Friday, December 28, 2016

To: 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
STAR Electric Company and Western Massachusetts Electric Company d/b/a Eversource

From: Anbaric Transmission LLC

In response to your letter of December 17, 2016 seeking stakeholder input into the development of a request for proposals ("RFP") for the competitive solicitation of bids to enter into cost-effective long-term contracts for clean energy generation pursuant to Section 83D of Chapter 169 of the Acts of 2008, as amended by Chapter 188 of the Acts of 2016, An Act to Promote Energy Diversity, Anbaric Transmission LLC ("Anbaric") is pleased to provide the attached comments to each of the 14 questions posed in the December 17th letter.

Summarizing the views set forth in our attached comments, Anbaric believes four factors should be paramount in preparing the RFP and its evaluation criteria:

1. The demonstrated ability to site, permit, and complete the proposed project. Energy projects in New England have often faced strong, organized local opposition, which can raise the project's cost, and often leads to its abandonment. Such an outcome would not further the objectives of this legislation.
2. Strong preference should be given to projects that deliver Class I RPS eligible resources. These resources meet the goals of both the Green Communities Act (RPS requirements), and the Global Warming Solutions Act. To ignore these resources in this procurement will only cause greater future costs to be borne by Massachusetts ratepayers.
3. Projects procured under this RFP will be paid for by Massachusetts ratepayers. Therefore, projects that provide local economic benefits in Massachusetts should be given preference.
4. Projects that deliver energy directly to Massachusetts should be given preference. Otherwise, constraints on the ISO-NE grid could result in the selection of projects that have a diluted impact on emissions within Massachusetts borders.

Anbaric has been part of the successful development of two important High Voltage Direct Current (HVDC) projects in the Northeast, which were developed on schedule and on budget. Anbaric is teaming up with National Grid in the development of two transmission projects in New England: the Vermont Green Line, a 400MW HVDC connection between renewable energy supply in New York and the New Haven substation in Vermont; and the Maine Green Line, a 1000MW HVDC connection between the rich wind regime in Maine and Plymouth, MA.

Anbaric appreciates the opportunity to provide its input into the RFP development process.

Sincerely,

Edward N. Krapels
Anbaric Transmission

Issues for Stakeholder Comment

1. Please provide the following information with your comments:

   - Anbaric Transmission LLC
     Suite 680, 401 Edgewater Place
     Wakefield, MA 01880
     Email info@anbaric.com

   - Type of Organization: Industry

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?
   - **Anbaric Response:** Anbaric suggests three months should be sufficient.

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.
      - **Anbaric Response**: Dealing specifically with the evaluation of the monetary value of the environmental attributes of the responses, Anbaric

suggests following transparent and established metrics.

a) Class I RPS eligible resources provide two separate and distinct values to Massachusetts ratepayers. The first is the provision of RECs, which energy suppliers are required by legislation to either procure or pay Alternative Compliance Payments. The second is a reduction in carbon emissions from the electric sector, the value of which is well established by the northeast's RGGI carbon market. In the absence of solicitations, New England will experience a shortfall of RECs, thus Massachusetts ratepayers would incur the costs of Alternative Compliance Payments. Further, some Class I RPS eligible resources are zero-carbon resources and they should be given credit for that. Hence, for Class I RPS resources, the value of environmental attributes should be calculated as the avoided ACP costs, plus the value of net carbon avoided in tons times the cost of carbon as reflected in the existing RGGI carbon market of the Northeast US.
b) Non-Class I eligible resources provide the reduction in carbon emissions, which should be valued as suggested above following transparent and established metrics

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.

- **Anbaric Response:** The Massachusetts legislature has determined which resources are included in the Class I category. This RFP should not second-guess or modify the legislature's decisions. Thus, Section 83D encourages the selection of Class I resources, and further encourages the combination of Class I resources and hydro.
- This RFP **does** allow non-Class I RPS eligible resources to be given a long-term contract. Such a contract has great value for these resources and is consistent with section 4 of the GWSA which stipulates that "the secretary shall analyze the feasibility of measures to comply with the emissions limit established in subsection (a). Such measures shall include, but not be limited to, the electric generating facility aggregate limit established pursuant to section 12, direct emissions reduction measures from other sectors of the economy, alternative compliance mechanisms, market-based compliance mechanisms and potential monetary and nonmonetary incentives for sources and categories of sources that the secretary finds are necessary or desirable to facilitate the achievement of reductions of greenhouse gas emissions limits." A long-term contract is a monetary incentive.
- Further, as stated above, Class I eligible resources provide two separate

and distinct values to Massachusetts ratepayers – RECs, and carbon-free (or low-carbon) energy supply. Non-Class I resources provide the latter. Valuing each of these attributes separately is not 'double counting,' because it recognizes the different value that each provides. To consider any valuation technique that does not account for these attributes separately and cumulatively would be inequitable and would contradict the intent of the legislature.

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.

