Via: marfp83d@gmail.com

The Massachusetts Department of Energy Resources
The Massachusetts Office of the Attorney General
Fitchburg Gas & Electric Light Company d/b/a Unitil ("Unitil")
Massachusetts Electric Company and Nantucket Electric Company d/b/a National Grid
NSTAR Electric Company and Western Massachusetts Electric Company d/b/a Eversource

Subject: Stakeholder Comment in respect of Section 83D of the 2016 Act to Promote Energy Diversity

Please find attached our stakeholder comments in respect of the foregoing; we appreciate the opportunity to participate in this open stakeholdering process. I invite you to contact me if you require further comment or clarification our on comments. We look forward to further dialogue on the process.

1. **Please provide the following information with your comments:**

    a. **Name of Organization**

    b. **Type of Organization (Public/Industry/Advocacy/Other)**

    Pattern Energy Group LP ("Pattern Development") is a privately owned renewable energy developer and the owner of the 600 MW King Pine wind project in northeastern Maine.

    Pattern Development is a leader in developing renewable energy and transmission assets. With a long history in wind energy, our highly-experienced team has developed, financed and placed into operation more than 4,000 MW of wind power projects. We have a global footprint currently spanning the United States, Canada, Mexico, Chile and Japan and a strong commitment to promoting environmental stewardship drives our dedication in working closely with communities to create renewable

energy projects. Further information can be found at our website at www.patterndev.com.

2. **Section 83D of Chapter 169 of the Acts of 2008 ("Section 83D"), as amended by Chapter 188 of the Acts of 2016, An Act to Promote Energy Diversity, requires a solicitation be issued by April 1, 2017, including a timetable for the procurement. What is the appropriate amount of time needed by bidders between the issuance of the solicitation and the date for submission of proposals?**

   2-3 months.

3. **Section 83D contemplates that the electric distribution companies operating in Massachusetts ("EDCs") will solicit bids to enter into cost-effective long-term contracts for clean energy generation. Clean energy generation means either: (i) firm service hydroelectric generation from hydroelectric generation alone; (ii) new Class I renewable portfolio standard ("RPS") eligible resources that are firmed up with firm service hydroelectric generation; or (iii) new Class I renewable portfolio standard eligible resources. As recognized in Subsection (h) of Section 83D, a long-term contract for clean energy generation may also include, in addition to the procurement of energy, the procurement of renewable energy certificates ("RECs") attributed to Class I RPS eligible resources, and renewable energy certificates not attributed to Class I RPS eligible resources (e.g., those generated by firm hydroelectric generation); hereinafter referred to as "environmental attributes associated with non-Class I RPS eligible resources."**

   Please discuss the methodology that the Section 83D bid evaluation process should use to value the environmental benefits associated with either RECs attributed to Class I RPS eligible resources or the environmental attributes associated with non-Class I RPS eligible resources. Your discussion should address the following:

   a. **Please describe the quantitative methods that the Section 83D bid evaluation process should incorporate for the purposes of evaluating the monetary value of the environmental attributes of RECs attributed to new Class I RPS eligible resources and environmental attributes associated with non- Class I RPS eligible resources.**

b. **Explain how your recommended methodology for the quantification of the monetary value of environmental benefits associated with RECs attributed to new Class I RPS eligible resources and environmental attributes associated with non- Class I RPS eligible resources: (i) treats Class I eligible resources and hydroelectric generation equitably; and (ii) does not result in double counting of environmental benefits.**

c. **Explain whether you propose to incorporate the avoided compliance costs of Chapter 298 of the Acts of 2008, Global Warming Solutions Act ("GWSA") into your recommended methodology for quantification of the environmental benefits associated with RECs attributed to new Class I RPS eligible resources and environmental attributes associated with non-Class I RPS eligible resources.**

DOER appears to have two primary objectives: (1) alleviating price spikes (primarily winter) with firm capacity in those periods, and (2) adding REC Class I energy to its portfolio to enable the state's utilities to efficiently satisfy their increasing RPS obligations through 2030.

