

WinnCompanies

Community Solar Photovoltaic to Benefit Affordable Housing

Darien Crimmin
Vice President of Energy & Sustainability
dcrimmin@winnco.com



Massachusetts Solar Policy

SREC-I Program

- 2010 through April 2014
- Production based incentive over 40 quarters
- SRECs - Solar Renewable Energy Certificates
- 1 SREC = 1 megawatt hour of production
- Auction floor (\$285/SREC) supports price while allowing for market dynamics.
- Program was very successful in establishing stable solar market and reaching 400 MW of capacity sooner than expected

Massachusetts Solar Policy

SREC-II Program

- Began in April 2014
- Production based incentive over 40 quarters
- Auction floor decreases each year (\$285 drops to \$189/SREC)
- Value of SREC corresponds to Market Sectors designed to guide solar deployment based on state priorities
- Positions state to develop 1,600 MW by 2020

Massachusetts Solar Policy

SREC 2 Program “Market Sectors”

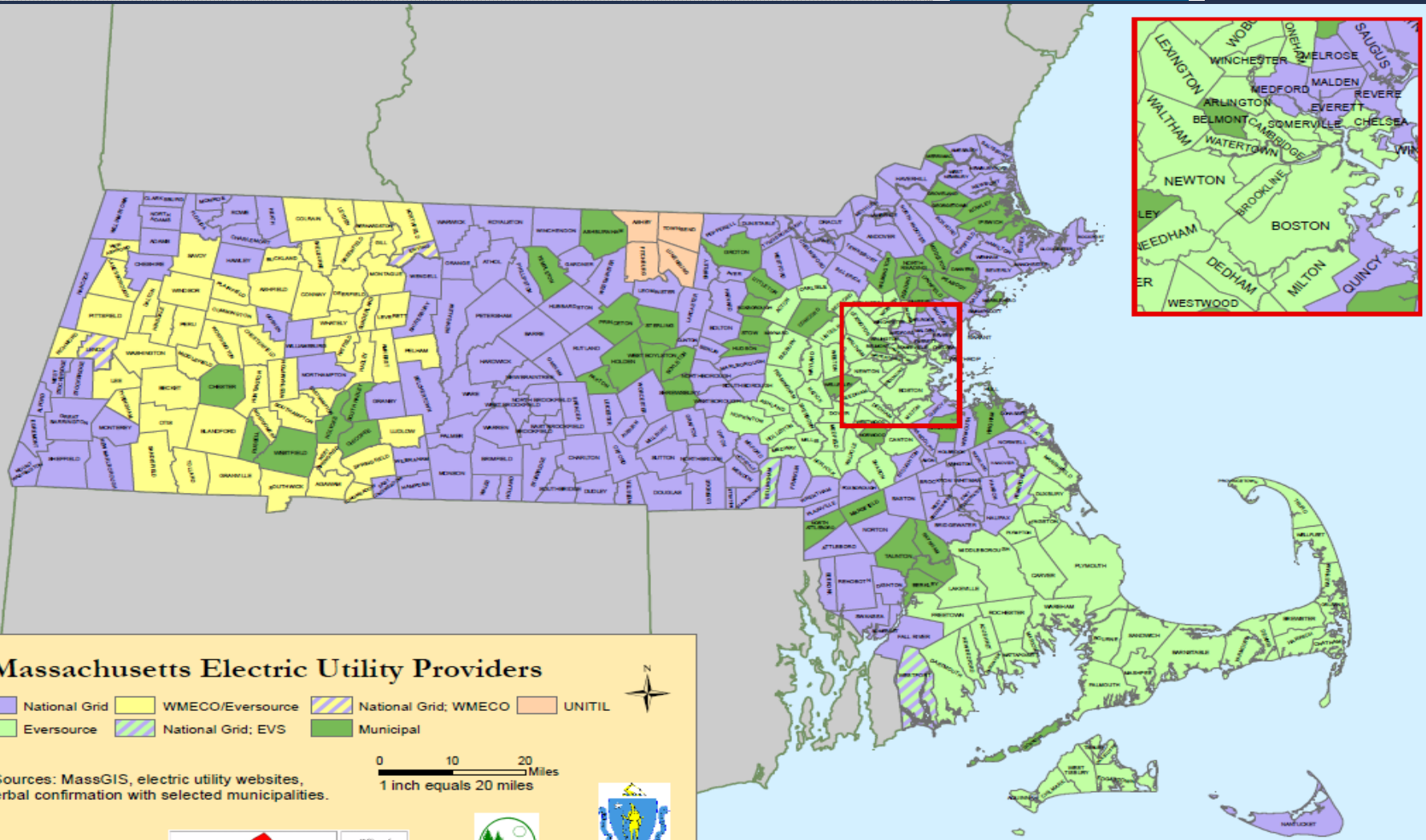
Market Sector	Generation Unit Type	SREC Factor
A	1. Generation Units with a capacity of <=25 kW DC	1
	2. Solar Canopy Generation Units	
	3. Emergency Power Generation Units	
	4. Community Shared Solar Generation Units	
	5. Low or Moderate Income Housing Generation Units	
B	1. Building Mounted Generation Units	0.9
	2. Ground mounted Generation Units with a capacity > 25 kW DC with 67% or more of the electric output on an annual basis used by an on-site load	
C	1. Generation Units sited on Eligible Landfills	0.8
	2. Generation Units sited on Brownfields	
	3. Ground mounted Generation Units with a capacity of <= 650 kW with less than 67% of the electrical output on an annual basis used by an on-site load.	
Managed Growth	Unit that does not meet the criteria of Market Sector A, B, or C.	0.7

