How Owning a Solar System Impacts My Home Value: A Guide to Valuing Residential Solar Energy Systems

Background

Thru 2017, there were nearly 1.6 million residential solar systems in the U.S. Roughly every 90 seconds, a home is going solar somewhere in the U.S.[1]

As shown on the map, solar is not isolated to a few states: nineteen states have over 10,000 residential solar systems. Other states will reach this threshold shortly. Accordingly, it's important that homeowners, real estate brokers, mortgage brokers, and other stakeholders in the residential housing market across the country understand the value of a solar system on a residential property.

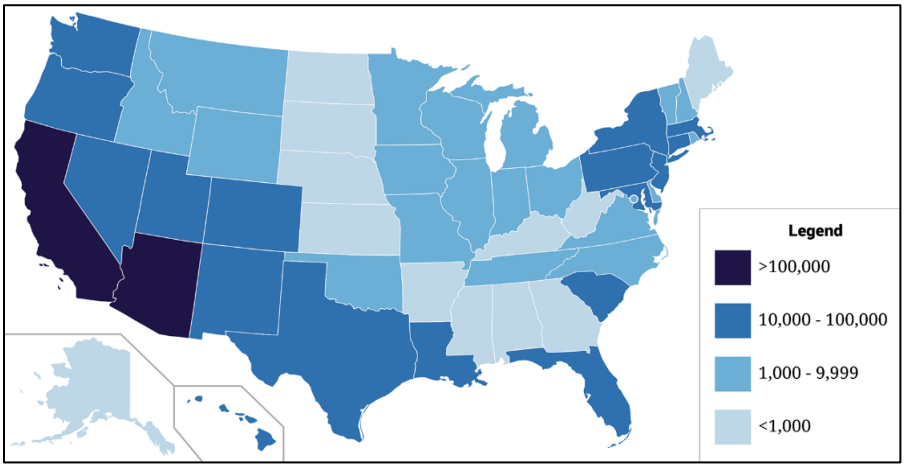

Figure 1: Residential Solar Installations by State (thru Q4 2017)
Source: SEIA

Whether purchasing a house with a solar system on the roof or looking to install a new system on your home, many homeowners are faced with the dilemma of trying to understand how to properly determine the value of that system, both for themselves as well as any future owner of their property. This guide seeks to educate homeowners on the various methodologies professionals use to value a solar system, some of the key drivers impacting that valuation, and tools and information to help ensure they receive an accurate value estimate when buying or selling a solar system.

Valuing a Solar System

There are three methodologies that should be considered when seeking the value of a residential solar system. Below is a brief explanation and some advantages of each methodology when applied to solar system valuations:

- **Income Approach:** values a solar system based upon the projected income a solar system will generate for the owner over the expected life of the solar system. For homeowners, this equals the expected energy-cost savings less any ongoing costs to pay for the system.

[1] SEIA/GTM Solar Market Insight, 2017

The energy-cost savings represent the avoided cost of purchasing the energy from the local utility based on the quantity of energy expected to be produced multiplied by the cost of utility power, also known as the billing rate or utility tariff.

  - ***Advantage:*** For most homeowners, income/savings is one of the main rationales for purchasing a solar system, so valuing a system on this basis most closely aligns the value with the homeowner's perspective (both sellers and buyers).

- **Cost Approach:** represents the cost to reproduce or rebuild the solar system currently affixed to the house with consistent size and quality of components.

  - ***Advantage:*** *Reflects the most up-to-date price of a new system (of similar production size) built at the same location. However, like all equipment, the value of a solar system depreciates over time.*

- **Comparable Sales Approach:** Values the system based on an evaluation of home sales with and without solar systems to determine the solar system's impact on the home sale price. This is done by trying to find "paired sales" or at least two homes with similar specifications, in a similar area, etc. where one home has solar and the other does not.

  - ***Advantage:*** A common methodology in the appraisal profession to help determine the current market value for a home with similar properties. As more homeowners install solar systems, it will improve the ability for an appraiser to find a "comparable sale" solar home to use as a valuation benchmark.

