



# GrowJobsCT

## MANUFACTURING MAKES CT'S FUTURE

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March 12, 2013

TO: Energy & Technology Committee  
FROM: John Harrity  
Director, GrowJobsCT

RE: **HB 6535 – AN ACT REDEFINING CLASS I RENEWABLE ENERGY SOURCES**

Senator Duff, Representative Reed, and Members of the Energy & Technology Committee:

I regret that I was not able to attend the March 7, 2013 public hearing at which HB 6535 was on the agenda. I am submitting this written testimony for your consideration, and am happy to meet with committee members to discuss the issue further.

As noted, my name is John Harrity, and I serve as Director of GrowJobsCT, a program that brings together labor, business and community advocates, along with interested public officials, in an effort to preserve and expand manufacturing jobs in Connecticut.

I also serve as the President of the Connecticut State Council of Machinists, the legislative and electoral advocacy organization for the Machinists Union in the state of Connecticut.

I am writing in support of HB 6535, with the request that the committee amend the proposed legislation to include **thermoelectric direct energy conversion as a Class I renewable energy source.**

Thermoelectric conversion is a mature technology that has been used for government and commercial applications for more than 50 years. In simple terms, thermoelectric conversion is a process in which electricity is produced by applying a high temperature source across one side of a thermoelectric module and a cold temperature sink across the other side. The process is passive, has no emissions or byproducts other than electrical power, and is a clean, renewable technology.

The US Department of Energy has concluded through independent study that thermoelectric conversion is an ideally-suited technology to recover energy from waste heat – a prime target for energy conservation and efficiency.

Until now, although thermoelectric conversion has many applications involving generation of relatively small amounts of power, low conversion efficiencies and cost prevented its use in larger applications with direct utilization to power generation for the grid.

Connecticut is fortunate to be the home of an experienced innovator and businessman, Daniel Lessard, who has developed patented designs to install thermoelectric conversion technology into large-scale power plants. Utilizing heat of the host facility, and without any major renovation of the power plant itself, Dan can install thermoelectric conversion power generation equipment that produces power by as much as 2% of total plant output, reduces waste heat by as much as 4% and reduces fuel consumption and stack emissions by as much as 1.5%. Dan Lessard's company, Phoenix Power, is interested in producing the thermoelectric electric power

generators here in our state. Phoenix Power is now in discussion with several state agencies about the advantages of locating here, and assistance that can be provided. Phoenix Power is also engaged in similar discussions with officials in New York and Massachusetts.

Based on projected company growth, Phoenix Power could generate up to 500 manufacturing jobs in Connecticut over the next five years. Or those jobs could be created in another state.

I urge the committee, and the legislature, to include thermoelectric conversion to the designated Class I Renewable Energy technologies, in order to encourage the development and use of this technology in Connecticut for several reasons.

First, thermoelectric direct energy conversion is a highly cost-effective way for power plants to turn waste heat and underutilized heat into useful energy – a key goal in the pursuit of better energy conservation and efficiency.

Second, thermoelectric direct energy conversion has no emissions, discharges or byproducts other than electric power. It captures otherwise wasted energy and turns it into electric power through a passive, clean, renewable process.

Third, based on industry assessments, Phoenix Power will play a significant role in power facilities in coming years. Production of the technology is estimated to require up to 500 manufacturing jobs within the next five years and grow dramatically from there

It is the stated and sincere intent of Phoenix Power and its CEO, Daniel Lessard, to build this company in the State of Connecticut. However, the actions of states in the region that either encourage company growth or demonstrate disinterest in this opportunity will obviously have an impact on where this equipment is produced.

This technology deserves the advantages that come with designation as a Class I Renewable in Connecticut. Thermoelectric conversion power generation is, in fact, a clean, renewable energy technology, with the added benefit that it utilizes waste heat. Connecticut needs the manufacturing jobs that will develop from the manufacture of this product.

I therefore urge the committee to amend **HB 6535 – AN ACT REDEFINING CLASS I RENEWABLE ENERGY SOURCES**, to include thermoelectric direct energy conversion.

I would be happy to discuss this further with committee members. I can be reached by email at [iamjh@sbcglobal.net](mailto:iamjh@sbcglobal.net) or by phone, at 860 459-5381.

Thank you.

John Harrity

CC: E&T Comm., D. Esty, B. Garcia, D. Williams, B. Sharkey, J. Olsen, P. Mounds, L. Tucker, E. Corey, D. Lessard.