

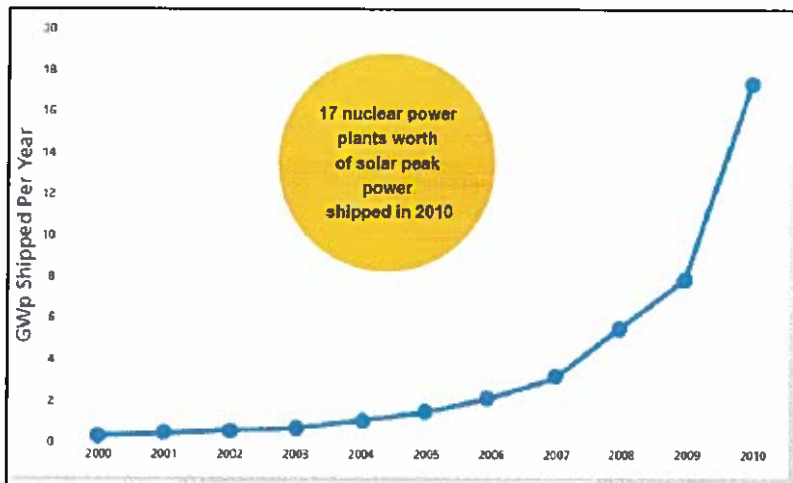
**Testimony of Mr. Colin Murchie
Director, Government Affairs, SolarCity Corporation
On Behalf of the Solar Energy Industries Association
Regarding the Alternative Energy Portfolio Standard
Before the Consumer Affairs Committee
Pennsylvania House of Representatives**

January 11, 2012

Chairman Godshall, members of the Committee, thank you for the opportunity to testify today. I come to speak to you as an employee of SolarCity and as a representative of the Solar Energy Industries Association.

Briefly, SolarCity (www.solarcity.com) is one of the largest providers of solar energy services in the United States. Over the past five years, we have created jobs for nearly 1400 individuals, in more than a dozen locations nationwide (including Broomall, PA.) Our innovative model of offering lease and PPA finance to homeowners as well as commercial businesses has led to an explosion in solar adoption – more than 19,000 customers and one billion dollars in project finance to date.

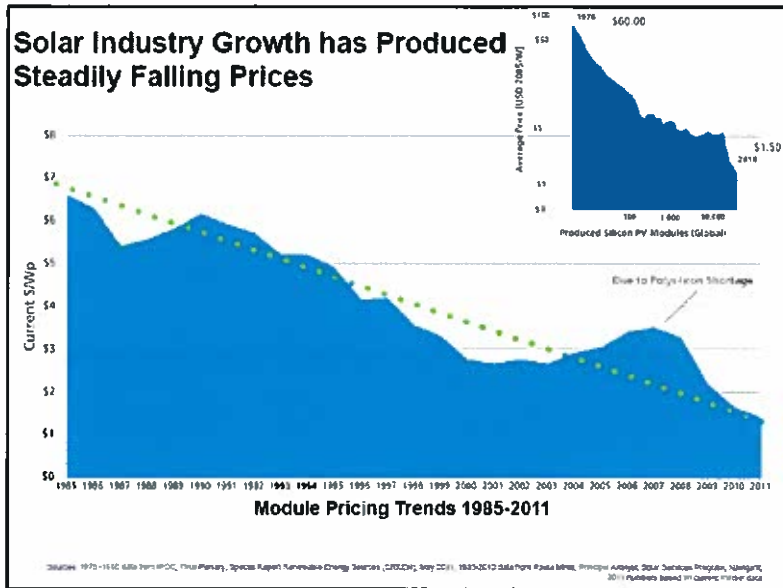
SEIA is the national trade association of the United States solar industry. Through advocacy and education SEIA and its 1,100 member companies work to make solar energy a mainstream and significant energy source by expanding markets, removing market barriers, strengthening the industry and educating the public on the benefits of solar energy. The comments contained in this filing represent the position of the SEIA as an organization, but not necessarily the views of any particular member with respect to any issue.