- **Anbaric Response:** Chapter 298 of the GWSA does not provide a specific penalty for failing to comply, hence Anbaric suggests that the metric used should be the only one being used in practice in Massachusetts – the CO_2 emissions price resulting from the RGGI market. Following a comprehensive 2012 Program Review, the RGGI states implemented a 2014 RGGI cap of 91 million short tons. The RGGI CO_2 cap then declines 2.5 percent each year from 2015 to 2020. The RGGI CO_2 cap represents a regional budget for CO_2 emissions from the power sector. The December 2016 auction (the 34th) yielded a carbon price of $3.55 per ton.

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?
    - **Anbaric Response:** It is our understanding that the GWSA targets 2050, and the interim goals are merely intended to keep Massachusetts on track to accomplish that ultimate goal. There are no penalties for missing a 2020 or 2025 goal. That said, projects that can deliver clean energy in 2017, 2018 and 2019 should be given some credit for that in the evaluation, but if large-scale responses to the RFP that are unable to be in service before 2020 provide much better economic and environmental results, being in service before 2020 should not be a major factor in the selection. What matters most is taking significant steps towards both GCA and GWSA targets.

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?

- **Anbaric Response:** Anbaric, as a transmission provider, has no preference for any particular tracking system requirements, but notes that such systems are in place in multiple jurisdictions to track renewable energy production. Any such system should, however be compatible with NEPOOL's GIS tracking system.

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)?

   - **Anbaric Response:** No. The value of these other market products is notoriously difficult to forecast and sensitive to the input assumptions chosen by the modeler. The entity most qualified to evaluate benefits a project might provide through these ancillary markets is the generator itself. The generator should be encouraged to pursue the values it believes it can capture in the competitive markets, and incorporate those values into a lower bid price, thus benefitting ratepayers.

   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?

   - **Anbaric Response:** No. See above.

   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.

   - **Anbaric Response:** As described above, each resource should bear the risk of qualifying and clearing its capacity, and the decision about whether or not to do so should be left to the generator.

   d. 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.

   - **Anbaric Response:** As discussed in a, b, and c above, Anbaric believes capacity value is best left for the generator to determine and incorporate into its bid. That said, the evaluators should take into account the deliverability of the resources they contract for, rather than the resources' ability to qualify as capacity. More on the deliverability issue in our response to question 7 below.

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:

    - Before answering the specific sub-questions below, Anbaric suggests that the selection criteria weigh the distinct forms of deliverability services differently, as follows:
        - "Firm deliverability" is a qualitative description of a transmission service that is highly likely to deliver renewable energy. The number of MWh needed to be deemed "firm" can be established by contract (with penalties if amount delivered is less than contracted). Firm deliverability provides reliability value to Massachusetts even if it is not deemed formally to be capacity.
        - "Non-firm deliverability" is a qualitative description of a transmission service that the supplier (or the customer) believes will lead to curtailment of delivery. For example, a large new supply injected into the middle of a weak part of the ISO-NE grid may lead to periodic or even chronic curtailments of renewable generation. The ensuing congestion on the interface may, or may not, lead to transmission solutions for that congestion. In New England, not a single transmission project aimed at relieving economic congestion has been completed. In the scoring of proposals, the deemed value of non-firm deliverability should be far below that of firm deliverability.

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

        - **Anbaric Response:** The ISO-NE I.3.9 is one of several critical milestones in the development of both generation and transmission projects because it marks the point in the ISO-NE interconnection process where the system upgrade costs are determined. Bidders should take responsibility for system upgrade costs in their bids. System upgrade cost assumptions included in a bid should be explicit, and should be backed up by technical studies conducted by recognized experts.
        - However, placing too much influence on I.3.9 approval would go against the spirit of the 83D procurement, which emphasizes the Commonwealth of Massachusetts' interest in <u>new</u> renewable energy development – to put it bluntly, the ISO-NE interconnection queue is backlogged, and penalizing potentially good projects for the ISO's slow process may harm ratepayers. As such, placing too much influence on I.3.9 would close the door on potential new energy development in New England and in neighboring regions that could be economical choices for Massachusetts. Anbaric's suggestion is to weigh I.3.9 at the same level of importance in the selection as obtaining state permits.

    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?

- **Anbaric Response:** The developer should provide detailed technical studies by recognized experts about the likely outcome of ISO-NE system impact studies. Such studies should make their assumptions explicit to allow for comparisons across the various bids submitted.

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?

- **Anbaric Response:** The developer should provide detailed technical studies by recognized experts about the likely outcome of ISO-NE system impact studies.

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?

- **Anbaric Response:** From a transmission development perspective, the ISO-NE-determined interconnection cost is only one of several major factors determining the cost of a new transmission project connected to renewable energy sources. Sustained and intense public opposition can cause a project to incur costs far beyond initial estimates. Those cost increases may come from having to change installation techniques, change routes, or promise increased 'benefits payments' to stakeholders or state authorities of transit states. These cost adders could be just as, if not more, significant than interconnection costs. At the extreme, opposition to transmission projects may stop a project from being developed altogether.
- At a minimum, project developers should be required to provide a time schedule showing pathway to commercial operations, and they should be willing to pay damages if their timelines are incorrect. They should submit facts showing their ability to develop projects on budget and on schedule. They should explicitly identify permitting and construction risks and quantify where those risks lie on a time line and schedule.

