



## Massachusetts Incentives

### Renewable Energy Certificates (RECs) and Solar Renewable Energy Certificates (SRECs I and SRECs II)

Revised- February 17, 2017

#### Preface

Welcome to our thirteenth version of this report since 2010. It is the most popular feature of our website. Usually we begin with a discussion of current market values for SRECs and RECs but this time we need to discuss solar incentive policy changes in the works during 2017. If you are new to these policies and programs they are complicated. It is best to read the “Basic Facts” section. Start on page 5 first then come back to this section after page 9.

Legislation written by the large, investor- owned utilities and ushered to vote by the House Leadership in league with the Baker Administration passed late in the last session. Despite hoopla in the media that this was a pro solar bill, it has reduced incentive values for solar electric facilities and given the responsibility for settling new Massachusetts incentives for solar electric development to the Department of Public Utilities. In many ways, the Governor signed into law a radical restructuring of solar policy which favors preservation, cushioning and an increase in electric utility shareholder profit during the transition to a renewable decentralized electricity supply<sup>1</sup>. It also hurts the solar market in many towns and cities. Formerly account holders served by most Municipal Electric utilities (MUNIs) in Massachusetts had the opportunity to access RECs and SRECs incentives; this new law sets aside their inclusion in new solar incentive policy. While the Department of Energy Resources is attempting to bridge that disconnect by reaching out to MUNIs for voluntary participation, MUNIS cannot access the same benefits the private monopoly electric utilities enjoy<sup>2</sup>.

On the plus side, the law increased slightly the Net Metering “Cap” in Massachusetts. Without a Cap increase the large-scale solar development industry would be hamstrung in 2017; the utilities used their Cap allocation leverage to exact significant concessions. Pro solar legislators were essentially boxed in. They had to approve the bill as the session ended. The Department of Energy Resources (DOER) has released a solar program design meant to capture the intent of the legislation. This new program called “Solar Massachusetts Renewable Target” (SMART) will take at least six months and more likely a year before it can come into full effect. Until then, the SRECs II program will continue at reduced rates per certificate. More on those changes below.

---

<sup>1</sup> Despite declining sales of electricity caused by a variety of forces, investor owned utilities will be assured the same and possibly increased gross revenue amounts from a variety of new bill charges. The Baker Administration and Democratic led legislature is merely continuing generous accommodations begun by the Patrick administration to Eversource (aka NSTAR & WMECO), National Grid ( aka Mass Electric and Nantucket Electric and UNITIL (aka Fitchburg Gas and Electric). Please see our Afterword in this white paper on page 10 discussing energy policy and climate change.

<sup>2</sup> MUNIs are not operated to make a profit and not subject to DPU regulation. With nowhere near the scale of the Investor Owned Utilities (IOUs) somehow they operate more efficiently and offer lower cost electricity. They are far more common in Eastern Massachusetts than Western Ma. There are no MUNIS in Berkshire County.

One salient feature of the pro utility legislation was established in an accelerated DPU docket this past Fall

- For all new PV Systems over 25 kW<sup>3</sup> (except those serving city or town, state and federal govt. accounts) and for all PV systems after their 20th year of operation, net metering credits will be valued at 60% of their retail value.

The next change in a related DPU docket (DPU 16-64) will decide how to target Solar PV customers who zero out their electric bill in any month.

- The utilities will levy a new charge to customer's bills. Called the Minimum Monthly Reliability Contribution (MMRC), this charge is still being defined. It is expected the MMRC will be a catch-all category and go far beyond discouraging solar producers. Because the charge can be modified in future, complicated rate cases and could apply to all ratepayers, the utilities worked very hard to get this part of the law enacted and vague ...*Reliability* can mean almost everything and *Contribution* is an odd word to use for a new charge. The important regulation to understand is 220 C.M.R. §18:00.
- Those interested in getting the details on hearings and comment deadlines for the DPU dockets and copies of our written comments should contact us by email: [info@bpvs.com](mailto:info@bpvs.com)

BPVS has been active in the DPU dockets for many years and will continue to advocate for sensible regulations. Regarding the new DOER "SMART" program, making it fair to the residential, commercial, agricultural and institutional customers we serve is our priority. Both the legislation and the SMART program design seem to most favor solar developers who have already locked in large multi megawatt projects with various Massachusetts towns and cities. The new program design is quite complex and as written still unclear on important dollar values and prerequisites. Some program mandates will likely face legal challenges.

