

CARBON FINANCE STRATEGIES LLC

Washington DC • Boston MA

BY E

Michael Judge
Director, Renewable & Alternative Energy Division
MA Department of Environmental Resources (“DOER”)
100 Cambridge Street, Ste. 1020
Boston MA 02114

June 26, 2016

**RE: COMMENTS – “Next solar incentive program”
(Listening Sessions announced June 6, 2016)**

Dear Mr. Judge:

This presents provisional comments of CFS on the nascent “post 1600 MW” program. Our comments are ‘provisional’ because they lack the context that would be provided by a proposed program.

CFS is a solar center of excellence that has co-developed or is developing about 30 MW of ground-mounted solar PV facilities in Massachusetts and elsewhere.

We first address a threshold predictability issue. We then suggest some “Post SREC-II” principles that DOER could issue to reduce market uncertainty in advance of a full-blown “post-1600 MW” regime.

1. *Speedy* certainty is critical

We agree with the need for comparative analysis of ratepayer costs to help justify and calibrate the new program. *However*, there now is a large body of “cost, benefit and ratepayer impact” studies in MA and other jurisdictions that this effort can draw from.¹

¹ See, e.g., NREL, *A Retrospective Analysis of the Benefits and Impacts of U.S. Renewable Portfolio Standards* (Jan. 6, 2016) (average RPS economic benefits for wind & solar far outweigh costs, even without counting related reductions in wholesale power prices or distributed-generation grid benefits); Brattle Group, *Comparative Generation Costs of Utility-Scale and Residential-Scale PV in Xcel Energy’s Colorado Service Area* (July 2015) (direct-install residential PV unit costs will be more than double utility-scale costs by 2019); Brookings Institution, *Rooftop Solar: Net Metering is a net benefit* (May 23, 2016), <http://www.brookings.edu/research/papers/2016/05/23-rooftop->

CARBON FINANCE STRATEGIES LLC

Washington DC • Boston MA

Notwithstanding inevitable state-specific variations, these studies' collective thrust seems clear. They include findings such as:

- (a) Net benefits to the grid of PV installations (including net metered installations) substantially exceed costs to utilities and non-participating ratepayers when all pertinent factors reasonably are taken into account;
- (b) The 'cost impacts' of distributed generation (including net-metered solar) to ratepayers typically are positive; and
- (c) Ground-mounted PV projects likely will be less than half as expensive as rooftop projects within the next 3 years even though the hard costs of both should continue to decrease (implying that adverse ratepayer impacts will increase if or as proportionately more rooftop facilities are installed).

Our point is: *such consistent general findings should allow DOER comfortably to announce certain 'guiding principles' for the "post-1600 program," whatever the specifics of that program may turn out to be. And, the sooner DOER does so, and begins consistently to reflect those principles in proposed program elements, the more it may help relieve market uncertainty.*

Due to such uncertainty there currently is no investment market at all for "SREC-III" projects of any type. What investment activity remains is focused on scrambling for projects qualified or potentially qualified under SREC-II. We are aware of no significant "SREC-III" project under development in which investment has not been declined or deferred until the "post-1600" program is "better defined." Some major investors have said that even "post-1600" proposed or emergency rules would not be enough for them to start or restart diligence.

[solar-net-metering-muro-saha#.V1h3dWU2xno.email](#); "Some states may be making a big mistake about [limiting] rooftop solar," *Washington Post* (May 26, 2016), <https://www.washingtonpost.com/news/energy-environment/wp/2016/05/26/some-states-may-be-making-a-big-mistake-about-rooftop-solar/?postshare=9241464306550672&tid=ss> in ("new research suggests [shifted costs to nonparticipant ratepayers] is an empty concern. A paper . . . from the Brookings Institution reviews a number of studies conducted by state utilities commissions, academic institutes and think tanks and suggests that [net metered] solar actually benefits all consumers – whether they're solar customers or not)."

