Amy G. Rabinowitz
Vice President & Deputy General Counsel

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October 28, 2016

Michael Judge and Kaitlin Kelly
Department of Energy Resources
100 Cambridge Street, Suite 1020
Boston, MA 02114

Re: Joint Distribution Company Comments -- "Next Generation Solar Incentive Straw Proposal"

Dear Mr. Judge and Ms. Kelly:

On September 23, 2016, the Commonwealth of Massachusetts Department of Energy Resources ("DOER") shared with the public its "Next Generation Solar Incentive Straw Proposal" ("Straw Proposal"), which DOER is developing pursuant to Chapter 75, Section 11 of the Acts of 2016, "An Act Relative to Solar Energy" ("Act"). Section 11(b) of the Act directs DOER to, among other things, "develop a statewide solar incentive program to encourage the continued development of solar renewable energy generating sources by residential, commercial, governmental and industrial electricity customers throughout the commonwealth." The Straw Proposal would add a new program for eligible solar projects under certain timing and other conditions that is different and distinct from the Solar Renewable Energy Certificate programs previously established by DOER (commonly known as "SREC I and SREC II", and together the "SREC programs"). By law, this program is separate and distinct from the DOER's renewable portfolio standard program.

Pursuant to DOER's request for written comments, Fitchburg Gas and Electric Light Company d/b/a Unitil ("Unitil"), Massachusetts Electric Company and Nantucket Electric Company, each d/b/a National Grid ("National Grid"), NSTAR Electric Company and Western Massachusetts Electric Company, each d/b/a Eversource Energy ("Eversource") (collectively, the "Distribution Companies") hereby offer the following comments.

I. Introduction and Background Information

The Straw Proposal appears to be DOER's initial step towards meeting its pending obligation under the Act to "adopt rules and regulations that lower the cost of the [C]ommonwealth's solar incentive programs for ratepayers." St. 2016, c. 75, § 11(a). DOER's Straw Proposal adopts a general framework so that the Commonwealth's solar market can transition from the current SREC programs to a successor solar incentive program ("New

Program"), and DOER expects the details of the New Program to be further designed and developed by stakeholders (Straw Proposal, Slide 26). DOER anticipates that: (1) DOER will build consensus with stakeholders throughout the autumn and file emergency regulations by the end of 2016; (2) the Distribution Companies will file a model tariff with the Department of Public Utilities ("DPU") in early 2017; (3) DOER will conclude its rulemaking and that DPU will complete its review of the model tariff by spring 2017; and (4) DPU will approve the compliance tariffs by summer 2017, allowing the New Program to go into effect thereafter (Straw Proposal, Slide 26).

II. Distribution Company Comments on Straw Proposal

a. Summary of Distribution Company Comments

The Distribution Companies support the DOER's efforts to design the New Program in a manner consistent with the Act's requirements and Governor Baker's commitment to expand the development of renewable generation projects, while lowering costs borne by electricity customers who fund the subsidy programs that support such projects. While the Distribution Companies recognize DOER's good faith efforts and are encouraged by the proposed tariff-based component of the program, the administratively determined compensation levels remain a significant concern given the potential for market-based incentives to further lower costs for ratepayers.

To ensure that the program maximizes cost reductions for customers, DOER should implement competitively set prices for incentives of systems greater than 250 kilowatts ("kW") in the New Program to avoid over-compensating such projects for their output. The Distribution Companies' specific concerns with the Straw Proposal include:

(1) the lack of competition in setting compensation levels for any projects, even those up to five megawatts ("MW");

(2) the disconnect between administratively-set incentive levels and the requirements of the Act;

(3) the starting prices of blocks and value of adders compared to incentives in other states;

(4) the timing and pacing of the blocks, creating confusion for the marketplace and

differing costs for ratepayers;

(5) uncertainty about rights to the capacity products generated by the projects;

(6) its administrative complexity and expected high administrative cost of the Straw Proposal; and

(7) the proposal includes questions regarding cost recovery that are not necessary for the DOER to address

The primary purpose of Section 11 of the Act was to direct DOER to enable the same amount of solar development to occur at a lower cost to electricity customers. Accordingly, the DOER should place the highest priority on reducing the costs of solar incentives, while encouraging the continued development of solar renewable energy, and ensure that the next generation solar program "promotes the orderly transition to a stable and self-sustaining solar market at a reasonable cost to ratepayers." Act, § 11(b).

b. <u>Specific Issues</u>

1. <u>The Administrative Setting of Incentive Values is Flawed and Inconsistent with the Requirements of the Act</u>.

