

# **SRECs**

**RPS, SACP and all that stuff...**

**Commonwealth of Massachusetts**  
**Executive Office of Energy and Environmental Affairs**  
**DEPARTMENT OF ENERGY RESOURCES**  
**RPS SOLAR CARVE-OUT**

**Determination of CY 2013 Total Compliance Obligation**  
*(per regulation 225 CMR 14.07(2)(d))*

**Formula**

$$\begin{aligned} \text{Total Compliance Obligation}_{\text{CY}} = & \\ & \text{Total Compliance Obligation}_{\text{CY-1}} \\ & + [\text{Total SRECs Generated (projected)}_{\text{CY-1}} - \text{SRECs Generated (actual)}_{\text{CY-2}}] \times 1.3 \\ & - \text{ACP Volume}_{\text{CY-2}} + \text{Banked Volume}_{\text{CY-2}} + \text{Auction Volume}_{\text{CY-2}} \end{aligned}$$

Term in Formula	CY 2012 Min Std Term	Value (MWh)	Source
Total Compliance Obligation <sub>CY-1</sub>	Total Compliance Obligation <sub>2012</sub>	81,559	per regulation; 225 CMR 14.07(2)(c)
Total SRECs Generated (projected) <sub>CY-1</sub>	Total SRECs Generated (projected) <sub>2012</sub>	109,465	DOER, as provided in Table of Projection Details below
SRECs Generated (actual) <sub>CY-2</sub>	SRECs Generated (actual) <sub>2011</sub>	26,598	2010 RPS Compliance Filings (see 2010 Annual Compliance Report, forthcoming)
ACP Volume <sub>CY-2</sub>	ACP Volume <sub>2011</sub>	53,802	2010 RPS Compliance Filings (see 2010 Annual Compliance Report, forthcoming)
Banked Volume <sub>CY-2</sub>	Banked Volume <sub>2011</sub>	11	2010 RPS Compliance Filings (see 2010 Annual Compliance Report, forthcoming)
Auction Volume <sub>CY-2</sub>	Auction Volume <sub>2011</sub>	0	2010 RPS Compliance Filings (see 2010 Annual Compliance Report, forthcoming)

Calculations			
Total Compliance Obligation <sub>CY</sub> <sup>3</sup>	Total Compliance Obligation <sub>2013</sub>	135,495	per formula above and regulation; 225 CMR 14.07(2)(d)
2011 Load		49,386,169	2010 RPS Compliance Filings (see 2010 Annual Compliance Report, forthcoming)
CY 2013 Minimum Standard		0.2744%	division of above two terms

**Formula Results**

**Total Compliance Obligation<sub>2013</sub>**

$$135,495 \text{ MWh} = 81,559 \text{ MWh} + [109,465 - 26,598] \times 1.3 - 53,802 + 11 + 0$$

**CY 2013 Minimum Standard**

$$0.2744\% = 135,495 \text{ MWh} / 49,386,169 \text{ MWh} \times 100$$

**Table of Projection Details**

Projection of CY 2012 Total SRECs Generated (for use in formula above)	Total Capacity (MW)	Actual/Projected CY 2012 SREC Generation <sup>1</sup>
<b>Qualified Projects (installed through August 23, 2012)</b>		
Actual SRECs generated per NEPOOL GIS - Q1 2012		14,479
Expected MW/MWh reported by qualified projects (Q2-Q4 2012) <sup>2</sup>	116.653	84,372
<b>Expected Projects (to be installed August - December)</b>		
State Supported Projects		
Commonwealth Solar II	8.000	1,894
Solarize Mass	0.300	66
EECBG/Green Communities Funded Projects	0.166	54
Private Sector Installations (based on quarterly growth trends)	40.000	8,600
<b>TOTAL</b>	<b>165.119</b>	<b>109,465</b>

<sup>1</sup> Projected generation assumes capacity factor of 13% for duration of year remaining after anticipated installation date

<sup>2</sup> Includes the capacity that generated the 14,479 SRECs in Q1 2012

<sup>3</sup> Stakeholders should note that the full compliance obligation is not necessarily required to be met with the purchase of SRECs. This is because any load served by competitive retail electric suppliers that was under contract prior to January 1, 2010 is exempt from paying the full Solar Carve-Out ACP Rate and can instead be met by ACP payments made at the RPS Class I ACP rate. This effectively reduces the actual demand for SRECs generated in any given Compliance Year. The table below shows the number of MWh served under pre-2010 contracts in 2010 and 2011 as well as the projections for the number of MWh that will be sold under these contracts in 2012-2016. More information will be provided in DOER's 2011 RPS/APS Annual Compliance Report that will be released later this year. All numbers in italics are projections.

