The Results Are in – Solar Energy was Booming in 2016

February 27, 2017

Series I: Solar Energy and the Economy

Most data lead to optimism.

Highlights:

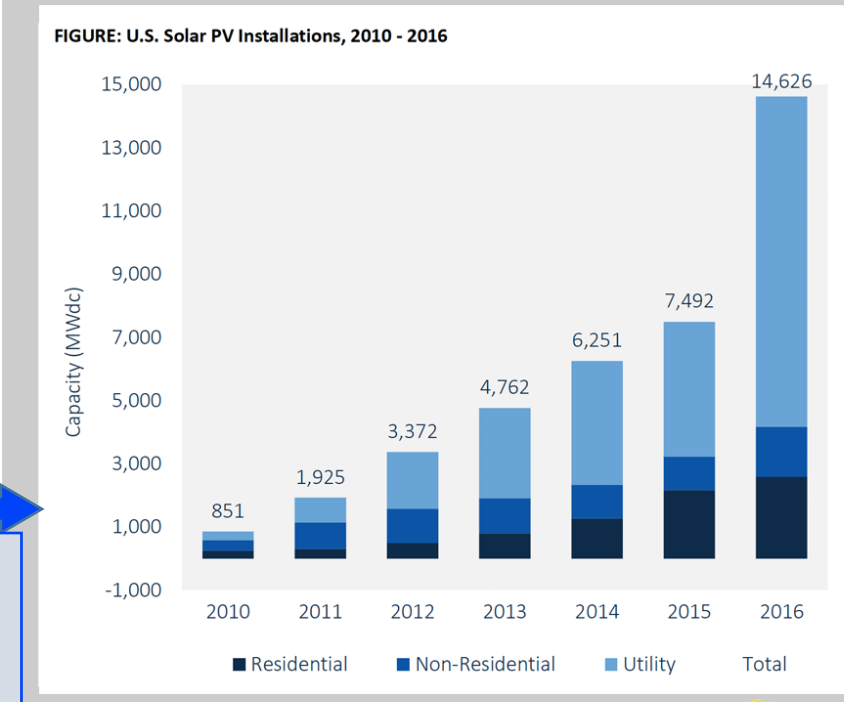
- Nationwide solar power capacity exploded by ***95%***.
- PA and NJ experienced relatively high growth.
- Jobs increased 25% nationwide. Locally over ***9k*** people work directly in solar.

Each new year gives us a chance to look back and answer the question, "Is the industry healthy and growing the right way?". This is true in most regions around the globe. Some places like Germany may have reached a peak in earlier years, however they still add more electrical capacity from renewable sources, usually wind and solar. There may be good reason for optimism even in those mature markets.

Where a continent, a country, or a state rank each year in solar additions doesn't tell a complete story. New markets can often start out growing with a bang. Looking at growth relative to factors such as the overall supply of energy and the economic value or impact builds a more informative picture.

The U.S. Results from 2016 – Rooftop to Utility Scale Solar

Last year the United States not only installed more MW in solar capacity than in any one previous year, there were a record number of jobs created. In all, 44 of 50 states saw an *increase* in solar power related job counts. Both are important. Looking at the chart from the Solar Energy Industries Association (SEIA), you can see the near doubling of new capacity (95%).



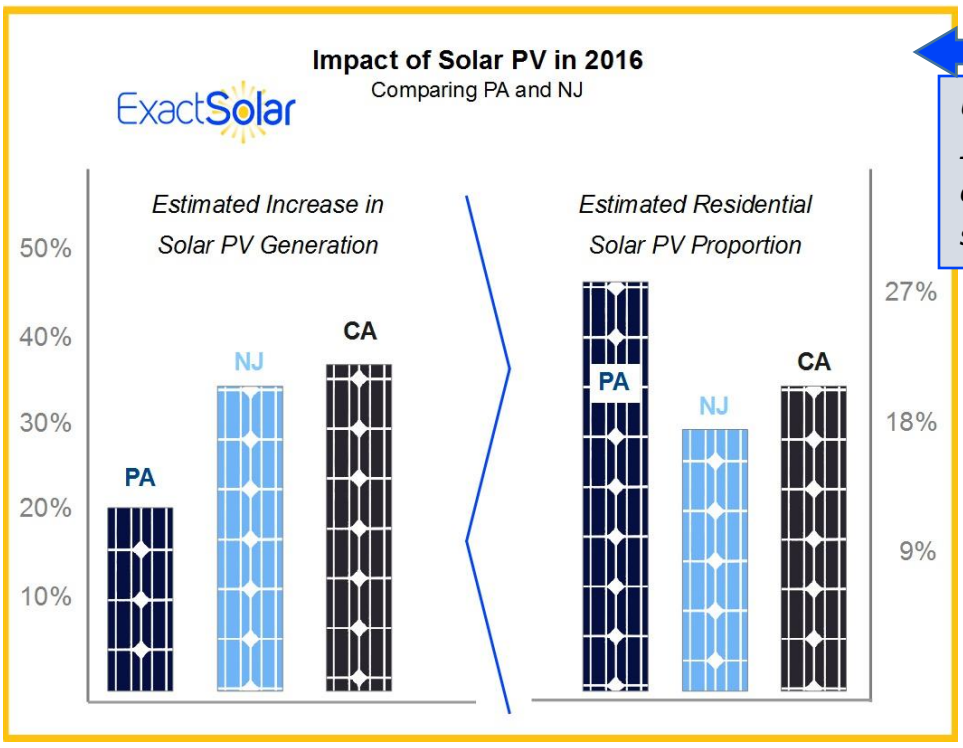
GTM Research and the SEIA annually publish the U.S. Solar Market Insight Report. This chart shows a 2016 growth in all three tracked sectors.