On October 11, 2016, DOER released to the public its consultant's solar analysis, entitled "Developing a Post-1,600 MW Solar Incentive Program: Evaluating Needed Incentive Levels and Potential Policy Alternatives" ("Solar Report"). DOER appears to have relied on the Solar Report to design the New Program to meet the twelve statutory criteria, but as set forth below, the Solar Report seems to have flaws that may have led to critical short-comings in the New Program. The Distribution Companies submit that if the Solar Report had been released to stakeholders in advance, the Solar Report would have been subject to rigorous review by all stakeholders, which would have yielded meaningful feedback for DOER to consider as it was designing the New Program, particularly in light of the flawed conclusions drawn in the report.

First, Section 11(b)(ii) of the Act directs DOER to design a new program that "relies on market-based mechanisms or price signals as much as possible to set incentive levels" (emphasis added). To be consistent with the statute, the New Program should include competition for at least some of the larger solar projects to track market prices and reduce costs for ratepayers. Instead of relying on the Solar Report's surveys, as described in more detail within the recommendations below, DOER could have used actual data from Rhode Island and

Connecticut, two neighboring states which both use competitive procurements to solicit and compensate medium to large-sized projects. The Distribution Companies estimate that the values currently proposed for the New Program are as much as $100 per megawatt-hour ("MWh") higher than they need to be, which equates to more than $1.5 billion in additional costs over the life of the program or, stated differently, about 0.3¢ per kilowatt-hour ("kWh") on electricity customers' bills.

To emphasize this point, please see Table 1 below, which shows the starting and end block prices under the proposed New Program for medium and large sized projects in Massachusetts compared to prices for similarly sized but competitively bid projects in Connecticut and Rhode Island. As shown below, even the Block 8 prices can be expected to be higher than recent competitively bid prices especially when adders are included. These price trends will hold true for smaller solar projects as well. Thus, absent competition, prices for solar in Massachusetts will remain higher than the market.

"Table 1: Comparison of Compensation for Large Solar Generating Facilities"[1]

Total Solar Compensation (in $ per MWh)

MA >250 - 1,000 kW AC Block 1	180.00
MA >250 - 1,000 kW AC Block 8	125.70
MA >250 kW to 1,000 kW AC Non Net-Metered Block 1	230.00
MA >250 kW to 1,000 kW AC Non Net-Metered Block 8	160.62
2016 CT Medium and Large ZREC Average Price (>100 kW to <1,000 kW)	146.50
2016 RI Renewable Energy Growth Program >250 kW	138.40

In addition, Section 11(b)(ii) of the Act directs DOER to design a new solar program that "considers underlying system costs, including but not limited to module costs, balance of system costs, installation costs and soft costs". To achieve this directive, DOER should have considered publicly available sources of data from solicitations and development activity in nearby states. However, it appears that, instead of using established and objective market data, DOER's

1 Prices shown above for Connecticut and Rhode Island represent average weighted prices for projects that were competitively bid and accepted in the most recent solicitations. The compensation for projects in Connecticut includes an estimate about the current net metering rate, whereas the compensation for projects in Rhode Island is a bundled price. Also, the Connecticut and Rhode Island prices are historical, whereas the proposed prices for the New Program are intended for 2017 and later years, and recent price trends show decreasing solar costs.

consultant relied on subjective survey results; specifically, as stated on page ix of the Solar Report,

> to elicit detailed information on various factors that affect PV project development and the successor program, the consultant conducted a two-part stakeholder survey. Results of the surveys and research were used to inform inputs into the model of required incentives (e.g., project costs and financing assumptions), deployment model (e.g., technical potential constraints on installed capacity, the financing of SREC revenue), and a separate model used to compute the net aggregate direct ratepayer impacts (which include administrative costs).