Compliance Year	Pre-2010 Load (MWh)	Effective Reduction in SREC Demand (MWh x Minimum Standard)
2010	19,316,360	13,110
2011	7,247,205	11,691
2012	3,070,121	5,005
2013	1,745,330	4,784
2014	441,885	Data Not Yet Available
2015	98,759	Data Not Yet Available
2016	61,995	Data Not Yet Available

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**Massachusetts SREC Market**

The Massachusetts Department of Energy Resources (DOER) created an SREC market which began in January 2010. Massachusetts's market is unique as it's final goal is 400MW of solar capacity. This has led to DOER to adopt a policy of setting requirements annually, based on a formula incorporating build rates and SREC data from past years. In addition to this, the state has implemented the MA Solar Credit Clearinghouse as a last resort, fixed-price auction in the last quarter of each year with a fixed price of \$300 per SREC less a 5% fee resulting in a floor price of \$285. This establishes a floor price for Massachusetts SRECs and gives project financiers a minimum value they can expect per SREC, though prices can rise as high as \$600 depending on market conditions.

**Pricing:**

[SREC Auction](#) - Auction closing prices history

**News:**

[Massachusetts Blog](#) - Starting point for useful information regarding the Massachusetts SREC market

**Other States in which Massachusetts facilities are eligible:**

None

**States Eligible for MA Market:** Only Massachusetts solar photovoltaic installations under 6 MW are eligible.

**Eligibility Period:** No defined period of years in which a facility is eligible to generate and sell MA SRECs.

**Energy Year:** January 1 to December 31

**Tracking Platform:** NEPOOL-GIS

**SREC Useful Life:** A 2010 SREC will be retired if it is not either sold or included in the DOER last-chance auction at the end of the 2010 trading period. If it is added to the DOER last-chance auction, it is re-minted with an extended life of up to 3 years.

**Solar Requirement:** Set at 30MW (0.0680% or 34,164 SRECs) in 2010. Each year the requirement will increase by 30% more than the previous year's increase. It will then be adjusted by the previous year's oversupply or shortage of SRECs. The total requirement in any given year is capped at 400MW and shall never decrease.

**SACP:** Set at \$600 for 2010 and can be reduced by DOER by up to 10% each year. The Solar Clearinghouse Auction, held in July for the prior calendar year, will establish a floor price of \$300.

**Meter Readings:** Facilities must report generation from revenue grade meters.

**Eligibility Begins:** Upon date of interconnection, as long as the system is certified by the state before that quarter's SREC's are generated. A system should apply for certification around the date of interconnection to assure they receive full credit for their generation.

Energy Year	Estimated Capacity Required (MW)	Estimated SRECs Required (MWh)	SACP
2010	19.6	22,200	\$600
2011	55.7	62,900	\$550
2012	65.0	73,400	\$550
2013	115.7	130,711	\$550
2014	-	-	\$523
2015	-	-	\$496
2016	-	-	\$472
2017	-	-	\$448
2018	-	-	\$426
2019	-	-	\$404
2020	-	-	\$384
2021	-	-	\$365

