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CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

Statement of the Connecticut Green Bank supporting Governor's Bill 6838
AN ACT CONCERNING THE ENCOURAGEMENT OF LOCAL ECONOMIC DEVELOPMENT AND ACCESS TO RESIDENTIAL RENEWABLE ENERGY

Energy & Technology Committee public hearing
March 17, 2015

The Connecticut Green Bank enthusiastically supports Governor's Bill 6838 as a way to meet our state's clean energy goals at less cost to ratepayers. This policy would be a net gain for ratepayers through the projected $68 million in RPS compliance savings it finds by taking advantage of conditions in the regional Class I REC market. It supports Connecticut's RPS policy towards deploying more clean, renewable energy resources entirely in-state. And the clean energy growth within Connecticut's borders would generate an estimated $537 million in economic activity and create or induce over 6,300 jobs.

BACKGROUND

As the nation's first green bank, the Connecticut Green Bank (Green Bank)[1] leverages the limited electric ratepayer resources it receives to attract multiples of private investment to scale up clean energy deployment in Connecticut. As a result of efforts since inception of the Green Bank, we are deploying more clean energy in our state than ever before – 108.3 MW in approved, closed or completed renewable and energy efficiency projects for a total investment of over $600 million (see Table 1). In fact, the Green Bank is deploying twice as much clean energy in the last three years through financing as its predecessor the Connecticut Clean Energy Fund deployed in the previous eleven years through grants and subsidies.

Table 1. Green Bank model deploying more clean energy faster and more responsibly

	FY 2000-FY 2011 (CCEF)	**FY 2012-FY 2015(Q2)** (CT Green Bank)
Model	Subsidy	Financing
Years	11.0	3.5
Energy (MW)	43.1	108.3
Total Investment ($ MM)	$349.2	$608.3

Connecticut's residents, businesses and institutions now have easier access to affordable capital to finance clean energy projects. The Green Bank scales up clean energy and plays an essential role in reducing the costs of clean energy investment, increases private capital

[1] Formerly known as the Clean Energy Finance and Investment Authority.

investment, and lowers costs to consumers. The Green Bank looks forward to supporting the legislature's and Governor's vision of cleaner, cheaper and more reliable energy sources for Connecticut – while creating jobs and supporting local economic development.

RESIDENTIAL ROOFTOP SOLAR PV

Under Public Act 11-80 (CGS §§ 16-245ff), the legislature established a target of deploying a minimum of 30 MW of new residential solar photovoltaic (PV) in Connecticut by 2022. The Green Bank was charged with overseeing this deployment, funded with one-third of its annual utility customer assessment revenue. Through its Residential Solar Investment Program (RSIP), the Green Bank created an open market for qualified solar PV installers to compete. Incentives are structured in declining blocks in an effort to lessen market reliance on subsidies. Meanwhile a suite of financing and marketing programs has continued to increase consumer demand and drive down costs.

As a result of Green Bank efforts, over 60 MW of new residential solar PV is being deployed – doubling the legislative target eight years ahead of schedule and well under budget. Installed costs have been reduced by nearly 30 percent and incentives by over 60 percent, and installed capacity has increased by 2,000 percent.[2] The market for rooftop solar PV has increased from nearly $10 million of investment in 2011 to almost $160 million of investment in 2014 – and more private investment in lease[3] and loan[4] financing for rooftop solar PV is occurring than ever before.[5]

The rapid and otherwise unprecedented success in growing Connecticut's home solar market has created a market environment where consumer demand is outpacing available RSIP incentives. The sales cycle of home solar is lengthy when considering the need for physical site assessment, engineering, permitting, installation, and inspection; this has begun locking up the availability of near-future RSIP funding when installers have many projects pending approval in their sales pipeline.

Governor Malloy and the Legislature set the conditions allowing Connecticut to succeed in surpassing the 2011 goal of 30MW of residential solar PV deployment by 2020 by creating the

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[2] Installed costs: $5.35/W (2011) to $3.85/W (2015); Incentives: $1.68/W (2011) to $0.59/W (2015); Deployment: 1.6 MW (2011) to 36.3 MW (2014); Investment: $8.4 MM (2011) to $157.4 MM (2014). Approved, in progress, and completed projects.

[3] *Connecticut's Green Bank: A Model for Public-Private Renewables Partnerships*? by Conway Irwin of Greentech Media (July 8, 2013)

[4] *Will Crowdsourced Loans for Rooftop Solar Overtake Third-Party Ownership* by Herman Trabish of Greentech Media (February 19, 2014) and $200 Million More Flows to Residential Solar Loans through Sungage and Mosaic by Eric Wesoff of Greentech Media (October 20, 2014)

[5] It should be noted that the Connecticut Green Bank attracted $50 MM of private capital to support the CT Solar Lease – including $23 MM investment from US Bank as a tax equity investor and a $27 MM investment from a syndicate of local lenders: First Niagara Bank, Webster Bank, Liberty Bank, and Peoples United Bank. It should also be noted that the Connecticut Green Bank enabled the first $5 MM crowd-funded solar loan product with its partners Sungage Financial and Mosaic, which recently resulted in a $100 MM commitment from the Digital Federal Credit Union and Sungage Financial to provide private capital to finance programs throughout the Northeast region.

