
Getting SMART

Making sense of the Solar Massachusetts
Renewable Target (SMART) program

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1. WHAT IS SMART?

In September 2018, the Massachusetts Department of Public Utilities (DPU) issued its order on the Solar Massachusetts Renewable Target (SMART) program.¹ The SMART program is the newest phase of policy-driven support for solar energy in the Commonwealth, and its arrival radically alters the way customers receive incentives for new solar panels. The SMART program went into effect on November 26, 2018 and is projected to result in the addition of 1,600 megawatts (MW) alternating current (AC) of small solar in the state. Customers with existing solar facilities are unaffected by the new regulations.

At its core, the SMART program is a new way for solar customers to receive financial incentives from the Commonwealth. SMART is a feed-in tariff similar in structure to solar policies that have been in place in other countries and states for decades. SMART participants receive fixed per-kilowatt-hour (kWh) incentive compensation for 10 or 20 years. The incentive for new participants is set to decline in steps as deployment proceeds through the 1,600 MW target. The goal of policies like SMART is to provide a strong financial signal for early adopters that decreases over time as the cost of solar becomes more favorable relative to conventional electricity. Under SMART, customers receive a monthly payment equivalent to the amount of electricity their solar facility generates (measured in kWh), multiplied by the price of the incentive (measured in dollars per kWh).

Incentive payments under SMART are available for any solar photovoltaic resource that is 5 MW AC or smaller.² Special incentives apply for customers who build or purchase certain kinds of solar facilities (i.e., solar built on landfills or solar providing electricity to low-income customers) and for customers who also site battery storage resources alongside their solar facilities. Incentives are available only for resources that are physically located in Massachusetts. For the vast majority of customers (i.e., residential customers with systems smaller than 25 kW AC), the payment system is relatively straightforward; special provisions typically only apply for low-income customers, community solar installations, or larger commercial and industrial solar installations.

SMART was established under “An Act Relative to Solar Energy,” which directed the Massachusetts Department of Energy Resources (DOER) to develop a statewide solar incentive program to encourage the continued development of solar. DOER, the Massachusetts electric distribution companies (Eversource, National Grid, and Unitil), and CLEAResult (the company hired to be the SMART Solar Program Administrator, or SPA) host information on SMART at <http://masmartsolar.com/>.³

This document serves as a guide to the SMART program as it exists in November 2018. Key parts of the program are still being determined and other aspects may be modified or revised in future proceedings.

¹ See D.P.U. 17-140, available at <https://eeaonline.eea.state.ma.us/EEA/FileService/FileService.Api/file/FileRoom/9848498>.

² The SMART incentives are only available to solar systems that generate electricity, not hot water.

³ Additional information on the transition to SMART is available at <https://www.mass.gov/files/documents/2018/10/15/SMART%20Program%20Launch%20Slides%20FINAL.pdf>. The final SMART provision can be found at <https://eeaonline.eea.state.ma.us/EEA/FileService/FileService.Api/file/FileRoom/10065924>.

2. HOW HAS MASSACHUSETTS SUPPORTED SOLAR SO FAR?

Before SMART, Massachusetts solar owners could receive five different categories of financial incentives: net metering, solar renewable energy certificates (SRECs), state and federal tax credits, low interest loans, and other, miscellaneous incentives. The SMART program replaces the incentive payment for SRECs with a different financial structure and provides a new option that can take the place of net metering. SMART does not make any alterations to tax credits, low-interest loans, or other incentives.

This chapter provides necessary background on each program in effect today to better understand how SMART changes the solar incentive landscape.

2.1. Net metering

In Massachusetts, many customers who generate electricity from solar qualify for net metering. Eligible facilities include all solar facilities that are 2 MW or smaller and public facilities that are 10 MW or smaller. Net metering allows customers to offset their electric usage with energy they generate. Electric meters track the net flow from a customer selling to the grid (e.g., in the middle of the day when their solar resource is operating at a level that exceeds their home's consumption) and from a customer buying from the grid (e.g., at night when the solar resource is not producing any electricity but the home still has demand for electricity). Over a month, if a customer buys more electricity than they sell, the difference will appear in the form of a reduced electric bill. If a customer sells more electricity than they buy, they will earn net metering credits, which can be rolled over to reduce their electric bill in the following month. Facilities can generate net metering credits for 25 years from the date of interconnection.

In Massachusetts, each distribution company implements two separate net metering caps for solar: one cap on the total generating capacity of private facilities, and a second cap for public facilities. These caps are calculated based on a percentage of the highest historical peak load of the distribution company, with the current cap set at 7 percent of peak for private facilities and 8 percent of peak for public facilities.⁴ Some facilities are exempt from the cap, meaning that they can be approved to net meter even if the cap is full. These include solar facilities with nameplate capacity less than 10 kW AC (on a single-phase circuit) or less than 25 kW AC (on a three-phase circuit).⁵ All other resources (i.e., those for which the cap applies) must apply for a “cap allocation” upon interconnection.

⁴ Mass.Gov, “Net metering guide.” Available at: <https://www.mass.gov/guides/net-metering-guide>

⁵ As of November 1, 2018, 97 percent of solar facilities in Massachusetts are smaller than 25 kW AC, and 89 percent of solar facilities are smaller than 10 kW AC. See <http://files.masscec.com/uploads/attachments/PVinPTSwebsite.xlsx>. However, facilities smaller than 25 kW AC represent about 27 percent of total installed capacity, whereas facilities smaller than 10 kW AC represent about 23 percent of total installed capacity.

Statewide, these caps total about 1,667 MW AC and apply to all resource types, including wind, solar, anaerobic digestion, or non-renewable technologies.⁶ Some service territories, such as National Grid, WMECo, and Unitil, are either at or within 100 kW AC of one or both of their caps.⁷ In aggregate across the state, there is about 300 MW AC left available, or about 18 percent of total cap capacity. A further 30 MW AC is on a “waiting list” in the service territories where the cap has already been met.⁸

Solar resources are compensated at different net metering rates depending on whether they are exempt from the cap and when they were activated. For (a) solar resources that are exempt from the cap or (b) solar projects that received a cap allocation before January 8, 2017, customers are compensated for 100 percent of the excess energy they produce. For all other solar facilities (i.e., those solar net metering facilities that received a cap allocation after January 8, 2017), customers are only compensated for 60 percent of the energy produced beyond their electric bill. The distribution company calculates credits by multiplying 60 percent of the excess energy produced by the local basic service charge, the distribution charge, the transmission charge, and the transition charge, all on a per unit of energy basis (kWh).⁹

Some customers are enrolled in ordinary net metering, wherein a single account co-located with a solar system has net metering credits applied to it. Other Massachusetts customers are enrolled in “virtual” net metering, where some or all of the net metering credits are applied to one or more other accounts. This allows customers who do not possess suitable locations for distributed solar (e.g., due to roof geometry, because they live in an apartment building, or for other reasons) to participate in net metering.

