Germany sets record for peak energy use – 50 percent comes from solar (Update)

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Solarkraftwerk Waldpolenz, the first Solar 40-MW CdTe PV Array installed by JUWI Group in Brandis, Germany. Credit: JUWI Group

The Fraunhofer ISE research institute has announced that Germany set a record high for solar use on June 9—on that day the country's solar power output rose to 23.1 GW—50.6 percent of all electricity demand. The record occurred over a holiday, which meant less demand, but it still marks a major step forward for the world's solar power leader.

Despite not having a generally sunny climate, Germany has been pushing solar energy—but not from the huge solar farms seen in other countries. In Germany, the focus has been on rooftop solar collectors mounted on homes, businesses and buildings of any other kind. Currently, over 90 percent of mounted solar panels in the country are on rooftops. The country broke two other records around the same time, producing 24.24 GW of solar generated power between 1 and 2pm on June 6, and over that entire week, the country produced 1.26 TWh of electricity from solar power. In stark contrast, recent reports indicate that solar power makes up just 0.2 percent of total energy production in the U.S.

The popularity of solar panels on rooftops has been bolstered by generous solar subsidies from the government along with a successful ad campaign. The movement is part of a plan by the German government to reduce greenhouse emissions due to electricity being produced in coal fired power plants and a simultaneous phasing out of nuclear power plants (all such plants are scheduled for closure by 2022). That leaves solar, wind and biomass—the country has been eagerly pursuing all of them, though clearly solar has become the national leader.

The move to solar has not been without its problems, of course. The government plans to lower or remove subsidies as soon as possible and the demand for batteries to store all that home-grown electricity is outstripping supply, causing a rise in prices. Also, it's not clear what sort of role utilities will play going forward—currently, many homeowners are reporting surplus energy production on sunny days which they sell to electric companies, which now find themselves having to store it for use during cloudy stretches.

There's another problem too, though it's not as obvious—the German government noted recently that almost seven million households in the country are living in energy poverty—defined as having to spend more than 10 percent of income on energy bills. The national energy program,

Energiewende, has resulted in some transfer of wealth, economists note—even with subsidies, it's generally the wealthy (and sometimes the middleclass) who can afford to put solar panels on top of their house—the poor continue to live off the grid and pay taxes that provide the funds for the subsidies. There's also some evidence that the country's energy program is pushing energy costs higher overall, resulting in more electricity being produced by cheaper fossil fuels.