



Massachusetts Department
of Energy Resources

COMMONWEALTH OF MASSACHUSETTS

*Charles Baker, Governor
Matthew Beaton, Secretary
Judith Judson, Commissioner*

*Green Communities Division
Webinar*

March 20, 2018

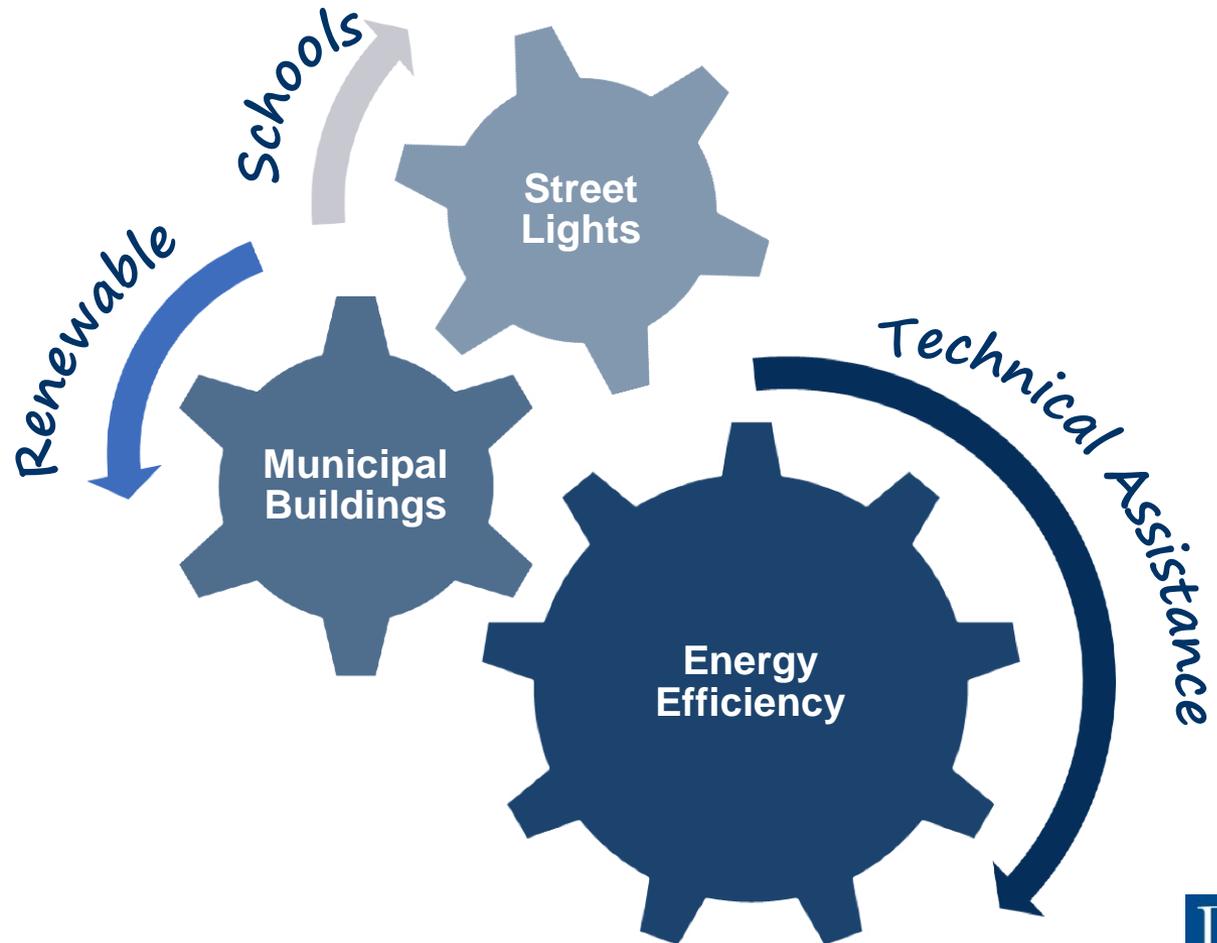
The Massachusetts SMART Program and Municipalities

Joanne Bissetta
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Renewable Energy

Green Communities Division

The energy hub for **all** Massachusetts cities and towns, not just designated “Green Communities.”



Massachusetts Department
of Energy Resources

*Helping Massachusetts Municipalities Create a Clean,
Affordable, and Resilient Energy Future*



Green Communities Division - Programs & Resources for Municipalities

- Green Communities Designation and Grant Program
- MassEnergyInsight energy tracking and analysis tool
- Municipal Energy Technical Assistance
- Energy Management Services Procurement Oversight
- Website filled with tools & resources:
- www.mass.gov/orgs/green-communities-division-massdoer

Email updates via e-blasts – Sign up by sending an email to:

join-ene-greencommunities@listserv.state.ma.us



*Helping Massachusetts Municipalities Create a Clean,
Affordable, and Resilient Energy Future*



Outreach - Regional Coordinators

- Regional Coordinators act as direct liaisons with cities and towns on energy efficiency and renewable energy activities
- Located at each of the DEP Regional Offices:



WERO – SPRINGFIELD: Jim Barry
Jim.Barry@state.ma.us



NERO – WILMINGTON: Neal Duffy
Neal.Duffy@state.ma.us



CERO – WORCESTER: Kelly Brown
Kelly.Brown@state.ma.us



SERO – LAKEVILLE: Seth Pickering
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Helping Massachusetts Municipalities Create A Greener Energy Future



Upcoming Events

- April 26, 1PM: Next webinar – “*Municipal Primer on Zero-Energy New Construction.*”
- MassSave Listening Sessions:

PITTSFIELD

Ralph Froio Senior Center
330 North Street, Pittsfield
March 22 from 4-6pm

SPRINGFIELD

University of Massachusetts Center
1500 Main Street, Springfield
April 5 from 6-8pm

