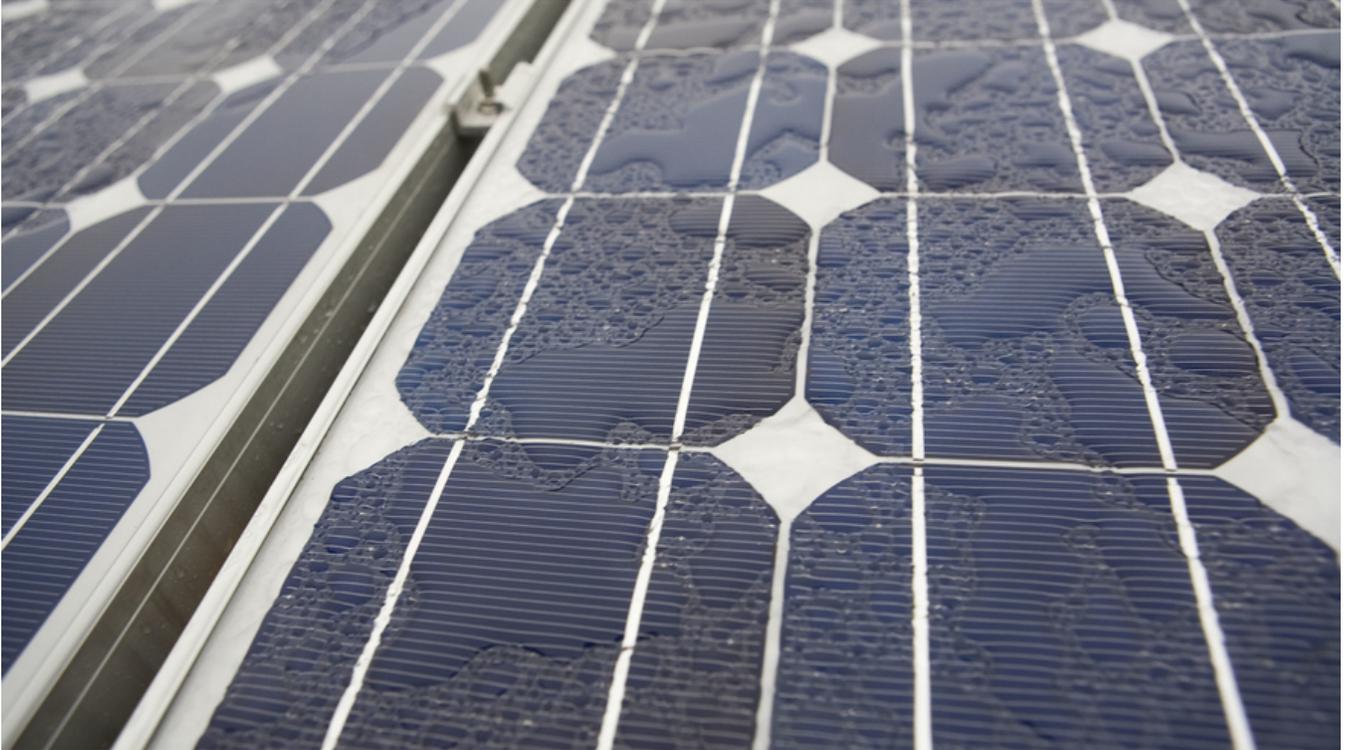


New solar panels can produce power from both the sun and rain

By Damian Carrington, The Guardian, adapted by Newsela staff on 05.23.18

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Researchers want to create a hybrid device that harvests kinetic energy from water as well as solar power from the sun. Photo by: Ramin Talaie/Corbis via Getty Images

Solar panels need the sun in order to make electricity. A new solar panel, however, also creates electricity from falling rain. It produces power even when it is cloudy or the sun has set.

More and more people are using solar energy. The costs have gone down almost 90 percent in the last 10 years. In many parts of the world, it is the cheapest form of electricity. However, the solar power output can fall under gray skies. Scientists are working to squeeze even more electricity from the panels.

Scientists demonstrated the new solar panel at Soochow University in China. The panel has two new polymer layers on top of a regular solar panel cell. The polymers are thin and are like plastic. They make electricity when raindrops roll off of them. The electricity comes from the water rubbing against the surface.

“Our device can always generate electricity in any daytime weather,” said Baoquan Sun, a scientist at Soochow University. “In addition, this device even provides electricity at night if there is rain.”

Adding Tengs To Solar Panels

Other scientists have recently added new devices to solar panels. The new devices are called Tengs. The Soochow design is much simpler, however. One of the polymer layers carries electricity for both the Teng and the solar cell. This means the device is much lighter than others.

“Due to our unique device design, it becomes a lightweight device,” said Sun. His team wants to build the panels into soft things like electronic clothing. However, the scientists still need to improve the panel's electrical output. Sun wants to produce a model of his new solar cell in three to five years.

Other scientists in China have also used Tengs on solar cells. These Tengs harvest some power from the wind, an approach Sun said could be added to his device.

Varun Sivaram works for the Council on Foreign Relations in the United States. He has also written a book on solar power. He thinks Sun's idea is interesting and likes that one source of energy, water, does not hurt the other.

Rain Doesn't Produce Much Power

However, Sivaram said the power from falling rain needs to be much higher. Right now, it does not really change how much power the panel creates. “It’s really not clear whether this is a big deal or not – I suspect it’s not.”

Professor Keith Barnham teaches at Imperial College London. He said the new rain-powered device has some advantages. It is small and works well. However, he pointed out that wind power would probably work better with the solar panels. “Wind power is clearly the most effective and complementary power source to PV – and it works equally well in the rain!”

Solar panels may one day be made out of softer material. Scientists are also studying artificial photosynthesis. Artificial photosynthesis uses sunlight to produce liquid and gas fuels.