Solar Energy was Booming in 2016 (cont'd)

Earlier in 2015 there was uncertainty about the life of the Investment Tax Credit (ITC), which got a lot of industry and media attention. The will of the Congress to continue the 30% credit and its terms past the previous 2016 deadline was debated. In December, 2015, legislation passed extending the majority of the provisions through 2019. Since large solar farms take months and years to plan and develop, most analysts conclude the massive jump in utility solar installations is a result of actions taken before the legislation was finalized in 2015. Nothing wrong with that.

However, most analysts see the growth in both of the non-utility segments to be more organic and less of a race to meet a deadline. The cost and value proposition for solar energy systems continues to improve. The decision gets easier for small businesses and for the homeowner. Products perform better, cost less for every unit of power produced, and systems last longer. This makes the economics work for a larger number of people. The constant increase in purchases and installations is a great indicator.

The U.S. Results from 2016 – On a More Local Scale



Using data from the U.S. Energy Information Administration (EIA) we compare our local states to the most solar active state, California.

Homeowners can sense a vibrant solar market from two measures. Looking at the increase in solar power production for each state shows that the economic value is improving fast (left side of the chart). Production in New Jersey is up a lot, and growth in Pennsylvania is better than expected.

More interesting for Pennsylvania is the higher contribution from residential rooftop solar (right side of the chart). While New Jersey installs more large solar projects, with over 2,000 MW of total solar capacity at the end of 2016, the residential solar contribution is huge. The results so far prove that solar energy is working at all scales and the market is very healthy in our region.

The U.S. Results from 2016 – Jobs, Jobs, and More Jobs (25%!)

The steady expansion of solar power capacity in the U.S. delivers a number of economic and environmental benefits. States with lower electricity rates continue to expand renewable energy capacity. In Texas, for example, the entity that manages the flow of electric power across most of the state (ERCOT) has concluded a study that places solar energy as the economic winner to produce the cheapest electricity over the next 15 years. And that state currently enjoys some of the lowest rates in the country. Beyond the energy costs, there is another equally compelling economic case to be made. Lately we read and hear about infrastructure spending and how it benefits the economy and society at large. Well, the same applies to the energy network. Every new solar job is just as valuable as a road building job, for example.

Using the survey results from the National Solar Jobs Census by The Solar Foundation, we feel encouraged that New Jersey is competitive as the #9 rank suggests, and Pennsylvania has returned to growing solar jobs.

SOLAR Energy

Brought 25% More Jobs to the US in 2016

	2016 Rank	2016 Jobs	Job Growth
California	1	100,050	32%
Massachusetts	2	14,582	-3%
Texas	3	9,396	34%
Nevada	4	8,371	-4%
Florida	5	8,260	26%
New York	6	8,135	-1%
Arizona	7	7,310	6%
North Carolina	8	7,112	20%
New Jersey	**9**	**6,056**	**-14%**
Colorado	10	6,004	20%
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Pennsylvania	**22**	**3,061**	**23%**

ExactSolar

Data extracted from the National Solar Jobs Census via The Solar Foundation

Local solar farms provide work opportunities during the construction phase and for maintenance and management after the system goes on line. Rooftop solar (distributed energy) also provides great numbers of installation jobs.

Perhaps more important, these jobs are skilled, sometimes unionized, and frequently they offer youth and the disenfranchised opportunities they might not gain otherwise. Solar Ready Vets, a Department of Energy initiative, helps prepare veterans for solar jobs from sales to skilled positions.

Women in Solar Energy (WISE) was started in 2011 to influence solar industry business practices with the goal of helping women advance. GRID Alternatives is a non-profit offering energy training and diversity programs to people and communities nationally and overseas that may not have easy access otherwise. These are just three examples of organizations whose efforts facilitate the growth of well-paying solar jobs for the widest range of people.

Solar Energy was Booming in 2016 (cont'd)

Every solar investment, small and large, plays a role in stimulating our domestic economy. Direct purchases increase the flow of money in a positive way. These investments produce favorable financial returns, jobs, and benefit local tax collections. Public companies benefit from improved bottom lines and perhaps increased stock activity. Homeowners and private businesses are able to better use their saved earnings and income.

One of the more compelling values of a healthy and expanding solar industry is the growing impact on quality employment. It can be a challenge for homeowners to find equal or better ways to leverage their finances in such positive ways:

- *For New Jersey and Pennsylvania homes, a properly designed solar energy system can pay for itself and deliver free electricity in 10 years or less.*
- *Over a decade of studies and data prove that rooftop solar is valued by homebuyers and increases home appraisals as well as sales prices.*
- *As more systems are installed, the more people in the local community benefit through jobs and taxes.*

And so it is that the report card from 2016 gives us plenty of reason to have a positive view for the year and optimism for the future. More and more families and businesses are deciding to make purchases that offer more societal benefits. And few offer the environmental, financial, and community benefits that distributed rooftop solar offers. It is satisfying to know that to solarize a home no longer requires a sacrifice that many earlier adopters made. And these benefits and reasons to go solar will be just as viable if not stronger in 2017 and beyond.

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