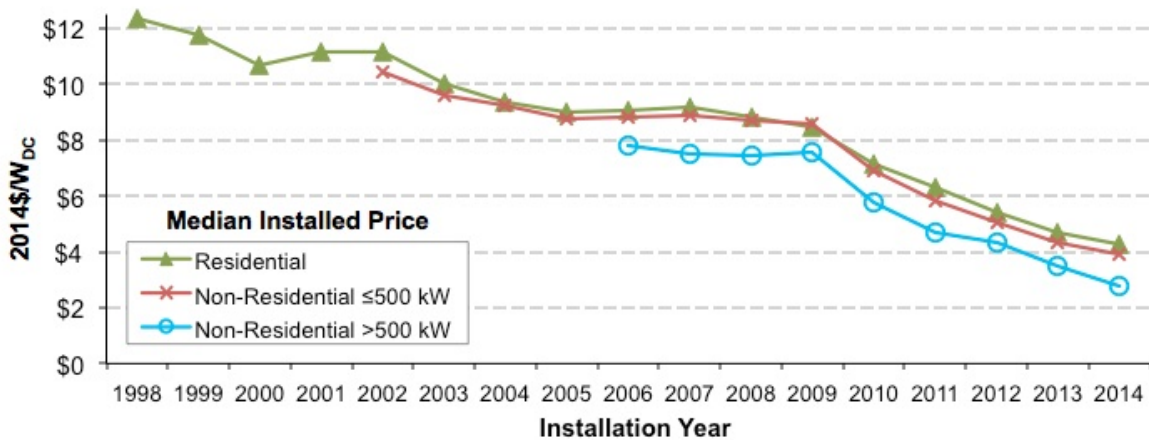


US distributed solar prices fell 10 to 20 percent in 2014, with trends continuing into 2015

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The installed price of distributed solar photovoltaic power systems in the United States continues to fall precipitously. This is according to the latest edition of Tracking the Sun, an annual PV cost tracking report produced by the Department of Energy's Lawrence Berkeley National Laboratory (Berkeley Lab). Credit: Berkeley Lab

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Laboratory (Berkeley Lab).

Installed [prices](#) for residential and small non-residential systems completed in 2014 were \$0.40-per-watt (W) lower, and prices for large non-residential systems were \$0.70/W lower, than in the prior year.

"This marked the fifth consecutive year of significant price reductions for distributed PV systems in the U.S.," notes Galen Barbose of Berkeley Lab's Electricity Markets and Policy Group, the report's lead author.

Within the first six months of 2015, installed prices within a number of large state markets fell by an additional \$0.20 to \$0.50/W, or 6 to 13 percent, maintaining the steady pace of solar price declines in recent years.

The continued decline in PV system pricing is especially noteworthy given the relatively stable price of PV modules since 2012. The report attributes recent system price declines, instead, to reductions in solar "soft" costs. These include such things as marketing and customer acquisition, system design, installation labor, and permitting and inspections. Attention in the industry has homed-in on soft costs, and the report suggests that these efforts are partly responsible for recent price declines.

The report also highlights the tremendous variability in PV system pricing. Among residential systems installed in 2014, for example, 20 percent sold for less than \$3.50/W, while another 20 percent sold for more than \$5.30/W. Similar variability exists among non-residential systems as well. As Berkeley Lab's Naïm Darghouth, another of the report's authors explains, "This variability reflects a host of factors: differences in system design and component selection, market and regulatory conditions, and installer characteristics, to name a few."

Comparing across installers in a number of large state markets, the report finds substantial heterogeneity in pricing, and suggests that "low-

price leaders" in these states can serve as a benchmark for installed price reductions that could be achieved more broadly. In Arizona, for example, 20 percent of residential installers had median prices at or below \$3.00/W in 2014, compared to the median price of \$4.30/W across all U.S. residential systems in 2014.

The report examines various other drivers for PV system prices, such as system size, the state in which the system is installed, whether it is owned by the site host or a third party, whether it is installed in new construction or on existing buildings, whether the site host is a for-profit commercial or tax-exempt entity, the module efficiency level, whether the system uses a microinverter or a standard string inverter, and whether the system is installed on a rooftop or is ground-mounted, either with or without tracking.

To varying degrees, these many factors are all found to impact PV system prices. As Barbose stresses, "The fact that such variability exists underscores the need for caution and specificity when referring to the installed price of PV, as clearly there is no single 'price' that uniformly and without qualification characterizes the U.S. market, or even particular market segments, as a whole."

The report, *Tracking the Sun VIII: The Installed Price of Residential and Non-Residential Photovoltaic Systems in the United States*, is the eighth edition in Berkeley Lab's *Tracking the Sun* report series. It is based on data collected from more than 400,000 residential and non-residential PV systems installed between 1998 and 2014 across 42 states, representing more than 80 percent of all distributed PV capacity installed in the United States. The [report](#) is produced in conjunction with a number of other related and ongoing research activities at Berkeley Lab and at the National Renewable Energy Laboratory that collectively analyze trends in PV system pricing.

The latest edition of Tracking the Sun, along with a summary slide deck and data file, may be downloaded at trackingthesun.lbl.gov.

Provided by Lawrence Berkeley National Laboratory

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