Even though actual data were available to the consultant from solicitations and development activity in nearby states, these may not have been considered here. As a result, the Distribution Companies have grave concerns about relying on this survey of solar organizations to establish assumptions for project costs. For one, the 100 organizations surveyed were hand-selected and possibly self-selected, and they were not all development or installation companies.[2] As stated on page 13 of the Solar Report, "[t]his potential self-selection bias should be kept in mind when reviewing all the survey results." Also, the survey yielded far less than 100 responses, resulting in a small sample size of information that was used to establish cost assumptions.[3]

Further, the Solar Report provides that in order "to estimate current and future incentive levels required to facilitate PV development, . . . [k]ey policy and market assumptions are as follows: The successor program is assumed to commence starting January 1, 2017 and have 1600 MW DC of projects installed by December 31, 2022 or 267 MW DC for each of six calendar years. The program incentives are assumed to last 10 or 20 years depending upon the case modeled" (Solar Report at vi, ix). These assumptions have flaws. Based upon the schedule associated with developing the New Program, it will not be available until summer 2017, yet the solar costs that were reported by developers in 2016 were presumably backward-looking and

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2 "With the help of DOER, SEA identified over 100 different organizations who were explicitly invited to respond to the survey. The survey request also was circulated by others (such as associations to their members) so it is unclear how many organizations ultimately received an invitation to respond" (Solar Report at 12).

3 "All responses were reviewed, and many clarification calls and emails ensued in order to improve the quality of responses. In the end, 47 useable qualitative responses and 21 useable quantitative responses were received" (Solar Report at 12).

provided a year in advance of any compensation. Aside from the problems with the initial cost estimates, given the rapid decline in solar costs in recent years, development costs could continue to shrink, automatically resulting in the provision of more compensation than necessary. Introducing competition into the program will help capture those cost savings for customers.

Without competition, solar developers will have no incentive to pass savings from decreased costs on to ratepayers, and will keep all realized cost savings between actual levelized cost and the block price. As a result, developers will regularly receive more funding than necessary to develop, build, and operate solar generating facilities. In the Distribution Companies' experience, competitive bidding leads to lower prices, which is why it is required for most of their procurements, and is used by other corporations and governments for nearly all procurements of goods and services. Additionally, survey results from solar developers show this as well (see Figures 9 and 10 of the Solar Report, where the majority of respondents state that competitive solicitations are either the same or lower cost).

The Solar Report recommends the use of the declining block incentive structure due to the consultant's conclusion that lower administrative costs are associated with the declining block structure as compared with a competitive structure. The cost difference described in the Solar Report appears to be based on the assumption that there is a "premium" to account for the development costs for projects that are never selected for a program within the administrative costs, as a modeling simplification (i.e., referred to as the "dry hole" premium) (Solar Report at 44). However, the qualitative and quantitative survey results do not appear to support this theory and, based on their experience in other states, the Distribution Companies do not find this assumption credible, particularly because it also assumes a ratio of 1.5 failed projects for every one that is successfully enrolled.[4] The Distribution Companies expect that the actual administrative cost differences between a declining block incentive program like the New Program and a competitive bid program would be nearly non-existent.[5]

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[4] Although there will always be projects with incomplete applications or that are simply ineligible for the program, the Solar Report raises some valid points about competitive procurements. Specifically, the Connecticut Program only administers one competitive procurement per year and has an annual contract budget. If more frequent procurements are required for solar in Massachusetts, these two factors could be modified. Also, the Connecticut Program is on track to procure approximately 400 MW through Year 6, and approximately 800 MW have applied during the prior 4.5 years.

[5] Most of the administrative work is gathering and assessing application materials to determine program eligibility, and the only added administrative step associated with enrolling projects in a competitively bid program is to rank the projects by price.

