Testimony in Support of HB 6635, "An Act Concerning Solar Power"

Testimony March 10 2009

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The Vote Solar Initiative

I want to thank Senator Fonfara, Representative Nardello, and members of the Joint Energy Committee for holing this hearing. It is a privilege to be here today testifying in support of HB 6635, "An Act Concerning Solar Power".

My name is Shaun Chapman; I serve as East Coast Campaigns Director for the Vote Solar Initiative (Vote Solar). Vote Solar is a 501 c (3) not for profit whose mission it is to bring solar into the mainstream. We do this by helping build robust state solar markets, through advocacy, policy design, and coalition building. Our home office is in San Francisco, with our East Coast Office in New York City.

I am pleased to be here before you to speak about the incredible opportunity HB 6635 An "Act Concerning Solar Power "(henceforth Solar Act) presents to the entire State of Connecticut. My testimony will focus around the incredible role leadership and policy mechanisms have played in driving state markets across the nation and globe, and the incredible position the state of Connecticut is in to leverage this opportunity.

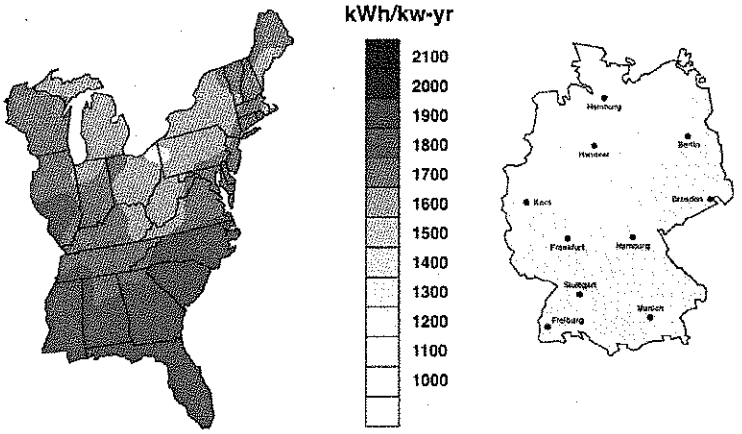
What Drives a Solar Market

At the basic level certain conditions need to be in place for solar electricity generation to be an option for a state. Those factors are:

- Adequate solar resource
- High electricity prices
- The will of the people

Connecticut has all three in spades. The solar resource, or insolation, in Connecticut far exceeds that of World PV leader Germany.

Results Courtesy of, International Energy Agency – Photovoltaic Power Systems Programme, European Photovoltaic Technology Platform and the European Photovoltaic Industry Association, "Compared assessment of selected environmental indicators of photovoltaic electricity in OECD cities."



Germany's much publicized feed-in-tariff has resulted in an incredible amount of PV deployment for a country with less solar resource than the state of Maine, demonstrating that policy is the game changer in bringing solar on line.

Connecticut's highest in the nation electricity prices, at nearly double the national average, have been well documented, surpassed by only Hawai'i which as an island state faces huge infrastructure costs.

Year	State	Average Retail Price Residential (¢/KwH)	Average Retail Price Commercial (¢/KwH)	Average Retail Price Industrial (¢/KwH)	Average Retail Price All Sectors (¢/KwH)
2008	HI Total	32.78	30.02	26.36	29.50
2008	CT Total	19.33	15.99	13.84	16.92
2008	NY Total	18.43	16.81	10.22	16.61
2008	MA Total	17.41	16.04	14.42	16.22
2008	RI Total	17.46	15.42	14.21	16.04
2008	NJ Total	15.97	14.77	12.54	14.96
2008	US Total	11.35	10.31	7.01	9.81

http://www.eia.doe.gov/cneaf/electricity/page/eia826.html

Of the top five states other than Connecticut, four have adopted aggressive solar energy goals as part of their strategy to take control of their energy costs. Hawai'i is seeking 70% renewable energy by 2030(i), New York will have 100 MW of solar by 2011(ii), Massachusetts is seeking 250 MW of solar PV by 2017(iii) and a US market leader New Jersey is aiming to do 2000 MW of solar by 2020.

According to a report by the Office of Legislative Research in Connecticut (iv) there are many

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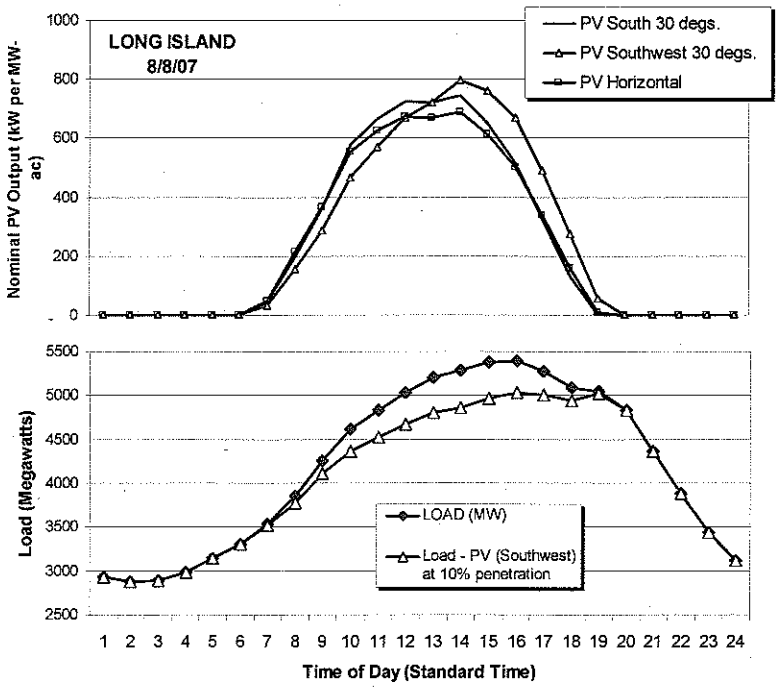
i https://www.eere-pmc.energy.gov/Hawaii.aspx
ii http://www.bnl.gov/bnlweb/pubaf/pr/PR_display.asp?prID=918
iii http://apps1.eere.energy.gov/states/state_news_detail.cfm/news_id=11494/state=MA
iv http://www.cga.ct.gov/2008/rpt/2008-R-0452.htm

factors behind the high price of Connecticut's electricity. However, the very minute solar energy is connected to the grid many of these factors will be alleviated.