Massachusetts Solar Policy

Solar Net Metering

- Net Metering Credits (NMC) are **dollar credits per kilowatt hour** produced by a solar facility
- Class I rate = \$0.182 / kwh
 - Basic service rate (“retail rate”)
 - Projects below 60 KW
- Class II rate = \$0.171 / kwh
 - Supply, distribution, transmission
 - Projects above 60 KW up to 1.0 or 2.0 MW
- Class III rate = \$0.107 / kwh
 - Supply and transmission only. No distribution
 - Above 1.0 MW (AC) for private offtakers
 - Above 2.0 MW (AC) for public offtakers

MA Electric Utilities



Massachusetts Electric Utility Providers

- National Grid
- WMECO/Eversource
- National Grid; WMECO
- UNITIL
- Eversource
- National Grid; EVS
- Municipal

Data Sources: MassGIS, electric utility websites, and verbal confirmation with selected municipalities.

0 10 20 Miles
1 inch equals 20 miles

Map produced by MassGIS
Created by H. Mattison
January 12, 2006

MASS GIS
Office of Geographic and Environmental Information
Massachusetts Executive Office of Environmental Affairs - 2006
website: www.mass.gov/mgis/

Secretary Stephen R. Pritchard

Governor Mitt Romney
Lt. Governor Kerry Healey

Solar Net Metering Credits

- **Credits can be transferred from the Host Account to any Recipient Account (“Off-taker”) within the same utility load zone**
- Host Customer is designated for solar meter – may be the solar developer or virtual host
- Utility company allocates credits via form called “Schedule Z”
- Net Metering Credit Purchase Agreements are the key legal document establishing the transaction between private parties

Offsite Solar Net Metering



Host Customer = Offsite solar facility
Size = 1 megawatt (DC)
Annual production = 1,250,000 kWh

Host produces more solar electricity than it consumes (via "net meter").
Utility credits host account with value of net metered credits

Example: Value of Net Metered Credits = \$0.20/kwh
Annual value = 1,250,000 kwh x \$0.20/kwh = \$250,000



Off-taker = utility customer in same load zone. Greater SREC incentive given to affordable housing

\$250,000 in credits

\$200,000 payment (20% discount)

Sale of credits from multiple housing customers via Net Metering Credit Purchase Agreements.

Payment supports financing of solar facility

Virtual Net Metering Example

Real World Example

839 KW Facility * 1,048,750 kwh/year production * \$199,262 NMC/year
 Monthly NMC allocated to two multifamily meters (54% and 46%)
 15% Discount to sites