CARBON FINANCE STRATEGIES LLC

Washington DC • Boston MA

As a result there now is a major mismatch between the recently-raised net-metering caps, and the limited availability of projects that can get financed and built under those caps. There also is a major mismatch between the DPU's recent determination that projects which receive a Cap Assurance by the "Notification Date" will be guaranteed full (rather than "market rate") NMC revenue streams,² and the inability of many "SREC-III" projects to get financed and built by January 7, 2017 so as to materialize that guarantee.³

We fear for PV momentum if (as seems likely) this situation continues until the fall. There are too many other jurisdictions with pending "improved" solar carve-out programs to which competing investment dollars may flow.⁴

We accordingly urge that **DOER promptly release 'guiding principles' that can reduce market uncertainty and increase "post-1600" predictability.** We emphasize that **such principles need not *and should not* delay issuance of a full "SREC-III" program – the ultimate predictability provider.** However, DOER has indicated that it does not plan to issue "SREC-III" emergency rules and may not even propose "SREC-III" rules for several months.⁵ Thus such principles' beneficial effects could be significant.

We suggest below some example 'principles' that we believe DOER swiftly could develop without compromising either a final "post-1600" program or that program's swift issuance.

2. An "SREC-III" program will track SREC-II as closely as possible

² See DPU Order 16-64-A (May 19, 2016).

³ See Point 5 below.

⁴ Or for which they might be reserved. For example, lead NJ legislators recently introduced a bicameral bill to "pull forward" a large amount of SREC demand to RY 2017-2019 from that program's out-years, in order to reduce SREC 'market overhang' and support SREC prices. See, e.g., S 2276 (introduced May 23, 2016), summarized at <http://www.srectrade.com/blog/srec-markets/new-jersey/new-jersey-rps-bill-proposes-pull-forward-to-address-oversupply> (June 3).

⁵ For example, DOER's April 8 SREC-II Emergency Rules indicate that an "SREC-III" program may not be in place for as long as 9 months from their issuance date. See *id.*, 225 CMR § 14.02 (definition of "Solar Carve-Out II Program Capacity Cap").

Market participants' familiarity with an existing regime cannot be over-valued, especially from an investment perspective. DOER's PV-incentive programs already have undergone several disruptive shifts over the last three years. Whatever the initial complaints about SREC-II complexity, stakeholders now have adjusted to that regime and know how to work within it. "Least disruption possible" should be a watchword for the next program revision.

H. 4173 grants DOER broad discretion in this regard. While it may be read to mandate "use of a declining adjustable block incentive, a competitive procurement model. . . or other declining incentive framework" [§ 11(b)(vi)], this clause is just one of a dozen factors that DOER is authorized to balance to achieve Section 11's primary goal: "to encourage the continued development of solar renewable energy generating sources by [or for] residential, commercial, governmental and industrial electricity customers throughout the Commonwealth." Moreover, the "declining balance" clause also authorizes DOER to adopt a "tariff" (not otherwise defined). In addition, the clause seems designed only to secure a "known or easily estimated *budget* to achieve program goals." This appears to mean that declining cost-effects should be model-able – not that "declination" must be an internal part of the program.

In any event SREC-II itself was a "declination" over SREC-I that would appear to meet this criterion. We see nothing in H. 4173 that would prevent an "SREC-III" with ACPs and auction floor prices slightly lower than SREC-II's from defensibly being characterized as "declining."⁶

⁶ DOER's RFQ for "post-1600" technical assistance (Feb. 6, 2016) appears to acknowledge this point (pp. 5-6) by listing "Continuation of the SREC-II Program beyond 1600 MW" as one of the three main options to be evaluated.

Adopting such a program also would seem to satisfy *per se* the criterion that a "post-1600" regime "lower the cost of the Commonwealth's solar incentive programs for ratepayers." H. 4176 §11(a).

We oppose "competitive procurement" of SRECs for reasons stated in our accompanying 2012 comments to California program consultants. These reasons include *de facto* exclusion of smaller developers, and procuring utilities' ability to manipulate the procurement process.

We reserve comment on "declining adjustable block" approaches until their content and operative details are better defined. However, we note that to the extent that SREC-II's

3. The program will seek to assure PV project developers financeable returns,

taking all relevant project costs and constraints fairly into account.⁷ To provide a predictable baseline, **“financeable returns” should be quantified** – for example, as “20-year cumulative average annual unlevered IRRs over 8%, under a reasonable financial model.”⁸

This should mean that while documented post-2014 decreases in component costs plus recent extensions of the Code Section 48 Investment Tax Credit will be reflected to *reduce* the available volume or value of “post-1600” SRECs (or similar incentives), negative inputs affecting project revenues also will be reflected to *increase* those values.