Connecticut Green Bank. The Governor is now rightly positioning Connecticut for further success by setting a new deployment target of 300MW by 2022. A new mechanism is needed to continue advancing Connecticut's clean energy economy in a cost-effective manner that continues to reduce reliance on subsidies and save ratepayer dollars.

SOLAR HOME RENEWABLE ENERGY CREDITS AND THE RENEWABLE PORTFOLIO STANDARD

The Renewable Portfolio Standard (RPS) was established in 1998 to address several objectives: reduce dependence on fossil fuels, create a hedge against oil and gas price volatility, lower air emissions, drive economic development and promote clean energy jobs.[6] However in itself it does not provide sufficient market signals to direct all – or even most – of its policy benefits to Connecticut.

Only five percent of the Class I market renewable energy credits (RECs) purchased by Connecticut suppliers are actually produced in Connecticut.[7] Much of the renewable energy production that energy suppliers and electric distribution companies (EDCs) use to attain Class I RPS compliance instead comes from biomass and wind generators from Maine and New Hampshire. Therefore the economic development benefits of an RPS policy accrue primarily to other New England states rather than to Connecticut.

The New England market for Class I RECs is part of the reason – the other part is due to the effect of penalty payments for noncompliance on market behavior, which is better known as the alternative compliance payments (ACP).The ACP is levied on suppliers and EDCs when they do not buy enough RECs to meet their required purchase volume. To account for the shortfall, the supplier must pay the ACP for each REC that they fail to secure.

The SHREC would create a partnership between the EDCs and the Green Bank. Similar to the existing ZREC/LREC programs, the EDCs would enter into 15-year contracts with the Green Bank to purchase the stream of SHRECs produced from residential solar PV systems. The Green Bank would use the revenues from the 15-year fixed price contracts to continue investing into the residential solar market through the RSIP program.

BENEFITS OF A SHREC POLICY

Governor Malloy's proposal will support a growing in-state solar PV industry to produce more clean energy at a faster rate, create in-state jobs and economic development, and improve the policy treatment for ratepayers.

Growth in solar PV deployment

Under business-as-usual, the Green Bank would not have the resources to drive a level of investment required to achieve the goal 300MW of solar PV deployment by 2022. A SHREC

[6] *Restructuring Connecticut's Renewable Portfolio Standard* by Connecticut Department of Energy and Environmental Protection (April 26, 2013)

[7] *Docket 13-06-11 Proposed Final Decision*, Public Utilities Regulatory Authority (January 16, 2015)

policy would fuel the installation of distributed energy resources; these resources can help reduce customer electricity demand and avoid costs in energy generation and capacity reserves. SHREC would also avoid the environmental costs of our reliance on fossil fuels and the price volatility associated with them.

Jobs and economic activity

The growing market of local solar PV installers and the entry of national installers are creating job opportunities for Connecticut residents. The Green Bank wants to continue spurring this growth, and over the lifetime of the SHREC program over 6,300 private sector jobs will be created. Between job and business growth and the increased spending power of solar homes, personal disposable income for Connecticut residents will increase by an estimated $537 million.[8] Unlike the vast majority of RECs that are produced outside our state, SHRECs would be directly supporting in-state clean energy projects and the Connecticut economy

Better policy treatment for ratepayers

To date, Connecticut residential ratepayers have received little direct benefit from RECs sold into the RPS. Ratepayers' direct experience with RPS policy is often only through its costs to them in the Combined Public Benefit Charge – under a SHREC policy more homeowners would become transactional partners in a different part of this process. They would be on the receiving side of clean energy deployment, made possible through RSIP incentives.

Most importantly, SHREC will also provide substantial savings to Connecticut ratepayers, particularly during shortages of Class I market RECs. The savings captured by entering into contracts at prices lower than the market is forecast to provide for the next few years based on the draft Integrated Resources Plan will save Connecticut ratepayers an estimated $68 million in RPS compliance costs over the life of program.[9] As the seller of the stream of RECs produced from home solar installations, the Green Bank can set the contractual fixed purchase price of each tranche of SHRECs the EDCs buy. Setting these prices lower than the ACP means that EDCs can pass those savings on to ratepayers.

The Connecticut Green Bank strongly encourages your support for Governor's Bill 6838.

[8] Connecticut Center for Economic Analysis at the University of Connecticut (February 10, 2015)

[9] Sustainable Energy Advantage (February 10, 2015). Energy cost savings are based on DEEP draft IRP assumptions of RPS compliance costs. The Cape Wind project was removed from updated assumptions in the final IRP, which now projects that Class I market REC shortage conditions happen sooner. This may further increase cost savings under SHREC.