

Solar Power Experiences & Advancements

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It has been five years since we last polled *Equiry* readers about solar power... and a lot has changed since then. Established companies have bought up start up entities, regulators have loosened restrictions, solar technology has advanced significantly, and new solar products have come on-line. Costs have also dropped.

The three biggest changes in the last five years are:

- Prices have dropped over 45% since 2014;
- Maryland now permits residential solar batteries to store energy for later use;
- Solar power manufacturers have introduced solar roofing tiles to replace more cumbersome solar panels.

We decided that with so many changes in the solar marketplace, it was time to send out a new survey. This time, we asked readers about reliability, costs, energy production, energy storage, and more. We also asked readers who don't have solar power to tell us why not.

Interestingly, 59.6% of our survey participants do not have solar power on their properties with 40.4% saying they do have solar power.

Solar Placement & Packages

Of the 40.4% survey participants who said they do have solar power, 55% have panels on their homes while 20% have panels on their barns. Ten percent have panels on farm out-buildings, and 5% have them on indoor arenas. Another 5% have stand-alone panels, and 5% clicked "other."

The majority (80%) of participants with solar power installed the systems themselves while 20% inherited solar power when purchasing their property. Most (56.3%) participants installed their system after our 2016 survey was published with 43.7% installing before 2016. The earliest installation of solar power for our survey participants was 2013.

In terms of types of contracts, 43.8% signed a purchase agreement, which means they purchased the panels outright and are responsible for the maintenance. The next most popular type of contract was a lease agreement, with 31.3%, which means the lessee pays a fixed rent in return for the right to use the solar system and to recoup the savings of any excess energy the system generates.

Six point three percent have a pre-paid power purchase agreement, which means that instead of renting the system or buying the system, the person agrees to buy the power generated by the system and pays an up-front payment to cover estimated energy needs over the term of the agreement. Under this agreement, the person has no monthly obligations except for any energy used in excess of that generated by the system.

And finally, another 6.3% have a non-prepaid power purchase agreement. This means the person agrees to pay for the power it uses from the system each month at a pre-set price. For both of these power purchase agreement models, the homeowner buys future power at today's rates, which results in substantial savings.

Several participants clicked "other" with one participant saying there was no cost to them with an agreement to maintain the system for 20 years. Another participant stated they did not sign any sort of agreement or contract.

Solar Providers

Our survey participants reported that they have solar power systems installed by the following companies American Solar Company, Aurora Energy, Solar City (now Tesla), Solar Run, Sungevity and Paradise Energy. The majority (78.5%) of participants used Solar City/Tesla.

We should note that there are many more options for solar power than just the companies listed above. Indeed, there are over 90 solar installation companies in Maryland, and 26% of our survey respondents did not tell us which one of those 90+ options they used.

Because there are so many options for installers and so many options for financing, several survey participants recommended that anyone shopping for solar power do plenty of research to find the plan and the provider that works best for them.

Customer Satisfaction

Overall, 78.9% of participants with solar power said they are happy with their system with 55.6% stating they would purchase again with the same vendor and same contract terms. A small percentage (5.6%) stated they would use the same vendor again but with different contract terms.

Aurora Energy, Paradise Energy, Sun Run and Sungevity all had positive reviews with participants saying they were both happy with the vendor and happy with their contract terms.

Solar City/Tesla had mixed reviews, with 60% stating they were happy with the company and 40% stating they were unhappy. Those who said they were unhappy, however, were not unhappy with the system itself, but rather, with customer service or with communication challenges.

In general, 16.7% of participants stated that if they had to do it again, they would install using a different vendor. Twenty-two point two percent stated they would not purchase solar power again.

Generating Power

The purpose of installing solar power is to save money on electrical expenses for the home and/or farm in addition to creating and using an en-

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Maryland Solar Stats

As of December 2020...

- Maryland has 1,293.92 MW of solar power installed across the state.
- Maryland is currently ranked 17th in the nation in terms of the amount of solar power generated.
- Over 4,800 jobs are created in Maryland due to the solar power industry.
- 4.17% of Maryland's electricity is produced from solar power.
- The price of solar power systems in Maryland has decreased by 45% over the past five years.
- The solar industry has invested over \$3 million in Maryland.
- The year 2016 saw the biggest boom in residential solar power installation in Maryland.
- There are 178 solar companies operating in Maryland: 11 manufacturers, 93 installers/developers, and 74 other.

Statistics from www.seia.org/states



Woodvale Farm

Solar was always part of Joe Herzog's bigger plan to continually upgrade Woodvale Farm (Frederick County) with environmentally friendly and fiscally prudent practices and systems. Working with Paradise Energy Solutions, a 270 panel, 87.75 kW system was installed on the indoor, producing 99,036 kW annually, or 101% of the farm's energy needs, which meant linking together the farm's four separate meters. Being able to link the meters to one solar system was critical for Joe: "The other companies kind of hemmed and hawed a bit and said 'well we're not sure that we can do that' and Paradise, basically from the get-go, said 'we do this all the time.'" 71% of the installation cost was covered by federal and state tax credits and grants, and Joe expects to break even on the installation costs after six years.