We object to a provision that automatically confers ownership of solar environmental benefits to the utility. Even if the price ranges proposed were fair (they are not<sup>4</sup>) the solar facility owner must have the choice to dispense or retire their clean energy 'attribute(s)' resulting from their investment. There are some encouraging measures in the new program for low-income residential accounts and communities and some new incentives for solar PV systems with storage capacity. Also those provisions protecting open lands, forbidding clear-cutting and top soil removal at large solar development, ground mount sites are important and long overdue. Environmental groups not the utilities advocated for land use provisions. The DOER webpage on the legislation and the new program may be found at

<http://www.mass.gov/eea/energy-utilities-clean-tech/renewable-energy/rps-aps/development-of-the-next-solar-incentive.html>

At this link you can download all stakeholder comments on the program including ours and see when hearings will occur and comments are due.

---

<sup>3</sup> Actually any new solar PV system on a single phase circuit (such as most residences) over 10 kW in size will be subject to this 40% 'haircut' too. Any new three phase PV system under 25 kW and any new single phase (or *split* single phase for those well versed in electrical specs.) under 10 kW will still receive near full Net Metering value for export credits.

<sup>4</sup> While DOER has suggested an incentive price range for various size and type of systems, their *basis* does not include external costs of pollution and climate change hazards, or the true value of solar, especially small solar PV systems to grid operations.

## Solar Incentive Summary for 2017

- **SRECs II program will continue until *New Solar Massachusetts Renewable Target (SMART)* program is in effect probably January 2018**
- **Federal Solar Tax Credit will continue through December 2020**
- **Near Retail Net Metering Credit values will continue for most residential customers**
- **Market Net Metering Credit ( 40% lower than near retail) is in effect for most commercial and institutional customers**
- **It is still prudent for large system plans to go forward in NSTAR and WMECO territory and get on the Net Metering Allocation wait list for National Grid territory**
- **There is a good possibility accelerated action by the utilities in DPU proceedings will add the Monthly Minimum Reliability Contribution to monthly billings of existing and new solar owners before the end of 2017.**

### SREC Market Prices

**SRECs I from the third quarter of 2016 will sell or are selling for just over \$325.00 each on the open market. The closed SREC 1 tranche will mean the market is slightly under-supplied for the remainder of their term.** Thus, SREC 1 prices in the next few years will exceed the \$285.00 Auction Clearing price benchmark. The almost guaranteed high value for SRECs 1 in coming years is one reason the utilities in Massachusetts have been fighting solar on every front they can. The last SREC 1 should be sold in 2024.

Depending on your contract with your aggregator you may receive a bit better or a bit less for either SRECs I or for SRECs II. **SRECs II from the third quarter of 2016 solar production will sell or are selling on the open market for around \$260.00 each.** Now it is likely SRECs II will never earn their Auction Clearing price which ranges from \$285.00 this year down to \$199.00 in year 2024. **We expect an average price of \$200. each per SREC II for their term life for those PV systems installed prior to January 8<sup>th</sup>, 2017.** The last SREC II of this vintage should be created and sold in 2027.

### **SRECs II Continuing Program**

As noted above until the new SMART solar program is in effect, SRECs II will continue. That means if you install a PV system this year your PV production for the next ten years will be eligible for this continuing program. You will be grandfathered in, but not at the same rate as those who were eligible for the program before January 8, 2017. The new rate will be 80% of their value for most residential customers. That is, aggregators will sell your late “vintage” SRECs II at a 20% discount on the market. **We expect this new ‘vintage’ of SRECs II will average in value over the next ten years at ~ \$150.00 each for residential and small commercial size systems <25kW.** DOER has set a table of discount factors on SRECs II for large systems and specialty systems, their rates range from 70% to 55 % of the pre 2017 base value.

**One caution** - if the new program starts late in 2018, meaning more PV capacity has come on line for the expanded SREC II program , the average value of SRECs II for new and old systems may be diminished further as supply of the certificates increases.

## RECS THE SAME OLD STORY

**For pre -2010 PV owners of small systems, you're only eligible to sell production attributes as RECS and these will still sell at \$20.-\$40. each over the next two years.** Small system PV owners of RECS will find few brokers interested because of transaction costs. BPVS regrets repeating this same message to early adopters of PV, our customers and others, who have looked to us and a few progressive legislators for help. In every policy discussion on Solar and net metering this year and in years past we have asked that SREC status be granted to eligible early PV owners. How is it possible to incentivize one solar kilowatt-hour made today ten times more than another? Those who built the first eighteen Megawatts of capacity in the state deserved better. We will still advocate a place in the SREC II extension & "SMART" incentive programs for them.

