



January 29, 2014

Dwayne Breger, Ph.D.  
Director, Renewable and Alternative Energy Development  
Massachusetts Department of Energy Resources  
100 Cambridge Street, Suite 1020  
Boston, MA 02114

Re: Comments - SREC-II Final Proposed Design January 2014

Dear Dr. Breger:

We appreciate the position DOER is in trying to maintain a viable solar industry, addressing ratepayer concerns and balancing competing renewable technologies within the RPS program promulgated in 1997. Massachusetts is in a period energy infrastructure re-deployment that involves changing conditions beyond current legislation. Governor Patrick and his administration have been perhaps best in the nation for their work in fostering renewable energy, but in the absence of assertive efforts by the Governors office and legislature, due to election year realities, significant changes may need to wait for a new election cycle. DOER must maintain the capacity that has been created within solar industry today to meet the installed capacity challenges facing Massachusetts by 2020.

### **Establish Larger Solar Industry Capacity In Earlier Program Years**

Forces facing Massachusetts's energy requirements will require new goals beyond Governor Patrick's 1,600 MW of solar installed capacity. We request that DOER not constrain Market Sectors A, B, C or the "Managed Growth Sector" categories in the early years allowing the industry to install up to 300 MW per year. If the Managed Growth Sector exceeds 200 MW per year, the industry will notified that DOER may restrict the Managed Growth Sector to 200 MW per year; and that in the absence of program extension, SREC II capacity for the Managed Growth Sector may cease after 800 MW has been achieved after the fourth year of the program.

Accordingly, annual capacity blocks of 26 MW for 2014, 80 MW for 2015 shall be removed and compliance obligations adjusted to maintain a balance of supply and demand in the SREC II market.

### **Maintain A Higher Differential Between ACP and SREC II Floor Pricing**

If the ACP pricing gets too close to the SREC II floor pricing, there is a greater likelihood that the ACP pricing will get included in the retail rate pricing and the SREC II obligation will be an arbitrage opportunity forcing greater downward pressure on the SREC II floor price. This concept is not too far afield from the



concept that the real-time rate today, January 29, 2014 at 1:50 PM of \$224.45 per MW or \$0.22445 per kWh will eventually make its way into future pricing models despite the fact that most rate-payers are temporarily insulated by long-term contracts or basic service.

### **Ratepayer Concerns Met By Purchase Obligations**

Rate-payer concerns could be met by inserting regulations that if a utility or competitive supplier purchases their SREC II obligations at the floor price, in the event of a shortage of supply, providing written evidence of future commitment(s) to developers at the floor price for supply yet to become operational, the ACP compliance obligation would be waived. There would be no restriction on forward purchasing of SREC II obligations at the floor price between a utility company or competitive supplier and project owners or developers. DOER would recognize such commitments as meeting compliance obligations.

### **Reasons For A Strong Solar Industry**

#### **Generation Retirements**

The ISO-NE Generation Retirement Study publication of June 14, 2013 indicates system wide retirement of 8,281 MW of coal and oil plants by 2020. One thousand MW need to be replaced within Connecticut for reliability and congestion reasons leaving approximately 7,200 MW to be replaced system-wide, specifically calling out 5,300 MW in Rest-of-Pool capacity. The early economic retirement of Vermont Yankee nuclear power plant of 604 MW was unexpected as was the early announcement of the Brayton Point closure at 1,620 MW by 2017.

Massachusetts has the largest load in New England and maintains some of the most significant central trading Hub Resources. (See ISO-NE diagram attached)

Approximately, 7,500 MW in replacement generation is going to be needed by 2020. That installed capacity should be replaced with a combination of 4,000 MW of solar generation, 2,000 MW of wind, CHP, anaerobic digestion and 1,500 MW of Province-owned, Hydro-Quebec resources.

#### **Renewable Energy Suppresses The Future Cost of Electricity**

A third party acknowledgement that renewable energy suppresses the future cost of electricity is provided in the New England States Committee on Electricity vs. ISO New England, Inc. Docket No. EL13-34-0000 (FERC)

Many studies are available from the Solar Energy Industries Association (SEIA) demonstrating the economic benefits of solar outweighing the cost subsidy.

## **1.2 Economic Multiplier Of Building Electric Generation Within The Commonwealth**

Governor Patrick's 1,600 MW of installed solar capacity plus an additional 4,000 MW to replace retiring coal and oil generation assets would equal 5,600 MW installed by 2020.

The economic benefit of recycling investment within the Commonwealth is 1.2 according to Dr. Barry Bluestone of Northeastern University. For every dollar reinvested there would be a twenty-cent additional benefit to other businesses and cities and towns within the Commonwealth.