WORCESTER

MA Department of Environmental
Protection
8 New Bond Street, Worcester
March 29 from 6-8pm

LOWELL

Lowell Senior Center
276 Broadway Street, Lowell
April 12 from 6-8pm



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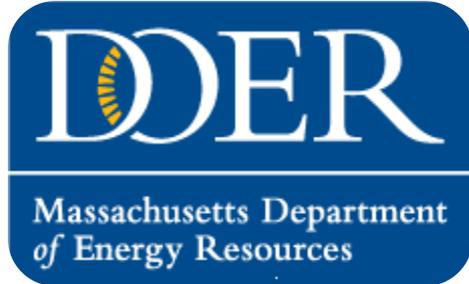
Recording & Presentation

- The webinar is being recorded and will be available on our website in approximately 48 hours at: www.mass.gov/orgs/green-communities-division-massdoer
- Click on the camera icon top right of your screen to save any slides for future reference
- Use the Q & A icon on your screen to type in questions



Helping Massachusetts Municipalities Create A Greener Energy Future





COMMONWEALTH OF MASSACHUSETTS

Charles D. Baker, Governor

Karyn E. Polito, Lt. Governor

Matthew A. Beaton, Secretary

Judith F. Judson, Commissioner

**Green Communities
Webinar
3/20/18**

**Solar Massachusetts Renewable Target
(SMART) Program Summary**

Kaitlin Kelly

Renewable Energy Program Coordinator

Purpose of Presentation and Links to Program Resources

- This presentation is designed to provide stakeholders with easily digestible information on the current design and status of the SMART Program, but should not necessarily be relied upon by stakeholders when making financial decisions. DOER strongly recommends that stakeholders consult the official resources listed below.
- For the official program rules, procedures, and eligibility criteria, stakeholders should consult the Department of Energy Resources' (DOER) SMART regulation (225 CMR 20.00), which was promulgated on August 25, 2017 and can be accessed at:
 - <https://www.mass.gov/files/documents/2017/10/16/225cmr20.pdf>
- Additionally, the SMART regulation is supplemented by several Guidelines published by DOER, which clarify how elements of the regulation will be enforced and can be found at:
 - [Development of the SMART Program Webpage](#)
- At this time, the SMART Program is not fully in effect as the Department of Public Utilities still has an open proceeding to review the model tariff that was jointly filed by the electric distribution companies in September 2017. Information on the status of this proceeding can be found at:
 - <http://web1.env.state.ma.us/DPU/Fileroom/dockets/bynumber> (type in 17-140 and click go)
- Program updates will continue to be provided by DOER as the program moves closer towards full implementation. Status updates and more information on the program can be found at the following two webpages:
 - masmartsolar.com (Solar Program Administrator's SMART Website)
 - [Development of the SMART Program Webpage](#)
- Interested stakeholders can sign up for email updates from DOER at:
 - <https://www.mass.gov/forms/subscribe-to-doer-email-lists> (select "Solar PV list include SREC Contacts")
- Questions on the program should be directed to one of the following:
 - DOER.SMART@state.ma.us
 - MA.SMART@clearesult.com

SREC II Extension Status

- SREC II remains in effect until the DPU issues an order approving the SMART Tariffs (SMART Program Effective Date)
- Facilities with capacities less than or equal to 25 kW DC that are interconnected before the SMART Program Effective Date are eligible to qualify under SREC II with an SREC Factor of 0.8
- Current SREC Factors for facilities larger than 25 kW DC:

Market Sector	Mechanically Complete by 3/31/2018	Mechanically Complete After 3/31/2018
A (> 25 kW DC)	0.7	0.65
B	0.6	0.55
C	0.55	0.5
Managed Growth	0.5	0.45

- Facilities with capacities larger than 25 kW DC must be mechanically complete (i.e. fully constructed on the customer's side of the utility meter) before the SMART Program Effective Date in order to qualify
- More details can be found in DOER's SREC Factor Guideline at:
<https://www.mass.gov/files/documents/2017/03/zu/225-cmr-14-solar-guideline.pdf>

Basic Features of SMART Program

- 1,600 MW AC declining block tariff program that provides fixed Base Compensation Rates to qualified generators
- Base Compensation Rates decline as Capacity Blocks are filled
- Applies to all investor owned electric distribution companies
- The amount of time a facility may receive compensation under the tariff is based on facility's AC rated capacity
 - 10-year term for facilities less than or equal to 25 kW AC
 - 20-year term for facilities larger than 25 kW AC
- Compensation structure differentiated between behind-the-meter and standalone facilities
- Four types of Compensation Rate Adders are available to eligible facilities:
 - Location Based Adders
 - Off-taker Based Adders
 - Energy Storage Adder
 - Solar Tracking Adder
- Maximum project size of 5 MW AC per parcel

Additional Program Features

- Initial Base Compensation Rates were established using the results of a competitive procurement for larger projects (> 1 MW) and were announced on January 11, 2018
- Base Compensation Rates are based on a facility's electric distribution company and Capacity Block
- Eligible projects may elect to receive compensation for energy through one of three mechanisms:
 - Net metering (via Net Metering Tariffs)
 - Qualifying facility tariff (via QF Tariffs)
 - Alternative on-bill crediting mechanism (via SMART Tariffs)
- Alternative on-bill crediting mechanism is a new energy compensation option that is designed to be an alternative to virtual net metering
- Alternative on-bill credit is not proposed to be made available to facilities with on-site load

Additional Program Features

- Program design steers projects towards optimal locations by providing Location Based Adders and Greenfield Subtractors
 - A Greenfield Subtractor will be applied to the Base Compensation Rate of any facility sited on open space that does not meet the criteria to receive the full incentive
- Energy storage will be compensated via variable adder that is based on the ratio of storage capacity to solar capacity as well as the duration of the storage
 - Minimum performance standards will apply to ensure grid benefits are realized

