooper Country with a month-long holiday celebration. This season's events include:

- **The Holiday Lights Driving Tour**  
Nov. 23 to Dec. 30  
7 days a week, 6–9 PM  
Moncks Corner  
Closed Dec. 24 & 25

- The Weekend Holiday Fairs at the Moncks Corner Regional Recreation Complex  
Dec. 1-2, 7-9, 14-16 & 21-23

For more information visit,  
[www.celebratetheseason.org](http://www.celebratetheseason.org).

For more information on  
Green Power or recommend  
businesses to become  
Green Power Partners,  
contact a Customer Service  
representative at  
your local  
Electric Cooperative.

11-18

## A Happy Holiday for Wildlife

Don't throw away your old Christmas tree—use it to benefit wildlife. Place your Christmas tree in your backyard, add treats and watch the wildlife have fun. Check out some ornament ideas:



**Popcorn Party** String popcorn together using a needle and thread. Use 100% natural popcorn (no butter or salt).



**Suet Loot** Suet is a popular bird food made from fat. Melt beef fat or bacon grease and let cool. Add bird seed, peanut butter, fruit or granola. Place in mesh bag and hang.



**Bird Bags** Fill net material with bird seed. Add finely crushed eggshells (adds calcium for birds). Hang with ribbon.



**String of Pearls** Using a needle and thread, string together different kinds of grapes.

**Apple/Orange Slices** Cut thin slices of apples and oranges. Hang each slice separately with ribbon.



**Pine Cone Pleasure** Mix peanut butter with oatmeal and apply thick mixture inside and around pine cone. Roll in bird seed. Hang with ribbon.



**Peanut Heaven** String together raw peanuts with needle and thread.

Source: U.S. Fish and Wildlife Service



For more information about this newsletter, visit  
[www.scgreenpower.com](http://www.scgreenpower.com).