DOER officials and others will counter that these early adopters received generous rebates in the 2002-2009 era. Some did but not the residential, small commercial and institutional sector. We have detailed to DOER officials and legislators how to judge eligibility for these worthy early adopters. It is the same criteria they used to waive the same requirements for large solar developers of pre -2010 projects.

Solar policy should not have a double standard that favors this "spreadsheet solar" segment with access to officials and politicians. Here by noting prices and trends we are trying to provide guidance to those balancing their energy budget with environmental aspirations. Many of our customers self -retire their SRECs or RECs, others just sell them for a few years then retire them while others need the revenue from them for the full term to afford ownership of their PV system. Since 1998, BPVS has been against separating attribute(s) from electrons to create these Renewable Energy Certificates and Solar Renewable Energy Certificates of varying vintages and values. Almost every other way of incentivizing solar is better. But, since these certificates were the only production incentive offered, we have advocated for a just policy.

## THE RECENT HISTORY

- The rapid build out of Solar PV capacity in state since 2010 had exhausted the original SRECs I "Solar carve out" of 400 Megawatts (MW) within the Renewable Portfolio Standard(RPS) so an emergency amendment to the RPS regulation was made in the fall of 2013 to provide a transition cushion. With the cushion, the original 'carve out' expanded to nearly 650 MW.
- The establishment of SRECs II through another amendment of the RPS regulation (225 CMR §14:00) was made in May 2014 expanding the 'carve out' to 1200 MW then capping it at 1600 MW with the 2016 legislation.
- While there was talk about a new SRECs III program, the 2016 legislation established a radical change instead. As part of the utility controlled SMART "incentive package", net metering value and / or energy value will mix with the clean energy benefits or 'attribute(s)', SRECs I and II formerly represented. Then this bundle value will be discounted, depending on the facility capacity and type. The 'attribute(s)' are still separated from the electron(s) as with SRECs & RECs but now there will be no objective, multi-player market for their valuation and transaction.

They will simply count as Class 1 RECs owned automatically by the utility. The PV owner has no choice. This is sort of like private land taking by eminent domain.

- Even so these new program participants may receive more \$ for their Class 1 RECs directly from the utility than those early adopters with pre 2010 PV systems who were disenfranchised when the Solar Carve out began in 2010. Again, if the SMART program can be altered, now is the time to redress this long time injustice.

### Basic Facts ( Revised 2-17-2017)

RECs & SRECs are certificates representing the clean energy attribute(s) of *Renewable* and *Solar Renewable Electricity*. They are not real energy, they are just measured the same way as electricity. One certificate equals a MWh (megawatt hour). 1,000 kilowatt hours (kWh) equals 1 MWh. Thus every 1000 kWh or 1 MWh produced, represents one Renewable Energy Certificate or Solar Renewable Energy Certificate. 1 MWh is slightly less than the average yearly output of a 1 kilowatt (kW) photovoltaic system in our region<sup>5</sup>. Generally, a Massachusetts SREC can only be produced by a PV system on line after Jan 1, 2010 although waivers were given by Patrick administration officials to many projects installed in 2008 and 2009. RECS are less valuable and result from various ‘attribute(s)’ defined technologies: wind, low impact hydro, biomass and from any solar PV system installed prior to 2010 and no earlier than Jan.1<sup>st</sup> 1998<sup>6</sup>. Other solar devices, e.g. for hot water, air heating cooking etc. are ineligible however in 2014 solar hot water systems became eligible for Alternative Energy Credits and DOER is now setting rules and values for them as *solar thermal devices*. You should also note even Natural Gas use at Combined Heat and Power facilities is eligible for Alternative Energy Credits (AECs). It is possible, battery storage systems may be eligible for AECs.