Solar Program Administrator

- CLEAResult was announced as the Solar Program Administrator on November 13, 2017
- CLEAResult has partnered with Clean Power Research and will utilize its PowerClerk platform to accept applications
- CLEAResult will be responsible for:
 - Reviewing applications and managing block reservations
 - Calculating total compensation rates
 - Making recommendations to DOER and electric distribution companies on project eligibility
 - Creating the public interface for SMART program, through its website and application portal
- CLEAResult's SMART Program website is now live:
<https://masmartsolar.com>

Factors that Establish a Solar Tariff Generation Unit's Total Compensation Rate

- Electric Distribution Company Service Territory
 - Base Compensation Rates are differentiated by electric distribution company service territory
- Capacity Block
 - Base Compensation Rates are differentiated by Capacity Block, which are established for each service territory and may be subscribed faster in one service territory than another
- Facility's AC Rated Capacity
 - Base Compensation Rates are also differentiated by system size
- Compensation Rate Adder Eligibility
 - Depending on its rate capacity, a facility may be eligible to receive one or more Compensation Rate Adders
- Greenfield Subtractor Applicability
 - If a facility falls under Category 2 or Category 3 Land Use, it will be subject to a Greenfield Subtractor (see slides 14-17)
- Behind-the-Meter Facility vs. Standalone Facility
 - While being classified as Behind-the-Meter vs. Standalone does not change the total compensation rate for which a facility is eligible under the tariff, the actual incentive payment is calculated differently depending on whether the facility serves an on-site load or exports 100% of its output to the electric grid

Capacity Block Sizes

Total Capacity Available per Capacity Block (MW AC)									
Distribution Company	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6	Block 7	Block 8	Total
Fitchburg Gas & Electric d/b/a Unitil	3.9	3.9	3.9	3.9	Not Applicable				15.8
Massachusetts Electric d/b/a National Grid	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	720.2
Nantucket Electric d/b/a National Grid	3.0	3.0	Not Applicable						6.0
NSTAR d/b/a Eversource Energy	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	732.1
WMECO d/b/a Eversource Energy	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	125.9
Total Capacity	204.2	204.2	201.2	201.2	197.3	197.3	197.3	197.3	1600.0

- Capacity available in each service territory was determined by multiplying 1,600 MW by each distribution company's percentage share of total statewide distribution load in 2016
- Unitil and Nantucket Electric have each elected to have fewer than eight blocks, as permitted by regulation
- Each block has a minimum of 20% and a maximum of 35% of capacity set-aside for projects ≤ 25 kW AC
- Capacity selected under the initial competitive procurement is deducted from the capacity available under Block 1 for each distribution company
- More information can be found in DOER's [Guideline on Capacity Blocks, Base Compensation Rates, and Compensation Rate Adders](#)

Competitive Procurement Results

- Bids for approximately 100 MW of projects were jointly solicited by the distribution companies in November 2017
- Each company solicited an amount of capacity proportional to their load share
- Results of the procurement were announced on January 11, 2018
- Results were used to establish the Base Compensation Rates for Block 1 in each service territory

	Massachusetts Electric d/b/a National Grid	Nantucket Electric d/b/a National Grid	NSTAR d/b/a Eversource Energy	WMECO d/b/a Eversource Energy	Fitchburg Gas & Electric d/b/a Unitil
MW Solicited	45.0	2.0	46.0	8.0	4.0
MW Received	53.3	0.0	2.0	13.0	0.0
MW Selected	43.5	0.0	2.0	7.7	0.0
Clearing Price (\$/kWh)	\$0.16933	N/A	\$0.17000	\$0.14890	N/A
Mean Price (\$/kWh)	\$0.15563	N/A	\$0.17000	\$0.14288	N/A
Block 1 Base Compensation Rate for 1-5 MW Facilities (\$/kWh)	\$0.15563	\$0.17000	\$0.17000	\$0.14288	\$0.15563

Block 1 Base Compensation Rates

Electric Distribution Company	Generation Unit Capacity	Term Length	Block 1 Compensation Rate
Fitchburg Gas & Electric d/b/a Unitil Massachusetts Electric d/b/a National Grid	Low income less than or equal to 25 kW AC	10-year	\$0.35795
	Less than or equal to 25 kW AC	10-year	\$0.31126
	Greater than 25 kW AC to 250 kW AC	20-year	\$0.23345
	Greater than 250 kW AC to 500 kW AC	20-year	\$0.19454
	Greater than 500 kW AC to 1,000 kW AC	20-year	\$0.17119
	Greater than 1,000 kW AC to 5,000 kW AC	20-year	\$0.15563
Nantucket Electric d/b/a National Grid NSTAR Electric d/b/a Eversource Energy	Low income less than or equal to 25 kW AC	10-year	\$0.39100
	Less than or equal to 25 kW AC	10-year	\$0.34000
	Greater than 25 kW AC to 250 kW AC	20-year	\$0.25500
	Greater than 250 kW AC to 500 kW AC	20-year	\$0.21250
	Greater than 500 kW AC to 1,000 kW AC	20-year	\$0.18700
	Greater than 1,000 kW AC to 5,000 kW AC	20-year	\$0.17000
WMECO d/b/a Eversource Energy	Low income less than or equal to 25 kW AC	10-year	\$0.32862
	Less than or equal to 25 kW AC	10-year	\$0.28576
	Greater than 25 kW AC to 250 kW AC	20-year	\$0.21432
	Greater than 250 kW AC to 500 kW AC	20-year	\$0.17860
	Greater than 500 kW AC to 1,000 kW AC	20-year	\$0.15717
	Greater than 1,000 kW AC to 5,000 kW AC	20-year	\$0.14288

- Base Compensation Rates in Massachusetts Electric, NSTAR Electric, and WMECO decline 4% per Capacity Block over eight blocks
- Base Compensation Rates in Fitchburg Gas & Electric decline 8.8% per Capacity Block over four blocks
- Base Compensation Rates in Nantucket Electric decline by 16% per Capacity Block over two blocks
- More information can be found in DOER's [Guideline on Capacity Blocks, Base Compensation Rates, and Compensation Rate Adders](#)

