CARBON FINANCE STRATEGIES LLC
Washington DC • Boston MA

BY E

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MA Department of Environmental Resources ("DOER")
100 Cambridge Street, Ste. 1020
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October 5, 2016

RE: COMMENTS – "Next solar incentive program" straw proposal as-released 9-23-16

Dear Mike:

This presents comments of CFS and Kearsarge Solar LLC on the straw proposal above. We incorporate by reference CFS' previous Listening Session comments dated June 26 to the extent they are not contradicted here.

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. Kearsarge Solar, an affiliate of Kearsarge Energy, LP (Watertown MA), has more than 80 MW of PV projects in operation or under development in Massachusetts.

1. **Feed-in tariff approach.** We **conceptually support the new feed-in tariff approach that DOER now proposes** as a successor to SREC-I and SREC-II to incentivize the next large "block" of statewide PV installation, ***subject to the points below.***

As we understand it, prescribed incentive 'tariff' payments per kWh of energy exported would be paid by affected IOUs and EDCs direct to qualified PV projects for fixed terms, in lieu of those projects generating and placing SRECs with third parties. *If fairly implemented* consistent with these comments, this approach could among other things: increase the predictability of project revenues and financing; reduce transactions costs; eliminate market concerns regarding the creditworthiness of SREC sellers; and (with respect to the proposed new tilt towards

bilateral or multi-lateral offtake PPAs in lieu of net metering) allow projects to mitigate numerous virtual net metering ("VNM") limitations.[1]

2. A swift, clear, predictable transition regime still is required. For reasons in our previous comments we **strongly support the numerous requests on this point** at the straw session.

Financing of new non-SREC-II projects already has been halted across-the-board by uncertainties regarding the revenues that will be available under a successor program, as well as the uncertain availability of NM under current caps.

DOER's plan to have the new program fully in place by next summer seems very ambitious, given the need for complex coordinated rulemaking between DOER and DPU. DOER has acknowledged that uncertainty pending full implementation will severely impact project financing and the ability to get projects started or built, though the agency apparently intends to reduce interim unpredictability as much as possible.

Importantly, those adverse impacts may be long-lasting even if DOER meets its proposed implementation schedule. Projects currently "on hold" may not revive and dollars provisionally reserved or committed to them may well go elsewhere. The short-term result could well be significant delays in achieving expected program results. Longer-term results could include de facto exclusion of all but very large developers that have funds to traverse this 'valley of death,' meaning decreased developer diversity and decreased competition.

The agency's recent extension of SREC-II from January through May 2017,[2] while welcome, seems merely a stop-gap response to this dilemma.

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[1] These limitations currently include restrictive geographical NM caps; project capacity limits for non-public projects; substantially disparate net-metering credit {"NMC") values across the Commonwealth; and a 40% reduction in the volume of NMCs available for monetization by new projects.

[2] Although subject to a 50%-of-construction-costs demonstration plus significant 20% reductions in applicable SREC factors. See, e.g., DOER, *Guideline: Renewable Energy Portfolio Standard – RPS Solar Carve-Out II Extension* (Aug.31, 2016), on-line at http://www.mass.gov/eea/energy-utilities-clean-tech/renewable-energy/rps-aps/srec-ii-emergency-rulemaking.html.

We accordingly **urge DOER to extend SREC-II with (at minimum) no further reduction in Market Sector Factors, through the later of July 2017 or the date that both DOER rules and a DPU tariff have been finally promulgated.**[3]

Any alternative that would provide similar certainty also would be acceptable.

3. The data and math supporting tariff "base rates" and adders must be provided for comment. As far as we know, no detailed analytic support has yet been provided for either the "adders" or for "base rates" that sharply diminish by more than 50% from 35¢/kWh (low-income projects less than 25 kW-ac) to 15¢/kWh ("large" projects over 1 MW-ac).

We understand the overall rationale is to assure projects in each category or sub-category a "reasonable" rate of return sufficient for them to get financed and built (i.e., assure that they will 'pencil out').