Traded as if they were real electricity, measured as a MWh, a REC or SREC represents the associated renewable energy “generation attribute” separated from the energy. A Generation Attribute is defined in Massachusetts- 225 CMR§14.00 as “ a non-price characteristic of the electrical energy output of a Generation Unit including, but not limited to, the Unit’s fuel type, emissions, vintage, and Renewable Portfolio Standard eligibility.”<sup>7</sup> More often than not the plural of “attribute” is used when detailing what comprises the value as separated into the tradable certificates, RECs and SRECs. Because officials and others have been unclear in

---

<sup>5</sup> Between 11:30AM and 12:30PM, on a bright sunny day a 1 kW (kilowatt) system will generate 1,000 watthours or 1 kWh(kilowatt hour). If you leave a 100 watt light bulb on for ten hours it will use 1 kWh. The average New England home without an electric hot water heater uses 650 kWhs per month. In twelve months it will use 7,800 kWhs, or 7.8 MWhs and need a 7 kW PV system to offset its’ utility purchases of electricity. A 7 kW PV system also will earn between 7 and 8 RECs or SRECs. When the system came on line first determines REC or SREC status.

<sup>6</sup> Certain PV systems installed in 2008 & 2009 may be eligible if those system owners did not receive rebates or grants from the Commonwealth Solar I program or its predecessors funded by the Massachusetts Renewable Energy Trust (MRET) or received a waiver from DOER officials. Pre -2008 installed photovoltaic generation systems are not eligible for the SRECs program. All post 1997 PV systems are still eligible to produce and trade their RECs as Class I RECs . Solar PV systems installed before January,1998 are not retroactively included within RPS ( Renewable Portfolio System ) legislated incentives for Class I RECs even though they have been and are generating solar kWh on the grid today. With DOER special permission they can qualify to sell attributes as Class II RECs. Class II RECs are even less valuable . The Classifications of RECs and AECs ( Alternative Energy Credits) by vintage and technology is labyrinthine and would take another essay to discuss.

<sup>7</sup> How this definition is constructed, construed and confounded in communications by Energy officials, REC and SREC brokers, utility executives and then in the marketplace by solar salespeople might interest students in Semiotics and Logic but screams for the attention of officials concerned with Consumer Protection.

their usage of terms and the definition contradicts itself, we write the word as *attribute(s)*. Solar old timers lump the whole mess under the term: *Vapor Watts*. We have to recognize that the *bureaucratess of Generation Attribute* and ‘SREC’ hides societal, and especially utility, denial of the true state of our generation mix. The cleanliness of solar energy has an arbitrary separate value but dirty electricity is just electricity. There are no penalty payments or ugly energy certificates for cancer causing, climate changing, respiratory system compromising toxic attribute(s) of the conventional fossil fuel and nuclear utility mix.

The ‘C’ in REC or SREC stands for Certificate once sold, although Credit is commonly used to mean either the attribute(s) or their transmutation into an official certificate. There is a lucrative market for these digital , not paper, certificates of renewable generation- *goodness*- exchanged within the New England Power Pool Generational Information System (NE-GIS or NEPOOL -GIS) . Utilities and electricity suppliers must meet a state regulated Renewable Portfolio Standard (RPS). RPS compliance allows their purchase of RECs or SRECs in lieu of real renewable electricity. While utilities are the primary buyers of RECs and SRECs, there are also voluntary purchasers who wish to lighten their carbon imprint and financiers who buy their potential future value. Often large- scale solar developers use them as collateral. Aggregators are SREC/REC traders listed by the state as eligible brokers to sell these certificates on behalf of PV system owners or certificate owners. Only Massachusetts utilities have to purchase Massachusetts SRECs. RECs can be purchased by Massachusetts utilities from out of state generators in the New England Power Pool.

### **Don’t Confuse SRECs with Net Metering**

The actual energy from a PV system measured on the solar kWh meter at the site reduces your electric bill<sup>8</sup>. This is the primary value as electricity. Let’s repeat it - a different financial benefit from tradable RECs or SRECs represents the separated clean attribute(s) of solar. The real electricity flows through wires.

Once a PV system owner sells the attribute(s) as RECs or SRECs, however, the energy from their PV system is just as “dirty” or unsustainable as the conventional electricity mix. This may surprise some people because it is not widely discussed. In 2012 the Federal Trade Commission stepped in to clarify fact and fiction in the clean energy claims made in the marketplace. See page 34 example 5 in the Federal Trade Commission’s [Green Guide](#)<sup>9</sup> for specifics on PV . If you sell the RECs or SRECs you can say you generate and sell clean energy not that you use it. The Vermont Law School in 2015 won a case against Green Mountain Power their state’s largest utility, because of claims the utility made to their customers that it was supplying renewable *solar* clean energy in their mix . The law suit indicates they were selling the attribute(s) from their customer’s solar PV systems as RECs in the Massachusetts RPS market! The impression consumers have that they can sell their