Compensation Rate Adders

- There are four categories of Compensation Rate Adders
 - Location Based Adders
 - Off-taker Based Adders
 - Energy Storage Adder
 - Solar Tracking Adder
- Systems larger than 25 kW AC may qualify for one adder from each category
- Systems less than or equal to 25 kW AC may only qualify for the Energy Storage adder
- More details on the eligibility criteria for certain adders can found in the following DOER's Guidelines
 - *Definition of Agricultural Solar Tariff Generation Units Guideline*
 - *Definition of Brownfield Guideline*
 - *Energy Storage Adder Guideline*
 - *Low Income Generation Units Guideline*
 - *SQ and Capacity Block Reservation Guideline*
- Guidelines can be found at:
<https://www.mass.gov/service-details/development-of-the-solar-massachusetts-renewable-target-smart-program>

Adder Values

Location Based Adders	
Type	Adder Value (\$/kWh)
Agricultural	\$0.06
Building Mounted	\$0.02
Brownfield	\$0.03
Floating Solar	\$0.03
Landfill	\$0.04
Solar Canopy	\$0.06

Off-taker Based Adders	
Type	Adder Value (\$/kWh)
Community Shared Solar (CSS)	\$0.05
Low Income Property Owner	\$0.03
Low Income CSS	\$0.06
Public Entity	\$0.02

Energy Storage Adder	
Type	Adder Value (\$/kWh)
Storage + PV	Variable

Solar Tracking Adder	
Type	Adder Value (\$/kWh)
Solar Tracking	\$0.01

- Adder values will decline by 4% as adder tranches are filled
- The first adder tranche is 80 MW for each adder
- Subsequent tranche sizes will be established by DOER
- More information on adder values and future tranche sizes can be found in DOER's [Guideline on Capacity Blocks, Base Compensation Rates, and Compensation Rate Adders](#)

Land Use Categories

- All systems are categorized according to land use
 - Category 1: No Greenfield Subtractor
 - Category 2: Greenfield Subtractor of \$0.0005/acre impacted
 - Category 3: Greenfield Subtractor of \$0.001/acre impacted
- Area impacted determined by the square footage of the PV panels
- Category is determined based on multiple factors such as, but not necessarily limited to the following:
 - Is the system located on Land in Agricultural Use
 - What is the size of the system?
 - Is the system ground mounted?
 - What is the existing condition of the land?
 - What is the zoning of the land?
- More information can be found in DOER's *Guideline on Land Use and Siting*, which can be downloaded at:
<https://www.mass.gov/service-details/development-of-the-solar-massachusetts-renewable-target-smart-program>

Category 1 Land Use

- No Greenfield Subtractor applies to Category 1 Land Use facilities
- Facilities located on Land in Agricultural Use or on Prime Agricultural Farmland can only be classified as Category 1 if they one or more of the following:
 - An Agricultural Solar Tariff Generation Unit
 - A Building Mounted Solar Tariff Generation Unit
 - Are sized to meet no greater than 200% of annual operation load of a farming operation
- Land in Agricultural Use is defined as:

All land as defined under M.G.L. c. 61A, §§ 1 and 2, enrolled in a program established pursuant to M.G.L. c. 61A, and land that had been enrolled in a program established pursuant to M.G.L. c. 61A within the past five years.
- Prime Agricultural Farmland is defined as:

Those soils identified by the United States Department of Agriculture Natural Resources Conservation Service to be prime farmlands pursuant to 7 CFR § 657.5(a).
- Facilities located on land that is not determined to be Land in Agricultural Use or Prime Agricultural Farmland can be classified as Category 1 if they meet one or more of the following criteria:
 - Have a capacity of less than or equal to 500 kW AC
 - Are a Building Mounted Solar Tariff Generation Unit
 - Are sited on a Brownfield
 - Are sited an Eligible Landfill
 - Are sited on land that has been previously developed, as defined by the Department
 - Are sited on land that complies with local zoning that explicitly addresses solar

Category 2 Land Use

- Facilities are classified as Category 2 Land Use if they are sited on land that has not been previously developed and is zoned for commercial and industrial development
- Category 2 Land Use facilities are subject to a Greenfield Subtractor of \$0.0005/acre impacted

Category 3 Land Use

- Facilities that do not meet the criteria to qualify as Category 1 or Category 2 Land Use shall be designated as Category 3 Land Use
- Category 3 Land Use facilities are subject to a Greenfield Subtractor of \$0.001/acre impacted
- Only applicable to facilities with capacities larger than 500 kW AC and less than or equal to 5 MW AC
- Facilities located on Land in Agricultural Use or Prime Agricultural Farmland that do not meet the criteria to qualify as Category 1 Agricultural Land Use will be categorized as Category 3 Land Use

Incentive Payments:

Standalone vs. Behind-the-Meter

- **Standalone facilities:** Any facility with no associated load other than parasitic or station load
 - Net Metered, Alternative On-bill Credit, and Non-net Metered Solar Tariff Generation Units
 - Incentive payment varies over life of project and is equal to all-in compensation rate (i.e. base + adders) *minus* the value of the energy
- **Behind-the-Meter Facilities:** Any facility that does not meet the definition of standalone
 - Incentive payment value is fixed for the duration of the tariff term and is determined at the time a project is interconnected
 - Facilities may or may not be eligible for net metering, but net metering eligibility has no impact on calculating the total compensation rate and the SMART incentive payment