2.2. Solar Renewable Energy Certificates (SRECs)

A renewable energy credit (REC) is created every time a renewable resource (e.g., wind or solar) produces a MWh of energy. A REC guarantees that a MWh came from a renewable generator and can be sold to utilities or end-use customers, allowing them to prove they purchased a MWh of renewable energy. Under the Commonwealth’s Renewable Portfolio Standard (RPS), which require utilities to purchase an increasing amount of energy from renewable resources each year, the distribution companies must purchase a certain number of RECs each year to demonstrate their compliance with state law.¹⁰

⁶ The caps do not apply to small hydroelectric facilities, which have a separate net metering cap.

⁷ See <https://app.massaca.org/allocationreport/report.aspx>

⁸ These facilities will likely not be built unless (a) there is a change to the net metering caps or (b) they qualify for an Alternative On-Bill Credit under the SMART program. More information on Alternative On-Bill Credits is presented below.

⁹ Department of Public Utilities, 220 CMR 18, “Net Metering.” Available at: https://www.mass.gov/files/220_cmr_18.00_final_12-1-17_1.pdf

¹⁰ See <http://programs.dsireusa.org/system/program/detail/479> for more information.

The Massachusetts RPS law also features a “solar carve-out,” which requires utilities to purchase a certain number of RECs from small, in-state solar resources. Customers who installed solar before November 2018 may sell SRECs through clearinghouses and earn compensation for their solar panels. SREC compensation is separate from net metering. Customers are eligible to receive SRECs for 10 years after their solar facility becomes operational; after that, these facilities generate Class I RECs, which generally have a much lower compensation payment than SRECs.¹¹

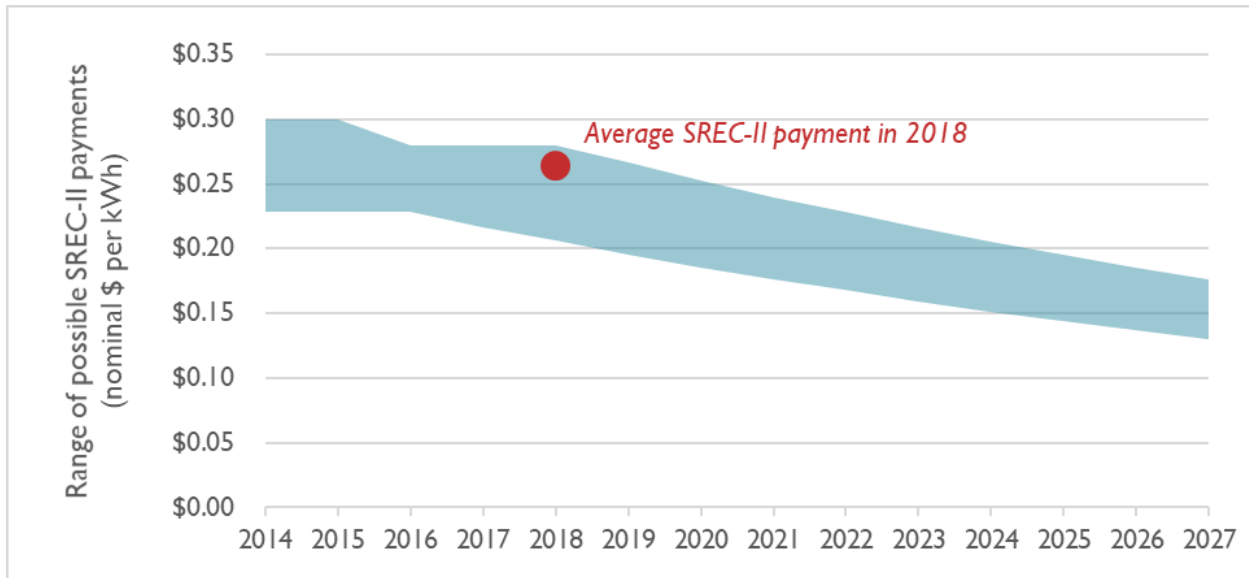
The original SREC program (SREC-I) had space for 400 MW AC of eligible resources; it ended in April 2014 when this capacity was met. A second version of the program (SREC-II) was then opened for another 1,200 MW AC but was eventually extended until the start of the SMART program in November 2018. These two programs (SREC-I and SREC-II) have different eligibility requirements for solar facilities, which are compensated at different rates. In addition, SREC-II projects that were built prior to January 8, 2017 generally receive the full SREC-II payment; most projects built after this date (but before the SMART program’s initial date of November 26, 2018) receive only 80 percent credit.¹² The rate at which consumers are paid is ultimately set by a market of SREC buyers and sellers, but features a floor and a ceiling to ensure the rate is within a certain range (see Figure 1).

The two SREC programs have led to the installation of more than 1,800 MW AC of small-scale solar in the Commonwealth.

¹¹ Customers receive these payments quarterly as a lump sum check, separate from their electric bill. Only full integer SRECs may be sold, so partial SRECs are carried over to the next quarter.

¹² In other words, these facilities must generate 1.25 MWh to earn one SREC, rather than 1 MWh. See <https://www.mass.gov/guides/solar-carve-out-ii-srec-ii-statement-of-qualification-application> for more information.

Figure 1. Range of possible SREC-II payment rates



Note: Payments reflect the amount relevant to facilities installed after January 8, 2017 and before November 26, 2018. Most facilities installed during this time period only receive a payment for each 1.25 MWh of electricity produced. Incentives are shown through 2027, the last year these facilities are eligible to receive incentive payments.

2.3. State and federal tax credits

A tax credit is a dollar-for-dollar reduction in income taxes that the owner of the solar project would otherwise pay the Commonwealth or the federal government. Two separate tax credits exist, one for Massachusetts and one for the federal government:

- Under Massachusetts law, owners of solar are eligible to receive a tax credit equal to 15 percent of the net solar expenditures for the year their project began construction. This tax credit has a maximum of \$1,000.¹³
- Under federal law, owners of solar are eligible to receive a tax credit equal to 30 percent of the net solar expenditures that commence construction through 2019. There is no maximum for this tax credit. The tax credit then steps down to 26 percent in 2020 and 22 percent in 2021. After 2021, this tax credit drops to zero for residential solar projects, and 10 percent for commercial or utility-scale solar projects.¹⁴

In both cases, the net solar expenditure includes the installation costs, minus the costs recovered through other tax credits and other rebates or grants. The credit is subtracted from the facility owner's income tax liability and may be carried over to subsequent filings if the credit exceeds the income tax.

¹³ See <https://www.mass.gov/regulations/830-CMR-6261-residential-energy-credit> for more information.

¹⁴ See <https://www.seia.org/initiatives/solar-investment-tax-credit-itc> for more information.