In Rhode Island, there is ample capacity to enroll projects "as bid," and few projects are rejected in any solicitation. At the same time, the ceiling prices established by Rhode Island's public Distributed Generation Board (which are based on recommendations by the same consultant who prepared the Solar Report), are routinely beaten by bids from eligible projects. Moreover, projects engaged in a declining block model are subject to price "step downs," which may make many of them uneconomic as well. There are risks to developers in both program designs, but there is a far greater risk to all customers of overpaying for solar generation under the administratively-set declining block structure. In short, the Distribution Companies recommend that, instead of a fixed price, the block pricing should function as a "not to exceed" cap on prices, and the capacity within the New Program for projects with a nameplate capacity in excess of 250 kW should be competitively procured and paid "as bid." Also, in each block, the compensation for projects under 250 kW should be influenced by the competitively bid prices for projects 250 kW and larger, which is the case for the Connecticut program.

2. Starting Prices of the Blocks and the Value of the Adders are Comparatively High and Have No Budget.

The proposed fixed compensation starting point remains too high based on the Distribution Companies' experience in other states. National Grid's program in Rhode Island and Eversource's program in Connecticut are proof that solar generating facilities can be and already are being built for less money. The starting prices for the blocks should be based on a fully vetted source, and the prices should be accurate and representative of the current market. Also, the price declines of five percent for each successive block is not an appropriate rate of decline. As shown in Table 1, below, a starting block of $250 would decline to only approximately $175 by Block 8 under the Straw Proposal, whereas a decline of ten percent per block would reach approximately $120 by Block 8.

"Table 2: Proposed Block Price Decline of 5% Compared to Recommended 10%"

Block No.	5% Decline in Price (in $ per MWh)	10% Decline in Price (in $ per MWh)
1	250.00	250.00
2	237.50	225.00
3	225.63	202.50
4	214.34	182.25
5	203.63	164.03
6	193.45	147.62
7	183.77	132.86
8	174.58	119.57

In addition, despite the statutory requirement to have a "known or easily estimated budget," there is no overall budget for the New Program. While DOER has stated that the New Program will be half as expensive as SREC I and II, that means that the New Program could nonetheless cost Massachusetts ratepayers an additional $4.5 to $5.5 billion (approximately 0.8 ¢ per kWh at full build-out), over its term, adding to the burden of the $9 to $11 billion cost of SREC I and II and associated net metering credits associated with those programs (approximately 1.6 ¢ per kWh).

For all of these reasons, the Distribution Companies recommend that, if no competition is introduced, DOER should lower the initial pricing of the blocks to be in line with current market dynamics by using a price currently in effect in another state, and lowering the blocks by ten percent per block rather than five percent, in order to ensure better future pricing for ratepayers. In addition, DOER could regularly monitor the solar market and include safety valves so that block prices can be lowered further when necessary. Finally, project enrollment goals should exist within each block, and caps should be placed on both the capacity of each adder and the total remuneration any project can earn from combining adders. With these limits in place, DOER should calculate and establish a total budget for the program, as called for by the Act.

3. The Timing and Pacing of the Blocks Could Create Confusion for the Marketplace and Differing Costs for Ratepayers.

As proposed, the New Program appears to require a Distribution Company to fill a block with projects and immediately open up a successive block to enrollment. Because it is unlikely that the Distribution Companies' blocks will fill at the same pace, this could lead to marketplace confusion and disruption, which could also affect the financing of solar projects for developers. Instead, a Distribution Company should not be required to open up a successive block to enrollment until either all other Distribution Companies have also filled that block, or until a designated period of time has elapsed. In addition, the New Program should be designed so that it will last for a certain period of time. Otherwise, if one Distribution Company fills all of its blocks ahead of the others, the previously witnessed net metering cycle will repeat itself by generating market pressure for a successor solar program even though half of the capacity of the New Program remains available.

4. Unless Capacity Rights to the Projects are Transferred, the Compensation Should be Reduced.

To date, the New Program has not yet addressed the question of potential revenue from the ISO-New England Inc. Forward Capacity Market ("FCM") for capacity products that may be obtained from solar generating facilities within the New Program and to whom the rights to such capacity products would accrue. Among other things, the Act requires DOER to takes into account "electricity revenues and any federal or state incentives" in designing the New Program. Accordingly, to the extent that the rights to capacity products from solar generating facilities enrolled in the New Program are not transferred to Distribution Companies and their customers, then the compensation available to such facilities should be lower to account for the opportunity to obtain FCM revenue. DOER should address this issue within its New Program as early as possible in order to set appropriate expectations for program participants, Distribution Companies, and other stakeholders.