Energy Compensation and Incentive Compensation for Standalone Facilities

- The total compensation to all SMART facilities is intended to account for *energy* and for *incentive* compensation
- The method of calculating the incentive payment depends on whether a system is classified as Behind-the-Meter or Standalone
- **Standalone facilities:** The Value of Energy depends on the type of energy compensation the facility is receiving and will be either a bill credit or direct payment
 - Net Metered Generation Unit
 - The value of the bill credit determined by the system's net metering eligibility per MGLc. 164 § 138; 220 CMR 18
 - Alternative On-bill Credit Generation Unit
 - The value of the bill credit determined by the final SMART Tariff, currently proposed at basic service
 - Non-net Metered Generation Unit
 - The value of the direct compensation subject to the utility company's Qualifying Facility Tariff
- Energy compensation + Incentive Payment always equals the total compensation rate for which a system is qualified for under SMART

Standalone Incentive Calculation

Standalone Solar Tariff Generation Unit Incentive Payment

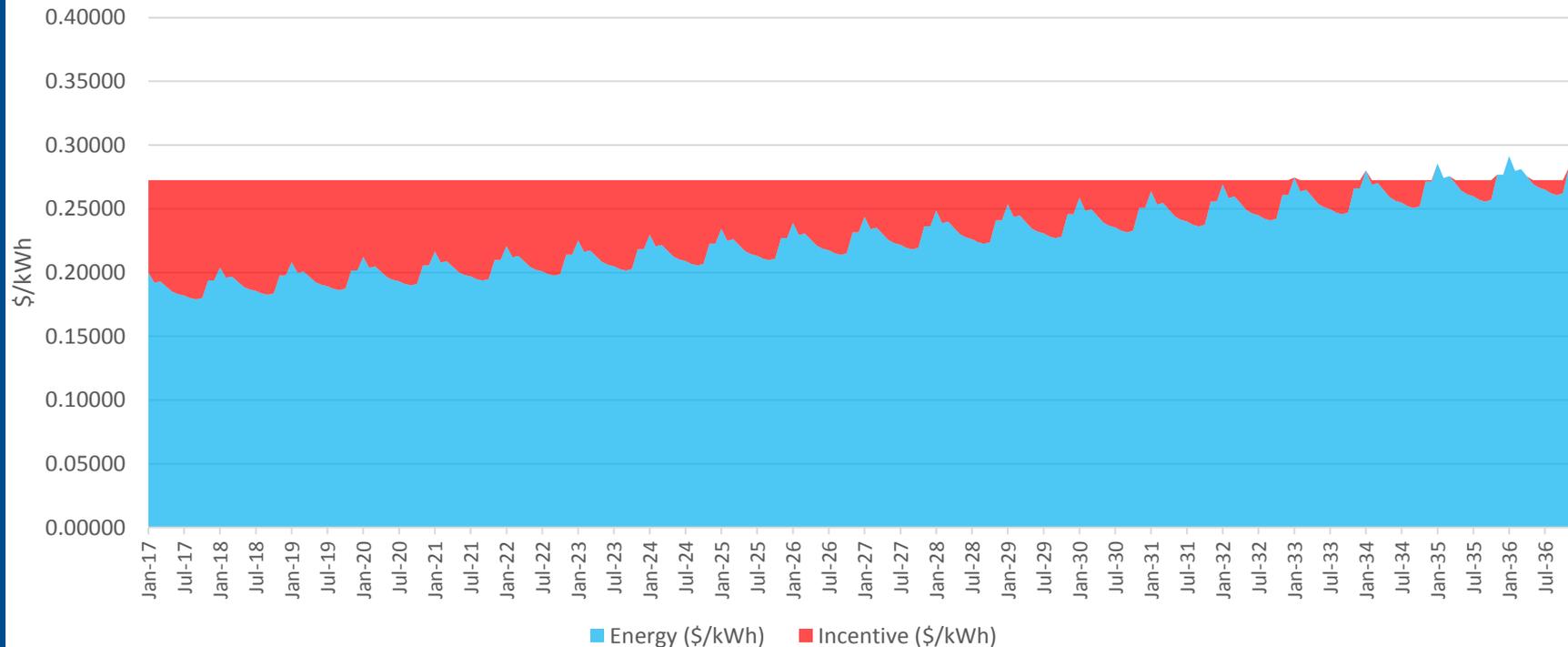
$$= (\text{Base Compensation Rate} + \text{Compensation Rate Adders} - \text{Greenfield Subtractor}) * \text{kWh} - \text{Value of Energy Generated}$$

- **Example:**

- A 500 kW net metered Canopy Solar Tariff Generation Unit facility qualifies under Eversource Block 1 and is eligible to receive a \$0.21250/kWh all-in compensation rate
- Canopy Solar Tariff Generation Unit Adder is \$0.06/kWh
- Greenfield Subtractor is \$0.00/kWh
- Net metering credit value is approximately \$0.20/kWh
- Incentive payment will fluctuate with change in net metering credit value
- Total compensation value will always be \$0.27250/kWh for entire 20-year tariff term

Standalone Generator Example

500 kW Standalone NEM Eligible Solar Canopy
(Eversource)



Note: Graph is illustrative of how payments would be determined and does not necessarily reflect actual values

Energy Compensation and Incentive Compensation for Behind-the-Meter Facilities

- The total compensation to all SMART facilities is intended to account for *energy* and for *incentive* compensation
- The method of calculating the incentive payment depends on whether a system is classified as Behind-the-Meter or Standalone
- **Value of Energy:** The Value of Energy approximates the avoided costs of electricity from a kWh of on-site load offset by a solar facility and is equal to the sum of the following:
 - Current volumetric distribution rate
 - Current volumetric transmission rate
 - Current volumetric transition rate
 - Three-year average Basic Service Rate
- These values are based on the distribution company service territory and the rate class of the End-use Customer's meter (e.g. Massachusetts Electric customer on an R-1 residential rate)
- The value of the incentive payment the facility is eligible to receive is calculated by subtracting the Value of Energy from the total compensation rate to which it is entitled under the tariff
- This resulting incentive payment value is fixed for the duration of the tariff term of the facility and does not fluctuate as electricity prices changes as it does for Standalone Facilities
- Because of this structure, Behind-the-Meter facilities will not necessarily always receive the total compensation rate for which a system is qualified for under SMART, but may receive more or less depending on 1) the future retail price of electricity, and 2) the amount of electricity exported by the facility to the grid (i.e. facilities that export more electricity may receive less total compensation because their avoided electricity costs will be lower than if the electricity was consumed behind-the-meter)