2.4. Low interest loans

Massachusetts offers fixed interest loans for residential customers who install solar panels. Customers can choose from a list of participating banks or credit unions whose terms and conditions may vary slightly. The loans range between \$3,000 and \$35,000, with lenders maintaining the option to go as high as \$60,000, and feature 10-year repayment plans at low interest rates. As of November 2018, the maximum allowable interest rate is 8 percent, although many banks offer lower interest rates, and income-eligible customers may obtain still lower rates.¹⁵

2.5. Other incentives

Equipment directly related to solar is fully exempt from the Massachusetts sales tax. The exemption qualifies that the solar installation is the primary or auxiliary heat or energy source at the customer's main residence.¹⁶ Similarly, the owner does not have to pay property taxes on the installation for 20 years. This can apply to customers in the residential, commercial, industrial, and agricultural sector. Once again, the system must be used as the primary or auxiliary heat or energy source on the property.¹⁷

Depending on the town or city, customers may also be eligible to receive rebates or other financial incentives to help decrease the cost of buying and installing solar. For example, customers of Holyoke Gas and Electric are eligible to receive up to \$10,000 of interest-free financial assistance repayable over 10 years.¹⁸ Other municipal utilities, including Chicopee, Marblehead, Concord, Taunton, Reading, and Hudson, offer other financial incentives.¹⁹

¹⁵ Mass Solar Loan, "For Consumers and Residents." Available at: <http://www.masssolarloan.com/>

¹⁶ Mass.Gov, "Sales and Use Tax." Available at: <https://www.mass.gov/guides/sales-and-use-tax>

¹⁷ DSIRE, NC Clean Energy Technology Center, "Renewable Energy Property Tax Exemption." Available at: <http://programs.dsireusa.org/system/program/detail/146>

¹⁸ See <https://www.hged.com/customers/save-energy-money/for-business/commercial-energy-conservation/default.aspx>

¹⁹ See <https://www.wholesalesolar.com/solar-information/state-solar-incentives/massachusetts>

3. HOW DOES SMART WORK?

Under the SMART program, owners of solar facilities receive a monthly financial incentive, separate from their electricity bill. This incentive is separate from and in addition to net metering incentives (virtual or otherwise), as well as any other incentives from tax credits, low-interest loans, or other sources.

In short, SMART replaces the SREC incentive, but leaves all other financial incentives for solar unaltered.²⁰ The arrangement to determine these incentives is complicated, with base payments that vary with installation rate, which are adjusted by multipliers based on system size and customer type, plus different types of available adders depending upon the type of solar PV system installed and its location.

3.1. SMART incentives

The compensation rate for each SMART project is fixed at the time of system installation based on a set of factors.²¹ The initial rates have been set for each distribution company's service territory based on a competitive request for proposals for large facilities. This RFP garnered responses totaling 53.273 MW throughout the state.²² Each project responding to this RFP specified a "bid price," with the marginal bid price for each service territory being used to set the initial compensation rate.²³

SMART attempts to reflect the different costs to develop solar PV at different sizes and in different locations. Smaller facilities have larger multipliers applied to the initial compensation rate than larger facilities, and low-income customers are eligible for higher compensation rates (see Table 1).²⁴ Rates also vary depending on the customer, facility, and distribution company. Customers are eligible to

²⁰ The one exception is the creation of the Alternative On-Bill Credit, which can be viewed as an alternative to net metering for standalone solar facilities.

²¹ Owners of solar facilities can receive the compensation rate themselves, or they can designate it to other customers if they are a third-party installer or if they own a community solar project.

²² Each winning project under this RFP will receive compensation at the Block 1 rate once it is constructed. All projects which bid under this RFP met several requirements, including being between 1 MW AC and 5 MW AC in size and offering a bid price that was less than the ceiling price of \$170 per MWh. Each distribution company was assigned an allocation, which in aggregate totaled 100 MW statewide. See <https://www.mass.gov/files/documents/2017/11/13/SMART%20100%20MW%20RFP%20%2811-13-2017%29%20final.pdf> for more information on the SMART RFP.

²³ In some service territories (e.g., Unital's service territory and Nantucket), the Commonwealth did not receive any eligible responses to the competitive RFP and the initial rate was determined administratively based on the other responses.

²⁴ Customers are eligible for the low-income incentive payment if they are enrolled in a low-income electric rate or if the customer lives in low or moderate income housing. See <http://masmartsolar.com/files/documents/Low%20Income%20Guideline%2004.26.18.pdf> for the SMART "Guideline Regarding Low Income Generation Units."

receive the SMART incentive for 10 years if their facility is less than or equal to 25 kW AC, and 20 years if their facility is greater than 25 kW AC and less than or equal to 5 MW AC.

Table 1. Base compensation rate factors

Capacity	Base Compensation Rate Factor	Compensation Term Length
≤ 25 kW AC, Low Income	230%	10 years
≤ 25 kW AC	200%	10 years
> 25 kW AC, ≤ 250 kW AC	150%	20 years
> 250 kW AC, ≤ 500 kW AC	125%	20 years
> 500 kW AC, ≤ 1,000 kW AC	110%	20 years
> 1,000 kW AC, ≤ 5,000 kW AC	100%	20 years
> 5,000 kW AC	Not eligible for SMART	Not eligible for SMART

Although a project’s incentive rate is fixed at the time of that facility’s installation, the incentive rate that each new project qualifies for changes over time. The SMART program is made up of eight “blocks,” with each block containing about 200 MW statewide. Once each block reaches its maximum capacity within a particular service territory, projects then become eligible to receive the next, lower dollar-per-kWh rate.²⁵ These incentive rates are awarded on a first-come, first-serve basis. A certain amount of the total capacity is set aside for solar facilities less than or equal to 25 kW AC.²⁶ Depending on the service territory, the decrease in rates from block to block ranges from 4 percent to 16 percent per block. See Table 2 for detail on available capacities in each block and Table 3 for detail on the total compensation rates planned for each block, inclusive of the factors from Table 1, above.²⁷

²⁵ If a project spans a capacity block, it will receive a unique prorated rate.

²⁶ This set-aside may range from 20 percent to 35 percent of the total available capacity for each block. Of the SREC-eligible facilities installed in Massachusetts since 2010, 97 percent of the facilities (by count) have been 25 kW AC or smaller; these same projects represent 27 percent in terms of total installed capacity. See <http://files.masscec.com/uploads/attachments/PVinPTSwebsite.xlsx>.

²⁷ See http://masmartsolar.com/_documents/Capacity-Block-Base-Compensation-Rate--Compensation-Rate-Adder-Guideline.xlsx for the source of these tables and for more information. See http://masmartsolar.com/_documents/SMART-BTM-Value-of-Energy-Workbook.xlsx for a tool to calculate the compensation rate for any given solar project in the Commonwealth.