2022

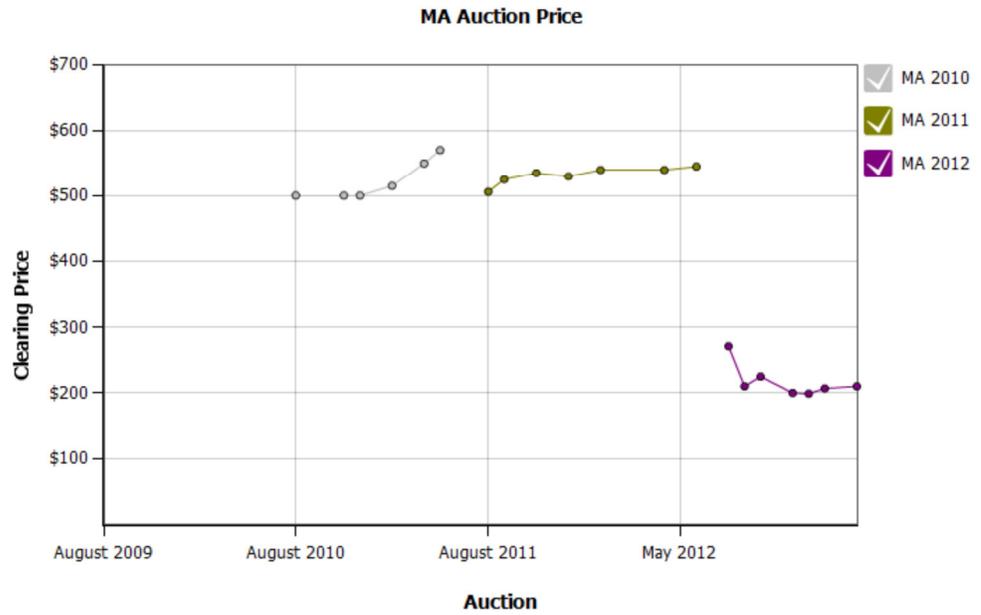
\$347

Note: Estimated capacity and SRECs required adjusted for expected impact of [TransCanada settlement](#). Updated September 2012. The 2013 compliance obligation is subject to [change](#).

**Useful Links:**

- [Massachusetts Client Forms](#) - All forms needed to sign up for SRECTrade's EasyREC service
- [New to Solar? - Getting Started](#) - The nuts and bolts of getting started generating and selling SRECs
- [MA Department of Energy Resources \(DOER\)](#) - Details on the Solar RPS carve-out
- [DSIRE: Massachusetts RPS](#) - Details on the Renewable Portfolio Standard

chart by amCharts.com



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**Solar Renewable Energy Certificates (SRECs)**

SRECTrade currently operates in states where there are SREC markets. The information on this page is general information describing how SREC programs work. For information about your specific state program see the links to the left.

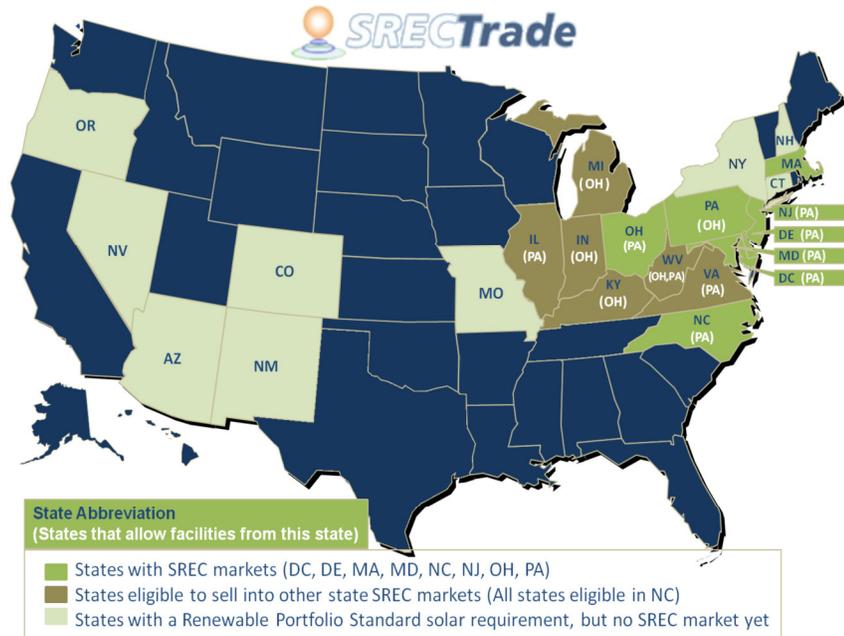
**SREC Market Monitor**

SRECTrade has also partnered with GreentechMedia's GTM Research to provide in-depth analysis of the SREC markets. More information can be found [here](#):



**State SREC Programs**

Here is a map of all the current and potential SREC states:



There are three conditions that must be present in order for a state to implement an effective SREC market:

- 1. RPS Solar Carve-Out:** The RPS solar requirement distinguishes solar from other renewable energy resources and in most cases will value solar electricity at a higher rate than other renewables. Most states will set a target for solar, either as a percentage of the total electricity sold into the state, as a fixed capacity target in megawatts (MW) or as a solar energy target measured in megawatt hours (MWh) or SRECs produced in a year.
- 2. Unbundled, Tradeable RECs:** A state must allow the SRECs to be owned and traded by the generating facility. In some states, your utility company owns your SRECs. This is a common stipulation in state solar grant or rebate programs. Other states have a budget for solar. For example, California is currently not a viable SREC market because the state requires that utilities purchase the SRECs bundled with the electricity that the system produces. The SRECs cannot be unbundled and sold separately.
- 3. Penalty for Non-Compliance:** Finally, in order to have a robust SREC market, your state must implement some sort of fine or penalty for non-compliance. This is commonly known as a solar alternative compliance payment (SACP). The SACP is

what drives the values of SRECs above any other type of REC. Without the SACP, it is difficult to incentivize buyers to pay prices that promote solar growth.

### What is an SREC?

In SREC states, the Renewable Portfolio Standard (RPS) requires electricity suppliers to secure a portion of their electricity from solar generators. The SREC program provides a means for Solar Renewable Energy Certificates (SRECs) to be created for every megawatt-hour of solar electricity created.

$$\begin{aligned} 1 \text{ SREC} &= 1,000 \text{ kWh of solar electricity} = 1 \text{ MWh of solar electricity} \\ 10 \text{ kW solar capacity} &= \sim 12 \text{ SRECs per year} \end{aligned}$$

The SREC is sold separately from the electricity and represents the "solar" aspect of the electricity that was produced. The value of an SREC is determined by the market subject to supply and demand constraints. SRECs can be sold to electricity suppliers needing to meet their solar RPS requirement. The market is typically capped by a fine or solar alternative compliance payment (SACP) paid by any electricity suppliers for every SREC they fall short of the requirement. The sale of SRECs is intended to promote the growth of distributed solar by shortening the time it takes to earn a return on the investment.

Once the installation of a solar system is complete, the system must then be certified by the state(s) in which it is eligible to sell SRECs and then must create an account with the tracking platform used by that state. Once registered, every month, the tracking platform will issue SRECs based on the generation of your system. In some states, estimated generation is used for systems under 10kW, while all other systems are required to submit generation on a monthly basis. One SREC is created for every 1000kWh of electricity created. For example, a 10kW system can generate approximately 1 SREC per month. However, it is up to the solar installation owner to decide how to manage the SRECs that are produced.

Some states will certify solar electric systems from out-of-state and allow the SRECs from those facilities to count towards the RPS. The map above shows what state individuals can sell their SRECs into.

### How SRECs are priced

There is no assigned value to an SREC. Prices are influenced by supply and demand. The supply is determined by the number of solar installations producing SRECs and trading them. The demand is determined by individual state RPS solar requirements and the Solar Alternative Compliance Penalty (SACP) set by the state. The RPS solar requirement represents the number of SRECs that the electric suppliers are required to collect each year. The SACP represents a theoretical maximum value of an SREC, since it is the amount paid per SREC by the electric suppliers if they do not collect enough SRECs. In states, such as New Jersey, where the SACP in 2010 is \$693, SRECs are worth more than a state with an SACP of \$250. You can click here to view a complete [Auction History](#).

### How SRECs are sold

Since it is very costly for electric suppliers to buy direct from individuals, solar owners have limited options for selling their SRECs. Most suppliers will either issue cumbersome requests for proposals (RFPs) or work directly with third-party aggregators and brokers. SRECTrade was founded with a simple mission: To provide the critical final component of the SREC program by establishing a public marketplace connecting sellers directly to suppliers in an inexpensive, easy, transparent and equitable way. We are able to accommodate volume transactions in bilateral transactions with buyers while also providing auction services for individual sellers in the market. For more information on how SRECTrade's monthly auctions work, please see the [How It Works](#) page.

