

COMMONWEALTH OF MASSACHUSETTS

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SEBANE Summer
Solstice Celebration

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Boston, MA

SMART Program
Overview and Transition Process

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)
- 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 credit is not proposed to be made available to facilities with on-site load
- 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

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
- 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 Until	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
- Until 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](#)

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](#)

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>

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
- 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 pursuant to MGL c. 164 § 138 and 220 CMR 18.00
 - 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 under SMART

Standalone Incentive Calculation

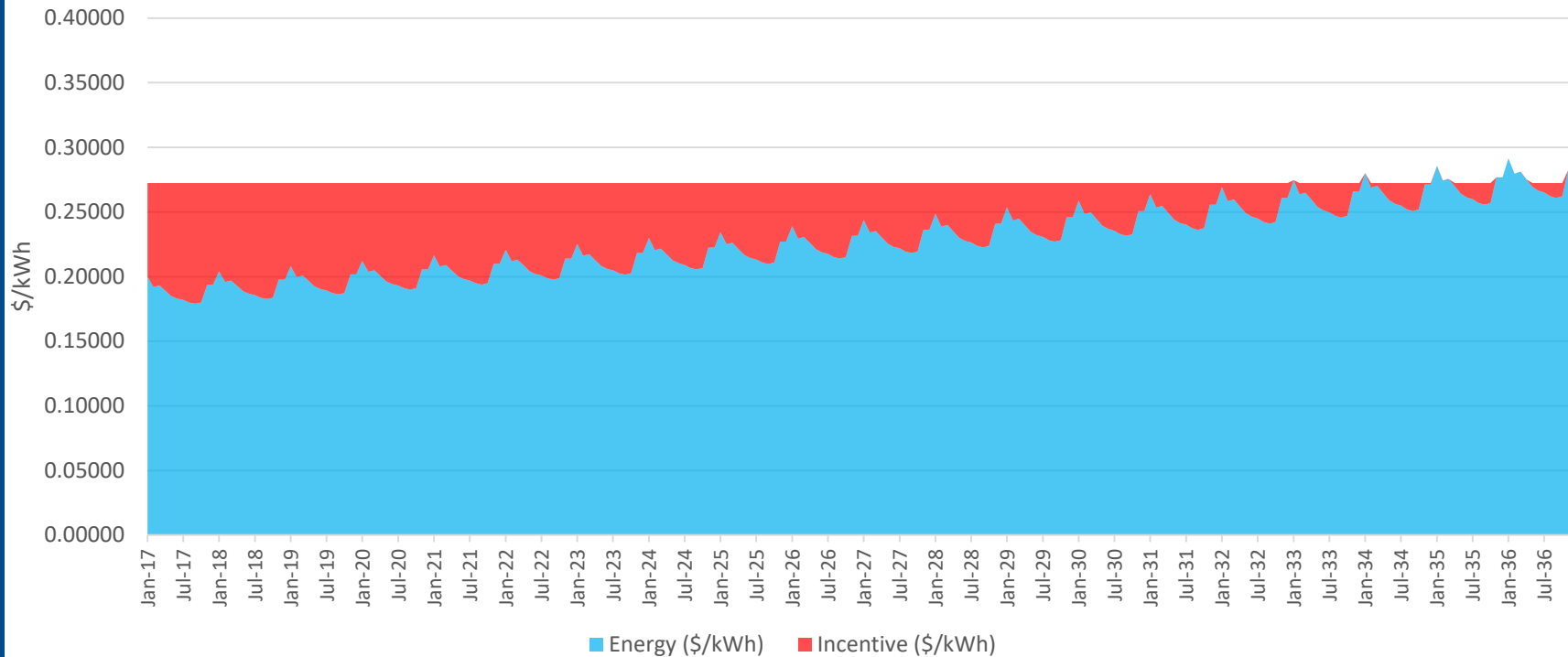
$$\begin{aligned} & \textit{Standalone Solar Tariff Generation Unit Incentive Payment} \\ & = (\textit{Base Compensation Rate} + \textit{Compensation Rate Adders} \\ & \quad - \textit{Greenfield Subtractor}) * \textit{kWh} - \textit{Value of Energy Generated} \end{aligned}$$

- **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
- 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 change 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 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)
- More information on how to calculate an estimated Value of Energy and SMART incentive payment value can be found in DOER's *Value of Energy Guideline and Calculator* for Behind-the-Meter facilities, which is available at:
 - masmartsolar.com (Solar Program Administrator's SMART Website)
 - [Development of the SMART Program Webpage](#)