DOER should consider allocating 50% of the 9.45 TWh procurement to Class I sources and the remainder to capacity-oriented renewables such as hydro, but including storage and other sources of firm delivery. Adding 4.7 TWh of Class I energy fits very well with the next decade of RPS compliance growth.

REC certificate energy and non-REC firmness / capacity are not easily evaluated together as they are very different products. Any methodology created to bring a 'level playing field' will be rife with assumptions of long-term variables that change dramatically, and will have a bias (likely strong) one way or the other. We therefore recommend that DOER to satisfy its primary objectives with separate procurements for separate products.

4. **Section 83D long-term contracts have the potential to provide the carbon reduction emissions needed to meet the Commonwealth's 2020 GWSA goals. How can the procurement be best structured to incentivize and reasonably value bids whose carbon reduction contributes to meeting 2020 GWSA goals? How can the evaluation incentivize and reasonably value bids that propose to offer clean energy delivery that maximize contributions to the 2020 GWSA goals**

by delivering incremental new clean energy in 2017, 2018, and/or 2019?

We support the RENEW position:

"As discussed in the answer to question 3, the Energy Diversity Act does not require procurements be designed to meet the 2020 GWSA requirements or GWSA. Therefore, no further evaluation should be necessary. MassDEP has accounted for anticipated clean energy procurements in its proposed design of a Clean Energy Standard."

5. **Section 83D requires a long-term contract to "utilize an appropriate tracking system to ensure a unit specific accounting of the delivery of clean energy, to enable the department of environmental protection, in consultation with the department of energy resources, to accurately measure progress in achieving the commonwealth's Global Warming Solutions Act ("GWSA") goals under chapter 298 of the acts of 2008 or chapter 21N of the General Laws." What requirements should be imposed on bidders so that, if selected, they are able to enter into long-term contracts that utilize an appropriate tracking system that ensures the procured clean energy can be counted towards GWSA compliance?**

   We support the RENEW position:

   "Selected non-RPS imports, such as hydropower bidders and suppliers, must have an accounting system in place to track and verify the hydropower attributes sold into New England and to measure compliance with greenhouse gas emissions limits as required by Section 83D(j). The accounting system should be compatible with the New England Power Pool Generation Information System (NEPOOL GIS). In addition to requiring that firm service hydroelectric suppliers (non-RPS Class I) certify that the environmental attributes are included with the energy delivered, any procurement of hydropower imports must be new resources that increase the amount of renewable resources on the New England power system (additionality) to meet the following important stated goals of the act: enhance electric reliability, reduce winter price spikes, and guarantee delivery in winter months. Accounting safeguards must also be in place to ensure any arrangement for non-RPS hydropower will result in measurable and verifiable new emissions reductions across the region that are fully consistent with the GWSA. Imports should only be eligible for a long-term contract if they bring new, unit-specific clean energy to the ISO New England (ISO-NE) control area in excess of the historical

baseline of what has been imported into New England from that neighboring region control area.

In considering imports of any type of clean energy from a region having a shortage of peak winter capacity, a tracking and verification system must be in place so that Massachusetts can also ensure new imports are not meeting its peak needs with fossil-fueled generation wheeled from other control areas (whether directly or used to fill reservoirs) nor by transferring existing carbon-free generation supplied to one control area to New England with that other control region replacing the transferred supply with increased fossil-fueled generation."