**Solar is now a Significant
Worldwide Industry**

In 2010, the solar industry worldwide shipped 17 billion' Watts of panels – enough to power roughly 3.4 million homes. So far in 2011, the US and world markets have both exceeded their 2010 mark. While much has been made of the bankruptcy of some peripheral solar panel

manufacturers, it's worth remembering that 2011 was another in a series of years of significant growth in the solar industry. In fact, in the third quarter of 2011 alone, more solar was installed in the US than



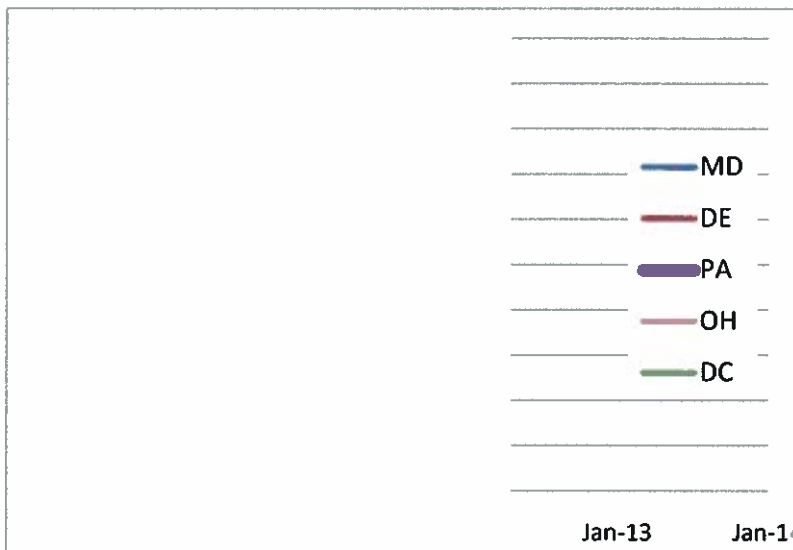
in the entirety of 2009, and the more than 100,000 jobs in the US industry grew by more than 6.8 percent in 2011.

Solar Costs are Declining Dramatically ...and So is the Cost of Pennsylvania's Solar Compliance

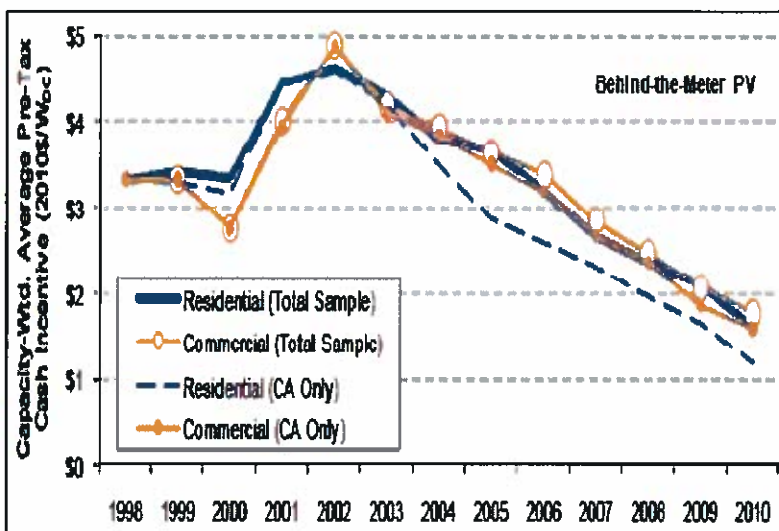
Those increases in volume continue to drive very major declines in price. In 2008, a one hundred Watt solar panel cost about \$325. Now, it costs much more like \$100.

In fact, the cost of a solar panel itself is now a more minor part of the installation. Installers (like my company) are getting smarter, too, with more operational improvements, more automation, etc.

Those reductions in price are showing up in lower prices for the RECs used to comply with Pennsylvania's AEPS. At left is a chart of REC prices in Pennsylvania and some neighboring PJM states over the last two years.



As you can see, these continue to come down. That's good, it's by design, and due to competitive forces. The price for a Renewable Energy Credit - the above market price of a solar MWh in these states - is down to a little more than half what it was two years ago. That matches a nationwide trend of steeply declining state-level incentives for solar (also as at left.)



In short, the PA AEPS is "on time and under budget." So why are we here talking to you? Why not let this market-based mechanism continue to

drive down costs and build out solar?

HB 1580 is a Necessary Response to a Specific Event.

If the AEPS existed in a vacuum, we wouldn't be here. But there was a significant shock to this market – in 200X, just about \$160MM of bond and stimulus money were *also* directed into the PA solar market. The design and pace of these programs meant that they resulted in building out more solar more quickly than the AEPS would have.