In all three cases, the home seller and buyer should consider any ongoing costs to pay for the system. Ongoing costs can come in the form of a loan payment, a lease payment, or a Power Purchase Agreement (PPA) payment.[2,3] For example, imagine a homeowner is selling a home that would normally sell for $400,000 but appraises for $425,000 due to the solar system on the roof. If the homeowner used a $20,000 solar loan to purchase the system, that loan may need to be paid off at the time of home sale. In that case, while the value to the buying homeowner may indeed be $425,000 (including $25,000 of value represented by the solar system), the selling homeowner would only get $405,000 at home sale.

If the system was purchased in cash without a supporting loan, or any financing was paid off, the ongoing costs of a solar system (such as for periodic maintenance) may be negligible.

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[2] A solar system financed by a lease or PPA structure (often referred to as third-party ownership or financing) is technically not part of the home real estate and, per guidance from federal regulators, cannot be financed by mortgage providers. Nonetheless, even solar systems with third-party financing mechanisms can provide energy cost savings to homeowners.

[3] NOTE: All SEIA-approved solar contracts guarantee that any third-party owned systems can be transferred to the new homeowner in a home sale. See https://www.seia.org/research-resources/model-leases-and-ppas. Please contact your solar provider for more information about transferring your solar loan, lease or PPA.

Recommended Valuation Method: The Income Approach

SEIA advises homeowners to focus on the Income Approach as the most appropriate initial methodology to determine the value of a home solar system. The income approach estimates the forward-looking value of the energy cost benefit. The other two mechanisms, while both valid, add complexities due to: federal, state and utility-specific incentives (which are generally applicable to initial installation only); the quality of the components and installation; and other factors. Below are links to a few on-line tools that may help.

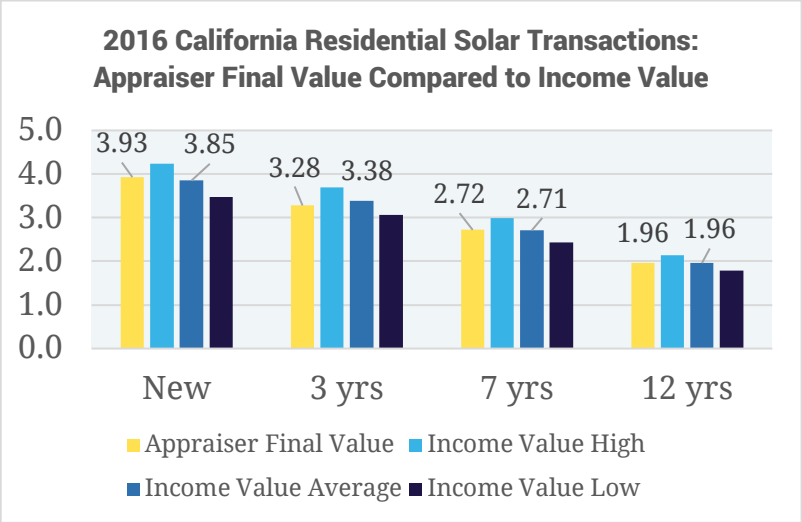

Figure 2: Appraisal and Income Values Nearly Equivalent in California
Source: U.S. Solar Market Value Report, Sandia National Labs

Based on a recent study by Sandia National Labs and Energy Sense Finance, home appraisals in California, Arizona, and Massachusetts consistently matched values obtained from an Income Approach calculation.[4] Figure 2 shows the data for California where market appraisals match the average Income Approach value for nearly 900 systems in that market.

Be an Advocate for Your System Value

It may be necessary for the current homeowner to highlight the monetary value and other benefits the solar system brings to potential homebuyers. New buyers have legitimate questions about value, savings, and other issues that must be addressed. Knowing the size, production, components of the system, current utility costs, and details to the financing will be helpful in the home sale and solar system-transfer process.

Realtors and appraisers may also struggle to fully value solar installations as many have not been trained yet on solar. In those cases, the homeowner may need to advocate for consideration of the solar system's value among real estate professionals as well.

Resources Available to Assist in Valuing a System

- PV Value[5] – Solar Value Calculator
- SEIA – This valuation guide and other consumer protection resources
- California Solar + Storage Association – Selling Your Solar Home Guide

[4] See U.S. Solar Market Value Report: Further Evidence Solar Adds Value to Real Estate. http://energy.sandia.gov/energy/renewable-energy/solar-energy/photovoltaics/publications/

[5] By Energy Sense Finance, the company that developed the appraisal research with Sandia National Labs. PV Value has been endorsed by the Appraisal Institute, an entity that educates the Appraisal Industry.