6. **Please respond to the following questions regarding the evaluation of the potential benefits associated with a clean energy generation unit's ISO-NE market qualifications other than the energy and REC markets in the Section 83D solicitation process.**

    a. **Should the Section 83D bid evaluation process attempt to quantitatively evaluate the potential benefits associated with a clean energy generation project's potential qualification and participation in other ISO-NE markets, (e.g., the forward capacity market or ancillary services market)?**

    b. **Although capacity is not being purchased under the procurement, electric customers may benefit if a project provides a capacity resource to the region and eliminates the need to purchase other additional capacity from the market. Should the bid evaluation consider such potential benefits of capacity?**

    c. **With respect to evaluating capacity, one potential approach is to have the resource bid its capacity and take the financial risk of qualifying and clearing their capacity in the market. Another potential approach is to ascribe a capacity value based on technology to all resources with the expectation that if capacity revenue is sufficient, resources will have an incentive to pursue a Capacity Supply Obligation. Please explain how the evaluation process might appropriately consider and quantitatively evaluate the potential costs, benefits, and risks of each approach.**

The procurement should be as transparent and simple as possible so as to deliver the lowest cost energy to DOER and its utilities. All bidders

should contribute all ancillary products to DOER and DOER or the utilities can evaluate those benefits for the entire tender but not individual projects. Assessing the potential capacity or ancillary services based on assumptions that could vary widely has the potential to discriminate against some projects more than others based on the 20-year horizon of those services and the potential for them to vary widely. DOER should be focused on getting the cheapest power possible, both REC and firm. As discussed below, the best method to achieve these objectives may be separate tenders for non-REC renewable capacity, and a separate tender for REC Class 1 energy.

7. **Project viability is an important consideration in the evaluation of a Section 83D bid. The ability of a clean energy generation project to achieve interconnection and be deliverable into the region can significantly impact the viability of the project. In addition, interconnection costs associated with clean energy generation can vary widely, and can change significantly over time. Please address the following questions:**

    a. **How should the procurement be structured to allow reasonable evaluation of bids that have not completed the ISO-NE I.3.9 process?**

    b. **For bids that have not completed the ISO-NE I.3.9 process, what information, such as technical reports or system impact studies that closely approximate the ISO-NE interconnection process, should the procurement require from bidders to allow a complete evaluation of bids and associated risks, costs, and benefits?**

    c. **What documentation and information should the procurement require bidders to provide in order to demonstrate that its project is viable from the interconnection process and ISO-NE PTF deliverability standpoint?**

    d. **What documentation should the procurement require bidders to provide that demonstrates the reasonableness of their estimates for interconnection and deliverability costs? What other cost containment information should bidders be required to provide to allow a complete evaluation of bids and associated risks, costs, and benefits?**

All bids should be evaluated based on their ability deliver energy into the ISO New England control area.

Bidders that are willing to commit to the full cost of construction, including over-runs, should be significantly favored in the evaluation process. Further descriptions of this are included in questions below.

8. **The Section 83D bid evaluation process will require a careful review of any transmission costs associated with a bid. Please respond to the following questions relating to the evaluation of any transmission related costs:**

    a. **What documentation and information should bidders provide in order to demonstrate the reasonableness of their transmission costs estimates included within a bid?**

    b. **Please describe in detail how transmission cost risks should be analyzed in the quantitative portion of the bid evaluation.**

    c. **What type of cost containment features might a bidder use to ensure that transmission cost overruns, if any, are not borne by ratepayers as required by the statute?**

    Bidders should build the cost of transmission, network upgrades and interconnection into their bid prices and accept the risks of so doing, particularly cost-over-run and schedule risk. Alternatively, bidders should commit to absorb cost-over-runs within certain bounds that they have some control over.

    Bidders that are able to control (or contractually control) the development and construction of a transmission / interconnection should be judged to be less risky than projects that are dependent on multiple proponents to enable a large transmission line.

    We also support RENEW's position on the cluster study approach that is ongoing.

9. **Should the bid evaluation process allow repricing, and if so, how would you structure bidder repricing to ensure that the initial and final bid is a lowest priced bid?**

    A re-pricing stage should not be a required stage in the procurement. While there are circumstances where a re-pricing may be appropriate, the

recent experiences in Mexico and other jurisdictions suggest a single bid process for highly comparable projects like energy results in the lowest cost bids.

If a re-pricing is desired by DOER, there should be transparent rules established prior to bid submission and only bidders within a certain percentage of the leading bidders should be allowed to participate, say those within 5% of the Stage 1 market clearing bids.