Behind-the-Meter Incentive Calculation

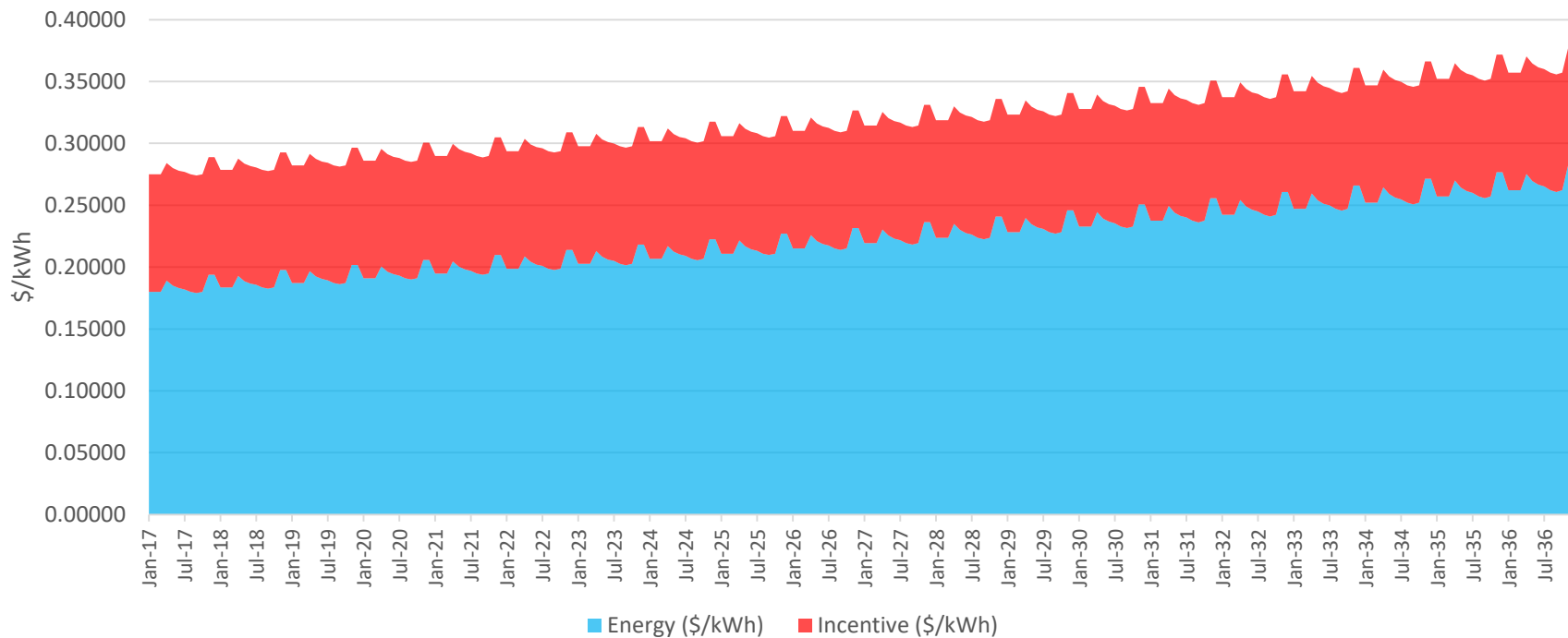
Behind the Meter Solar Tariff Generation Unit Compensation Rate
= (Base Compensation Rate + Compensation Rate Adders)
– (Current Volumetric Delivery Rates
+ Three year average of Basic Service Rates)

- **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

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>

Transition Process

SMART Tariff Approval and Launch Date

- DPU order on the model tariff expected to be issued in the coming weeks
- Following the issuance of an order, EDCs will need to file compliance tariffs
- Upon the approval of compliance tariffs, the SMART Program will officially take effect
 - Exact timing of these steps will not be certain until the DPU issues its order on the model tariff, but approximately 30 days from initial order to compliance tariff approval is likely a reasonable estimate
- As soon as it is possible to do so, DOER will announce the date upon which it will begin accepting applications for the SMART program

SREC II

- Projects >25 kW DC that are seeking qualification under SREC II will be required to submit paperwork demonstrating that they are mechanically complete two weeks after the SMART Program Effective Date (i.e. approval of compliance tariffs).
- Projects <=25 kW DC that are seeking qualification under SREC II will need to submit an application to DOER by November 15, 2018.
 - Application will be required to demonstrate the facility's authorization to interconnect was granted before the SMART Program Effective Date

Important Links and Contact Info

- SMART Program Regulation (225 CMR 20.00):
<https://www.mass.gov/files/documents/2017/10/16/225cmr20.pdf>
- Guidelines and Program Updates:
masmartsolar.com (Solar Program Administrator's SMART Website)
[Development of the SMART Program Webpage](#)
- DPU Docket on Model SMART Tariff:
<http://web1.env.state.ma.us/DPU/Fileroom/dockets/bynumber> (type in 17-140 and click go)
- DOER Stakeholder Email List:
<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