

VIA Email to: DOER.SREC@state.ma.us

March 25, 2012

Michael Judge, RPS Solar Carve-Out Program Coordinator  
Massachusetts Department of Energy Resources  
100 Cambridge Street, Suite 1020, Boston, MA 02114

Dear Michael,

Re: Comments on Regulatory Changes to 225 CMR 14.00 RPS Class I

I thank you and the DOER for providing the opportunity to comment on the rulemaking currently being proposed to alter 225 CMR 14.00 RPS Class I.

I believe the SREC program described in these regulations is not succeeding in its central mission to efficiently allocate the more than \$1B funds that the state has directed be spent to support the build out of solar power infrastructure in the state.

Furthermore, I believe the DOER's own processes around designing the SREC program and managing and potentially extending it could be altered to help alleviate the problems the program is facing. Improving the transparency of the DOER's intentions and actions is critical to improving confidence among current and potential program participants.

I propose the DOER take the following actions to begin rectifying the situation. First, with respect to the specific rule change proposals the DOER has made:

- 1) **Reject the proposed change to 14.07(2i)**, the “end of program” rule change that would substantially reduce the price outlook for opt-in qualified credits in the last three years of the program. There is no clear reason to go back on established commitments to investors who have already supported projects in the state, and doing so substantially decreases investor confidence in new investments in the current or subsequent programs.
- 2) **If the DOER decides that a change to 14.07(2i) must be made to ensure the program does not extend a full year, adopt instead an alternative change** which puts control of whether the program will be extended in the hands of retail electricity suppliers (RES) while maintaining much of the positive benefits of the current version of 14.07(2i) for solar power owners and investors. I outline such an alternative later in this document.
- 3) **Do not change 14.07(2d), the “TCO rule change”, until a technical review session is held.** I believe that communication from the DOER has contributed to a misperception among many market participants that this rule change will primarily “increase the responsiveness of...[the TCO]...to

current market conditions” – the current oversupply – without also describing that such a change will have a complex, substantial impact cascading into later years that may favor some market participants and not be beneficial for others. I am not convinced having seen no evidence that the DOER has fully considered a range of potential interventions, modeled the positive and negative impacts, and appropriately weighed stakeholder interests in making the current choice.

- 4) Hold a technical review session open to all market participants before the current rule changes are adopted** where the DOER can present and answer questions about the logic and modeling behind each of the rule changes it has proposed. Such a session will serve at least an audit function, ensuring that the DOER has done the background work necessary to ensure the proposed changes will likely have the impact they intend, and that the risks that these changes may have other less desirable impact(s) have been considered adequately. I present below a motivating example where the DOER’s modeling and risk assessment may not have been sufficient in earlier work related to the SREC program. Such a session will also contribute to improving transparency in line with the additional changes proposed below.

I also urge the DOER take the following steps to increase the transparency of its actions and intentions, ensure that the marketplace is fully open to all current and potential participants, and increase confidence among current and future market participants that the SREC program’s regulations will not be substantially changed in favor of one set of stakeholders or another without legislative action.

- 5) Adopt a more transparent and open rule change process.**
- Open all rule change discussions the DOER has that occur among all but one or a few market participants to the public from the very beginning (e.g. no limited-invite, unpublicized meetings as was the case for a DOER-organized discussion in November 2012 when many of the current rule change proposals were first presented to many market participants). Publish all official materials publically.
  - When a rule change is under consideration have the DOER provide as part of its proposed rule change documentation a detailed description of why each rule change is being considered and the impacts (positive and negative) the DOER expect the changes to have.
  - Organize a public, written communication process over a long enough period and with sufficient steps where the views of different stakeholders can be taken in by others and responded to in detail (including technical detail) and at length.
  - Ensure the rule change process ends with a final presentation from DOER where the DOER responds to stakeholder concerns and provides justification for the final decision.

- 6) **Adopt and publish guidelines as soon as possible that describe to SREC market participants under what conditions future rule changes may be considered.** Does the DOER consider an auction failure (or multiple years of auction failures) sufficient reason to intervene? Or several years of undersupply and hence near-ACP SREC prices? Or a cumulative program payout above some level as reason to intervene on behalf of rate-payers?

Sincerely,

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## **Supporting Material – Background**

The Massachusetts Solar Carve-Out program has so far been a success overall, increasing total solar power capacity in the state from less than 20MW before the program started to nearly 250MW a little more than three years later.

That success is largely due to the more than \$1B in funds from Massachusetts rate-payers that has been directed to support the construction of solar power infrastructure in the state.

It is a separate question whether the SREC program designed to allocate those funds efficiently has been suitably effective.