### Getting Started

Here are the steps for getting started with an SREC program in your state:

- 1. Understand SRECs:** Utilize the resources on our website to learn as much as you can about SRECs. Each state program is unique and you can find out more information on the individual state page and in our blog. In addition, learn more about the service we offer on our [EasyREC](#) page.
- 2. Find out where you are eligible to sell your SRECs:** Your state may or may not have a program; however your ability to sell your SRECs into other states could have a significant impact on the value of your SRECs. You may be eligible to get your system certified in many state programs, regardless of if your state has one or not. Everyone should check our [State Certifications](#) page to see the states in which they may be eligible for certification.
- 3. Get your system installed:** SRECTrade works with several installation companies. You should be able to sign up for the EasyREC service through your installer. If they do not offer the service, then feel free to contact us directly.
- 4. Enroll with SRECTrade:** SRECTrade provides two options. If you sign up for the [EasyREC](#) service, we handle everything else including submitting your state certification applications, creating your SREC tracking account and automating the sale of your SRECs in our auction.

If you do not sign up for EasyREC, here are the additional steps:

- 4a. Get your system certified by your state:** Once the system is installed, it is now ready to be certified by your state and any other states in which you are eligible. You can find out more on where you are eligible and how to apply on the

[State Certifications](#) page. Every state handles this process differently, but we recommend beginning the application as soon as possible, before your installation is complete.

**4b. Set up your SREC tracking account:** Every state or region will use a different system for creating and tracking the SRECs. The Mid-Atlantic states use GATS, North Carolina uses NC-RETS, Massachusetts uses NE-GIS. If you opt to manage your own SRECs, you will need to have a tracking account with one of these registries. Once you have SRECs in that account, you can then post them in our auction.

**4c. Create an account online with SRECTrade:** This is the simplest step of all. Complete the online form to create your account and when your SRECs are available in your tracking account, log into your SRECTrade account, select the "Orders" link and place an offer to sell your SRECs.

**5. Understand the timing:** After you initially sign up, it will take a few months before you begin receiving payments. For example, if your system goes online on January 1st, your January generation will be recorded on January 31st. Your first SREC(s) will be actually credited to your account on March 1st. They would then be sold in the March auction, so your first payment would come in late March. After that, payments will come as SRECs are generated. Also note: some states operate on a quarterly basis, rather than monthly.

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SREC – Solar Renewable Energy Certificate – a certificate that is awarded to a qualified solar facility whenever 1000 KwHr of energy has been produced. The facility must be certified by a state regulatory agency and registered with a registry authorized by the state to create and track SRECs.

RPS – Renewable Portfolio Standard – a regulation that requires utilities to supply a specified percentage of electricity used from renewable resources.

Solar carve-out – the amount of energy in the RPS that must be produced by solar, i.e. excludes wind, geothermal, etc.

Utilities are required by law to purchase enough SRECs to prove solar power generates a certain percentage of their retail sales.

In some states the energy produced for SREC qualification can be estimated or instrumented by a meter. In Massachusetts the energy must be metered.

In some cases solar installations may be registered in states other than the state in which they are physically located, to sell the SRECs to those other states. But in Massachusetts, the installations can only sell the certificates within the state.

Utilities purchasing SRECs from homeowners reduces the homeowner's cost of the solar installation.

SRECs can be sold a variety of ways that include the spot market, auction or negotiating long term contracts.

In Massachusetts the price of each SREC is \$300 less a \$15 fee or \$285. However if there is an abundance of SRECs available as it is now, the price homeowners are paid can be less.

Massachusetts has a solar credit clearinghouse auction which is run by the Department of Energy Resources to auction off unsold certificates. The auction will be held 4<sup>th</sup> quarter 2013.

Certificates in general are good only for the year in which they were generated. Unsold certificates from the auction will have their life span extended to three years.

If energy suppliers fail to secure enough SRECs as required by the RPS, they must pay a fee called Solar Alternative Compliance Payment (SACP). A state's SACP actually sets the maximum value of the SREC.

SREC prices are a function of the state's SACP, the supply and demand for SRECs, and the term or length of time over which SRECs are sold.

The Massachusetts SACP is \$550 in 2013, down from \$600 in 2010 and scheduled to be \$347 in 2022.

Massachusetts solar carve-out for 2013 is 135,495MW or 0.2744% of the utility load in 2011.

Only installations under 6MW are eligible for SRECs.

More SREC information is available at [www.srectrade.com](http://www.srectrade.com).