10. **Section 83D requires that the clean energy resources to be used by a developer under the proposal to guarantee energy delivery in winter months. How would bidders demonstrate that proposed long-term contracts can meet this requirement? How should the evaluation process consider bids that cannot demonstrate an ability to meet this requirement?**

    For intermittent resources such as wind or solar, the procurement should require the submission of a 12x24 resource analysis which could then be compared with peak demand periods of the ISONE to determine the efficacy of such project to alleviate peak period demand. The procurement could also request bidders to propose a minimum delivery quantity during peak periods (i.e. afternoons in February), failing which they would be subject to liquidated damages or the obligations to replace such power.

    The DOER should provide its priority demand periods on a 12x24 to allow bidders to evaluate the suitability of their projects, as well as the potential need to supplement with alternate fuel sources (i.e. storage, hydro).

11. **Section 83D requires the DOER to give preference to clean energy generation bids that "combine new Class I renewable portfolio eligible resources and firm hydroelectric generation and demonstrate a benefit to low-income ratepayers in the Commonwealth without adding cost to the project." Please describe how the procurement should be designed to give preference to such bids, and the minimum requirements a bidder should demonstrate to meet this standard.**

    The procurement should be structured as two separate procurements – one for hydro and storage, and one for Class I REC generation. Pairing the two at a macro scale is more efficiently done on a portfolio ISO basis than by individual developers.

12. **Section 83D requires the solicitation and consideration of proposals for long-term contracts for a period of 15 to 20 years for clean energy generation. Does 83D allow for the solicitation and consideration of proposals, as one form of bid, in the form of a delivery commitment model approach as contained in the New England Clean Energy RFP (available at: https://cleanenergyrfpdotcom.files.wordpress.com/2015/11/cleanenergy-rfp-final-111215.pdf). If so, should such proposals be allowed in response to this Section 83D procurement, and do you think the ability to submit such proposals would potentially be utilized by bidders? Would your firm potentially submit such a proposal if allowed as an option?**

    The tender should be structured so as to allow the cost of generation and interconnection to be built into the PPA price i.e. the developer would commit to funding the transmission, system upgrades and interconnection costs, as well as cost over-runs, and the procuring state would simply pay a fixed price for delivered energy. Any network resources would be turned over to the ISO for operational control.

13. **Section 83D permits firm service hydroelectric generation from hydroelectric generation, new Class I RPS eligible resources that are firmed up with firm service hydroelectric generation or new Class I renewable portfolio standard eligible resources to qualify for a long-term contract. Please discuss any quantitative bid evaluation methods not yet discussed in your comments that would be beneficial to incorporate into the quantitative portion of the Section 83D bid analysis to ensure that the value of firmness is adequately captured.**

    The most efficient way to satisfy the desires for (i) firm power, *and* (2) REC compliant energy, would be to conduct separate and equal procurements: the first for hydroelectric, storage and other non-REC sources that contribute to firm power at peak periods, and the second for Class I resources. Pairing hydro with intermittent sources is generally best done at the ISO or utility level, rather than the developer level, based on both risk sharing and electrical considerations.

14. **Resource flexibility— the ability to ramp up and down in response to contingencies— is a potential consideration in the evaluation of Section 83D bids. With increasing intermittency in both load and generation, resources with the ability to respond to system contingencies, extreme events, and load/generation intermittency**

can help avoid reliability issues and mitigate the impact of price spikes to customers. How should the evaluation team quantify the impact of resource flexibility? How should the evaluation be designed to give preference to resources that provide such flexibility?

ISONE is already well served by quick-response natural gas generation, which facilitates the integration of much higher levels of intermittent resources than are in place (or proposed). The ISO does not need significant short-term ramping capability and it should not be a factor in the procurement.

Pattern Development appreciates the opportunity to offer these comments.

Sincerely,

Colin Edwards
VP, Co-Head of Development for North America

Colin.edwards@patternenergy.com
Cell: 647-625-6652