



Calpine Corporation

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Eric Steltzer
Deputy Director, Renewables and Alternative Energy
Massachusetts Department of Energy Resources
100 Cambridge Street, Suite 1020
Boston, MA 02114

Re: Offshore Wind Additional Procurement Study Stakeholder Comment

Dear Mr. Steltzer:

Calpine Corporation (“Calpine”) offers the following comments in response to the Department’s stakeholder questions regarding issues related to a prospective additional 1,600 MW of offshore wind (OSW) procurement.

Calpine operates the largest fleet of natural gas combined cycle (NGCC) and combined heat and power facilities in the U.S. and is also the nation’s largest producer of electricity from renewable, base-load geothermal resources. In New England, Calpine operates approximately 2,000 MW of generation, including the Fore River Energy Center in Weymouth. In addition, our Calpine Energy Solutions subsidiary is a licensed retail energy provider that supplies approximately 1,670,000 MWh of commercial and industrial load in the Commonwealth.

General Comments

New England is continuing to reap substantial economic and environmental benefits related to the successful operation of the regional competitive wholesale power markets. The markets administered by ISO-NE are maintaining reliability at historically low costs due to the overall efficiency of the generating fleet and the availability of relatively low-cost natural gas (despite seasonal price volatility). Without the need for state or other subsidies, the competitive markets have attracted newer and cleaner generating technologies that have largely replaced generation from the region’s legacy coal- and oil-fired generating units.

The existing ISO-NE market design, however, is primarily designed to optimize between cost and reliability. While the region’s electric power sector emissions have declined more than 50% since 2000 with the inception of competitive markets, many states, including the Commonwealth, wish to make faster progress on their environmental goals. To date, NEPOOL and other stakeholder discussions have failed to identify a politically-acceptable market-based solution, such as a carbon tax, that could incentivize the development of low-carbon resources without out-of-market subsidies. Several New England states, therefore, have turned to above-market, long-term contracts to address their clean energy goals, and we are now heading to a hybrid market structure where a rapidly-increasing percentage of the region’s overall electricity needs is being met outside of the competitive market.

Calpine and many other stakeholders believe this trend is inherently unsustainable. At some point, existing generators will not be able to earn sufficient revenues in the competitive markets and will need – or be forced – to adopt a significantly different resource adequacy framework.

In many ways, New England has already realized the lowest-cost carbon reductions with respect to power sector carbon emissions. Based on EIA data for 2016, the highest carbon-emitting sectors were the transportation sector and the residential and commercial sector, while the power sector ranked third. Incremental electric sector carbon reductions are becoming more expensive, with the most recent clean energy RFPs (including 83C and 83D) attracting new resources at prices that are generally around twice as expensive as current market prices. Earlier initiatives such as RPS programs and net metering were very expensive on a per-kWh basis, but the scale was not overly disruptive. Now, however, the combined impact of various state policy initiatives, especially including these large-scale procurement efforts, is becoming very disruptive. The potential cumulative impacts of those policies need to be evaluated, and the Commonwealth needs to recognize that, at some point in the not-too-distant future, it may not be able to continue to rely on competitive markets to successfully address cost and reliability concerns.

Calpine offers the following general recommendations, with more detailed responses to specific questions below.

- The Department's OSW study should recognize and evaluate, to the extent possible, the likely cumulative impacts of an additional OSW procurement effort on the long-term viability of the ISO-NE competitive markets in the context of ongoing state policies, such as the CES, RPS, etc. and similar efforts in other states.
- Evaluating the total cost of any additional procurements should include prospective above-market costs that may be necessary to maintain revenue-adequacy for existing generating units that will be necessary to maintain power system reliability.
- The study should recommend that policymakers identify the most efficient and lowest cost ways to reduce economy-wide GHG emissions in all carbon-emitting sectors before selecting specific GHG reduction strategies and technologies.
- In an effort to increase transparency and assist with prudent planning, procurements should identify and be driven by the specific cost of GHG emissions relative to other available options, such as energy efficiency or GHG reduction efforts in the transportation and buildings sectors.
- The all-in cost of state procurements should be made as transparent as possible on consumer bills rather than continuing with the current approach in which state policy resources appear as T&D retail costs.

- The Commonwealth needs to consider that its share of RGGI revenue will fall as state policy resources displace in-state fossil generation. Having to replace that source of funding for existing energy efficiency and other programs should be considered in the context of evaluating additional procurements.
- Any additional procurements should be phased in over time to allow ISO-NE to most efficiently incorporate the new resources into power grid operations. Making such large-scale changes too quickly may have numerous unintended consequences with respect to power operations, reliability, and consumer economic impacts.