Behind-the-Meter Incentive Calculation

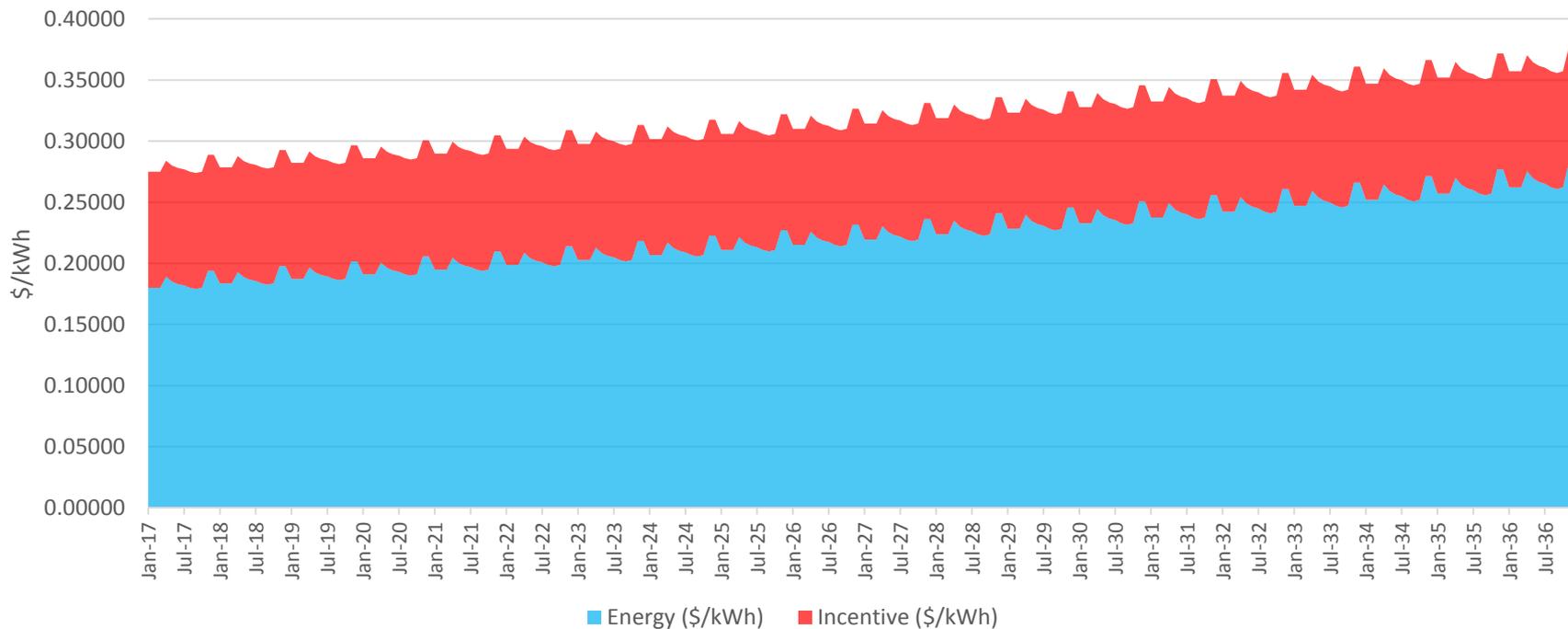
$$\begin{aligned} & \textit{Behind the Meter Solar Tariff Generation Unit Compensation Rate} \\ &= (\textit{Base Compensation Rate} + \textit{Compensation Rate Adders}) \\ &- (\textit{Current Volumetric Delivery Rates}) \\ &+ \textit{Three year average of Basic Service Rates} \end{aligned}$$

- **Example:**

- A 500 kW facility qualifies under National Grid Block 1 at a \$0.255/kWh compensation rate and is eligible for a \$0.02/kWh Building Mounted Adder for a total compensation rate of \$0.275/kWh
- Project is interconnected behind a meter on the G-1 rate class
- The Value of Energy (i.e. volumetric distribution + transmission + transition + 3-year average basic service) for this particular rate class is determined to be \$0.18/kWh
- The incentive rate would be set at \$0.095/kWh (\$0.275/kWh minus \$0.18/kWh) and would remain in effect for 20 years, regardless of what happens to electric rates over that timeframe

Behind-the-Meter Generator Example

500 kW Behind-the-Meter Building Mounted Facility
(National Grid)



Note: Graph is illustrative of how payments would be determined and does not necessarily reflect actual values

Submitting a Statement of Qualification Application

- The Statement of Qualification Application portal will be open following the issuance of the order on the Model Tariff by the DPU
- DOER will announce the first day applications will be accepted
- On the first day, applications will be ordered according to the date the ISA is fully executed by both parties
- On the second day and thereafter, applications will be ordered based on a first come first served basis

Submitting a Statement of Qualification Application

- Applications will be assigned to Blocks on a rolling basis, they will continue to fill and decline with the number of applications received
- Applicants must ensure the application is thorough and complete
- Applicants must provide the minimum application requirements to secure a Capacity Block Reservation
- Applicants may be required to submit additional application requirement depending on size, location, and adders sought

Submitting a Statement of Qualification

Application 25kW or less

Minimum eligibility criteria:

1. Executed Contract with the solar installer
2. [Customer Disclosure Form](#)

If seeking Low Income Base Compensation Rate:

1. Evidence the Customer of Record is a low income residential utility rate

If third party owned:

1. Executed Power Purchase Agreement

Systems will qualify for a 12 month reservation period

1. Systems may apply for an extension to their reservation period, subject to the requirements of the [Statement of Qualification Reservation Period Guideline](#)