However, **as to the base tariff rates**, neither what that IRR is nor the inputs which determined it have been made available for comment. **As to the adders**, how these proposed additional unit values were calculated remains equally unclear.

The extent to which reasoned analysis from real-world data transparently supports such figures will be critical to build investor confidence, avoid possible train-wrecks, minimize potentially disruptive mid-course corrections, and help assure program success.[4]

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[3] To be meaningful, any such extension also would have to extend the deadline by which the 50% cost-of-construction test must be met, given financing delays due to ongoing "next generation solar incentive" uncertainty. As with the Market Factors, project developers should not be penalized further due to uncertainty delays that are inherent in how DOER has structured the successive PV incentive programs.

[4] By way of example, the "reasonable return" issues raised by this approach include: What IRR is DOER using as the yardstick? Does it reflect current financial-market hurdle rates? To what extent does it assume that projects have been 'de-risked" at the point when they typically seek financing? How does it reflect inputs such as current (average, geographical, or utility-specific) site lease, wetlands delineation, local property tax, labor, and interconnection costs?

We **urge DOER promptly to make its underlying data and analyses available for comment,** either well before the current comment period closes October 28 or in a separate comment period.

4. "Large" projects should have twenty-year tariff tenors. We concur with attendees who urged a 20-year tariff period for "large" ground-mounted projects, consistent with other finance terms for such projects.

Current SRECs only run for approximately 40 quarters. *However*, project SREC revenues can be structured in ways that boost IRRs in important respects. For example, they typically are capped only by relatively high SACPs, especially in their early years. They are supported by auction floors that tend to assure minimum SREC revenues. They have significant prospective upside above those floors. Even where they may be placed at a discount in (say) three-year strips, they allow SREC generators to smooth out market variations by exercising informed discretion regarding how many SRECs to hold in reserve and when to place them.

The price flexibility these factors offer often can weight highly the value of near-term SREC revenues, due to the nature of NPV discounting in IRR calculations.

Only the minimum-value assurance would be provided by a fixed tariff base rate.

We therefore urge DOER to provide a 20-year (rather than the proposed 15-year) tariff for "large" PV projects. This seems especially important given current and projected declines in Class I REC value due to development of other renewables and to the ability of extra-state projects to sell RECs into Massachusetts.[5]

In any event, given the 40+ year life of many next-generation projects, to provide a smoother and more predictable landing **DOER should expressly address what happens when tariffs 'end.'**

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[5] REC traders currently are characterizing the MA REC market as "unstable" and are projecting Class I values not much higher than 3¢/kWh within the next five to seven years.

While we assume such projects would continue to be eligible for Class I RECs, a **"smooth landing" also could be addressed by (e.g.) phasing down tariff payments over 3 to 5 years after their proposed tenors.** This "exit" concern applies to all the proposed tariffs, whether or not a 15 or 20 year tenor is adopted for large projects.

5. The tenor of adders should be clarified. The straw proposal implies (without stating) that applicable per-kWh adders will run for the entire tenor of the applicable tariff base rate. This is an important certainty factor where many proposed base rate revenues are substantially lower – on the order of 40% less -- than 'comparable' SREC revenues. **DOER promptly should clarify that adders will run for the same periods as the proposed base rates.**

6. Siting criteria pitfalls should be avoided. DOER proposes for the first time to adopt general siting criteria that automatically would ban new ground-mounted projects from a wide variety of areas including DEP wetlands, prime farm soils, priority habitats, and prime or certain other "forest land" (plus, apparently, the buffers for such areas).

We appreciate the rationale but note that:

(a) the proposed criteria are broad enough to prohibit PV siting in huge swaths of the Commonwealth, including much of still-depressed Western Massachusetts;

(b) properly-designed PV not only can be a non-detrimental fit for some of these categories, but can be net-environmentally-beneficial in light of farming's documented adverse effects on water quality, habitat and other resources;

(c) to preserve flexibility, states facing similar issues have opted for rationing systems rather than flat bans[6]; and

[6] See, e.g., [New Jersey] Solar Act of 2012, H. 1925, L. 25, Acts of 2012, Chap. 24, Sec. 2, subsections (q), (r) and (s), on-line at http://www.njcleanenergy.com/files/file/Renewable_Programs/SRECs/Solar_Act.pdf.