Table 2. SMART capacity by block and distribution service territory (MW AC)

		Block 1	B2	B3	B4	B5	B6	B7	B8	Total
Total SMART capacity	Unitil	4	4	4	4	-	-	-	-	16
	National Grid	93	93	90	90	90	90	90	90	726
	<i>Nantucket Electric</i>	3	3	-	-	-	-	-	-	6
	<i>National Grid, other</i>	90	90	90	90	90	90	90	90	720
	Eversource	107	107	107	107	107	107	107	107	858
	<i>NSTAR</i>	92	92	92	92	92	92	92	92	732
	<i>WMECO</i>	16	16	16	16	16	16	16	16	126
	Total	204	204	201	201	197	197	197	197	1,600
Minimum required set-aside for facilities ≤ 25 kW AC	Unitil	1	1	1	1	-	-	-	-	3
	National Grid	19	19	18	18	18	18	18	18	145
	<i>Nantucket Electric</i>	1	1	-	-	-	-	-	-	1
	<i>National Grid, other</i>	18	18	18	18	18	18	18	18	144
	Eversource	21	21	21	21	21	21	21	21	172
	<i>NSTAR</i>	18	18	18	18	18	18	18	18	146
	<i>WMECO</i>	3	3	3	3	3	3	3	3	25
	Total	41	41	40	40	39	39	39	39	320
Already procured from competitive RFP	Unitil	0	-	-	-	-	-	-	-	-
	National Grid	44	-	-	-	-	-	-	-	-
	<i>Nantucket Electric</i>	0	-	-	-	-	-	-	-	-
	<i>National Grid, other</i>	44	-	-	-	-	-	-	-	-
	Eversource	10	-	-	-	-	-	-	-	-
	<i>NSTAR</i>	2	-	-	-	-	-	-	-	-
	<i>WMECO</i>	8	-	-	-	-	-	-	-	-
	Total	53	-	-	-	-	-	-	-	-
Currently available for facilities > 25 kW AC	Unitil	3	3	3	3	-	-	-	-	13
	National Grid	31	74	72	72	72	72	72	72	581
	<i>Nantucket Electric</i>	2	2	-	-	-	-	-	-	5
	<i>National Grid, other</i>	28	72	72	72	72	72	72	72	576
	Eversource	76	86	86	86	86	86	86	86	686
	<i>NSTAR</i>	71	73	73	73	73	73	73	73	586
	<i>WMECO</i>	5	13	13	13	13	13	13	13	101
	Total	110	163	161	161	158	158	158	158	1,280

Notes: Values are rounded to nearest MW for the sake of simplicity. Allocations were determined based on each service territory's share of 2016 distribution load in Massachusetts. Unitil and Nantucket Electric both elected to have fewer than 8 capacity blocks, as permitted under 225 CMR 20.05(3). See https://www.mass.gov/media/1937226/download?_ga=2.196717292.1181886720.1541775161-483334923.1493903549 for more information.



Table 3. Base compensation rates by block, distribution service territory, and capacity size (nominal \$/kWh)

	Generation Unit Capacity	Block 1	B2	B3	B4	B5	B6	B7	B8
Unitil	≤ 25 kW AC, Low Income	0.35795	0.32645	0.29772	0.27152	-	-	-	-
	≤ 25 kW AC	0.31126	0.28387	0.25889	0.23611	-	-	-	-
	> 25 kW AC, ≤ 250 kW AC	0.23345	0.21290	0.19417	0.17708	-	-	-	-
	> 250 kW AC, ≤ 500 kW AC	0.19454	0.17742	0.16181	0.14757	-	-	-	-
	> 500 kW AC, ≤ 1,000 kW AC	0.17119	0.15613	0.14239	0.12986	-	-	-	-
	> 1,000 kW AC, ≤ 5,000 kW AC	0.15563	0.14193	0.12944	0.11805	-	-	-	-
National Grid (Other)	≤ 25 kW AC, Low Income	0.35795	0.34363	0.32989	0.31669	0.30402	0.29186	0.28019	0.26898
	≤ 25 kW AC	0.31126	0.29881	0.28686	0.27538	0.26437	0.25379	0.24364	0.23390
	> 25 kW AC, ≤ 250 kW AC	0.23345	0.22411	0.21514	0.20654	0.19828	0.19034	0.18273	0.17542
	> 250 kW AC, ≤ 500 kW AC	0.19454	0.18676	0.17929	0.17211	0.16523	0.15862	0.15228	0.14618
	> 500 kW AC, ≤ 1,000 kW AC	0.17119	0.16435	0.15777	0.15146	0.14540	0.13959	0.13400	0.12864
	> 1,000 kW AC, ≤ 5,000 kW AC	0.15563	0.14940	0.14343	0.13769	0.13218	0.12690	0.12182	0.11695
National Grid (Nantucket Electric)	≤ 25 kW AC, Low Income	0.39100	0.32844	-	-	-	-	-	-
	≤ 25 kW AC	0.34000	0.28560	-	-	-	-	-	-
	> 25 kW AC, ≤ 250 kW AC	0.25500	0.21420	-	-	-	-	-	-
	> 250 kW AC, ≤ 500 kW AC	0.21250	0.17850	-	-	-	-	-	-
	> 500 kW AC, ≤ 1,000 kW AC	0.18700	0.15708	-	-	-	-	-	-
	> 1,000 kW AC, ≤ 5,000 kW AC	0.17000	0.14280	-	-	-	-	-	-
Eversource (NSTAR)	≤ 25 kW AC, Low Income	0.39100	0.37536	0.36035	0.34593	0.33209	0.31881	0.30606	0.29382
	≤ 25 kW AC	0.34000	0.32640	0.31334	0.30081	0.28878	0.27723	0.26614	0.25549
	> 25 kW AC, ≤ 250 kW AC	0.25500	0.24480	0.23501	0.22561	0.21658	0.20792	0.19960	0.19162
	> 250 kW AC, ≤ 500 kW AC	0.21250	0.20400	0.19584	0.18801	0.18049	0.17327	0.16634	0.15968
	> 500 kW AC, ≤ 1,000 kW AC	0.18700	0.17952	0.17234	0.16545	0.15883	0.15247	0.14638	0.14052
	> 1,000 kW AC, ≤ 5,000 kW AC	0.17000	0.16320	0.15667	0.15041	0.14439	0.13861	0.13307	0.12775
Eversource (WMECO)	≤ 25 kW AC, Low Income	0.32862	0.31548	0.30286	0.29075	0.27912	0.26795	0.25723	0.24694
	≤ 25 kW AC	0.28576	0.27433	0.26336	0.25282	0.24271	0.23300	0.22368	0.21473
	> 25 kW AC, ≤ 250 kW AC	0.21432	0.20575	0.19752	0.18962	0.18203	0.17475	0.16776	0.16105
	> 250 kW AC, ≤ 500 kW AC	0.17860	0.17146	0.16460	0.15801	0.15169	0.14563	0.13980	0.13421
	> 500 kW AC, ≤ 1,000 kW AC	0.15717	0.15088	0.14485	0.13905	0.13349	0.12815	0.12302	0.11810
	> 1,000 kW AC, ≤ 5,000 kW AC	0.14288	0.13716	0.13168	0.12641	0.12135	0.11650	0.11184	0.10737

Notes: Unitil and Nantucket Electric both elected to have fewer than 8 capacity blocks, as permitted under 225 CMR 20.05(3). See https://www.mass.gov/media/1937226/download?_ga=2.196717292.1181886720.1541775161-483334923.1493903549 for more information.

