May 14, 2010

Mr. Dave Corbus
Senior Engineer
National Renewable Energy Laboratory
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Golden, Colorado 80401

Dear Dave:

Thank you for taking the time to discuss in greater detail the National Renewable Energy Laboratory's (NREL) Eastern Wind Interconnection Study (EWITS). Having conducted "what if" scenario analysis at the request of the New England Governor's in relation to developing New England's renewable resources, we value the data such analysis provides. We commend NREL for its effort and substantial data production.

We appreciate the distinction you draw between technical analysis such as EWITS and policy. Similarly, we appreciate your recognition that a clear understanding of the kind of information EWITS provides - and the kind of information EWITS does *not* provide - is critically important to Governors and other policymakers as they consider EWITS and the ways in which it can and cannot be used to inform policy options.

We set forth below the kind of information that EWITS does not provide.

- EWITS appears to understate the cost of overall transmission infrastructure. A report prepared for the New England Governors by ISO New England, Inc. (ISO-NE) estimated the cost of transmission to deliver power from the Midwest to the eastern United States could be *more than three times as costly* as the JCSP's original estimates.[1] (See, ISO-NE Study at page 58.) Aside from experience in New England that shows initial transmission cost estimates to be well below actual costs, the proposed transmission overlay designs have the potential for adverse operational consequences if the underlying transmission infrastructure is not reinforced and enhanced. To avoid adverse impacts, local and regional reinforcements would be required. Even if able to be addressed from a technical perspective, the reinforcements could add major costs.

- EWITS does not consider the costs of additional transmission that would be needed to move the power EWITS hypothesizes to be delivered *to* New England's border *throughout* New England to load. The costs of transmission in

[1] *New England 2030 Power System Study, Report to the New England Governors, 2009 Economic Study: Scenario Analysis of Renewable Resource Development*, ISO New England, February 2010.

region that would be required to move renewable and/or coal power from the Midwest throughout New England would be substantial. The ISO-NE report referenced above also identified $5 billion to $11 billion of transmission reinforcements that would be required *in New England* to reliably deliver supplies from the Midwest. (See, ISO-NE Study at page 58.)

- EWITS suggests that the most significant impact of EHV transmission would be to dramatically displace generation from gas-fired power plants in the East (with power generated to the West). Yet, EWITS does not consider the possible operational impact of decommissioning a substantial portion of generating capacity close to load in the East, nor does it contemplate the costs of compensating generators that are rendered uneconomic by EHV transmission – but are required for reliability and voltage support. Under the EWITS scenarios, it is reasonable to expect that there will be an ongoing need for local capacity from New England's gas-fired power generating facilities that would not earn sufficient revenues from capacity, energy, and ancillary service payments to remain in service; and for those generator-related costs to be significant.

- The data provided in the EWITS final report does not give enough information to perform an extensive analysis particularly with regard to the regional impacts of the hypothesized scenarios. Also missing is a characterization of the uncertainty of the cost estimates that may lead to some confusion about the costs and merits of the scenarios.

Therefore, for EWITS to fully inform policy choices, it needs to factor in the cost categories above and provide clear analysis of the potential overall impacts of the hypothesized scenarios *and* of the regional impacts of these scenarios. In the absence of such information, policy makers will not be in a position to make sound decisions.

As important, if the goal of EWITS is to help policymakers sort through the most cost-effective, technically feasible way to reduce carbon and meet our clean energy goals, it must:

(1) identify how carbon emissions under the wind power scenarios compare against a future where there is no additional effort to construct transmission beyond existing regional tariff and reliability constructs. Because transmission systems do not distinguish between generation fueled by wind and coal, a cross-country transmission system could serve as a pathway to deliver increased coal-fired generation to East coast consumers, which could undermine the goal of developing wind resources within the Eastern Interconnection;

(2) provide a comparative assessment of reaching our carbon and renewable goals through regionally-focused renewable, efficiency, and distributed generation development. Additionally, any credible assessment of New England's renewable power options and ways to serve consumers cost-effectively must include Canadian resources.

As EWITS noted, one reason for its West-to-East bias (or, why all the transmission overlays are structured to allow a general West-to-East energy transfer) was the lack of wind generation data from Canada, which precluded NREL from studying energy transactions between border regions of the United States and Canadian provinces to the north. (See, EWITS at page111). New England has access to significant amounts of low- and no-carbon resources just to the north. Those resources must be considered in the analysis and the comparative assessment; and,

(3) provide some characterization of the uncertainty involved in the assumptions and potential impacts (e.g. costs) associated with the issues studied. This comparative assessment should include the costs, operational feasibility, and an assessment of the magnitude of renewable development and carbon emission reductions achievable under regional development scenarios.

New England supports the type of analysis NREL has conducted and would support NREL receiving supplemental funding to conduct a more complete analysis. Without such further analysis, however, it is our belief that EWITS in its current form is not a sufficient basis to be relied upon by policymakers for making energy decisions critical to our future. Further, we would be pleased to assist NREL with the production of data associated with New England and Canadian no- and low-carbon resources, transmission cost estimates based on New England's experience in recent years and the important operational issues noted above.

Again, thank you for taking the time to help us better understand EWITS.

Sincerely,

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