5. The Proposed Program is Administratively Complex and Expensive.

While the tariff elements and the commitment to lower total payment for solar generation will reduce the cost of the New Program compared to the SREC programs, the New Program design does present significant administrative and technical implementation challenges which are unnecessary and will result in increased costs, both to establish the program and to administer it over time.[6] This complex compensation proposal will likely require significant time and dollar

[6] For example, Unitil is in the process of implementing a new Customer Information System, and designing this system to support the DOER's proposed solar incentive program will require months of additional system configuration and testing.

investments in billing systems,[7] which will add cost and require at least one year to implement, and require more personnel to support it.[8] In addition, the Distribution Companies will need incremental personnel to administer all of the solar generation accounts to be created and managed within this program.[9]

The Distribution Companies recommend that DOER radically simplify the New Program to make it less complex, less administratively challenging, and less expensive for ratepayers. Otherwise, DOER should dedicate significant administrative resources and support for New Program-related duties such as qualifying projects, and tracking whether projects remain eligible to receive payments. The Distribution Companies recommend that a third-party combine the production and usage meter data, and compare it to a project's individual solar rate, applicable adder(s), and net metering rate to determine the bill credits and payment that it should receive under the New Program, then provide the compensation to the customer, and refer the bill credit value to the Distribution Companies.[10]

6. The Proposal Includes Questions Regarding Cost Recovery That Are More Properly Deferred to the DPU.

The Straw Proposal contemplates "full cost recovery" for Distribution Companies of all incentive payments and administrative costs associated with the program. However, it also raises questions about what costs should be recoverable, where such costs should be reflected on

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7 In its Grid Modernization proceeding before the DPU, Eversource estimated that the cost of a "bolt-on" complex billing package would be $26 million, and complex billing capability would be required to administer all parts of the proposed New Program. Additional costs would be associated with data collection, data management and storage, and customer billing presentment. In addition to billing system upgrades and associated administration, it appears that the New Program would necessitate new production meters on all solar facilities to net the solar production and demand related net metering credits.

8 This is particularly true for Eversource. For example, Eversource's renewable energy program in Connecticut, which is about one-quarter of the size of the proposed New Program, currently requires two dedicated full-time employees just to purchase RECs from customers, and additional employees provide support on the billing, accounting, regulatory, and legal administration.

9 This broad and complex administrative mandate is not currently within the core function of the Massachusetts Distribution Companies. In Rhode Island, Narragansett Electric Company is provided remuneration by statute as a means to compensate the company for administering that state's solar incentive program.

10 Even with the services of a third-party administrator, the Distribution Companies will still need to develop systems that will require a significant investment of time and resources.

a customer's bill, and whether such costs should be recoverable as an energy charge, a delivery charge, or both.

The Act requires the program to "ensure that the costs of the program are shared collectively among all ratepayers of the distribution companies." The Distribution Companies would support any pronouncements by the DOER in their regulations regarding cost recovery associated with the Program, consistent with the language of the Act. However, the specific questions raised by the DOER are ultimately the purview of the DPU to determine, based on their determination of whether the costs charged to customers are recovered through just and reasonable rates. Accordingly, the Distribution Companies recommend that the DOER leave to the DPU questions regarding specific issues associated with how costs associated with the program will be recovered from customers.

III. Conclusion

The Distribution Companies appreciate the opportunity to provide comments on DOER's Straw Proposal and New Program. Please contact any of the undersigned if you have any questions regarding this filing.

Sincerely,

James Daly Vice President Energy Supply Eversource Energy 247 Station Drive Westwood, MA 02090 (781) 441-8258	Gary Epler, Esq. Chief Regulatory Counsel Unitil 6 Liberty Lane West Hampton, NH 03842 (603) 773-6440	Amy G. Rabinowitz Vice President & Deputy General Counsel National Grid 40 Sylvan Road Waltham, MA 02451 (781) 907-1830

Very truly yours,

Amy G Rabinowitz

Amy G. Rabinowitz
Vice President & Deputy General Counsel
National Grid
40 Sylvan Road
Waltham, MA 02451
(781) 907-1830