

Issue Overview: Solar energy

By Bloomberg, adapted by Newsela staff on 09.15.16

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TOP: Solar panels are pictured in California in October 1996. Photo by Raphael Gaillarde. BOTTOM: Graphics by Solar Energy Industries Association.

DEFINITIONS

carbon emissions

The release of carbon dioxide into the atmosphere from activities like burning fossil fuels

fossil fuel

A source of energy that is formed deep in the ground from dead animals and plants; coal and gas are examples

renewable energy

Energy that is collected from natural resources that will not run out, like wind, water, and sunlight

People used to believe that

power from the sun could not be used all over the world. This kind of power is called solar power. It can be collected using photovoltaic cells, which are installed on large surfaces called solar panels. As the light hits these panels, they generate electricity. In doing so, they provide homes, computers, and cars with the energy they need to work.

Solar panels used to be expensive and did not provide enough energy to be worth buying. Over the past few years, however, the price has gone down. At the same time, the electricity produced by solar panels keeps increasing. About \$150 billion each year is poured into this industry. In some places, the cost is already as low as that of fossil fuels like carbon, coal and gas.

Even so, the idea that solar could soon meet the energy needs of the world is not very likely. In 2013, solar power made up less than 2 percent of the electricity used in the world. So while it is getting cheaper, it is also not catching on very quickly.

This is not the only hurdle. People like their power always to be available. A big problem is keeping electric power running when it is dark and cloudy. As soon as the sun is covered, solar panels have no way to make electricity. The future of solar power might not be so bright after all.

The Situation

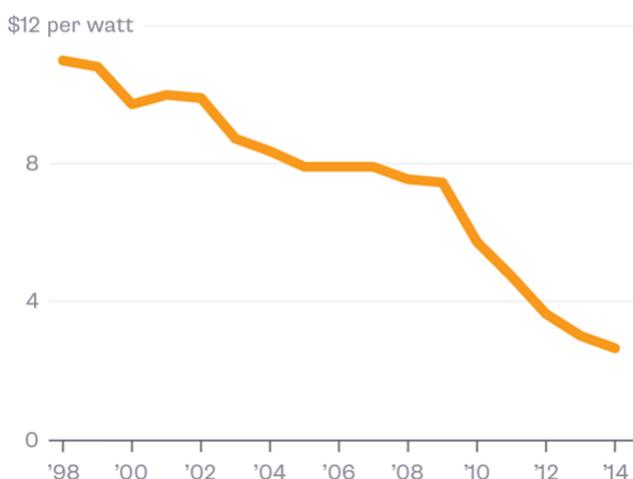
A global deal was reached in Paris in December to help fight climate change. Fossil fuels are cheap, but they also harm the planet. The deal was meant to increase funding for the business of renewable energy, including solar. Other forms of renewable energy are water and wind.

Almost all U.S. states have set goals for renewable power. California plans on having half of its power be renewable by 2020. Since August 2015, all states are required to lower carbon emissions.

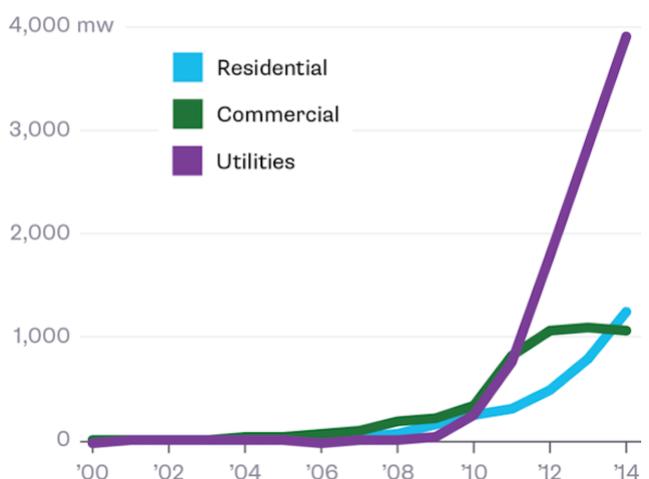
China has installed the most renewable power plants, followed by Japan. In India, plans have been announced for \$160 billion in solar power projects. Some big businesses have made splashy announcements. For example, Apple claims that it will spend \$850 million on solar power.

Here Comes the Sun

Average solar system cost in the U.S.



