

Rhode Island RE Growth

SolarWise: Integrating Solar PV with Energy Efficiency to Drive Sustainability

Rhode Island Distributed Generation Board Meeting
July 23, 2015



Agenda

- Origins
- Objectives
- Benefits
- Solar Screenings and Marketplace
- SolarWise Bonus Concept
- New Construction and Retrofits
- Process and Example

Origins and Limitations

- The current statewide residential EE audit program is branded “EnergyWise” and this addition of solar promotion is by extension proposed to be called “SolarWise”
- RE Growth law allows National Grid to request up to half of the Small and Medium classes of solar be allocated to an EE/Solar coordinated program in a given year
- No cross payments of solar funds for EE measures, or EE funds for solar payments, would be proposed
- All screening, marketplace, and management costs of SolarWise would be borne by the RE Growth program, or self-sustained through fees paid by users, depending on cost-effectiveness and benefits

Objectives with SolarWise

- Educate and provide solar PV system screening to all customers receiving EE savings audits, with easy access to installer offers
- Lower the soft costs of implementing solar for RI developers and customers
- Incentivize deeper savings from all customer EE opportunities if also interested in adding solar
- Accelerate the adoption of Zero Net Energy buildings in Rhode Island

Two Main Elements to SolarWise

- Provide a solar screening and easy access to solar installation quotes to all audited customers
 - Aim to reduce soft costs and increase competition through an on-line marketplace for solar through existing vendors offering such platforms
- Establish a bonus schedule on the standard PBIs being offered for reaching “stretch” levels of energy efficiency
 - Create customer savings and RE Growth savings at the same time by reducing the projected annual load

SolarWise Screening and Offers

- When receiving an audit, customers could also receive a solar screening summary of their property for a potential solar installation from the auditor
- Information on registering for and receiving solar offers from multiple participating installers thru an on-line platform could be provided
- Tools to compare offers, such as purchase vs. lease, may be provided by the marketplace vendor with input from National Grid
- Customers would be responsible for managing and closing their solar transaction, which would not be contingent on any EE measure implementation

SolarWise Benefits

- Customers in one available on-line market reportedly save an average of 10% compared to state average installed cost, and often receive offers with greater savings than that
- Transparency of comparable offers can enhance consumer confidence in the transaction
- Financing offers may be able to be linked to the marketplace, such as PACE financing once available
- Customers would be free to choose any offer they receive – not controlled or guided by National Grid – though some marketplace providers offer advisory support for customers

SolarWise Bonus Incentives

- To incent customers to achieve deeper savings, National Grid may propose a Bonus PBI be offered to customers that meet certain new savings and absolute energy intensity goals
- Offers would be available to all customers for both new construction projects and retrofit opportunities
- More analysis on the appropriate bonus levels is needed so that RE Growth absolute program cost is neutral or reduced
- The following pages are illustrative examples, and should not be considered as proposed numbers or target levels
- Idea is to provide larger bonuses for greater savings at lower levels of energy intensity, lower bonuses for savings with higher intensity

New Construction EE Incentives

- Residential New Construction EE program delivers energy efficiency through a tiered incentive program.
- To drive efficiency higher in the Program, a new tier will be proposed for 2016.
- Benefits of aligning the Residential New Construction EE incentives with the SolarWise concept:
 - Drive new construction efficiency to the higher tiers
 - Encourage adoption of solar through RE Growth at the time of construction
 - Generate maximum benefits through a single transaction

New Construction EE Incentives

Tier Level	% More efficient than baseline*	Incentive (1 – 4 units)	Current Number of Completed Projects (203 total)	Current Percentage of Completed Projects
Tier 1	15%-24%	\$250/unit (\$500)	27	13%
Tier 2	25%-34%	\$1,000/unit (\$1,500)	129	64%
Tier 2+	35%-44%	\$1,500/unit	42	21%
Tier 3	45% or more	\$4,000/unit	5	2%

*The results of the Rhode Island 2011 Baseline Study informed the new construction baseline home. For renovations and rehabs, the baseline is the existing home plus code required improvements. See Program Requirements and Terms and Conditions for additional prerequisites.

Residential New Construction – SolarWise Bonus Concept



		2015 Ceiling Price	2016 Ceiling Price	New Construction 2016 Ceiling Price + EE Premium Tier 2+	New Construction 2016 Ceiling Price + EE Premium Tier 3
Small-Scale Solar Ceiling Price		<i>cents/kWh</i>	<i>cents/kWh</i>	<i>cents/kWh</i>	<i>cents/kWh</i>
Host Owned (1-10 kW DC)	15-yr Tariff	41.35	\$A	\$A+ 7%	\$A+ 10%
Host Owned (1-10 kW DC)	20-yr Tariff	37.75	\$B	\$B+ 7%	\$B+ 10%
3rd Party Owner (1-10 kW DC)	20-yr Tariff	32.95	\$C	\$C+ 5%	\$C+ 8%
Small-Scale Solar (11-25 kW DC)	20-yr Tariff	29.80	\$D	\$D+ 5%	\$D+ 8%



Retrofit Incentives

- Aim is to propose a similar bonus for Residential and C&I retrofit projects
- Looking to use of the Energy Utilization Index based on EIA electricity use per square foot data to measure post-retrofit energy intensity of the building
- Would also be driven by projected savings from current opportunity to qualify for a solar bonus through the SolarWise allocation
- A simple “band” approach would be most easily applied, with bonuses for greater savings and lower energy intensity

Retrofit SolarWise Bonus Concept

Current EE Project Savings	EIA EUI kWh/sf Ranking Post-EE Improvements			
	<75%	75-85%	85-95%	>95%
0-5%	0	0	0	2%
5-10%	0	0	2%	5%
10-15%	0	2%	5%	7%
15-20%	2%	5%	7%	9%
>25%	5%	7%	9%	15%

- Figures are all illustrative; ongoing research on bands of EUI by building type in RI and appropriate bonus levels will inform any final proposal to the PUC
- The bonus amounts would be a cost of the RE Growth Program, not of the EE program

Illustration of SolarWise Process

- Step One: Solar screening of audit recipients will increase public knowledge about solar and its appropriateness at their location
- Step Two: Invite customer to seek offers for installations through an on-line marketplace where developers have lower customer acquisition costs, resulting in competitive offers, e.g. 10% savings on installed \$/W
- Step Three: Implement a “stretch” target of savings and intensity, for example, reaching 90% index score on the EIA EUI kWh/sf for building type for a C&I customer with an 18% reduction in annual kWh
- Step Four: Qualify for a higher PBI for meeting that stretch target, such as a 7% increase in the PBI, but for fewer kWh per year than without the EE measures

SolarWise Savings Example

	Current	EE + SolarWISE
Cost of Solar \$/watt	\$3.00	\$2.70
Annual Usage kWh	120,713	98,660
<i>(assumes system sized to meet 100% on site load)</i>		
System Size, kW DC	104	85
PBI, \$/kWh	\$0.240	\$0.2568
Annual PBI	\$28,971	\$25,336
20 Year value of output	\$579,421	\$506,715
Total Sytem Cost	\$312,000	\$229,500
Total Installed Cost Savings		\$82,500
Total RE Growth Savings		\$72,706
Total Added PBI to Customer		\$33,150

- Illustrative example for a medium sized C&I customer considering a system to meet 100% of their annual load at a building with a 90% EUI score, 7% bonus PBI
- Sizing limit of 100% of historic load would apply to the SolarWise bonus