---

<sup>8</sup> The electricity is used within your building as it is generated and this defers you buying its equivalent from the utility. Often enough, the electricity generated from the PV system can exceed your needs at the moment and the extra is automatically exported to the grid. Since Jan.1st 2010 every exported kWh you send to the utility grid is compensated at almost the same retail rate you pay for electricity Formerly, exported power was compensated at the utilities wholesale rate approx. \$0.03-\$0.06 per kWh. Under true net metering in MA the value of your exported kWh is at the retail rate (approx. \$0.126 -\$0.285 per kWh) minus system benefit charges per kWh for the Massachusetts Renewable Energy Trust administered by DOER, the Department of Energy Resources & for the Energy Conservation & Energy efficiency funds administered by the various utilities. The compensation rate is changing as utilities’ de-couple’ electricity pricing and new rates go into effect. Consider~ \$0.18 a safe export kWh value for 2017 for Eversource and National Grid customers until the new SMART Program comes into effect ( see page 1 and 2) .

<sup>9</sup> <https://www.ftc.gov/sites/default/files/attachments/press-releases/ftc-issues-revised-green-guides/greenguides.pdf>

PV system RECs or SRECs and still pat themselves on the back for using green clean electricity at their site is wrong. Despite what most solar sales people say you cannot have it both ways<sup>10</sup>.

### **How can I sell my SRECS or RECS ?**

You need to sell your attribute(s) as RECs or SRECs through an aggregator /broker. It is not cost effective for small PV system owners to trade on the NEPOOL –GIS.

DOER has compiled a list of aggregator/brokers you can contact for detailed offers.

<http://www.mass.gov/eea/energy-utilities-clean-tech/renewable-energy/solar/rps-solar-carve-out/>

Look for the “Market Resources” link near the bottom of this web page .

If the list fails to download or is not in a readable format for you be sure to contact DOER at their email address also listed on this webpage. If you are our customer, we will send you the current list and our detailed guidance on dealing with an aggregator.

To enable the sale of SRECs/RECs your PV system production must be reported monthly to the Massachusetts Clean Energy Center Production Tracking System (MassCEC-PTS). Formerly BPVS made sure your system was registered on the PTS. Now DOER will only allow aggregators to register a system on the PTS. If you do not wish to sell your RECs or SRECs we have to advocate and seek a waiver so you can report on the PTS.

We’ll present options to manually report or to provide automatic reporting equipment installed with your PV system. Automatic reporting is required if your PV system is over 10 kW in capacity. With either choice, BPVS installs a revenue –grade, properly calibrated, solar, kWh meter identical to the best meters utilities use.

Manual reporters will receive a username and a password from the PTS administrator. Each month the PTS system sends you email notices to enter your production tally from the solar kWh meter. You’ll receive multiple notices and have a ten day window to access your PV system page on the PTS and enter the total number of solar kWh registered on your meter. If you ignore notices or forget to make the entry you can catch up the following month. We do not advise you skip months often however because the PTS system is wary of production entries that appear high and will sometimes challenge you for an explanation.

Automatic reporting equipment uses a datalogger (Data Acquisition System or DAS) interfaced to the solar kWh meter and hooked into your computer network or to direct internet access. There are many bells and whistles with automatic reporting equipment and brands and they range in cost from a few hundred dollars to several thousand. The key part of any DAS is the PTS reporting service. Most customers choose a ten year service plan; the device manufacturer is designated as your PTS reporting representative and is obligated to update your PTS tally each month for ten years.

---

<sup>10</sup> Now let’s be really clear .. If the RECs or SRECs I or SRECS II are sold, whether you are the system owner or if you leased a PV system or have just a power purchase agreement for the PV system output, then real electricity is used in your building or exported to reduce your electric bill. But the ‘solar’ – clean energy attribute(s) of that electricity is not; it has been sold through an aggregator or the utility will take it as part of the new SMART program bundled incentive. In truth the real electricity you use is the dirtiest power: coal, oil or natural gas fueled – not solar and not a mix of hydro or wind or anything remotely clean. The money received for the RECs or SRECs is payment for “sin eating” if you will. This type of transaction is a direct descendant of papal indulgences sold in the Middle Ages in Europe. Functionally the logic behind the transmutation of attribute(s) is akin to the most muddled reasoning of Scholasticism.