Clearly, the AEPS operates in a competitive supply / demand market. The demand ramps up over time. This additional funding meant there was extra supply. The result has been that REC prices have stopped drifting downwards due to technological progress and competition, and instead been sent to near-zero. That's different from the typical competitive self-correction the market carries out; it's a drive towards zero – new projects cannot compete with legacy projects that received this extra funding. (Note, the chart I included shows average prices in a given month – which are still propped up by older projects with more sustainable contracts.)

I know that many will refer to this as a crisis; you can also think of it as an opportunity. There are really two possible responses to this influx of state money;

- 1.) **Do Nothing.** Eventually, several years in the future, the AEPS will catch up and self-correct. Ratepayers and taxpayers would in effect receive the benefits of their bond-funded programs back in the form of extremely low REC prices for a few years. In the interim, little or no solar development will occur in the state, and companies will have to scale back their operations dramatically. At the end of this time, we could go through the exercise of reestablishing the industry and catch back up.
- 2.) **Take Advantage.** Alternatively, you could move some of the AEPS requirements forward. You would still ultimately reach the same amount of solar, and still have the same rate caps and cost controls. Ratepayers and taxpayers would still receive the benefits of their bond-funded programs back - simply in the form of slightly lower REC prices for many years, instead of near-zero prices for a few years. You would simply reaching program goals earlier - without the need to shut down the industry in the interim.

The second option strikes me as more efficient. It lets the AEPS continue to work as designed – driving subsidy costs down – eventually to zero – but it copes with this shock that would otherwise push them to zero immediately.

When Will Solar Stand on Its Own, Without State Subsidies?

As I demonstrated above, the average state subsidy for solar installations has dropped from about \$5 per Watt in 2002 to just about \$1.50 in 2010. While equivalent data is not yet available for 2011, I can tell you in our experience those drops have continued. The question is when that number will reach zero. All I can say is that we're all actively working as hard as we can to bring that day about, and I think

we've made commendable progress. In fact, schemes like the AEPS, which builds competition for the minimum incentive right into the mechanism, are a very effective means for doing that.

The Costs of the Solar Requirement are De Minimis

PJM reports that in 2011, PA utilities purchased just about 86,000 SRECs, for an average price of \$208. In round numbers, just under \$18 million dollars. Considering that the revenue electric companies derived from PA customers that same year was about \$13.8 *billion* dollars, you can put this in perspective. It's about a one-tenth-of-one-percent rate increase - .13 %.

Unfortunately, I understand that some of you have seen a financial study by some students at Penn State. All I can tell you is that between ignoring a 30% federal tax credit, and assuming that energy in 2046 costs the same as it does today, that it tends to overstate the case very significantly. Similarly, the Energy Association has presented some frightening numbers; however, these would require the costs of solar to increase, steadily, over the next few decades, which does not seem to me to be a likely case.

Now, there are a lot of reasons electric rates go up and down by about one-tenth-of-one-percent. Fairly minor changes in the weather could do that. But I would submit that not many of those reasons would have the same value to the state that you've heard of so far. It seems to me like a reasonable investment to make in a more secure, predictable, energy future, and one where more of Pennsylvania's energy comes from Pennsylvania.

Conclusion

I would urge the Committee to pass HB 1580 as a targeted response to today's oversupply problem, and to use the surging installations and plummeting costs of solar energy in the Commonwealth as a springboard to further success – not as an excuse to take a breather from years of progress. I welcome your questions.

Graph References:

(Growth in Solar PV Shipments) Source: PV Industry Growth Data from Paula Mints, Principal Analyst, Solar Services Program, Navigant

(Steadily Falling Prices) 1976 -1985 data from IPCC, Final Plenary, Special Report Renewable Energy Sources (SRREN), May 2011; 1985-2010 data from Paula Mints, Principal Analyst, Solar Services Program, Navigant; 2011 numbers based on current market data

(Declining S-REC prices) PJM – GATS; <https://gats.pjm-eis.com/myModule/rpt/myrpt.asp?r=230>

(Declining overall state incentives for solar): Tracking the Sun IV An Historical Summary of the Installed Cost of Photovoltaics in the United States from 1998 to 2010: <http://eetd.lbl.gov/ea/ems/reports/lbnl-5047e.pdf>