

A New Landscape



Renewable Energy Opportunities for Massachusetts Municipalities



The Trusted Integrator for Sustainable Solutions

Tough Times for All



- **“The Great Recession” has affected the financial health at all levels – individuals, towns/cities, states and the federal government**
- **Everyone is looking for ways to trim costs and improve efficiency**
- **MA municipalities have been hard hit by decreases in state aid, decreased tax revenues, and on-going fixed cost increases**



Saving on Energy Costs



- **Implementing energy efficiency measures and using renewable energy to power municipal facilities can save costs on a long term basis, and help “green” municipal operations**
- **MA has implemented legislation governing net metering and providing new incentives for solar power that open new savings opportunities for cities and towns.**



Net Metering



- **What is it?**

*Net metering is a state regulation allowing customers to receive value during periods when their eligible on-site distributed generation (such as a wind turbine or solar array) generates more electricity than they use. That is, the electric meter runs backward whenever a customer's net metered facility is producing more power than is being consumed and their account gets net metering credits for net excess generation at the end of the customer's monthly billing period. **

* From DOER definition on Net Metering main page



The New MA Net Metering Regs



- At the end of 2009, MA implemented new net metering regulations (22 CMR 18.00) for investor owned utilities, which established new rules regarding net excess generation from qualifying renewable energy systems
- The rules allow accumulation of net metering credits equal to the monthly amount of net excess generation, and assign a value to these credits that approaches retail
- They also allow allocation of the net metering credits to third parties – this is essentially *virtual net metering*.

Net Metering Example - Basic



- **Net Metering Example #1 (No Net Excess Generation):** A facility installs a rooftop solar array. The array offsets purchased energy from the grid, and overall, generates approximately 50% of facility needs each month.
- No net excess generation month to month, but the grid is used as intermittent storage on a daily/weekly basis.
- This is “standard” net metering, and enables facilities with available space and suitable electric loads to effectively use renewable power.

Net Metering Example - New



- **A municipality or a developer builds a solar array or a wind turbine(s) on land within the same utility territory.**

- **Municipally owned - The generating facility produces net metering credits which can be used by the municipality and credited to the electric bills for its other facilities.**
- **Developer owned – Net metering credits are allocated to the municipality through a long term purchase agreement and credited to the municipal electric bills.**

Net Metering Credit Value



- **Each credit has a value on a kWhr basis equal to :**
 - **Transmission Charge**

 - **Transition Charge**
 - **Service Default Charge**
 - **Distribution Charge (only for municipal owned or developer owned and 100% sold to municipalities)**



“Virtual” Net Metering Benefits



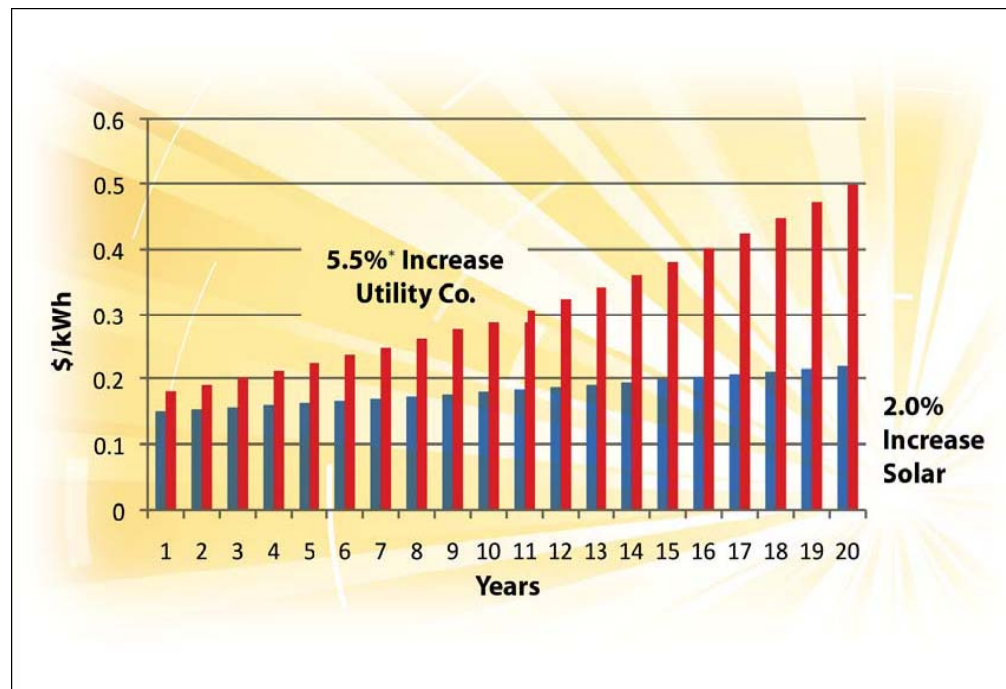
- If developer owned, no capital cost or development risk for the municipality
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- Long term savings on electricity costs and hedge against price volatility
 - Increased use of green power
 - Educational opportunities



PPA Rate Vs. Grid Rate



Electricity prices in MA went up at an annual rate of 8.9% for commercial users between 2003 and 2008. A typical long term credit purchase agreement price would increase 2-3% annually.



Savings Example



- **A developer builds a 1 MW solar array on private land.**
- **Municipality purchases 1.2 million kWhrs worth of Net Metering Credits from the system annually.**
- **Credit Purchase price is \$0.10/kWhr with 3% annual escalation.**
- **Credit value on municipal bills = \$0.13/kWhr**
- **1st year savings: \$36,000.**
- **15 year projected savings: \$1.2M**

The New MA SREC Program



- For up to date information: www.dsireusa.org; also Mass DOER and CEC websites.
- MA solution: SREC market (“Solar Credit Clearinghouse”) – same model as NJ
- 1 SREC is created by generation of 1 MWhr of power from a qualifying solar facility
- In MA - Annual auction for unsold SRECs (\$300/MWhr – equivalent to \$0.30/kWhr) – this sets a floor price
- Who buys SRECs ? Ultimately the utilities do, to meet their RPS goals

The Power of Incentives



- Incentives are attracting financing sources to solar and driving widespread use of PPA based applications, where site host (user) pays no capital but agrees to long term electricity purchase
- Using Federal incentives alone (no SRECs), a financed project using a Power Purchase Agreement (PPA) would likely be in the \$0.25/kWhr range or higher
- For MA, include SREC sales, and a PPA can be financed at a competitive rate (<\$0.15/kWhr)

The Power of Incentives (cont.)



- Note that at their floor price (\$300/MWhr), the SRECs in MA generate roughly twice the revenue of electricity sales on a solar PPA.
- SREC market in MA is just getting off the ground and so has greater financing risk .
- Wind power projects have different economics from solar, and do not require or qualify for SRECs, but do generate “standard” RECs.

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Questions and Discussion