(d) excessively stringent or rigid siting criteria will encourage "gaming the system"[7] and/or drive up the costs of the program for ratepayers, undercutting its overall goals.

DOER evidently is aware of these pitfalls, since it has committed to "guidance that defines these areas in more detail" and to provide developers "[advance] information regarding the locations of these restricted areas." It also "may establish" an exceptions process with related guidance. (Straw, p. 10).

We submit this does not go far enough. **Projects that have been in development for more than a year *or* have otherwise expended significant development resources with community support should not be banned retrospectively. They should automatically be grandfathered under clear criteria.**[8]

In addition, DOER **should not only develop an expedited exceptions process, but should include advance categorical exceptions as well as those which may be determined case-by- case.** It also **should incorporate a mechanism by which case-specific exceptions promptly become categorical or presumptive-categorical exceptions if they meet stated criteria.**

7. PPA alternatives to VNM should be better defined. CFS and Kearsarge were among the first post-rebate developers to finance a large ground-mounted project without benefit of VNM (operational 2 Q 14). Based on that experience we conditionally support:

- expanded PPA use as an alternative to VNM;

- the proposed 5¢/kWh "non-net-metered" adder; and

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[7] Analogous "gaming" can include securing permits without complete wetlands delineations or habitat designations, then "discovering and fixing" such deficits after permits have been issued.

[8] We believe a "50% of costs" test would be too stringent and potentially punitive for such projects. Instead we suggest (solely by way of example) obtaining either permits or an ISA as appropriate trigger points. Alternatively, a 25%-of-costs test might be appropriate.

• the proposed definition of CSS that would allow "retail electricity supply contracts . . .as an alternative to net metering." (Straw, pp. 14, 18, 20).

We ask that DOER **improve and operationalize this alternative off-take route by making clear that:**

• **"retail" means simply direct or indirect *sales* to energy end-users, not retail energy *rates*;**

• **off-take from "facilities not serving a significant on-site load" (Straw, p. 18) via bilateral PPAs with entities outside the Commonwealth, but within NEPOOL, will qualify[9];**

• **utility on-bill crediting is an approved supplement or further alternative to PPAs, at least within the same utility service territory;**

• **Acceptable "PPAs" will include those with public or private affordable housing entities;** and

• **Acceptable "PPAs" will include accordion-type arrangements by which residential off-takers may (e.g.) sign on through an appendix, rather than having to negotiate individual 40-page PPAs and hire lawyers to do so.**

The last two steps will be particularly important for non-NM CSS or similar projects involving low-income "off-take" beneficiaries.

8. We conditionally **support the proposed adders for CSS and low-income CSS.**

However, **we recommend that DOER explore further whether an R-2 rate should be the sole eligibility test for "low-income" recipients.** For example, where an entire area is "economically distressed" under HUD or Tax Code provisions – as with many Western Massachusetts areas, post-2008 – much efficiency may be gained with little or no sacrifice by rebuttably presuming that all off-takers in such areas

[9] This result would appear to be consistent with DOER's goal of encouraging non-VNM "off-take." See, e g., Straw, pp. 3 ("enable continued solar market growth without expanded net metering caps"), 18 passim.

are "low income." Such a presumption may benefit low-income residents more than a rigid R-2 test, since it could free up more funds to be spent in local economies.

9. Tariff incentive payments "net of energy value (i.e., total tariff rate minus value of energy)" will not work.

This is the Straw's pivot point in many respects. DOER apparently means it to level the playing field between new NM and new non-NM "PPA" facilities which often receive close-to-wholesale or -LMP rates that are much lower than current Net Metering Credits ("NMCs"). As we understand it, "leveling" generally would be implemented by subtracting from total tariff payments (base rate plus applicable adders) either the applicable PPA rate or the presumptively higher net NMC rate,[10] in each case on a unit per-kWh basis.