Compensation adders and subtractors

The SMART compensation rate that a customer receives is subject to a number of “adders.” Compensation adders are summed with the project’s base compensation rate (which vary by system size, as detailed in Table 3) to determine the total compensation rate that a customer will get.

Customers can receive an adder if their solar facility is:

- Building-mounted
- Floating solar (e.g., sited on top of a reservoir)
- Located on a brownfield
- Located on an eligible landfill
- Canopy-mounted (e.g., built over a parking lot or a pedestrian walkway)
- Located on agricultural land
- Community shared solar (CSS) (i.e., typically larger solar facilities that allocate credits to three or more participants, with no more than two participants receiving net metering credits in excess of that which would annually come from a facility sized at 25 kW AC; the combined share of two participants must not be more than 50 percent of the total unit’s capacity, unless it is smaller than 100 kW AC)
- Located on low-income property (i.e., housing subsidized by federal or state programs) and serving low-income customers
- Low-income CSS facility (i.e., a CSS project wherein 50 percent of energy output is allocated to low-income customers in the form of electricity or bill credits)
- Owned by a public entity (i.e., sited on property owned by a municipality or other governmental entity and has assigned 100 percent of its output to municipalities or other governmental entities)
- Utilizes solar tracking (i.e., the panels change orientation with respect to the sun over the course of a day)
- Co-located with an energy storage system (ESS)

A solar facility is only eligible to receive adders if it is greater than 25 kW AC, except for the ESS adder, which is available to all solar facilities.

Adders are grouped into four different “adder types” for location, off-taker (i.e., type of customer), storage, and tracking (see Table 4). Solar facilities are eligible to receive one adder from each of the four adder types, for a total of four maximum adders. Each of the adders currently has eight tranches

(although more are possible). Once a tranche is full, the price of the adder decreases by 4 percent.²⁸ Each adder fills a tranche independently of other adders and the solar blocks. For example, the adder for solar tracking in Tranche 1 is \$0.01000 per kWh; once 80 MW of solar tracking have qualified for this adder statewide, the new solar tracking adder will be based on Tranche 2 (\$0.00960 per kWh). This change in price is independent of the amount of capacity qualified for building-mounted solar, for example.

The ESS adder has its own set of complexities. To qualify for the ESS adder, a storage facility must:

- Be co-located with a solar facility;
- Have a capacity equal to at least 25 percent of the solar facility's capacity (measured in direct current [DC] kW), but not more than 100 percent;
- Have a nominal useful energy capacity of at least two hours but no more than six hours (i.e., the energy stored is between two and six times the instantaneous power the system can export);
- Have a round-trip efficiency of at least 65 percent;
- Be able to provide data at 15-minute intervals; and
- Discharge at least 52 cycles per year.

The ESS adder is a function of the storage capacity relative to the solar capacity and the storage hours at the rated capacity. Generally speaking, the closer in size to the solar facility capacity and the more storage hours an ESS can hold, the higher the adder. And, as with other adders, the price of the adder decreases as each tranche fills.²⁹ At a minimum, this adder is \$0.0247 per kWh produced (regardless of tranche); at a maximum, this adder could be up to \$0.0763 per kWh (in Tranche 1 only).³⁰

Also, there are compensation subcontractors. If a facility is located on a greenfield (i.e., not a brownfield or landfill, or on a building or other qualifying structure), the overall incentive payment is reduced.³¹ This subcontractor is equal to \$0.0010 per kWh and applies to all projects greater than or equal to 500 kW AC and less than or equal to 5,000 kW AC. The full subcontractor applies if the greenfield site of the facility is not zoned for commercial use, industrial use, or specifically for solar or power generation. Half the subcontractor (\$0.0005 per kWh) is applied if the greenfield site is zoned for commercial use, industrial use,

²⁸ If a project spans two adder tranches, the project will receive the adder with the majority of eligible capacity.

²⁹ See DOER's Energy Storage Calculator at http://masmartsolar.com/_/documents/Energy-Storage-Calculator-FINAL091218.xlsx for more information on how to calculate specific ESS adders.

³⁰ Under D.P.U. 17-140, the distribution companies have been directed to integrate recommendations from the DPU, DOER, the Attorney General, and other intervenors regarding ESS. The distribution companies are required to provide an update on this progress in their January 1, 2019 annual SMART filing. In the meantime, the DPU has directed the current ESS adder to go into effect as planned.

³¹ See http://masmartsolar.com/_/documents/Land%20Use%20and%20Siting%20Guideline%2004.26.18.pdf.

or specifically for solar or power generation. There are no limits or tranches on compensation subtractors.

A schedule for defining the MW quantities for compensation adder tranches has not yet been established.



Table 4. SMART compensation adders by tranche (nominal \$ per kWh)

Adder Type	Generation Unit Type	Tranche 1	T2	T3	T4	T5	T6	T7	T8
A. Location Based	Building Mounted	0.02000	0.01920	0.01843	0.01769	0.01699	0.01631	0.01566	0.01503
	Floating Solar	0.03000	0.02880	0.02765	0.02654	0.02548	0.02446	0.02348	0.02254
	Brownfield	0.03000	0.02880	0.02765	0.02654	0.02548	0.02446	0.02348	0.02254
	Landfill	0.04000	0.03840	0.03686	0.03539	0.03397	0.03261	0.03131	0.03006
	Canopy	0.06000	0.05760	0.05530	0.05308	0.05096	0.04892	0.04697	0.04509
	Agricultural	0.06000	0.05760	0.05530	0.05308	0.05096	0.04892	0.04697	0.04509
B. Off-taker Based	Community Shared Solar (CSS)	0.05000	0.04800	0.04608	0.04424	0.04247	0.04077	0.03914	0.03757
	Low Income (LI) Property	0.03000	0.02880	0.02765	0.02654	0.02548	0.02446	0.02348	0.02254
	LI CSS	0.06000	0.05760	0.05530	0.05308	0.05096	0.04892	0.04697	0.04509
	Public Entity	0.02000	0.01920	0.01843	0.01769	0.01699	0.01631	0.01566	0.01503
C. Storage	Energy Storage System (ESS)	Variable	Variable	Variable	Variable	Variable	Variable	Variable	Variable
D. Tracking	Solar Tracking	0.01000	0.00960	0.00922	0.00885	0.00849	0.00815	0.00783	0.00751
Tranche Size (MW)		80	TBD	TBD	TBD	TBD	TBD	TBD	TBD

Source: <https://www.mass.gov/media/1937226/download?ga=2.196717292.1181886720.1541775161-483334923.1493903549>.

Net metering with SMART

Under SMART, customers who enroll in net metering (virtual or otherwise) will continue to accrue and benefit from net metering credits on their electricity bills. In addition, they will receive a separate SMART incentive payment, which will be disbursed by the customer's distribution company on a monthly basis, via check or electronic funds transfer.

