PSB 928, An Act Concerning Shared Clean Energy Facilities
Energy & Technology Committee, Match 17, 2015, 10:00 am

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Co-Chair Doyle, Co-Chair Reed, Committee Members and staff, my name is Joel Gordes. I am an independent energy consultant. While I recently served as a Study Advisor to the Connecticut Academy of Science and Engineering (CASE) on their study of this issue for this legislature, I do not represent them in any way. While not here physically today, joining me in support of this bill and testimony is David Anderson former Representative (R, CT-45th) and Chairman, Energy and Public Utilities Committee 1985-86

We strongly support this bill to allow development of Shared Clean Energy Facilities (SCEFs) which are already underway in 4 New England states and ~12 others.[1] Many in the environmental community will well-cover the valuable contributions these can make to furthering environmental goals. We will concentrate more on issues of equity, deficit reduction and enhanced security, safety and resilience that these facilities can offer.

Equity Issues; SCEFs Vs. the Utility Model: SCEFs provide a high degree of equity heretofore missing in our programs, particularly those employing photovoltaics (PV). A majority of residents cannot install PV systems on their homes due to improper orientation, shading by trees or structures, roof problems, etc. The SCEF allows them to subscribe to the output of a facility and by using virtual net metering to obtain most of the value of PV which assign kWh credit from a well-positioned site. In addition, because the SCEFs are much larger than residential systems, they can realize economies of scale allowing more competitive prices. This provides an additional bonus of adding to the global amount installed that leads to further cost reductions.

The utilities take credit for much of the PV installed thus far and should be commended for that. However, they claim their model benefits all ratepayers by providing equity. With the amount of PV currently in place this likely amounts to a minute amount per ratepayer. Additionally, it will not likely attract any degree of investment from the private sector compared to SCEFs which will access financing from diverse private capital sources attracted perhaps from the Green Bank. We do think utilities ought to have the option to own and operate SCEFs but not to the exclusion of others including non-profit and for profit institutions.

The Utility-Driven Myth of "Subsidization": Utilities continue to promote the myth that renewable energy is heavily "subsidized" by or "cost-shifting" to other ratepayers through net metering. Certainly, it is difficult to understand how longstanding monopolies with state guaranteed rates of return ignore that they enjoy the largest subsidy of all. At one time there were sound technical reasons for this.

Net metering payments are not subsidies or even "cost-shifting"; they are "compensation" for energy generated and other value streams provided by PV system owners through net metering laws. Actually, these payments should also include a premium for power produced when it coincides with summer peak use. All ratepayers benefit from this reduction in demand and PV owners may be actually undercompensated. Among some of the additional, generally accepted values that warrant this compensation and aid all ratepayers are:

- Avoided Energy Costs
- Reduced T&D Losses
- Deferred T&D Upgrades

Avoided Generation Capacity
Avoided Transmission Capacity
Avoided SOx, NOx & CO2 Costs

There are additional values to all ratepayers, some of which are open to honest debate and is

[1] Solar Energy Industries Association

precisely why we need a vigorous, professional study on the value of distributed generation, including PV, as outlined in HB 6023. That study ought to be combined with this bill before us. Some values have already been named above but quantifying others like security and resilience, while more difficult to assign dollars and cents values, can undergo analyses to determine this.[2] Interesting to note is a recent study in Maine where they determined the value at $0.33/kWh rather than the retail value of ~$0.20/kWh Connecticut now provides. In Louisiana, heavy users of coal and gas, where power averages only about $0.09/kWh, a study showed no net benefits from solar but both the methodology and inputs have been the subjects of controversy.

One Vision of How Shared Facilities May be Employed for Low-Income Populations: Equity issues dictate there must be a concerted effort to benefit low-income citizens. While we have a winter moratorium on shut-offs of electricity, the rest of the year we do not and a certain number of people suffering economic hardship lose access to power. The utilities do their best to minimize this dire action. But too often, those who are shut off resort to candles for lighting and there are myriad accounts of candles tipped over with ensuing fires and loss of life; many time with children involved. In a nation that guarantees life, liberty and the pursuit of happiness, it is almost unthinkable such punitive action can deprive life in this way.

SCEFs could mitigate this unfortunate situation. One vision is that groups like Operation Fuel, which already aids people to pay electric bills and AARP could use contributions to buy or invest into SCEFs or benefit from Crowdfunding to do so. This would provide electric bill relief to those who may be facing an imminent shut off. This cannot take place under the utility clean energy model as structured.

The Deficit Reduction Connection While Aiding Low-Income Populations: One interesting application of SCEFs has already taken place in Massachusetts, another state serviced by Eversource who strangely opposes them in this state. It allows low-income housing tenants to save $60 million or more over 20 years by use of SCEFs with the bill credits going to the 16 housing authorities.[3] There is reason to believe that there may be even better alternatives available here to do much the same. If the source to pay those electric bills was from the state in part or in whole, this use of SCEFs could aid in reducing a state deficit. This could be built upon to provide power not only to housing authorities but to state offices or any other structure using electricity for which the state may make support payments. Certainly it is an area to be explored.

Meeting Security and Resilience Needs: The security and resilience threats to the grid are not just storms such as we have experienced but also include physical terrorism, cyberterrorism and just the sheer complexity of the ever-growing and heavily-centralized grid. We need to provide added degrees of resilience and security by moving toward a decentralized system where generation is located closer to loads-- just as Mr. Edison first envisioned it. Where possible, generation should be placed in areas that may include critical infrastructure able to operate independently of the grid when required. States, like New York, and some utilities, accept these concepts and are embracing new business models rather than throwing obstacles in the way of SCEFs. SCEFs aid in further decentralizing the grid and, when outfitted with back-up generation, CHP and eventual storage options, may be able to provide needed power to those critical facilities during emergencies. We hope our own utilities, instead of opposing this business model, will follow suit and even profit from it. Almost four years ago, in a published OP-ED this co-author wrote:

> ...but the key to successful implementation will be to compensate utilities with equal or better rates of return so they cooperate in installation of these systems. We have taken similar steps for their involvement in energy efficiency programs since 1988. Only by making the utilities monetarily whole can a secure, reliable distributed generation plan become a reality.[4]

In closing, competing bill HB 6940 for a pilot project is a half measure and was soundly rejected by the CASE study committee. Thank you for your attention. I would be pleased to answer any questions.

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[2] One method is by what is termed "willingness to pay" studies.
[3] Trabish, Herman K. *How Virtual Net Metering Will save Low Income Massachusetts Residents $60 Million*. UtilityDIVE 12/9/14
[4] Gordes, Joel N. *Smaller Electric Grids Safe, Reliable*. The Hartford Courant. September 4, 2011. P. C1.