Reminder: the only adder systems 25kW or less may qualify for is the Energy Storage Adder

Submitting a Statement of Qualification

Application: Over 25kW

Minimum eligibility criteria:

1. Fully executed ISA
2. Proof of site control
3. Non-ministerial permits
4. Land Use Categorization documents, if applicable
5. If subject to project segmentation, evidence of qualifying for an exception
6. Adder eligibility documentation, if applicable
7. Systems will qualify for a 12 month reservation period
 1. Systems may apply for an extension to their reservation period, subject to the requirements of the [Statement of Qualification Reservation Period Guideline](#)

Qualifying for Location Based Adders

Applicants must provide documentation showing proof of eligibility at the time of submitting the SQA for a Reservation

Location Based Adder	Required Documentation
Building Mounted	Site plan
Floating Solar	Pre-determination letter
Brownfield	Pre-determination letter
Landfill	Post-closure use permit
Canopy	Site plan
Agricultural	Pre-determination letter

Further information can be found in the following Guidelines:

- [Definition of Agricultural Solar Tariff Generation Units](#)
- [Definition of Brownfield](#)

Qualifying for Offtaker Based Adders

- All schedule Z forms must be submitted at the time of commercial operation
- Projects seeking an offtaker based adder may apply for the adder at any point during the Reservation Period;
- With the exception of Public Entity adder, which must provide proof of locational eligibility at the time of submitting the SQA for a Reservation

Offtaker Based Adder	Required Documentation
Community Shared Solar	Schedule Z/ Credit Allocation Form
Low Income Property	Pre-determination letter; and/or Schedule Z/ Credit Allocation Form
Low Income Community Shared Solar	Schedule Z/ Credit Allocation Form
Public Entity	Schedule Z/ Credit Allocation Form; proof land is publicly owned

Further information can be found in the following Guidelines:

- [Low Income Generation Units Guideline](#)
- [Statement of Qualification Reservation Period Guideline](#)

Energy Storage Adder

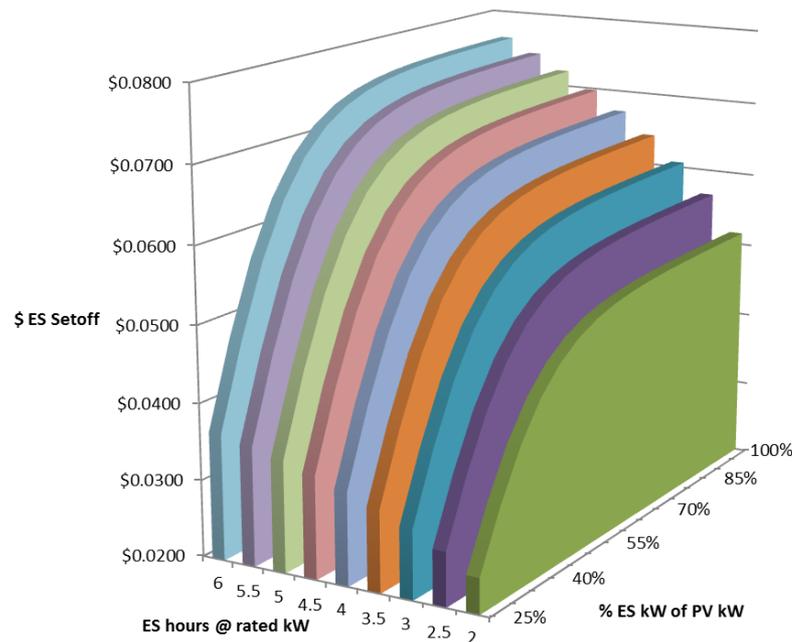
- Applicants may apply for the Energy Storage Adder at any time
 - If applying for the Energy Storage adder during the Reservation Period or after the system is operational, the available adder rate will apply
- Energy Storage Adder is variable and will be primarily based on the ratio of the storage capacity to solar capacity, as well as the duration of the storage
- Base adder of \$0.045/kWh is a component of a formula designed to provide more value to higher capacity and longer duration storage
- Adder will decrease by 4% per block
- Facilities with capacities equal to or less than 25 kW AC will also be able to receive a storage adder
- More details on the adder and an adder calculator can be found in DOER's *Energy Storage Guideline*, which can be downloaded at:
<https://www.mass.gov/service-details/development-of-the-solar-massachusetts-renewable-target-smart-program>

Energy Storage Adder Formula

$$\text{Energy Storage Adder} = \left[\frac{\left(\frac{ESkW}{PVkW}\right)}{\left(\left(\frac{ESkW}{PVkW}\right) + \exp\left(0.7 - \left(8 * \left(\frac{ESkW}{PVkW}\right)\right)\right)\right)} \right] * \left[0.8 + \left(0.5 * \ln\left(\frac{ESkWh}{ESkW}\right)\right) \right] * \text{Base Adder}$$

Where ESkW represents the nominal rated power of the energy storage system and ESkWh represents the nominal rated useful energy of the energy storage system