The SMART incentive rate is calculated according to the formula detailed in Equation 1. In short, the incentive rate is determined by adding the base compensation rate for the given block and distribution company to any applicable compensation adders, subtracting out any applicable compensation subtractors, and then subtracting a "value of energy" (VOE). This VOE will be established by DOER and will be equal to a three-year average of the basic service rate, plus the current rates for transmission, distribution, and transition.³² This rate is calculated independently for each distribution company and rate class.

For behind-the-meter customers, the VOE is determined once their facility has been interconnected and it remains constant throughout the duration of their tariff. But the calculation of the "starting" VOE will change over time: each year it will be recalculated based on the sum of distribution charge, transmission charge, transition charge, and the average of the basic service charge for the three calendar years immediately preceding.³³

Equation 1. Calculating the SMART incentive rate for net metering (measured in nominal \$ per kWh)

SMART Incentive rate

$$\begin{aligned} &= \text{Base compensation rate} + \text{Compensation adders} \\ &\quad - \text{Compensation subtractors} - \text{Value of energy} \end{aligned}$$

For example, a customer with a system smaller than 25 kW AC in Block 1 with Eversource as the distribution company with no compensation adders or subtractors would have the following SMART incentive rate:

Equation 2. Example SMART incentive rate (nominal \$ per kWh)

$$\text{SMART Incentive rate} = \$0.34000 + 0 - 0 - \$0.18734$$

$$\text{SMART Incentive rate} = \$0.15266$$

³² The VOE for net metering resources that qualify under Block 1 has already been established and can be found at https://www.mass.gov/media/1937226/download?_ga=2.196717292.1181886720.1541775161-483334923.1493903549. Both DOER and the DPU emphasize that this VOE is not intended to be an estimate of the "value of solar."

³³ See <http://masmartsolar.com/>, Frequently Asked Questions Version 3, Section D, Question 2.

This incentive rate is then multiplied by the facility's monthly generation to calculate an incentive payment. Because the starting VOE can and will change over time, this will result in an incentive payment that is different for all customers but is consistent and predictable for any one customer.

See Chapter 4 for a comparison of SMART incentives and SREC incentives for behind-the-meter customers.

3.2. Alternative On-Bill Credits

New with SMART is the establishment of Alternative On-Bill Credits (AOBCs), which are an alternative to traditional net metering for standalone solar facilities. Under AOBC, customers are not credited for solar generation at the \$-per-kWh retail rate they would be credited under net metering.³⁴ Instead, they are credited using the VOE (described in "Net metering with SMART" above).

Because AOBCs can only be used by standalone solar facilities, they may not be relevant for the large number of small, behind-the-meter solar customers who site solar on the roofs of their homes or small businesses. But its existence may allow the creation of more community solar facilities and increased access to solar for customers whose homes are not suitable for on-site solar. Special provisions apply to the AOBC program that do not apply to customers receiving SMART incentives who are enrolled in net metering:

First, the AOBC program is only available to standalone solar facilities (i.e., it is not available for solar facilities that are behind-the-meter). Net metering is allowed for both standalone and behind-the-meter projects. An AOBC project could be used for CSS, where the customers live in one place but the facility is somewhere else.

Second, under current state law, the distribution companies are permitted to impose net metering caps (see "Net metering" section, above, for more information). Because AOBC is not net metering, facilities that receive bill crediting under AOBC are not subject to the caps.

Third, the VOE for AOBC customers is not fixed like it is for behind-the-meter customers.³⁵ Instead, the VOE is re-calculated each month, based on the applicable basic service rate.³⁶ Because the incentive payment is calculated by subtracting the VOE from the base compensation rate, this results in an incentive payment that also changes.

The final difference relates to the relative locations of the solar facility and the participating customer(s). To receive AOBCs from a solar facility a customer must only be in the same distribution company service

³⁴ Under current net metering rules in Massachusetts, facilities that are subject to a net metering cap only receive net metering credits equal to 60 percent of their net excess kWh. For standalone facilities (i.e., facilities that are not co-located with electric load), this effectively translates to a payment rate equal to 60 percent.

³⁵ See http://masmartsolar.com/_documents/SMART%20PC%20User%20Guide%20v2.3_10-31-18.pdf, page 56 (definition of SMART Solar Incentive Payment Rate [SIPR]).

³⁶ See <https://eeaonline.eea.state.ma.us/EEA/FileService/FileService.Api/file/FileRoom/10065924>, page 7 of 15.

territory, but not necessarily the same ISO New England load zone. This is a contrast with virtual net metering, for which the customer must be located both (a) in the same distribution company service territory as the solar facility and (b) in the same ISO New England load zone.

AOBC versus net metering: What are the trade-offs?

AOBC features a number of advantages relative to net metering. It broadens the geographic eligibility for CSS customers and means that medium- to large-sized solar facilities do not have to worry about a net metering cap to receive on-bill compensation. In addition, resources are compensated at the full base compensation rate, unlike current resources that have a cap allocation and use net metering (and receive only 60 percent of the net metering compensation rate).

On the other hand, the main disadvantage of AOBC relative to net metering is that it provides on-bill compensation at a lower \$-per-kWh rate. Rather than standalone solar customers receiving both net metering credits for any excess generation and SRECs, customers now only receive a single SMART payment. And, because it is established based on an average of the previous three-years' basic service rate (at the time of system interconnection), and because electricity rates typically increase over time in nominal terms, customers may see a lower compensation rate than they would if they were on net metering (changes in seasonal pricing aside). Furthermore, because the VOE is recalculated for AOBC projects each month, the incentive payment is not known or fixed, although this is also an issue under net metering.

Disbursement of SMART payments under AOBC

Even though the VOE changes over time, the compensation rate that AOBC projects receive does not. This results in AOBC customers receiving a payment equal to their base compensation rate, plus any applicable adders or subtractors (see Equation 3). This total payment rate is then multiplied by the facility's monthly generation to calculate a total payment, inclusive of both the costs of energy and the SMART incentive.

Equation 3. Calculating the SMART payment rate for AOBC (measured in nominal \$ per kWh)

SMART Payment rate

$$\begin{aligned} &= \text{Base compensation rate} + \text{Compensation adders} \\ &- \text{Compensation subtractors} \end{aligned}$$

However, it is the incentive payment that is passed to subscribed customer accounts (i.e., as with community solar projects). In this case, the incentive payment rate is calculated the same as in net metering (see Equation 4). However, because the VOE changes each month, so too does the incentive rate. This incentive payment rate is then multiplied by the facility's monthly generation and the subscribed customer's allocation to determine a monthly payment to customers. This payment is made automatically by each distribution company and is automatically transferred to subscribed customers' electricity bills.

Equation 4. Calculating the SMART incentive rate for AOBC (measured in nominal \$ per kWh)

SMART Incentive rate

$$\begin{aligned} &= \text{Base compensation rate} + \text{Compensation adders} \\ &- \text{Compensation subtractors} - \text{Value of energy} \end{aligned}$$

3.3. Qualifying facilities

A third type of SMART project exists for projects that are “Qualifying Facilities” as defined by DOER in 220 CMR 8.02.³⁷ This type of project is functionally very similar to AOBCs, with the exception that the VOE is not based on the basic service rate, but is instead based on the rate applicable under each distribution company’s qualifying facility tariff.