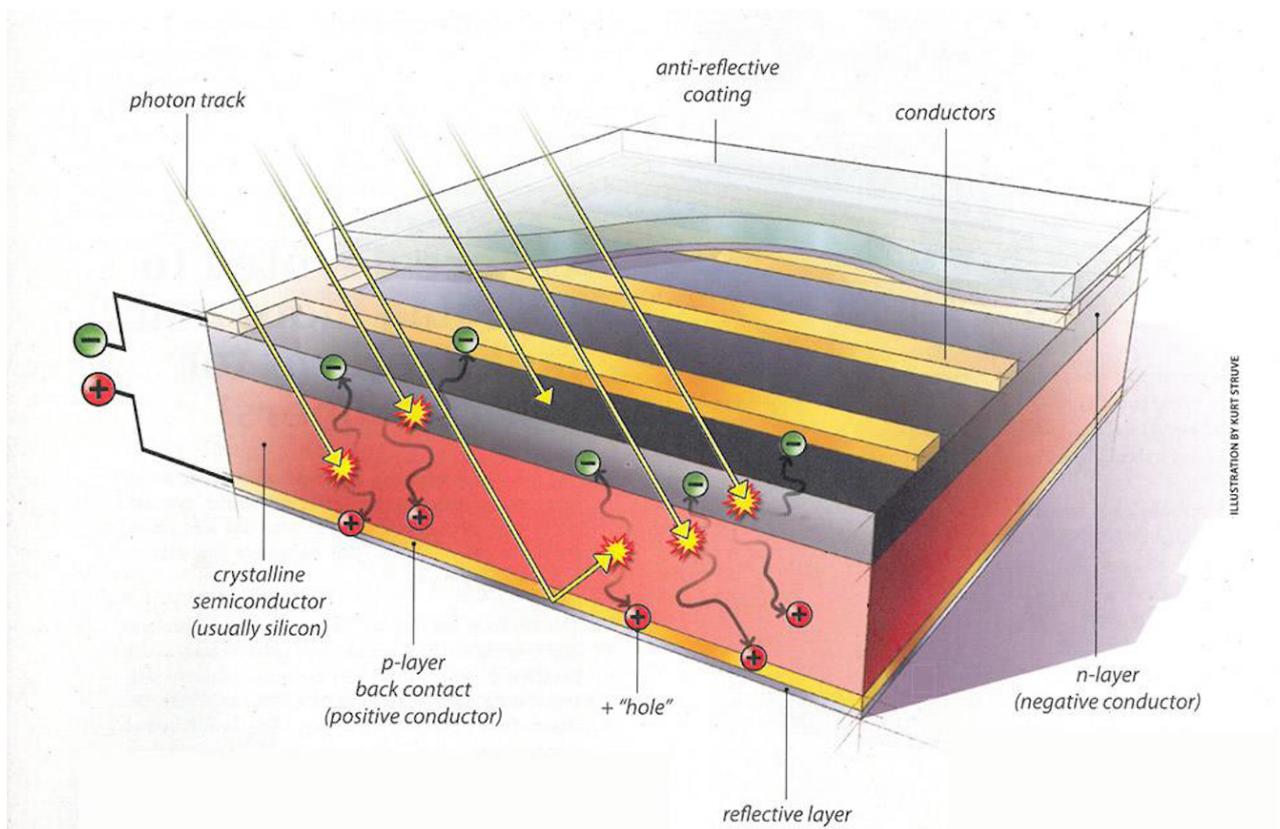
U.S. photovoltaic capacity, by sector



The Background

The first photovoltaic cell was made by Bell Labs in New Jersey in 1953. By the 1990s, Japanese companies were producing most of the world's cells. By 2004, Germany led the world in solar panel manufacturing. Eventually, more solar energy companies started competing with each other. The result was a huge price drop, and some companies were forced to close.

The industry then shifted to China. There, companies led by Suntech Power built giant panel factories. Funding was given in the form of loans from the government. Foreign investors brought cash. These companies have been able to survive longer than those in Europe.



The Argument

The environmental group Greenpeace says solar "could meet the world's energy demands many times over." Others are a bit more cautious. The International Energy Agency says that photovoltaics might generate 16 percent of the world's electricity by 2050. This will only happen if the right laws and deals are in place.

Supporters of fossil fuels say that solar power will never be practical. It requires constant sunlight and is too expensive, they say.

The future of solar depends on which countries are willing to pay now. In the long run, solar power may be cheaper. It will also undoubtedly be cleaner. The deal in Paris suggests that many countries are willing to switch to renewables. If scientists can figure out an affordable way to store electricity for use at night, some worries could be resolved. Right now, this is solar's biggest weakness.