In many ways the SREC program has not been successful in that regard. A program designed to correct for imbalances has swung wildly from two years of heavy undersupply (2010-2011) to what looks to be three or four years of heavy oversupply under current rules (2012 to 2015 or 2016). With the current outlook allowing for as many as three successive years of heavy oversupply starting in 2012, many market participants have come to the conclusion that the outcome of the 2012 clearinghouse auction is at risk. Correspondingly, SREC spot prices for the 2012 vintage have dropped substantially below the \$300/\$285 auction floor. As well, forward contract prices for SRECs out to 2017 or 2018 indicate a market that sees the long-term value of SRECs at a severe discount to the floor, suggesting substantial concern among market participants that the framework of the program may not hold as originally intended.

Solar infrastructure is effectively being built in the state but at a perceived subsidy level of perhaps \$150 or \$200 per SREC, while rate-payers are potentially on the hook for \$300+ per SREC in subsidies depending on how the market actually develops in the years ahead. Rate-payers have essentially made a volatile bet with investors about how the program will develop in years after the 400MW cap has been reached, when the fluctuations in the SREC market will have no direct impact on the incentives for further solar installation in the state.

That the DOER is considering an intervention to change the market rules shows their own understanding of the importance of improving the perception of the stability of the program. However the potential for rule changes, those currently being considered and unknown ones into the future, are contributing to the lack of trust in the program. “You know they are going to zero, right?” is the comment one potential investor has made when discussing the potential investment opportunity in Massachusetts SRECs that captures the tone of many such discussions.

As far as I can tell, Massachusetts SREC market volatility has scared away smaller, less connected investors, as well as larger investors who would enter but for an established position in the market. Rather than building a large and diverse investor base with experience supporting Massachusetts solar projects that could

help drive future solar growth in the state, investors with connections and long-term experience dominate. Improving the DOER's transparency, both of actions and intentions, is critical.

## **Supporting Material – Issues with past DOER analysis**

Here is an example of what seems to be a potential error in the DOER's original design of the SREC program - one that (if true) has contributed to the oversupply we are now experiencing - and that could have been avoided by more public access to the DOER's detailed modeling for the program back when they were first designing it. I list this here as a motivating example for the DOER to open up its rule change process and include more technical reviews of its results.

The carve-out regulation sets the 2010 and 2011 compliance obligation at specific levels (instead of using the TCO formula, which didn't kick in until 2012): in 2010 the mandated compliance obligation was based on assuming 30MW installed, and in 2011 on 69MW installed (these two numbers are expressly written into the regulation) - these are equivalent to 34K SRECs in 2010 and 79K in 2011.

The problem with this is that MW installed in a year only generate power for part of the year - based on the actual experience of the program, at about 50% of the full year level. So in the first year of the program, to hit 34K SRECs generated, something like 60MW would have had to be installed. But in 2011, because we would have started the year from a 60MW installed base, we would only need 9MW more of full-year capacity, i.e. roughly 18MW of installed capacity in the year. That seems like quite an odd pattern.

Restated: the carve-out seems to have been built around 60MW of installation in 2010 and then 18MW in 2011, because the program did not account for (a) the partial year impact of the first year's installation, and then (b) the fact that much of the SREC growth from year 1 to year 2 would come not from new installations but instead simply from the first year's installations moving from a half year of production to a full year of production.

Hence the 2010 compliance obligation was very high, installation did not come close to meeting it, and roughly 30K of ACP was paid. That large ACP payment in 2010 has had two effects on where we are now: it reduced the 2012 TCO by 30K due to the ACP correction, increasing the # of credits going into the 2012 auction and putting pressure on 2013, and then that in turn reduced the 2013 TCO (which builds from the 2012 TCO) by roughly 30K.

I estimate the 2013 TCO would be in the 150-160K range instead of the current roughly 135K (absent rule change) had the 2010 TCO calculation taken into account the average half-year effect for new installations. Hence getting the 2010 compliance obligation so far off was a contributor to the market now being in its second year of heavy oversupply with as many as two more years coming without substantial rule changes. Further, note that the 50K adjustment the rule change proposes is only somewhat larger than the impact that not having a high 2010 ACP would have had.

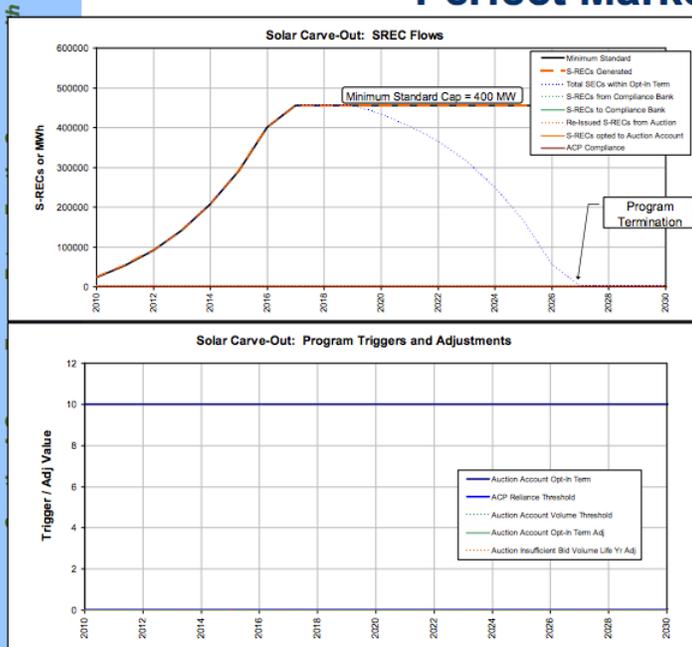
Did the DOER really make such a mistake, not accounting for the fact that 30MW of installation activity in the first year would produce only 17K and not 34K of SRECs?