3.4. Other SMART components

This section contains information on miscellaneous details related to SMART, as well as information on issues that are not yet resolved.

Ownership of renewable attributes

Under the SREC program, owners of solar facilities have the option to not sell their RECs. Although these customers forego compensation associated with the sales of their SRECS, these customers retain the rights to their RECs and can thus claim that the electricity they consume is 100 percent renewable.³⁸ This claim of “renewable-ness” is independent of any compensation that a customer receives through net metering or other incentives. In other words, because the customer has not sold their RECs, they have not transferred the renewable attribute associated with their electricity production and can claim it as their own.

Under the SMART program, customers are required to forego a claim to their RECs in order to receive the SMART incentive (for 10 or 20 years). This is the same as under the SREC program; customers will not be compensated with an incentive unless they transfer the “renewable-ness” of their solar generation to the distribution company.

Costs to sign up for SMART

SMART requires that installers submit applications to distribution companies on behalf of customers. This application process requires the payment of an application fee by the consumer. The purpose of

³⁷ See <https://www.ferc.gov/industries/electric/gen-info/qual-fac/what-is.asp> for more information.

³⁸ Assuming that their solar facility’s generation meets or exceeds their electricity consumption. If, for example, their solar facility produces MWh equivalent to 75 percent of their electricity consumption, their electricity could be said to be 75 percent renewable.

this fee is to cover the cost of the Solar Program Administrator, the third-party organization responsible for running the SMART program. As of November 2018, the cost of this fee is still not finalized.

SMART also requires the installation of a new distribution company-owned meter to track the production of their electricity.³⁹ Installers are required to leave an open socket for a distribution company-owned production meter when designing solar systems. Customers are responsible for paying for this meter during the interconnection process.⁴⁰ The cost of these meters will ultimately vary but could be in the range of \$200 to \$300 for smaller systems or as high as a \$25,000 for the largest systems.

Taxation of incentive payments

As with SREC sales, solar customers are required to pay state and federal taxes on the income produced by SMART incentive payments. Customers are required to provide a W-9 as part of their application submission, and distribution companies will issue an annual 1099 to all recipients of incentive payments.

Participation in ISO New England's Forward Capacity Market (FCM)

ISO New England's Forward Capacity Market (FCM) is a market in which New England's system operator (the ISO) conducts an annual auction to procure capacity for a period three years into the future. Resources may participate in the auction, receiving payments in exchange for an obligation to provide capacity to the electricity grid. These resources are often conventional power plants, but renewable resources and demand-side resources (like energy efficiency and behind-the-meter solar) are also eligible to participate.

In 2009, the DPU granted distribution companies the right to capacity payments associated with net metering facilities for the purpose of possibly generating revenue. In theory, utilities could then apply this revenue as a credit to ratepayers, reducing the cost of the net metering program. Utilities are not obligated to assert this right. To date, only National Grid has asserted this right (and only on less than half of its eligible facilities), and none of the three distribution companies have actually enrolled the capacity of net metering facilities in the FCM. As a result, no net metering facilities have a capacity obligation and none have earned any capacity revenue.

Likewise, under the SMART program, the distribution companies are eligible to qualify certain solar facilities in the FCM. However, the DPU is currently evaluating whether to preclude the distribution companies from having the right to capacity payments in a separate docket.⁴¹ Per the DPU, until a final

³⁹ A solar facility may then have up to three meters: a production meter, a meter for storage, and a revenue-grade meter to measure usage or net export. Under the SREC program, customers were only required to have a revenue-grade meter for measuring usage or net export.

⁴⁰ See D.P.U. 17-140. Facilities with ESS may require the installation of a separate meter. Distribution companies are prohibited by the DPU from assessing service fees associated with meter maintenance at this time. Meter costs will be a separate assessment and will not appear on a customer's electricity bill.

⁴¹ See D.P.U. 17-140 and D.P.U. 17-146.

determination is made, neither utilities nor solar facility owners may claim the right to bid capacity into the FCM.

Who pays for SMART?

All customers of electric distribution companies in Massachusetts will fund the SMART program on their electric bills through a SMART Factor. This includes funding for the incentives, as well as funding for the administrative costs of running the program (estimated to be about 4 percent of total program costs).⁴² All customers will see a specific “SMART Factor” line item on their bill, separate from the existing categories of basic service, distribution, transmission, and transition.

This item will be measured in \$-per-kWh. Initially it will be bypassable (i.e., customers enrolled in net metering can avoid this charge), but in 2019 or 2020 it will convert to a non-bypassable charge. This means that all customers, including both current and new solar customers, will pay an amount equal to the charge multiplied by their electricity consumption, regardless of whether those customers are enrolled in net metering. Although the net metering payment rate will not include the SMART Factor, if a customer has produced enough net metering credits with their solar facility, these credits can be used to pay for the charge.

Prioritizing low-income customers

The Act enabling SMART directs DOER to design a solar incentive program that minimizes barriers to solar and creates incentives targeting low-income customers. The current SMART program contains a set of incentives for low-income customers (including a class of base compensation incentives, as well as several compensation adders), partly meant to address the low participation rates observed in the SREC programs from low-income customers. The DPU directed distribution companies to collect and regularly report data on the number of low-income customers subscribed to the SMART program in order to monitor low-income customer participation and potentially direct changes to the program.⁴³

Municipal utility eligibility

In contrast to the SREC program, solar facilities interconnected in municipally owned utilities or municipal light departments are not eligible to participate in SMART. Instead, these facilities may apply to sell Class I RECs or work with DOER to participate in a separate “Municipal Light Plant Solar Program.”⁴⁴

⁴² See D.P.U. 17-140.

⁴³ See D.P.U. 17-140.

⁴⁴ See <https://www.commbuys.com/bs0/external/bidDetail.sdo?docId=BD-19-1041-ENE01-ENE01-32726&external=true&parentUrl=bid> for more information on the “Massachusetts Municipal Light Plant Solar Program” (bid number: BD-19-1041-ENE01-ENE01-32726).

Will SMART change in the future?

After 400 MW have been submitted for qualification under the SMART program, DOER will conduct a review of the program's benefit-cost ratio (BCR), compensation rate adders, and overall cost impacts to determine if any revisions to the program are necessary. Other changes may occur after this initial evaluation, and it is unclear at this point what incentives, if any, will persist after the 1,600 MW eligible under SMART have been procured. For reference, the original goal of the SREC program was to enroll 1,600 MW DC by 2020; this capacity was met in April 2017 and now exceeds 2,200 MW DC (roughly 1,800 MW AC).