You are only eligible to sell RECS from your pre -2010 PV system; there are conflicting rules from the MassCEC –PTS and DOER on the process <sup>11</sup>. More about the PTS and its' relation to SRECs or RECs may be found at :

<http://www.masscec.com/production-tracking-system>

If you do not have high speed internet or cell phone access at your site ( you are not alone in Western Mass) and/or if you simply prefer not to use email, BPVS can provide PTS reporting services for you in a special arrangement with the PTS.

Once you choose to sell your RECs /SRECs to an aggregator, you will give them permission to access your production tally on the PTS. A degree of fraud protection is part of the PTS software; it can identify outliers and request clarification if you report more production than is possible or likely given the weather and the tally from comparable PV systems in any given month. There is also a degree of quality control; the PTS alerts you if your PV system is producing below par. Whether you manually report your tally each month to the PTS or report automatically, you too have access to the PTS production tally page on their website. Massachusetts should improve the PTS to make data available to all including academics and to quantify production in a user-friendly way to show emissions deferral.

The aggregator will submit to NEPOOL –GIS and DOER a statement of qualification for your PV system<sup>12</sup>. All of the technical details you and they need for this document are included in our contract and system design documentation however it's often the case that an aggregator will send you a form, then tell you to ask us to fill in the technical sections for you. We are happy to do this at any time at no charge. Sometimes our customers switch aggregators. Our documentation help is still a free service through out the ten year certificate term.

At this point and after your solar system has made at least 1000 kWh or 1 MWh, you are ready to get paid for your SRECs or RECs. The aggregator you select will have a variety of plans you can option to sell the SRECs or RECs. Unfortunately, neither DOER nor the Massachusetts Clean Energy Center nor the Office of Consumer Affairs and Business Regulation present any detailed guidance on these important plan variables. At BPVS we know that it is a conflict of interest for us to recommend any aggregator/broker, advise you on their offers or be both an aggregator and design /installation firm.

---

<sup>11</sup> MassCEC- PTS has suggested that pre -2010 PV systems which now want to qualify to sell RECs and report to the PTS monthly must have automatic reporting even if their PV system is under 10 kW in capacity. BPVS has tried to have this policy changed as it is a costly burden for small PV owners, some of whom do not have reliable internet access. Pre 2010 PV owners who wish to increase their PV capacity now face unnecessary complications. Expansion capacity has to be separately metered so REC and SREC tallies are isolated which involves greater expense in power conditioning units, switchgear and solar kWh reporting. We now have customers who've expanded their systems several times and have three separate solar kWh meters: one for their original RECs eligible increment, a second for their SRECs I increment and a third for their SRECs II capacity.

<sup>12</sup> DOER publishes on its website a list of all SREC eligible PV systems copying information from this statement of qualification that identifies your site by name, the aggregator representing you, system costs and technical details.

## BPVS POLICY & DISCLOSURES on RECSs/SRECS

1. Our contracts for PV installation, service or repair do not include any clauses with conditionals or any vague language to take ownership of SRECs, SRECs II or RECs from you, or take implied equivalents such as ‘Carbon Credits’, ‘Emissions Credits’, ‘Pollution Offsets’, ‘Clean Energy Attributes’, ‘attributes’, credits’, ‘Environmental Financial Incentives’, separated benefits, or ‘Green Tags’. All of these are synonyms for what DOER means by ‘Generation Attribute’.
2. BPVS cannot recommend any aggregator/broker to you. It is common practice for PV firms to represent aggregator/brokers, and receive commissions from them. Neither the installer nor the aggregator/broker is required to disclose such relationships. Some PV firms are also aggregators.<sup>13</sup> When shopping for a PV system if the salesperson does not disclose your eligibility for RECs or SRECs or suggests that they will “take care” of that for you...be careful. You may unwittingly sign away a significant amount of money. A 5 kW PV system can produce 58 or more SREC II certificates in 10 years; at \$200.00 Per SREC II that is \$10,000.00. We supply you with the full list of MA eligible aggregator /broker firms to select one for yourself. Many of our past customers experienced in shopping for and switching brokers are available to contact if you want objective guidance.
3. It is not that hard to research offers yourself; the sign up process with an aggregator is easy. We always are ready to help you fill in the PV technical sections of the sign up process.
4. BPVS supplies calibrated solar kWh meters identical to the best meters utilities use; our meters are digital, that is, easy to read and supplied with tamper indicating seals, unbroken and 0 kWh registered at start. We register the solar kWh meter serial number in our files and add a tamper indicating seal to the meter base hasp. Automatic DAS equipment we supply is from a third party provider unassociated with BPVS or an aggregator/broker. Should the Department of Public Utilities ever challenge the meter readings or DAS reports from your site we’re happy to verify the equipment installed is *revenue grade* and the wiring is properly routed and connected for *revenue grade* integrity.
5. **You do not have to sell the SRECs/RECs from your PV system.** Not selling them means you have retained the clean energy benefits or ‘Generation Attribute(s)’ with the electricity. The BPVS website includes a table to calculate deferred emissions from your personal or “on site” solar energy use. Go to: [Clean Energy Stats](#). The official DOER manner of retiring RECs and SRECs will actually cost you money so all our customers self-retire their attribute(s) before they are minted<sup>14</sup>.
6. Aggregator/Brokers typically charge a fee ranging from 2% to 10% of the sale price they get for your SRECs/RECs. For small PV systems the aggregator bundles their SRECs with those of others to trade in large blocks. Consult your tax advisor; generally proceeds to you from SRECs/RECs sales are

