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What factors affect the prices of low-priced U.S. solar PV systems?

Gregory F. Nemet, Eric O'Shaughnessy, Ryan Wiser, Naïm R. Darghouth, Galen Barbose, Ken Gillingham, Varun Rai



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1 What Factors Affect the Prices of Low-Priced U.S. Solar PV Systems?

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3 Gregory F. Nemet^{1,2}, Eric O'Shaughnessy^{3,4*}, Ryan Wiser⁵, Naïm R. Darghouth⁵, Galen Barbose⁵, Ken
4 Gillingham⁶, and Varun Rai⁷

5
6 ¹ University of Wisconsin-Madison, La Follette School of Public Affairs

7 ² Mercator Research Institute on Global Commons and Climate Change

8 ³ National Renewable Energy Laboratory

9 ⁴ University of Wisconsin-Madison, Nelson Institute for Environmental Studies

10 ⁵ Lawrence Berkeley National Laboratory

11 ⁶ Yale University, School of Forestry & Environmental Studies

12 ⁷ University of Texas—Austin, LBJ School of Public Affairs

13 * corresponding author: eric.oshaughnessy@nrel.gov. 15013 Denver West Parkway, Golden, CO 80401

14 15 **ABSTRACT**

16 The price of solar PV systems has declined rapidly, yet there are some much lower-priced systems than
17 others. This study explores the factors that determine prices in these low-priced (LP) systems. Using a
18 data set of 42,611 residential-scale PV systems installed in the U.S. in 2013, we use quantile regressions
19 to estimate the importance of factors affecting the installed prices for LP systems (those at the 10th
20 percentile) in comparison to median-priced systems. We find that the value of solar to consumers—a
21 variable that accounts for subsidies, electric rates, and PV generation levels—is associated with lower
22 prices for LP systems but higher prices for median priced systems. Conversely, systems installed in new
23 home construction are associated with lower prices at the median but higher prices for LP. Other
24 variables have larger price-reducing effects on LP than on median priced systems: systems installed in
25 Arizona and Florida, as well as commercial and thin film systems. In contrast, the following have a
26 smaller effect on prices for LP systems than median priced systems: tracking systems, self-installations,
27 systems installed in Massachusetts, the system size, and installer experience. These results highlight the
28 complex factors at play that lead to LP systems and shed light into how such LP systems can come about.
29

30 Keywords: subsidies; solar; PV; price dispersion; technological change

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