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?

- Transmission developers should be required to enter a fixed price

bid. The bid evaluators can compare the costs of the various proposals and draw their own conclusions on the reasonableness of the transmission costs.

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

- In a fixed price transmission bid, the evaluators' task is to compare projects in terms of cost and make a determination about the best combination of clean energy resource and transmission service offered by respondents. As discussed further in section 9 below, transmission bidders should be allowed to offer adjustment formulas for cost items over which they have no control, and these formulas should be transparent.

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?

- With a fixed price transmission bid, the developer, not the customer, bears the risk of cost overruns, therefore a fixed price bid should not need cost containment. The adjustment formulas referred to in the answer to #9 should provide all the risk management instruments the transmission developer should need.

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?
    - **Anbaric Response:** A central feature of any transmission selection in the 83D procurement should be the developer's willingness to take responsibility for the cost of its project.
    - That said, bidders should be allowed to provide adjustment formulas for certain items over which the bidders have no control, such as (a) transmission component commodity prices, (b) exchange rate changes for items manufactured overseas, and (c) interest rate changes. Projects without I.3.9 approval should be required to provide an adjustment formula to amend their bid in response to projected interconnection costs that turn out to be wrong. Interconnection costs are notoriously unpredictable.
    - Developers therefore should be instructed to provide an initial binding bid with adjustment formulas.

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?
    - **Anbaric Response:** Projects that cannot demonstrate a guarantee of energy delivery in winter months should state the amount in MWh of the bid that may be at risk, and those MWh should not be allowed to count those toward RPS or GHG

reduction goals for the time period over which they cannot guarantee delivery.

- As a transmission company, Anbaric is aware of liquidated damages and other provisions of intermittent energy contracts that may be used in these circumstances. However, generators are better equipped to provide an answer to this winter delivery question.
- As a transmission developer, however, Anbaric respectfully suggests that a new transmission line from a renewable energy district like Maine can provide access to Massachusetts markets from multiple suppliers in multiple markets, thus if the contracted suppliers should encounter unusual winter supply difficulties, other suppliers with access to the new transmission line may be able to provide the winter supply.

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.

    - **Anbaric Response:** To protect rate payers from having to eventually procure Class I resources or pay increasingly expensive Alternative Compliance Payments (ACPs), the evaluators' preference for projects should be in proportion to the amount of Class I resources they provide. Hence, a proposal that uses hydro to firm the delivery of 500MWs of Class I resources would be rated higher and given greater preference than a proposal that uses hydro to firm only 200MWs of Class I resources.
    - Concerning preferences to projects that provide benefits to Massachusetts low-income tax payers, Anbaric suggests two approaches. First, providing benefits to Massachusetts low-income ratepayers should be a threshold requirement for a proposal to qualify for evaluation. Second, the low-income benefit standard should be given equal weight to other qualitative evaluation factors like project viability, and effects on greenhouse gas emissions.

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/clean-energy-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?

    - **Anbaric Response:** The delivery commitment model was not identified in the legislation and should not be allowed. We note that the legislation authorizing the 83D RFP is titled "An Act to Promote Energy Diversity." New England's energy markets are dominated by natural gas, which now accounts for approximately 50%

of all energy generated, and more importantly sets the market clearing price 75% of the time. The DCM model represents a commitment to supply a quantity of energy, but at the market price. With natural gas setting the market price to this extent, adding supplies at the market price does not provide the benefits associated with fuel diversity. Only by entering into a contract where the energy price is independent of spot markets and natural gas prices will Massachusetts ratepayers realize the benefits of fuel diversity. While the DCM may enable non-fossil fuel sources, it does not provide any hedge against fossil fuel price volatility.

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.

    - **Anbaric Response:** Deliverability of energy is an important criterion that should be used in the evaluation, particularly for this RFP that is intended to serve load in Massachusetts. The ISO-NE grid between northern New England and Massachusetts is constrained, resulting in both curtailments of existing renewable resources, and in difficulties for new resources to interconnect into the grid. Projects that can demonstrate increased deliverability of energy into Massachusetts should be given greater credit. Hence, projects that have interconnection points in the Commonwealth of Massachusetts should be given points for each megawatt of energy actually delivered into Massachusetts.
    - Additionally, any projects selected through this RFP will be paid for by Massachusetts ratepayers. Hence, projects that directly benefit Massachusetts residents and towns should be given quantitative credit. These types of benefits could include local property tax payments, impact mitigation payments to communities, road use agreements, and other local benefits to communities, such as low-income ratepayers in a host community.

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?

    - **Anbaric Response:** New transmission assets, such as voltage source converter HVDC facilities, provide black start capability, bidirectional flow between remote parts of the grid, VAR support, and other reliability benefits that are part of a bid response, and should be given credit for their reliability and other, related values Projects that reduce the need for spinning reserves, frequency regulation, etc.

should be credited for such effects, using the current market price for such services. Further, transmission lines that connect to a variety of resources, rather than a single supplier, inherently offer greater reliability, and lower single-contingency risk, and should be credited accordingly.