"Leveling" is the elephant in this room. As the Straw seems to formulate it, PV projects *would have absolutely no incentive to price their energy at anything other than zero,* since contracted energy returns would reduce their tariff payments one-for-one. That seems particularly true because in many cases "fair energy pricing" could largely eliminate *any* tariff-based incentive payments.[11]

This outcome would drastically distort energy markets. It also could provide unjustified shorter-term windfalls to very small projects (which might be the only types of projects to survive),[12] while encouraging *de facto* circumvention in the long-term.[13]

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[10] I.e., gross NMC value minus whatever discount from that value was offered to and accepted by NMC purchasers.

[11] For example, if a "large" project could secure a 10¢/kWh PPA rate (substantially below current retail electricity rates), its base tariff rate apparently would decrease to 5¢/kWh, absent any adders. If a 250 kW low-income CSS project in SEMA placed NMCs at their current discounted rate of about 20¢/kWh equivalent, its total tariff rate apparently would decrease to about 11¢/kWh *even with all applicable proposed adders.* Few if any projects will "pencil out" based on such revenues.

[12] For example, a 25 kW low-income CSS project in Western MA apparently could receive total gross tariff-incentive payments of as much as 47¢/kWh equivalent. Subtracting current

In short, *the "leveling" concept will not work as currently formulated.*

At minimum, **we urge that DOER revise this formula to make clear that only *a portion* of "energy value" will be subtracted from gross tariff incentive payments.** This may not solve the problem outlined above, but at least would mitigate it.

We believe a better approach would **take "energy value" out of the "leveling" approach entirely, and instead preferentially differentiate non-NM from NM projects on independent grounds.** To accomplish this, DOER may not need to do much more than leave in place its proposed adders for non-NM projects, then adjust the base tariffs to remove projected average per-kWh energy revenues, perhaps subject to an index. With all due respect, DOER has no business discouraging fair pricing for renewable energy -- especially if real-world "energy parity" is its ultimate goal.

"Leveling" also raises two second-order issues that appear to cut in different directions:

- How will DOER / DPU treat the 40% portion of "market net metering credits" for which new VNM projects apparently will receive no energy revenue under H.B. 4173 (Acts of 2016, Chap. 75)?

- How will DOER / DPU treat *non-energy revenues* that non-NM projects may realize from (e.g.) sales of capacity or ancillary services?[14]

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discounted NMC values of about 8¢/kWh equivalent would leave it net 39¢/kWh payments, compared to the un-financeable net tariff payments in the footnote immediately above.

[13] For example, to maximize net incentive payments, projects might sell energy for a fraction of a cent during their tariff term, then seek to recoup thereafter.through energy rates that are as high as possible. The effects of such "back-loading" – e.g., massive downstream retail price hikes – could be profound if such "economically rational" tactics become widespread.

[14] NM projects *generally* cannot realize revenues from capacity or ancillary services, which typically are allocated to their serving utilities under current tariffs and Interconnection Service Agreements. *Residential NM customers* often cannot realize such revenues because (e.g.) they are not interconnected to appropriate three-phase distribution lines.

We take no position on the first issue at the present time.

On the second issue, we urge that **DOER / DPU expressly exclude all capacity and other similar revenues from any "energy value" to be subtracted from the gross tariff incentive.** By custom and law, capacity or other services that do not directly provide electrons are not "energy." This exclusion also would comport with the Straw's focus solely on energy, and with DOER's desire to incentivize alternatives to VNM.

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

Thanks as always.

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for

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C (e): Interested parties

However, non-NM projects serving little on-site load represent potentially significant resources to support grid resilience and reliability. While their potential revenues from providing capacity or ancillary services may be tiny at present, this may well not be the case a few years from now.