



Testimony in Support of **HB 5362** "An Act Concerning Renewable Energy" Testimony
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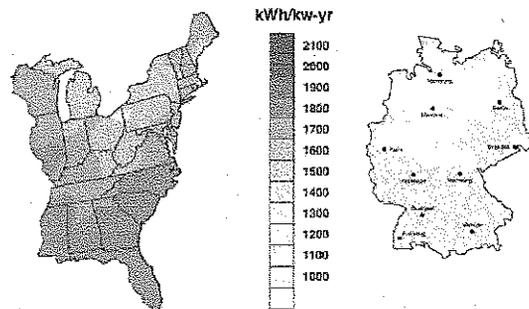
This bill represents an opportunity to the entire State of Connecticut. In nearly every state where a robust solar market exists, it took pieces of legislation just like this one to drive the market. New Jersey, the nation's second largest solar market and not significantly rivaled in that status by any other state, is the best known example. Many elements of this legislation, particularly the market driven mechanism known as Solar Renewable Energy Certificates/Credits (SREC), closely mirror the program in New Jersey. The Vote Solar Initiative strongly supports this legislation and urges its swift passage.

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
- Long term, certain solar policy



***Results Courtesy of International Energy Agency**

Connecticut has two of three in spades.

The solar resource, or insolation, in Connecticut far exceeds that of World PV leader Germany, a country with less solar resource than the state of Maine, clearly demonstrating that policy is the key to bringing solar on line.

Connecticut also suffers from the highest in the nation electricity prices, nearly double the national averageⁱ.

Some of the main factors behind high Connecticut electricity pricesⁱⁱ can be addressed with increased solar PV deployment:

- **High demand versus low supply** –real estate prices at a premium and power plants becoming difficult to site, adding 300+ MW of peak power resource will be much welcomed.
- **Reliance on expensive and volatile natural gas markets** –a peaking energy resource solar electricity allows Connecticut to cut out some of the most expensive fuel in energy portfolio – natural gas. Currently Connecticut relies on natural gas for 34%ⁱⁱⁱ of its energy generation. As peak resource

ⁱ <http://www.eia.doe.gov/cneaf/electricity/page/eia826.html> (Surpassed only by the island state of Hawai'i)

ⁱⁱ <http://www.cga.ct.gov/2008/rpt/2008-R-0452.htm>

ⁱⁱⁱ *ibid*

diagrams show^{iv}, 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.

- **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.

The only piece missing for Connecticut to be a northeast market leader in solar PV is a long term, secure solar program by passing HB 5362.

Policy makes all the difference - HB 5362 is good policy

HB 5362, “An Act Concerning Renewable Energy” addresses the need for secure financial incentives. The bill relies on market based mechanisms that have prevailed in New Jersey, catapulting the state into a national leader.

In fact, 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.

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^v.

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. Clear policy can keep those costs down, but can also help put people back to work.

Analysis conducted by the Vote Solar Initiative, using the National Renewable Energies Laboratory Jobs and Economic Development tool, shows that with the passage of HB 5362, Connecticut could look forward to the following: 1,200+ long lasting, well paying jobs. In addition, creating \$45+ million yearly average in-state revenue (i.e. wages, salaries), and \$160+ million in pure economic output activity^{vi}.

The passage of this bill will clearly put Connecticut back on track in putting people to work; and generating revenue.

In Summary

HB 5362 is solutions based legislation. It will go a long way to addressing Connecticut’s electricity security and costs, environmental protection, and economic development. It should be passed as quickly as possible to put the sun to work for Connecticut, but putting Connecticut back to work.

iv Dr. Richard Perez University of Albany <http://www.asrc.cesdm.albany.edu/cvitae/perez.htm>

v 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>

vi Please see Job and Economic Impact Analysis of HB 5362 appendix to this testimony

Job and Economic Impact Analysis of HB 5362

Job creation potential from Green Jobs has captured the imaginations of policy makers. To help support job creation claims Vote Solar has run analysis on the job creation and earnings/output potential of a robust solar program. We used the National Renewable Energies Laboratory (NREL) PV Jobs and Economic Impacts (JEDI) Model. In this section we outline the jobs data and analysis. In the next section we lay out the numbers for Earnings and Output opportunities.

Job Creation			
	Direct, Induced	Supported 25 Years	Maximum Total
Residential RetroFit	139	2	141
Residential New	16	0	16
Residential – All	155	3	158
Small Commercial	154	4	157
M/L Commercial	439	17	456
Commercial – All	593	21	614
Utility	478	6	484
Program Totals	1225	29	1255

For simplicity, our first run of the numbers did not include in-state manufacturing. Over the life of the program we can look forward to 1,255 high quality jobs. The jobs include direct impacts; installers, electricians, project developers to induced impacts; catering services, lawyers, and doctors. Of these jobs, the program would create 29 jobs that would last for 25 years (the average lifespan of an installed system) in maintenance and operations work. In the first year of the program, 2010, 1,155 new jobs would be created.

Earnings			
	Average - Through 2020 (\$000)	Totals - Through 2020 (\$000)	Maximum Year (\$000)
Program Totals	\$ 48,020,276.68	\$ 528,223,043.43	\$ 66,397,340.04

The job creation potential is just half of the economic opportunity for Connecticut. A Robust solar program would be a significant source of in-state earnings, (i.e. wages and salary) and in-state economic output (i.e. economic value).

The program generates, on average, roughly \$50 million a year in state revenue through the terminal year of the program, 2020. Though revenue would continue beyond that, and would total over half a billion dollars in total. The maximum year of the program, the very first year, would result in over \$66 million in revenue.

Output			
	Average - Through 2020 (\$000)	Totals - Through 2020 (\$000)	Maximum Year (\$000)
Program Totals	\$ 115,834,191.89	\$ 1,274,176,110.81	\$ 160,098,326.60

Output can be described as the raw economic activity generated from the program. The program generates, on average, over \$115 million a year in in-state activity through the terminal year of the program, 2020. Though economic production would continue beyond that, and would total over a billion dollars. The maximum year of the program, the very first year, would result in over \$160 million in in-state economic production.

Notes:

- Cost data is taken from two sources:
 - *Tracking the Sun II*, Ryan Wiser et al, Lawrence Berkeley National Lab, October 2009
 - Massachusetts Renewable Energy Trust: <http://www.masstech.org/SOLAR/>
- NREL PV JEDI tool is not yet publicly available and is still in Beta testing. Numbers should be treated as an estimate. More information available: http://www.nrel.gov/analysis/jedi/about_jedi.html
- Tool assumes no in state manufacturing at this point.
- All assumptions can be found here: http://spreadsheets.google.com/pub?key=tVTaX_RC6imyEyUhZiFwkTQ&output=html