Perhaps there is some other explanation, but here is further evidence around the potential mistake:

In October 2009 the DOER made a presentation about the structure of the program (see figure below). It describes a scenario in which the DOER assumes the market will start from a specific first-year installation volume (20MW instead of the 30MW that was eventual put into the program, but that difference is not important).



## Price Support Mechanism Scenario Analysis Perfect Market Balance



- PV installation starts at exactly 20 MW in 2010 and grows at exactly 30% per year.
- No policy triggers or adjustments.
- Installation meets Minimum Standard exactly each year, with no reliance on ACP or Auction Account.
- Term provided to generators to opt-in to Auction remains at 10 years.
- Minimum Standard Cap is reached in 2017, and program fully expires in 2027.

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The presentation page shows each year's installation volume growing by 30%: from 20MW installed in 2010 to 26 in 2011, etc. (similar to the actual carve-out using 30 and 39MW volumes for 2010 and 2011, where the 69 in 2011 is cumulative: 30 + 39).

All of that is done correctly (in hindsight the 30% growth rate vs the roughly 100% per year we've seen is low, but that isn't the issue.)

Here's the issue. Look closely at the graph the DOER presented on the above page - which shows the number of SRECs expected per year - and compare to the numbers calculated below using both the incorrect and correct approach to calculating the

SRECs produced from installation during a year (ie taking into account that in-year installation will only generate 50% of a full year's SREC volume):

For 2012, the correct SREC calculation should be 72K while the incorrect one is 92K; the DOER graph looks like 90K.

For 2014 the correct volume is 173K, the incorrect volume is 206K; the graph seems to show something slightly over 200K

For 2016 the correct volume is 345K, the incorrect volume is 400K, the graph shows 400K.

These gaps are small, but they are significant particularly in the early years of the program. Looking back to the actual program regulation, the idea that 2010 installation could achieve 34K of SREC production is, looked at in detail, very hard to believe when instead it is viewed as needing to hit 60MW in one year, and that miss contributed to the oversupply situation we are in now.

This error in fact runs throughout the scenario calculations the DOER presented in October 2009. Where the DOER said that 30% growth would lead to a perfectly stable market, in fact their using the wrong growth model meant that in practice a period of oversupply was certain under such conditions. Even had the market grown more slowly than projected (as the DOER attempted to show on another page of that presentation) the market would still have experienced oversupply because of the odd way solar installation volumes were used to calculate solar production (MWhS/SRECs).

What fixes that kind of thing is many eyes on the model. Had the DOER released the underlying model (rather than simply writing 30 and 69 into draft forms of the regulation, where out of context they are hard to interpret), this error would almost certainly have been caught. Absent the presence of a model and a single set of numbers for everyone in the market to look at and discuss, enough disconnect among participants and their individual models arises that discussions end up being at a high level and this seemingly little error seems to have crept in and possibly contributed to a large problem.

Possible Lesson: The more transparency from the DOER, the more context they can put around their numbers, the more they are pressed to provide an actual model, the better.

## **Supporting Material – Changes to 14.07 (2i)**

The proposed rule change to 14.07 (2i) appears to be intended to remove the possibility that SREC sellers can deposit SRECs into auctions in the last two years of the program and, in so doing, trigger an increase in the length of the program by one or two years.

But the DOER's proposed change removes what was a substantial price support for opt-in qualified SRECs in the last years of the program, one that many investors included in their investment decision. Without the original rule SREC prices in the last years of the program could drop well below the auction floor.

As an alternative to keeping the current rule unchanged, the DOER should consider alternatives which maintain some price support.

One possible approach: in the last two years of the program, give RES the option to buy any credits which are about to be deposited into the clearinghouse auction, at a price equal to the ACP. This puts in RES hands whether the program will be extended while maintaining price support for opt-in qualified credits at the end of the program.

The details of which RES would buy these credits (a 'round zero' of the auction?), and potentially counting them as banked credits (and possibly adjusting the banked credit limits) can be determined after allowing for RES input into such an alternative rulemaking option.