Stakeholder Questions

4) *Are the opportunities to participate and earn revenue in the wholesale markets (e.g. Energy, Capacity, and Ancillary Services) and renewable energy certificate payments sufficient to support the development of new OSW projects? Why or why not? Are there recommended changes to the wholesale market structure or renewable energy portfolio standard that would impact your answer?*

Based on current forecasts it is unlikely that energy and capacity revenues alone can sufficiently support new large-scale renewable development, at least for the foreseeable future. The increasing level of price-taking resources entering the wholesale markets is already disrupting economically efficient price formation and distorting proper incentives for new investment, including offshore wind projects, and the situation will only get worse as new projects that already have contracts come online. It is also unlikely wind resources would receive any significant compensation for ancillary services due to their intermittent attributes.

6) *What are the costs and benefits of an additional OSW procurement(s) on potential pricing and other impacts on wholesale markets (e.g. Energy, Capacity, and Ancillary Services)? Please be as specific as possible as to which markets you are referring to.*

- What, if any, would be the effect on the wholesale markets caused by an additional OSW procurement(s)?*
- If there would be any negative effect, are there recommended solutions to mitigate the effect?*

If energy and capacity market prices continue to be suppressed by subsidized resources, all resources – regardless of technology – will ultimately require out-of-market support.

Additionally, the Department should recognize that historically low wholesale energy prices have masked other factors that place upward pressure on consumer bills. Consumers will start to see much higher overall power bills as less expensive power from the competitive market is replaced by the growing number of above-market contracts.

- Would additional OSW procurement(s) incremental to procurements under Section 83C have any specific wholesale market impacts on other low/no emission resources?*

Yes. All of the pending and proposed out-of-market procurements have the potential to significantly reduce revenues needed by existing clean generators, such as nuclear and hydro units. We are already seeing attempts to secure subsidies for the nuclear units in New Hampshire and Connecticut, and this trend will only get worse. In addition to increasing consumer costs, the decision to further procure any single resource negatively impacts those resources not included in the procurement. Instead of encouraging competitive entry of other low or no emission resources, this procurement effectively picks winners and losers and discourages competitive investment in other clean energy resources.

7) Will additional OSW procurement(s) have specific seasonal market impacts?

This is difficult to predict without any real-world evidence in hand. While some parties claim OSW will help mitigate seasonal fuel price volatility, the markets are highly dynamic. For example, OSW will certainly displace existing fossil generation to some degree, but the market may anticipate that and respond by securing less winter oil, natural gas and LNG inventory in a way that results in no net increase in winter reliability. Or, ISO-NE may need to provide above-market payments to those generators to maintain adequate winter fuel security, which would then offset any cost-savings. By itself, as an intermittent resource, wind does not provide the flexibility or dispatch capability necessary to add resilience to the grid, and ISO-NE has not included wind resources (or Canadian hydro imports) in the current interim fuel security plan. Therefore, procuring these resources financially supports a less resilient resource portfolio in Massachusetts and potentially pushes out dispatchable resources needed for reliability.

15. With pending retirements in New England should there be a particular focus on specific development areas and/or transmission interconnection points to relieve future reliability constraints?

To date, predictions that New England will experience significant near-term retirements has been overstated. ISO-NE has a formal process in place, through the Forward Capacity Market, to manage resource adequacy. Any generators that wish to retire need to inform the ISO in March of the year prior to the next Forward Capacity Auction, and any retirement generally would not take place until the capacity commitment period for that auction, which gives the market at least three years to replace that capacity if it is needed to maintain reliability. Until a generator formally announces its intentions, any discussion about retirement is purely speculative.

In many respects, the ISO-NE market continues to be oversupplied, as demonstrated by recent FCA clearing price trends. This is in part due to recent ISO-NE market policy discussions (e.g., CASPR and fuel security), which tend to encourage generators to defer retirement decisions until the impacts of those policies become clear. While it is certainly true that many plants are “at risk,” it is not clear whether and, if so, when any of these units may actually retire. Minimal retirements are pending in New England with the notable exception of Exelon’s plan to retire Mystic Generating Station Units 7-9. However, intermittent wind assets cannot supply the same load profile as thermal or nuclear assets, so focusing on thermal retirements, including Mystic’s, as opportunities for reliability relief is problematic.

Conclusion

Calpine looks forward to continuing to provide feedback to DOER and please do not hesitate to contact me at Steven.Schleimer@calpine.com if you have any questions or need any additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read 'SS Schleimer', with a stylized flourish at the end.

Steven S. Schleimer
Senior Vice President Governmental and Regulatory Affairs