- **High demand versus low supply** – With real estate prices at a premium and power plants becoming increasingly difficult to site, adding 370 MW of peak power resource without adding further space constraints to an already crowded New England state will be much welcomed.
- **Reliance on expensive and volatile natural gas markets** – As a peaking energy resource solar electricity allows us to cut out some of the most expensive fuel in Connecticut's energy portfolio – natural gas. Currently Connecticut relies on natural gas for 34% (v) of its energy generation. As peak resource diagrams show, 10% market penetration of solar PV can shave off the need for 500 MW of peak resource, which would save a lot of expensive natural gas.



Dr. Richard Perez University of Albany http://www.asrc.cestm.albany.edu/cvitae/perez.htm

v ibid

- **Congestion** – Because, as a distributed generation resource, solar energy is consumed close to where it is produced, costly transmission projects and charges will be alleviated.

Finally, we know the will of the people in the state of Connecticut. Time and again they have voiced their concern for the environment, and asked for alleviation from high energy market costs. This is a golden opportunity to have an impact on both.

Policy makes all the difference

While it is certainly the case that California is a US market leader, but to date Northern California has out paced southern California Pending new develoments fro LADPW and Southern California Edison). Germany and New Jersey do not necessarily inspire sunny thoughts, however have inspired bursting solar markets. What makes the difference is policy. Primarily four policy mechanisms: Net metering, Interconnection, **Financial Incentives**, and rate design.

HB 6635, "An Act Concerning Solar Power" addresses the need for Financial Incentives, but just a word about the other three. I would refer the committee to the report: "Freeing the Grid" which takes the task of ranking and grading state net metering and interconnection design (Connecticut receives a B for net metering and a D for interconnection) (vi). While fair rate design acknowledges that as long as its profits are tied to how much electricity they sell the utility is at a disadvantage to encourage customers to use less of their product (i.e. they would not encourage more solar deployment).

While these other mechanisms are important to the development of a true solar market, nothing drives a market the way long term, transparent, financial instruments do. In the just released report by Lawrence Berkley National Labs *"Tracking the Sun: The Installed Costs of Photovoltaics in the US from 1998 – 2007"* it is clear that having long term, on the ground programs is what helps markets achieve long term sustainability.

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vi http://www.newenergychoices.org/uploads/FreeingTheGrid2008_report.pdf

> The overall decline in installed costs over time is primarily attributable to a reduction in non-module costs, calculated as the total installed cost of each system minus a global annual average module price index. From 1998-2007, average non-module costs fell from $5.7/W to $3.6/W, representing 73% of the average decline in total installed costs over this period. This suggests that state and local PV deployment programs – which likely have a greater impact on non-module costs than on module prices – have been at least somewhat successful in spurring cost reductions. (vii)

In short, local solar markets are at the mercy of local policy. As a matter of economics this is an easy conclusion to draw. Some of the highest costs of a solar project come from the installation costs. This comes from the market friction of boom bust cycles in the industry. We are currently in a bust cycle in Connecticut. The Connecticut Clean Energy Fund (CCEF) has been proposed for raiding; even as funding sources are drying up.

This is happening at the exact time Connecticut should be gearing up to put people back to work in the technologies that are making a global impact. The recently announced closure of the Akeena office in Milford, CT is an example of a shock to the industry. Other installers will be reluctant to hire and train new staff, order supply in advance and leveraging economies of scale on the supply markets, building customer contacts and all the things that come along with mature market growth.

What clear, long term, transparent solar programs like HB 6635 do is provide the industry with just enough assurance to get to work training staff for the long term, buying supply in bulk, and forging important customer contacts.

How HB 6635 Works – Learning Lessons, and Showing Leadership

Because the solar market place does not operate in a vacuum many of the mechanisms proposed in this bill have been at work in other states with varying degrees of success. What the authors and the sponsors of this bill have demonstrated is a willingness to learn from the pitfalls in other states, and crafting legislation that will work for Connecticut.

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vii Executive Summary "Tracking the Sun: The Installed Costs of Photovoltaics in the US from 1998 – 2007" http://eetd.lbl.gov/ea/EMS/reports/lbnl-1516e.pdf

As I understand an analysis of the various components of the bill has been done by Fred Zalcman of SunEdison, so I refer the committee to that analysis, and will not further belabor those points.

However, I will point out that the most important aspect of this bill is its comprehensive nature. We can not afford to continue the policy of patchwork solar policies and hope that a market gets started in Connecticut. HB 6635 has something for everyone with the prevailing wisdom of the industry at work behind each step of the process. While 370 MW of solar PV may sound like a lot of energy compared where Connecticut is now, it is a mere 5% of total projected capacity in 2020, the terminal year of the program. While there are proposals for upfront rebate costs, as there are on the residential rebate, those cost have been built into the program to be simply zero by the terminal year. There is not another technology with this much promise that would propose the same.

In conclusion, the Vote Solar Initiative strongly supports the passage of HB 6635 and we welcome the opportunity to work with this Committee, the members of the General Assembly, and the Governor towards its ultimate passage and enactment into law.