

Solar Myths and Misconceptions: The “Costs” of Going Solar

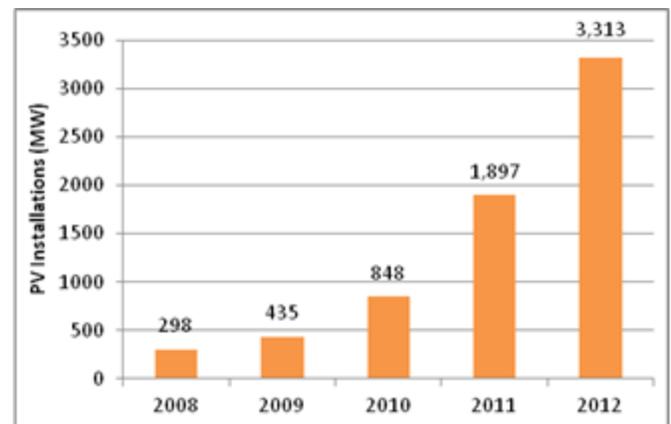
What are the Costs of Going Solar?

As more individuals, corporations, and local governments consider photovoltaic (PV) solar energy as a means of controlling their energy costs, it is important to understand current costs and financing options. Despite the record growth of the solar industry in recent years,¹ many people interested in PV often encounter various myths or misconceptions about the costs of going solar. This fact sheet is intended to dispel some of those myths. Several resources are provided at the end of this fact sheet for readers to learn more. The Resources Database – <http://solaroutreach.org/resources/> – on the website of the SunShot Solar Outreach Partnership provides more content on solar topics, including podcasts, webinars, and blog posts.

MYTH: The upfront cost of solar is too high to adopt solar energy.

REALITY: Rapid cost declines² and new financing models have allowed record amounts of new solar installations.

Despite price declines of 44% in the last two years³ and the availability of local incentives, covering the upfront cost of solar energy installations can be financially challenging. Fortunately, there are low cost financing options for all funding levels. Although not available in many states, a popular way to go solar, is through a third-party ownership (TPO) arrangement. Under a *power purchase agreement* (PPA) a local government or private customer hosts, but does not own, the solar energy system installed on its property. The solar energy vendor owns the system and sells the power, usually at a lower rate than the local utility, to the host to recover its investment. Alternatively, under a *solar lease* the system host agrees to make regular lease payments for a pre-determined number of years.⁴ TPO options like these are not only beneficial for local governments, which seldom have the capital budgets for solar, but also for homeowners who previously could not afford the up-front capital necessary to own and install solar. The growth of TPO has been a huge market driver in states that allow for such arrangements. In 2007, 93 percent of homeowner investments in solar were through direct purchases. Just four years later, in 2011, two-thirds of new residential installations were through TPO.⁵



Advances in financing options and solar cost reductions have dramatically increased installations in recent years. (SEIA/GTM, 2013)

MYTH: The payback period of solar is too long to justify switching to solar.

REALITY: Solar can provide a return on investment in less than ten years.

Since PV panels produce power whenever the sun shines over their 30-year life, any PV system will eventually pay for itself. Whether it can do so in a period of time that is attractive to all potential adopters is a separate issue. Fortunately, studies show that PV systems can pay for themselves, on average, within 7 to 15 years.⁶ Solar adopters in states with robust solar policies can see a payback in as little as five years. PV systems installed for individuals using TPO models mentioned above can even be cash flow positive on day one. Payback periods are also affected by the cost of local electricity, the solar resource, and the local installation cost. The states with the shortest payback periods for residential solar installations, according to research by One Block Off the Grid and Clean Power Research, are Massachusetts (4.0 years) and Hawaii (5.4 years).⁷ These states are vastly different in geography and solar policy, but their policies lead to similar payback periods.

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- ¹ Solar Energy Industries Association/GTM Research. 2013. *Solar Market Insight: 2012 Year in Review*. Executive Summary available at www.seia.org/research-resources/us-solar-market-insight
- ² Ibid.
- ³ Ibid.
- ⁴ The Solar Foundation. 2012. *Solar Accounting: Measuring the Costs and Benefits of Going Solar*. Available at http://thesolarfoundation.org/sites/thesolarfoundation.org/files/TSF_SolarAcct_Final.pdf.
- ⁵ California Solar Initiative. 2012. *Annual Program Assessment*. Available at www.cpuc.ca.gov/NR/rdonlyres/0C43123F-5924-4DBE-9AD2-8F07710E3850/0/CASolarInitiativeCSIAnnualProgAssessmtJune2012FINAL.pdf
- ⁶ One Block Off The Grid/Clean Power Research. (2012, March 15). *How Much Does Solar Cost?*. Available at <http://1bog.org/blog/infographic-how-much-does-solar-cost/>
- ⁷ Ibid.
- ⁸ Database of State Incentives for Renewables and Efficiency. 2013. *Property Tax Incentives*. Available at <http://dsireusa.org/solar/solarpolicyguide/?id=11>
- ⁹ U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. 2011. An Analysis of the Effects of Residential Photovoltaic Energy Systems on Home Sales Prices in California. DE-AC02-05CH11231/DEK-8883050. U.S. Department of Energy: Washington, DC. Available at <http://eetd.lbl.gov/ea/emp/reports/lbnl-4476e.pdf>
- ¹⁰ U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. 2008. A Homebuilder's Guide to Going Solar. DOE/GO-102008-2599. U.S. Department of Energy: Washington, DC. Available at <http://www1.eere.energy.gov/solar/pdfs/43076.pdf>
- ¹¹ Flicker, Jack D. et al. (2012) *PV Inverter Performance and Reliability: What is the Role of the Bus Capacitor?* Available at <http://energy.sandia.gov/wp/wp-content/gallery/uploads/Flicker-PVSC-Cap-Paper-Final.pdf>.
- ¹² Electric Power Research Institute. (2010). *Addressing Solar Photovoltaic Operations and Maintenance Challenges: A Survey of Current Knowledge and Practices*. Available at www.smartgridnews.com/artman/uploads/1/1021496AddressingPVOaMChallenges7-2010_1_.pdf