Formula Outputs



Energy Storage Adder Matrix

Storage kW as % of Solar	Storage Hours @ Rated Capacity								
	Minimum					Maximum			
	2	2.5	3	3.5	4	4.5	5	5.5	6
25%	\$0.0247	\$0.0271	\$0.0291	\$0.0307	\$0.0321	\$0.0334	\$0.0345	\$0.0356	\$0.0365
30%	\$0.0321	\$0.0352	\$0.0377	\$0.0399	\$0.0418	\$0.0434	\$0.0449	\$0.0462	\$0.0474
35%	\$0.0382	\$0.0419	\$0.0450	\$0.0476	\$0.0498	\$0.0517	\$0.0535	\$0.0551	\$0.0565
40%	\$0.0428	\$0.0470	\$0.0504	\$0.0533	\$0.0558	\$0.0579	\$0.0599	\$0.0617	\$0.0633
45%	\$0.0460	\$0.0504	\$0.0541	\$0.0572	\$0.0599	\$0.0622	\$0.0643	\$0.0663	\$0.0680
50%	\$0.0481	\$0.0527	\$0.0565	\$0.0598	\$0.0626	\$0.0650	\$0.0673	\$0.0692	\$0.0711
55%	\$0.0494	\$0.0542	\$0.0581	\$0.0614	\$0.0643	\$0.0668	\$0.0691	\$0.0712	\$0.0730
60%	\$0.0502	\$0.0551	\$0.0591	\$0.0625	\$0.0654	\$0.0680	\$0.0703	\$0.0724	\$0.0743
65%	\$0.0507	\$0.0557	\$0.0597	\$0.0631	\$0.0661	\$0.0687	\$0.0710	\$0.0731	\$0.0750
70%	\$0.0511	\$0.0560	\$0.0601	\$0.0635	\$0.0665	\$0.0691	\$0.0715	\$0.0736	\$0.0755
75%	\$0.0513	\$0.0562	\$0.0603	\$0.0638	\$0.0667	\$0.0694	\$0.0717	\$0.0739	\$0.0758
80%	\$0.0514	\$0.0564	\$0.0605	\$0.0639	\$0.0669	\$0.0696	\$0.0719	\$0.0740	\$0.0760
85%	\$0.0515	\$0.0565	\$0.0606	\$0.0640	\$0.0670	\$0.0697	\$0.0720	\$0.0742	\$0.0761
90%	\$0.0515	\$0.0565	\$0.0606	\$0.0641	\$0.0671	\$0.0697	\$0.0721	\$0.0742	\$0.0762
95%	\$0.0515	\$0.0566	\$0.0607	\$0.0641	\$0.0671	\$0.0698	\$0.0721	\$0.0743	\$0.0762
100%	\$0.0516	\$0.0566	\$0.0607	\$0.0641	\$0.0671	\$0.0698	\$0.0722	\$0.0743	\$0.0763

Reflects value for Energy Storage Systems that are part of the first adder tranche based on size & duration

Energy Storage Requirements

- Minimum and Maximum Nominal Rated Power: The nominal rated power capacity of the Energy Storage System paired with a solar photovoltaic Generation Unit must be at least 25 percent and shall be incentivized for no more than 100 percent of the rated capacity, as measured in direct current, of the solar photovoltaic Generation Unit.
- Minimum and Maximum Nominal Useful Energy: The nominal useful energy capacity of the Energy Storage System paired with the solar photovoltaic Generation Unit must be at least two hours and shall be incentivized for no more than six hours.
- Minimum Efficiency Requirement: The Energy Storage System paired with the solar photovoltaic Generation Unit must have at least a 65% round trip efficiency in normal operation.
- Data Provision Requirements: The Owner of the Energy Storage System must provide historical 15-minute interval performance data to the Solar Program Administrator for the first year of operation and upon request for the first five years of operation.
- Operational Requirements: The Energy Storage System must discharge at least 52 complete cycle equivalents per year and must remain functional and operational in order for the solar photovoltaic Generation Unit to continue to be eligible for the Energy Storage Adder.

Submitting a Statement of Qualification

Application: Enrolling in the Tariff

- All systems must submit the authorization to interconnect, issued by the utility company
- The size of the final as-built system may not exceed the AC capacity reserved, *de minimis* increases in the DC capacity are allowed
- All systems over 500kW must provide a P.E. certification the Performance Standards have been met in the construction of the project (See [Land Use and Siting Guideline](#) for details)
- Systems must also comply with all terms in the SMART Tariff as approved by the DPU

Proposed Model Tariff

- On September 12, 2017, the distribution companies jointly filed a model tariff and accompanying testimony with the DPU (docketed as DPU 17-140)
- Filing initiated a proceeding that will allow the SMART Program to go into effect once DPU reviews and approves the model tariff
- Companies explain that filing is designed to track closely to DOER regulatory requirements, but contains several items specifically highlighted by the companies for DPU review including, but not limited to:
 - Alternative On-Bill Credit mechanism
 - Cost recovery mechanism
 - Procedures for issuing payments to generators
 - Metering requirements
 - Tariff enrollment requirements for generators
- Filing only represents a joint company proposal at this point in time
- No final decisions will be made until the DPU conducts a full adjudicatory proceeding and issues an order
- More information (and a copy of the proposed model tariff) can be found at:

<http://web1.env.state.ma.us/DPU/Fileroom/dockets/bynumber> (type in 17-140 and click go)

DPU 17-140 Procedural Schedule

The DPU has established the following procedural schedule for the docket:

Tuesday, September 12, 2017	Model Tariff filed by Electric Distribution Companies
Thursday, October 19, 2017	Deadline for Intervention
Tuesday, October 24, 2017	Public hearing
Monday, November 13, 2017	DPU issues Procedural Schedule
Friday, January 12, 2018	Deadline for Intervenors to provide notice of intent to file testimony
Friday, January 26, 2018	Reply Comment Deadline
Monday, January 29, 2018	Deadline for Intervenors to file direct testimony
Thursday, February 08, 2018	Deadline for Electric Distribution Companies to file rebuttal testimony
Wednesday, February 21, 2018	Deadline for Intervenors to file surrebuttal testimony
Friday, February 23, 2018	Deadline for issuing discovery
Friday, March 9, 2018	Final discovery responses due
Thursday, March 29, 2018	Evidentiary Hearings begin
Thursday, April 5, 2018	Evidentiary Hearings conclude
Monday, April 23, 2018	Deadline for Intervenors to file initial briefs
Monday, May 7, 2018	Deadline for Electric Distribution Companies to file initial brief
Monday, May 14, 2018	Deadline for Intervenors to file reply briefs
Monday, May 21, 2018	Deadline for Companies to file reply brief
TBD	DPU issues Order approving tariff