Advancing the Clean Energy Future

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To: Massachusetts Department of Energy Resources
Massachusetts Office of the Attorney General
Electric distribution companies
From: Acadia Center
RE: Clean Energy Procurement

In the interest of supporting clean energy procurement that optimizes energy system benefits and greenhouse gas reductions, Acadia Center provides the following comments and recommendations regarding competitive solicitation of long-term contracts for clean energy generation enabled through An Act to Promote Energy Diversity.

Acadia Center is a non-profit, research and advocacy organization committed to advancing the clean energy future. Acadia Center is at the forefront of efforts to build clean, low-carbon, and consumer-friendly economies. Acadia Center provides accurate and reliable information and offers a real-world and comprehensive approach to problem solving through innovation and collaboration.

Our comments focus on structuring the solicitation to enable Massachusetts to have the best information for evaluating and comparing the ability of project proposals to meet greenhouse gas reduction, cost, and reliability objectives. Specifically, we recommend that projects including hydroelectricity be required to submit bids for provision of energy at full capacity during winter peak demand periods to meet system needs. Such projects could also submit bids for provision of energy at less than full capacity during winter peak demand periods. With this information, evaluators can assess the cost and benefits of structuring clean energy procurements to meet system reliability needs in comparison to alternatives. This recommendation directly responds to question 8 in the request for comments, but is also relevant to questions 6 and 4.

Need for Clean Energy Procurement

Massachusetts has committed to achieving deep reductions in electric sector and economy-wide emissions.[1] Procurement of renewable energy in conjunction with other New England states can achieve economies of scale, drive development of renewable energy, and achieve lower prices. In 2013, Massachusetts and Connecticut jointly contracted for 815 MW of renewable energy at a cost of less than $0.08/kWh, below the prevailing market rate for wind power and other conventional generation sources.[2]

Electric utilities' newly-enabled ability to procure hydroelectricity can contribute to achieving the states' climate goals and meeting our future energy needs, but purchases of hydropower should be used to compliment RPS Class I renewable energy rather than supplant it. To the greatest degree possible, long-term commitments of ratepayer

[1] Massachusetts' *Global Warming Solutions Act* requires a 25% reduction in GHG emissions from 1990 levels by 2020, and an 80% reduction by 2050.
[2] See: http://www.bostonglobe.com/business/2013/09/22/suddenly-wind-competitive-with-conventional-power-sources/g3RBhfV440kJwC6UyVCjhI/story.html

expenditures should be structured to achieve multiple public policy objectives. In the context of large-scale and potentially long-lived energy expenditures, these public policies should include reducing greenhouse gas emissions, limiting expenditures on infrastructure, and reducing reliance on natural gas and oil generation otherwise needed to meet peak demand.

Ensuring Performance On-Peak

Properly structured procurements can enable the use of clean energy to meet the region's electric reliability needs on a year-round basis. Bundled procurements of renewables and hydroelectricity can be designed to provide high capacity factors if hydroelectricity is used to back up intermittent renewables, and hydroelectricity alone can match system peaks if required to do so. Delivery of energy at full capacity is especially valuable during winter peaks when generation from natural gas is least reliable and most expensive.

Promoting on-peak performance through the RFP is particularly important, as imports of hydroelectricity from Eastern Canada may be subject to interruptions during winter peak periods when Provincial demand spikes and hydropower first serves Provincial needs.[3] Massachusetts must thus establish specific measures to ensure that power will be provided to New England's consumers when it is needed and valued most. Failing to ensure on-peak performance for clean energy could either cause in-region prices to increase during peak periods as more expensive existing generation sources are called on, or could require expenditure on additional infrastructure and/or new peaking generation that would rarely be used.

Recommendation

The RFP should require that all proponents of projects including hydroelectricity include a bid to provide full capacity during winter peak. Project proponents would also be invited to include an alternative bid that does not guarantee full-capacity on peak winter delivery, which would enable evaluators to compare the cost of firm winter capacity from proposed projects versus alternatives such as additional in-region dual fuel generation. Proponents of projects that do not include hydroelectricity could also provide bids that would ensure full capacity during winter peak (e.g. by pairing renewable energy with storage).

Ability to deliver at full capacity on winter peak should be demonstrated through a description of capacity adequacy to meet all existing and anticipated requirements. This information would include generation and transmission capacity net of competing demand during winter peak periods..

Beyond requiring peak performance bids, Massachusetts can promote actual performance by imposing significant liquidated damages on facilities that do not meet their energy delivery obligations. These damages should approximate penalties incurred under ISO-NE's Pay for Performance (PFP) program[4]. Any damages payments should

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[3] See remarks of ISO-NE President Gordon van Welie at Restructuring Roundtable, slide 10: http://www.raabassociates.org/Articles/Gordon%20van%20Welie%20Presentation%209.19.14.pdf

[4] Generators that do not follow through on capacity commitments are required to pay penalties equivalent to price impacts of such non-performance, with corresponding bonuses paid to generators that do meet capacity commitments. For additional details see: http://www.iso-ne.com/committees/key-projects/fcm-performance-incentives

accrue to ratepayers to compensate for higher costs and increased emissions reduction requirements that would result from non-performance.

We do not believe that a "delivery commitment model" is allowed under the enabling statute, which authorizes utilities to "enter into cost-effective long-term contracts for clean energy generation."[5] However if delivery commitment bids are submitted, the requirement for winter peak performance bids should apply. Providers opting for the delivery commitment model would thus be required to offer a bid that ensures provision of energy at maximum capacity during winter peak demand periods, but could allow for reduced capacity during other periods.

Thank you for your time and attention to these comments, and we look forward to continuing to support Massachusetts' efforts to structure clean energy procurement to achieve climate, consumer, and reliability benefits.

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[5] See line 499, of H 4568, at: https://malegislature.gov/Bills/189/House/H4568