---

<sup>13</sup>. Most Solar Lease or Power Purchase Agreement firms are, or control, aggregators/brokers. Some solar contractors are also aggregators.

<sup>14</sup> Minting: The process of depositing attribute(s) on the NEEPOOL GIS to turn them into immediately tradable RECs or SRECs. Re-minting: Depositing attributes in the DOER Clearinghouse Auction to create extended life SRECs. Again the rules and details of the SRECs and RECs program are labyrinthine and change often.

considered taxable income even though the aggregator does not send you an IRS form 1099. A low commission percentage does not mean you'll get the best per SREC price from that aggregator. Sometimes brokers with high fees have provided the best overall return to PV owners.

7. This report includes values for SRECs and RECs based on public information at the time of the report date. BPVS provides this price information, projections and analysis in a conservative light as a service to our customers assessing risk. Some solar sales pitches present SRECs and SRECs II values at their highest possible price in their financial analyses. RECs history, SRECs recent history causes us to refrain from such charming optimism for this complex market.

### **Afterword**

The nearly fifty-year-old, transition to clean energy needs to accelerate. It is shameful how much time has wasted away on frivolous concerns and how painful it has been to preserve the fossil fuel hegemony. In many of the poorest regions of the Globe climate change will have the most devastating upheavals. In Massachusetts and across the nation in the last few years politicians have allowed utilities to put solar development on pause so they can promote greater reliance on natural gas in our region and fossil fuels generally.

Without question, some solar opportunists have discredited the solar effort and some critics have good cause to complain that solar incentives in the state have been too generous for the large solar developers including those who push solar leases in the residential sector. Massachusetts has done a poor job on consumer protection and in establishing solar as a licensed trade. Formerly Massachusetts incentives were tuned just right for a middle class family to take a loan out to pay for a PV system. But the programs were rapidly exhausted by ravenous solar lease companies ( usually headquartered out of state) for whom they were a bonanza. The SMART program so far appears to tune incentive levels just right for large solar developers with locked in municipal projects and the residential firms with armies of high pressure salespeople. There won't be much left in a year or two for the Massachusetts residential and commercial market participants who want to support local businesses.

This new program once again gets incentives wrong by continuing to feed to RPS mandates for just the Investor Owned Utilities (IOUs). We need to establish a statewide Renewable Portfolio Standard and include in that a Solar Bank or Renewable Utility, owned by the people. All electricity distributors and/or suppliers including the MUNIs should pay penalties on their dirty power to this public fund. Then the Solar Bank or Clean Energy Peoples Utility can reward clean energy producers. Environmental benefits are not attribute(s) to act as separated, transactional symbols. Lets respect the physics of electricity generation and reward benign prime movers, proximity and simultaneity to load, and their little or no harmful consequences to the environment. There are very good provisions in the new program to enfranchise low-income electricity consumers and prevent barbaric land use practices by large field solar developers. We hope readers of this paper will engage their neighbors and legislators to share the [Mass Power Forward Coalition](http://mapowerforward.com/)<sup>15</sup> effort to improve this program and pass new legislation to chart a truer course for renewable energy and efficiency. Please Contact us , we welcome your comments and questions. E: [info@bpvs.com](mailto:info@bpvs.com)

---

<sup>15</sup> <http://mapowerforward.com/>