



## **The 2017 Solar Eclipse and the Solar Power Industry**

**By Audrey D. Kline**

The August 21, 2017 solar eclipse dubbed by some the event of a lifetime was indeed a spectacular event. A total eclipse had not been visible across the country since 1918, nor had any total eclipse been at all visible in the U.S. since 1979. The eclipse was spectacular not only for its path and beauty, but also for the tremendous economic impact it generated, both positive and negative.

If you live anywhere close to the “path of totality”, namely the swath of miles that would experience a 100% eclipse of the Sun, there is little doubt that you experienced some sort of disruption to the normal flow of business, traffic, and life on August 21. Areas in the path of totality experienced an incredibly large influx of tourists, and many of these areas are small towns with little infrastructure in place to handle this size population swell, even for a day. Schools dismissed for the day, requiring people to take time off from work. Productivity was down given the magnitude of the ‘once in a lifetime’ event. While purveyors of eclipse-safe viewing glasses no doubt made plenty of money (as well as the sellers of uncertified glasses), hotels, restaurants and area attractions saw incredible sales too. People also rented out their homes for thousands of dollars. In Kentucky, it was akin to the Kentucky Derby, and in South Carolina, it was akin to an SEC football game.

Beyond the economic benefits to local businesses, there were added costs in many dimensions as a consequence of the eclipse. Productivity took a

tumble, with [sources](#) estimating the cost of lost worker productivity at up to \$694 million. That's a lot of loss, but to put it in perspective, it pales in comparison to the Monday after the Super Bowl's estimated loss of \$1.7 billion and Cyber Monday's \$1.9 billion. On the positive side of the economic impact ledger, local areas have predicted an economic impact ranging from \$30 million in [Hopkinsville](#), KY, designated as the point of greatest eclipse by NASA, to \$50 million in [Columbia](#), SC. Hopkinsville was even the site of an unveiling of a new one day only [stamp](#) by the USPS to commemorate the event. Estimates in [Salem](#), Oregon, one of the first sites that would see the eclipse, estimated a doubling of its population for the day and an economic impact of about \$9 million. There were also [concerns](#) about the toll on the environment there from the tourism influx and the possibility of forest fires.

While the obvious disruptions were planned for in places like Hopkinsville, Salem, and Columbia, a less obvious disruption—namely a loss of power for the [solar power](#) industry—was also being planned for well in advance. Given the path of totality crossing the entire continental U.S., solar capacity was expected to decline for a few hours, particularly on the west coast and east coast in areas more heavily reliant on solar power. In California, for example, it was predicted that during the eclipse the solar plants would experience a halving of their productive capacity. The Energy Information Administration (EIA) anticipated an impact on nearly 2,000 solar power plants across the country.

Nearly five million homes utilize solar power today, so with the loss of power generation, many solar plants were forced to find substitute power sources and ensure the timing of the substitution was timed to correspond to the loss and return of solar power. That was no simple or cost-less accomplishment. Moreover, California called on its population to conserve energy during the morning of the eclipse to prevent the need for large consumption of alternatives (and hence, higher costs). The benefit of the solar industry to these types of disruptions is the opportunity to highlight the need for backup energy sources that are easily substitutable. The loss in [power](#) was expected to be equivalent to roughly 6,000 megawatts in California, which is akin to the power draw for six million households. Currently, the electric grid could pull from other energy sources that were readily available to provide power if needed. While the alternative energy sources are more expensive than solar power, at least they were available.

The next solar eclipse to cross the United States is expected in just seven years. On April 8, 2024, a total eclipse will be visible on a diagonal path from Mexico through Texas, the central U.S., Maine, and into Canada. Lessons learned from the 2017 eclipse, ranging from managing the tourism influx along the path of totality to the impact on the solar power industry and overall power grid, will all come in handy seven years down the road. Our reliance on solar energy is expected to continue to grow, so managing the impact of the loss of productive capacity will be even more important in another seven years.

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