REVIEW OF POSSIBLE MASSACHUSETTS CLEAN PEAK STANDARD

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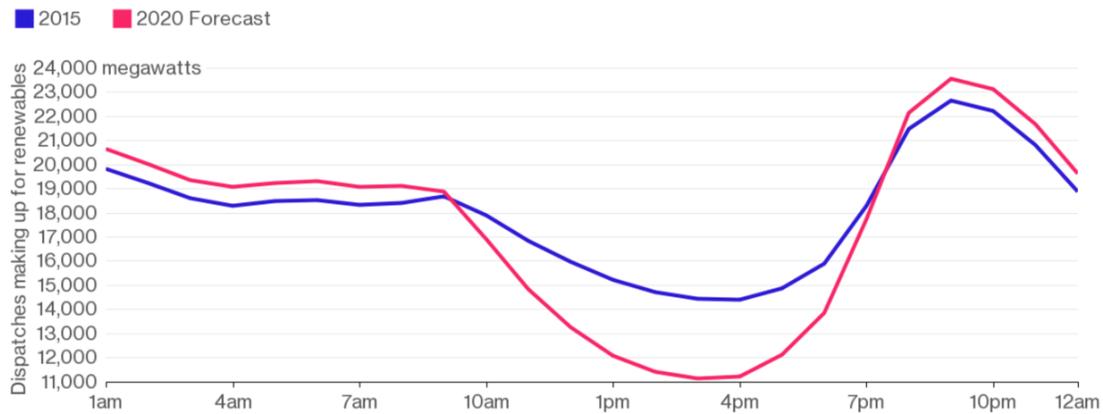
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To: Clients and Colleagues
From: John Dalton, President, Power Advisory LLC

Last week, Massachusetts Governor Baker submitted legislation to the Massachusetts Senate and House, "An Act Promoting Climate Change Adaptation, Environmental and Natural Resource Protection, and Investment in Recreational Assets and Opportunity", as a key part of the administration's Climate Change strategy. The Legislation included $1.4 billion in capital authorizations for climate adaption and resilience. Of particular relevance to New England's electricity sector was a Clean Peak Standard that would require the Department of Energy Resources to establish a standard that requires "all retail electricity suppliers to provide a minimum percentage of kilowatt-hour sales to end-use customers in the commonwealth from clean peak energy resources."

A Clean Peak Standard was first proposed by Arizona's Residential Utility Consumer Office to ensure that a certain percentage of energy delivered to customers during peak load hours is delivered from clean energy resources. Such a standard can help ensure that the environmental objectives of a renewable portfolio standard (RPS) are promoted and not frustrated by a significant reliance on fossil fuel generating resources during peak load hours. RPS promote resources that provide the lowest cost energy, but with wind and solar providing the vast majority of such energy they can lead to an oversupply of energy in some periods (as reflected by negative market prices) and increases in the requirements for more flexible dispatchable resources in other periods. This is illustrated by the Duck Curve, which reflects the significant increase in ramping capability that is required as result of the increased penetration of solar energy resources. Figure 1 below shows California's Duck Curve and the dramatic increase in the requirements for fast-responding resources, a significant proportion of which is likely to be natural gas-fired, from 4 to 7pm.

Figure 1: Net Load in California after Variable Resources: the "Duck Curve"

Source: CAISO (https://www.bloomberg.com/news/articles/2015-10-21/california-s-duck-curve-is-about-to-jolt-the-electricity-grid)

The Clean Peak Standard would require that a portion of qualifying electricity production be produced during the designated peak period to limit the need for natural gas-fired generating units that are commonly called upon to provide such a ramping capability. Specifically, to qualify under the conditions reflected in Figure 1 generating resources would need to produce energy from 4 to 7pm and utilize a clean energy resource to produce this energy. The filed legislation defines eligible resources as Class I renewable energy resources (which presumably would have to be dispatchable or schedulable), energy storage resources (which presumably would be charged with clean energy), or demand response resources.

With an objective to incent the development of new resources, rather than to increase the compensation realized by existing resources, there is likely to be a requirement that these be new resources. This presents special challenges to demand response resources where it is more difficult to ensure that the resource is in fact incremental and not an existing resource seeking to secure higher revenues from a higher value market. Similarly, energy storage resources presumably will need to demonstrate that the energy used for charging is "clean" and incremental.

The legislation calls for the Clean Peak Period to be when "electrical consumption results in a significant increase in greenhouse gas emissions, or an increase in electrical prices or transmission and distribution costs to end-use electricity customers" and be no more than 10% of the hours in the year.

Power Advisory would welcome the opportunity to assist clients in assessing opportunities created by the Clean Peak Standard regulation.