The negative inputs include but are not limited to:

- Increasing MA PV-related labor costs and skyrocketing MA PV interconnection costs since mid-2014;
- The cost to many smaller developers of monetizing tax credits through arrangements with large credit-hungry entities (generally amounting to a ‘haircut’ of at least 25% of nominal credit value);

“Managed Growth” sector was a “declining block,” it (a) was short-lived and (b) encouraged many developers to qualify projects by other routes. A more straightforward and predictable approach seems preferable.

⁷ Some of the other balancing factors to be weighed in design of a “post-1600” program are that this design must “consider environmental benefits, energy demand reduction and other avoided costs provided by [PV] facilities . . . encourage solar generation where it can provide benefits to the distribution system . . . and promote investor confidence through long-term incentive revenue certainty and market predictability.” H. 4176 §§ 11(b)(ix) – (xii) (some punctuation omitted).

⁸ DOER could minimize any potential case-by-case reviews by (e.g.) listing required model inputs, providing a suggested simple Xcel model, and treating its results as presumptively determinative. This would not differ much from how DOER previously addressed such issues as whether 50% of project costs timely had been incurred under SREC-I.

CARBON FINANCE STRATEGIES LLC

Washington DC • Boston MA

- Many tax-benefit monetizers' reluctance to accept any Code 179 'bonus depreciation' to preserve tax appetite for other projects, causing such potential depreciation benefits to be lost or eroded by time;
- a reasonable discount factor to reflect average unavailability of tax credits or depreciation benefits under the preceding two points, in any presumptive general guideline for "financeable returns"⁹;
- Loss of 40% of the net-metering revenues that renewable-electricity production otherwise would generate under long-term contracts, due to the "market net metering" provisions of H. 4176;
- Rising personal property taxes levied by hard-pressed municipalities on larger solar (e.g., non-residential) projects, which in general appear to have increased substantially over the last 3 years¹⁰; and
- material revenue differences by utility service territory.¹¹

4. Preferred SREC-II market sectors will continue to be preferred,

especially where justified by cost-effectiveness or special policy concerns. This *should* include CSS projects, low-income housing projects, and governmental

⁹ Alternatively or as a final program supplement, DOER could achieve similar "fairness" results by providing an "inputs" check box for tax-benefit applicability to a simplified financial model, subject to the usual sanctions for misrepresentation.

¹⁰ Based on anecdotal evidence from other developers and our own experience. While all local PV taxes are negotiated to some extent, an insistent municipality has far more leverage than a developer. For example, CFS recently was informed that one Town's "minimum rate" for personal property taxes had increased more than 20% per-MW of capacity over PILOT rates for virtually identical projects agreed upon only 2 years ago. We are not aware of any up-to-date time-series survey of local MA property-tax rates across the Commonwealth. These rates often are difficult to obtain.

¹¹ For example, the G-O rate that currently determines NMC value presently is nearly twice as high in SEMA than in Eversource West.

entities that benefit from or own PV facilities, all of which are referenced positively by H. 4176.¹² It *may* include future landfill or canopy projects that are not so referenced, to the extent a preference remains justified given their relative install costs and other changed circumstances.

5. SREC-II eligibility will be extended to projects that receive a NM Cap Assurance by the final DPU “Notification Date”

Lack of a clear transition regime – predictable *sufficiently in advance* – from SREC-II to “SREC-III” has amplified PV financing and development uncertainty. This uncertainty could be reduced without materially affecting the integrity of either program, by harmonizing DOER’s “SREC III” rules with DPU’s recent order confirming that projects which receive a Cap Assurance by the final “Notification Date” also will be assured full NMC revenues.¹³ For delayed-financing reasons

¹² H. 4176 expressly references only *government-owned* PV facilities. § 11(b)(vii). However, we see no pertinent distinction between PV facilities that are owned by governmental entities and those which are privately-owned but provide 100% of their power to such entities. Under DPU precedents, the latter already qualify for the “public” cap and larger per-parcel net-metering capacity. See, e.g., DPU Order 11-11-C (Aug. 24, 2012).