Investment of 5,600 MW of solar would provide the following benefits:

- At \$1.50 per watt for all labor, professional services, site work, materials purchased within the Commonwealth  
\$8.4 Billion (\$8,400,000,000) would be spent within the Commonwealth.  
At a 1.2 economic multiplier this would generate \$1,680,000,000 in economic benefits to the Commonwealth.
- Generate approximately \$294,000,000 in W-2 state income taxes
- Continuing operations of generation facilities per year would generate approximately \$7,350,000 per year in state income taxes.
- Municipal PILOT agreements based at 5,000 per MW would generate \$28,000,000 per year for cities and towns.

### **The Cost To Ratepayers**

The cost of the SREC program to the ratepayer at the floor price of \$285, is \$0.00134 per kWh for every 200 MW of installed capacity. For the average NSTAR residential customer that cost would be approximately \$8.01 per year.

### **Addressing The Concerns Of Industries Within The Commonwealth**

The economic multiplier of retaining our vibrant manufacturing, fabrication and product development industries is equally as important as retaining energy dollars within the Commonwealth.

We would recommend that with a firm floor price established and perhaps with a raised floor price or SREC factors reduced to achieve realize the potential of this idea, that the five-percent that is currently established as the auction fee become a fee for all SREC II transactions and such proceeds be distributed to industries that manufacture, fabricate or develop products that must compete outside of the Commonwealth.

Other states have not yet adopted as visionary a renewable energy program, and while the time is now for action within Massachusetts, we need to find a



mechanism to keep our Massachusetts industries competitive in transition while the rest of the country catches up.

As significant changes are required to take advantage of the timing of infrastructure replacement within the ISO-NE region, it is important to maintain a strong solar industry while the regulatory and legislative changes are made to benefit all stakeholders in the Commonwealth. We request DOER increase the total solar program per year to 300 MW starting in 2014 and terminating the growth management sector early in the event renewable energy infrastructure potential is not realized.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Doug Pope", written over a horizontal line.

President.

## References:

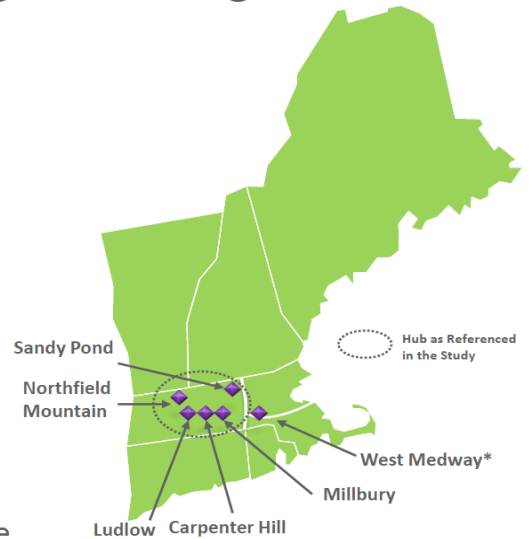
**SREC Cost Per 200 MW At Floor \$285 = \$0.00134 per kWh**

- A. Solar Installed and Billable to Ratepayers 200 MW
- B. Average PV Solar Capacity Factor 13.21%
- C. Hours per year 8760 hrs/yr
- D. Annual Solar PV Energy Production 231,439 MWh/yr ( $D=A*B*C$ )
- E. **Cost of SRECs (priced at Floor) \$285 per MWh**
- F. **Annual Cost of SREC Program \$65,960,172 per year** ( $F=D/E$ )
- G. **Annual System Load 49,386,169 MWh/yr (DOER RPS 2011 Compliance Filing)**
- H. **SREC Charge per unit Energy Consumed \$1.34 per MWh** ( $H=F/G$ )
- I. kWhs per MWh 1000 kWh/MWh
- J. **Unit SREC Charge in Customer Bills \$0.00134 per kWh** ( $J=H/I$ )
- K. Average NSTAR Residential Customer Energy Consumption 500 kWh/Mo (see: [http://www.nstar.com/residential/customer\\_information/nstar\\_green/nstar\\_green.asp](http://www.nstar.com/residential/customer_information/nstar_green/nstar_green.asp) )
- L. Average NSTAR Residential Monthly Cost of SREC Program \$0.67 per month ( $L=J*K$ )
- M. Months per Year 12 mo/yr
- N. Average NSTAR Residential Annual Cost of SREC Program \$8.01 per year ( $N=L*M$ )
- Already billed to ratepayers [Renewable Energy .00050 per kWh, Energy Conservation 0.00250, Transition 0.00783 Distribution: 0.05847]

## Importance of New England Trading “Hub” in MA (ISO-NE)

### Application of New England Trading “Hub”

- New England Trading Hub (Hub) is a central trading location in energy market where no significant energy congestion is expected
  - 32 electrical buses/nodes in West-Central Massachusetts make up the Hub
  - Interconnection of new proxy generation at the Hub was represented by six 345 kV buses/nodes\*
- Replacement resources needed were envisioned to be integrated at the Hub



*\* W. Medway 345 kV is electrically close to, but not in the defined Trading Hub*