Month	Monthly Solar Production Curve	Monthly Production (kWh)	Monthly NMC	A. 54% NMC to Wat Lofts	B. Projected 2015 Elec Costs	C. NGRID minus NMC (Col. B + A)	D. Payments to NGRID (AUM)	E. NMC Payments to OME - 85% of Column A	F. Total Monthly Payment (Col.D + E)	Total Savings
Jan	5.0%	52,582	\$ (9,990)	\$ (5,395)	\$ 10,675	\$ 5,280	\$ 5,280	\$ 4,586	\$ 9,866	\$ (809)
Feb	6.5%	68,418	\$ (12,999)	\$ (7,020)	\$ 10,287	\$ 3,268	\$ 3,268	\$ 5,967	\$ 9,234	\$ (1,053)
Mar	8.5%	88,961	\$ (16,903)	\$ (9,127)	\$ 9,752	\$ 625	\$ 625	\$ 7,758	\$ 8,383	\$ (1,369)
Apr	9.4%	98,777	\$ (18,768)	\$ (10,135)	\$ 9,105	\$ (1,029)	\$ -	\$ 8,614	\$ 8,614	\$ (491)
May	11.3%	118,999	\$ (22,610)	\$ (12,209)	\$ 7,828	\$ (4,381)	\$ -	\$ 10,378	\$ 10,378	\$ 2,550
Jun	10.9%	114,566	\$ (21,768)	\$ (11,755)	\$ 10,985	\$ (769)	\$ -	\$ 9,991	\$ 9,991	\$ (994)
Jul	11.8%	123,691	\$ (23,501)	\$ (12,691)	\$ 14,517	\$ 1,826	\$ -	\$ 10,787	\$ 10,787	\$ (3,730)
Aug	10.9%	114,313	\$ (21,720)	\$ (11,729)	\$ 15,575	\$ 3,846	\$ -	\$ 9,969	\$ 9,969	\$ (5,606)
Sep	9.0%	94,729	\$ (17,998)	\$ (9,719)	\$ 14,447	\$ 4,728	\$ 4,221	\$ 8,261	\$ 12,482	\$ (1,965)
Oct	7.2%	75,295	\$ (14,306)	\$ (7,725)	\$ 11,319	\$ 3,594	\$ 3,594	\$ 6,566	\$ 10,160	\$ (1,159)
Nov	5.0%	52,532	\$ (9,981)	\$ (5,390)	\$ 9,211	\$ 3,821	\$ 3,821	\$ 4,581	\$ 8,403	\$ (808)
Dec	4.4%	45,888	\$ (8,719)	\$ (4,708)	\$ 9,831	\$ 5,123	\$ 5,123	\$ 4,002	\$ 9,125	\$ (706)
Total	100.0%	1,048,750	\$ (199,263)	\$ (107,602)	\$ 133,533		\$ 25,931	\$ 91,461	\$ 117,393	\$ (16,140)

Credits appear on NGRID bill

09797030829150-082915

nationalgrid

SERVICE FOR
 WINN DEVELOPMENT
 MANAGEMENT OFFICE
 141 JOHN ST HOUSE METER
 LOWELL MA 01852

BILLING PERIOD
 Jul 20, 2015 to Aug 18, 2015

PAGE 1 of 3

ACCOUNT NUMBER 90123-62005
 PLEASE PAY BY No payment due

AMOUNT DUE

www.nationalgridus.com

CUSTOMER SERVICE
 1-800-322-3223
 CREDIT DEPARTMENT
 1-888-211-1313
 POWER OUTAGE OR DOWNED LINE
 1-800-465-1212
 CONTACT US
ngrid.com/ma-contactus
 CORRESPONDENCE ADDRESS
 PO Box 960

ACCOUNT BALANCE

	National Grid Services	Other Supplier Service	Adjustments	Total
Previous Balance	2,371.49	4,714.15	0.00	7,085.64
Payment(s) Received	-7,085.64	-0.00	-0.00	-7,085.64
Amount Past Due	-4,714.15	4,714.15	0.00	0.00
Current Charges	2,579.82	5,062.66	-30,961.07	-23,318.59
Amount Due ▶	-\$ 2,134.33	\$ 9,776.81	-\$ 30,961.07	-\$ 23,318.59

\$23,318 in credits received x 80% = **\$19,820** owed

\$3,498 in savings this month

Property level savings

Deal Name	KW (DC)	Annual NMC Delivered	Off-taker Distribution	Annual Site Savings	20-Yr Site Savings
East Bridgewater	206	\$60,119	One Site; 1 Account	\$12,024	\$ 240,476
WinnSolar 3	411	\$104,000	Two Sites; 2 Accounts	\$10,400	\$ 207,999
Beverly	1,083	\$248,837	One Site; 2 Accounts	\$37,325	\$ 746,510
Fairhaven	1,050	\$109,755	Two Sites; 2 Accounts	\$16,463	\$ 329,265
Onset	650	\$153,324	Two Sites: 2 Accounts	\$13,192	\$ 263,840
Gardner	1,004	\$33,773	One Site; 10 Accounts	\$3,618	\$ 72,365
Hubbardston	839	\$199,263	Two Sites; 2 Accounts	\$35,642	\$ 712,842
Westminster	1,500	\$152,288	Four Sites; 10 Accounts	\$30,458	\$ 609,151
TOTAL	7,532	\$1,235,398		\$159,122	\$3,704,569

Topics for Discussion

- What is right value for NMC paid by offtaker?
 - Fixed rate?
 - % discount?
 - Floor price?
- How can solar net metering credits directly benefit residents, in addition to the housing development?
- Utility pushback on NMC rates and distributed generation
- Establishing the proper “Value of Solar”

Questions...

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