On the “negative” side of the “financeable returns” ledger, “SREC-III” value for such ‘public’ projects analytically should be adjusted downward because they will receive 100% of NMC revenues, not 60%.

¹³ See DPU Order 16-64-A, n. 2 above. The “Notification Date” apparently is June 1 under DPU’s May 11 emergency rules but is widely expected to be extended past July 29 by DPU’s permanent rules implementing H. 4176. *Id.*, at pp.5-6. DPU’s emergency rules do not expire until approximately Aug. 10, 2016 unless earlier replaced. This suggests the final Notification Date could be mid-August or perhaps later.

Among the other uncertainties noted in these comments, it is not clear to us whether DOER’s May 18 “Notification [to DPU] of Intent” to determine that the “1600 MW” cap has been reached, also is a *final determination* that the cap legally has been reached, or whether DOER must make a second triggering determination based on more complete current data. As far as we are aware, no such definitive determination has been made.

noted above, this Cap Assurance may be meaningless without timely definition of what SREC “incentives” will accompany it.¹⁴

To be clear, we *are not* suggesting that the January 7, 2017 date for SREC-II project completion (as currently qualified) be extended. We *are* proposing that projects which file a complete SQA by the final Notification Date presumptively should be eligible for SREC-II status, just as they would be for 100% NMC revenue status.

It makes no sense for such projects to receive an NMC “guarantee” that amounts to an empty box if they cannot be financed and built until after an “SREC-III” program is fully in place. Few projects will meet the January 7 deadline if they have only one to three months to secure financing, close it, and complete construction in winter conditions. That seems particularly true given that most “bankable” EPC contractors are largely booked up due to pressures to complete previously-qualified SREC-II projects by the end of 2016.

6. Residential “set asides” reasonably will be minimized

Such provisions either grant small residential installations automatic 100% SRECs or reserve such SRECs for them.

We recognize both the policy values of encouraging broad PV participation, and DOER’s past commitment to that principle. However, the incentive also is in tension with the goal of reduced ratepayer impacts, due to the higher cost of such facilities. In addition, such set-asides largely do not benefit homeowners. Instead they tends to benefit large residential installers that tilt the PV playing field by marketing solar under lease or similar arrangements, aggregating such installations, claiming available tax credits internally, securitizing lease (“PPA”) revenues, and leaving homeowners to face potential system-balancing, “grid support” or “fair share” charges.

¹⁴ See, e.g., Austen Perea, “Will Virtual Net Metered Projects Survive Under Massachusetts’ New Solar Policy Regime?” (June 14, 2016), http://www.greentechmedia.com/articles/read/will-virtual-nem-projects-survive-in-massachusetts?utm_source=Daily&utm_medium=Newsletter&utm_campaign=GTMDaily (“Beyond 2017, the future of offsite and community solar projects – the backbone of Massachusetts’ . . . market – will ultimately depend on the successor SREC program and how it incentivizes virtual net metering”).

CARBON FINANCE STRATEGIES LLC

Washington DC • Boston MA

“True residential” who self-finance and own their PV systems may well fall into a different category.¹⁵ However, we see no current reason to treat the owners of lease-financed residential installations any differently for “SREC” eligibility purposes than other developer-applicants.

We also note that unlike residential installs, larger PV projects can provide frequency-regulation and other distribution benefits – factors also encouraged by H. 4716.¹⁶

We appreciate the opportunity to comment and would be pleased to discuss any aspect of the points above.

Thanks as always.



Michael H. Levin

Managing Director & General Counsel

C (e): Interested parties

¹⁵ DOER seems to have acknowledged this by pursuing credit enhancement programs for potential residential PV owners who cannot otherwise qualify for PV financing.

¹⁶ See *id.*, §§ 11(b)(ix) & (10).

Apart from logistical and monitoring issues, many residential PV installs will be connected to single-phase distribution lines, making them ineligible under current FERC principles to provide ancillary services through battery storage or other means. Only three-phase installations can furnish such grid benefits