4. HOW DO SMART PAYMENTS COMPARE TO SREC PAYMENTS?

Comparing the incentive payments under the new SMART program to the incentive payments under the old SREC program is difficult. Most SREC customers receive compensation at the same \$-per-MWh price, but the price is not fixed and could vary in the future (within the range described above in Figure 1). Meanwhile, the SMART incentive rate is highly variable based on the size of the solar facility, whether it is eligible for compensation adders (or subtractors), the service territory the solar facility is located in, the VOE determined at the time of the system’s installation, and the compensation block in effect at the time of the system’s installation. However, once these factors are established for a given facility, that facility’s owner will know exactly what their incentive payment is for a 10- or 20-year period.

In 2018, the median size of an SREC-eligible solar facility was 6.5 kW AC and featured an annual capacity factor of 13.4 percent.⁴⁵ Table 5 shows how SMART compensation differs for customers by distribution company.⁴⁶ If this typical customer enrolls in Block 1, they can expect to receive about \$959 per year in SMART incentive payments for 10 years.⁴⁷

Table 5. Comparison of annual SMART compensation for different distribution companies

	Block 1	B2	B3	B4	B5	B6	B7	B8
Unitil	\$654	\$427	\$218	\$25	-	-	-	-
National Grid	\$857	\$739	\$630	\$523	\$418	\$317	\$218	\$122
Eversource	\$1,075	\$943	\$814	\$688	\$565	\$445	\$327	\$212
Statewide Avg	\$959	\$833	\$714	\$597	\$487	\$376	\$269	\$163

Notes: SMART incentive payments will ultimately depend on the location of the solar facility, the value of energy at the time of interconnection, the size of the facility, and whether the facility is eligible for any compensation adders or subtractors.

⁴⁵ This capacity factor is based on historical MassCEC data, available at <http://files.masscec.com/SREC%20Capacity%20Factor%20Analysis%202010%20thru%202017%20updated%208.10.18%2028final%208.20.2018%29.xlsx>. 6.5 kW AC x 13.4 percent x 8,760 hours = 7,600 kWh AC produced per year.

⁴⁶ The estimate for SMART incentive payments is based on the incentive for non-low-income resources 25 kW AC or smaller and assumes an R-1 electricity rate. This estimate also assumes that the VOE will increase over time. Based on MassCEC data for historical solar installations (2016 to 2018) for systems 25 kW AC or smaller, we assume that 40 MW AC is installed every five months. We assume that the basic service rate component will increase by about 5.5 percent per year, in line with data observed from <https://www.mass.gov/files/documents/2018/10/19/Basic%20Service%20Prices%202010-18-18.xlsx>. We do not make any changes to the distribution, transmission, or transition rates, resulting in a statewide overall annual rate increase of about 3.5 percent per year. The statewide average is based on an average of incentive prices for each distribution company, weighted by historical residential electricity sales for each distribution company. Assumed compensation rates do not include any adders or subtractors (which are only applicable to systems that are larger than 25 kW AC, with the exception of the ESS adder).

⁴⁷ This is an estimate for a customer in the R-1 rate class. A similar customer in a low-income rate class would receive an incentive payment of \$1,325 per year if they were to sign up in Block 1, assuming no other changes to assumptions.

While 6.5 kW AC was the median installed capacity for 2018, 90 percent of all systems were between 2.8 kW AC and 12.8 kW AC.⁴⁸ All systems within this range (as long as they were located in the same service territory) would be paid at the same SMART compensation rate, as they are all 25 kW AC or smaller. But, because these systems produce a varying range of electricity, their total monthly SMART payment could vary. For Block 1, the statewide average payment could range from as high as \$1,880 per year to as low as \$420 per year.

What might this typical SMART customer have otherwise received in SREC-II payments, had their system been installed prior to November 26, 2018? Table 6 compares an estimated amount of annual compensation for SREC-II's to the potential yearly compensation under SMART.⁴⁹ Customers who enroll in Block 1 can expect to see an annual incentive payment equal to about 63 percent of what they would have otherwise received under the SREC-II program (as it existed at the end of 2018). However, by the time Block 8 is in effect, the incentive payment may be just 12 percent of the SREC II compensation amount.

Table 6. Comparison of statewide averages for annual SMART and SREC-II compensation

	Block 1	B2	B3	B4	B5	B6	B7	B8
SREC-II	\$1,529	\$1,529	\$1,529	\$1,451	\$1,451	\$1,378	\$1,378	\$1,378
SMART	\$959	\$833	\$714	\$597	\$487	\$376	\$269	\$163
SMART as a percent of SREC-II	63%	55%	47%	41%	34%	27%	20%	12%

Notes: SMART incentive payments will ultimately depend on the location of the solar facility, the value of energy at the time of interconnection, the size of the facility, and whether the facility is eligible for any compensation adders or subtractors. Meanwhile, SREC-II payments will ultimately depend on the market price for SRECs. All values are in nominal \$ per kWh.

While the SMART incentive payment will ultimately vary from customer to customer, solar customers may ultimately prefer the long-term certainty of SMART compensation to the uncertainty of SREC payments. SMART payments are issued once a month, rather than once every three months as with SRECs.⁵⁰ This increased frequency of payments may be useful to customers who prefer a regular, albeit lower, form of compensation. In addition, because of the time it takes to sign up for the SREC program,

⁴⁸ 2.8 kW AC represents the 5th percentile of this dataset, while 12.8 kW represents the 95th percentile of this dataset. Systems that would be paid at a lower compensation rate (e.g., systems with capacities larger than 25 kW AC) represent a relatively small number of total systems (i.e., fewer than 3 percent of all facilities). No data was available on the number of systems that would be eligible for compensation at the low-income rate.

⁴⁹ The estimate for SREC-IIs is based on an average of the range of SREC-II prices observed in 2018 at <https://srectrade.com/>, multiplied by 80 percent (reflecting the SREC-II payment rate available for most R-1 customers with 6.5 kW AC solar facilities just before the start of the SMART program). We assume that SREC-II prices decline over time, remaining consistently 6 percent lower than the maximum payment for SREC-IIs detailed in Figure 1 (the specific maximum payment used is linked to the projected installation scheduled described in Footnote 46). Actual SREC-II prices are driven by the market and may ultimately be different in future years.

⁵⁰ This assumes that customers have produced enough electricity to create an SREC. For customers with smaller systems, the time between SREC payments may be longer than three months.

and the fact that auctions only occur each quarter, it can take up to six months to receive a customer's first SREC incentive payment. Under SMART, consumers should be able to see an incentive payment soon after system interconnection. Finally, under SMART, owners of solar facilities larger than 25 kW AC are eligible to receive SMART incentive payments for 20 years, versus a maximum of 10 years under the SREC program. For these larger facilities, the disadvantages of a lower payment rate may be balanced out by the advantages of a longer payment period.

The SMART program does come with downsides for solar facility owners related to SRECs. In addition to having an overall less-generous incentive payment (all things being equal), the SMART program requires owners to pay an application fee and purchase a production meter. While the total costs of the fee and the meter are yet to be determined, they could be in excess of \$300. Finally, under the SMART program, customers in municipal utility service territories are not eligible to receive incentive payments, unlike in the SREC program.

