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Sent: Wednesday, October 09, 2013 2:34 PM

To: Heather Hunt ; Welch, Thomas L; katie dykes; Chris Recchia; Margaret Curran; Michael Harrington; Bob Scott

Subject: RE: seeking feedback: requests from state consultant on B&V Hydro work

All—For the reasons Heather indicated in the note attached to her e-mail, MA DOER agrees that it is appropriate to withdraw the questions.

Fyi, I was not in the loop on DOER's communication to NESCOE. This is not an indication of any disagreement or absence of communication in general among MA energy agencies—just that everyone is moving too fast....

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From: Heather Hunt [mailto:heatherhunt@nescoe.com]

Sent: Tuesday, October 08, 2013 8:16 PM

To: Berwick, Ann (DPU); Thomas Welch; katie dykes; Chris Recchia; Margaret Curran; Michael Harrington; Bob Scott

Subject: seeking feedback: requests from state consultant on B&V Hydro work

Confidential Draft -

Please hold the attached document and that fact of analysis of analysis in confidence. It could easily beg questions and requests from stakeholders and our goal was to issue a revised Hydro Report and nothing else.

MA DOER sent us a series of questions from its consultant on the preliminary Black & Veatch Hydro Study - the preliminary draft version that is being reworked substantially and that will not be released outside the states. While we are generally as responsive as we can be to states, this is a first and there are some considerations to think through. The memo attached has the consultant questions. I embedded up front a note with questions for you and considerations so that you have everything in one place.

Please let me know what works best for you - you might prefer a call rather than a series of emails. I am traveling tomorrow but could work on setting a call as soon as possible. DOER notes time urgency so we'd need to talk soon.

Ann - you can feel free to share this with DOER if you like. I wanted to get Managers guidance before communicating back but I have no issue with DOER seeing the considerations that NESCOE should think through.

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The MA DOER sent NESCOE the series of questions below on the preliminary draft Black & Veatch Hydro Study, the version that we are now substantially reworking. The preliminary draft version that is the subject of the DOER questions is not, as you all decided, to be released outside of the states. This notes some considerations in connection with the questions on that initial version and seeks your guidance.

We are working on a revised draft Study that will be a very different work product than the preliminary draft Study that MA DOER has asked Synapse to assess (for background, Synapse notes that its Statement of Work asks that it “review NESCOE cost evaluations and cost-effectiveness conclusions. In particular the SOW requires us to review key assumptions and analyses underlying the cost evaluations and cost-effectiveness conclusions presented in the August 27, 2013 draft of *Analysis of Hydroelectric Power Imports* prepared by B&V.”) In the revised draft, there will be no comparison between the price reduction benefit estimates and the transmission cost-of-service estimates. In other words, we are deleting the net benefit analysis altogether. The revised draft Study will take elements of the data and tell the best story possible – it will make clear that reduced electricity prices and reduced electric sector emissions would likely result from increased hydro imports and provide estimates associated with the assumed import scenarios. Synapse analysis of the preliminary draft’s cost-effectiveness findings will not be applicable under the revised draft Study, which will be the only draft released outside of the states.

A threshold question then is how you want NESCOE to respond. As you know, we endeavor to be responsive to state agencies whenever possible. However, this is a first and there are some considerations that should be weighed at the same time. One primary consideration is that answering many of the questions would produce more information that could find its way into the public record on a *preliminary* draft Study and findings that will not be released publicly and that will be superseded by a very different presentation of information. It would also seem to be helpful to everyone to know what DOER plans to do with the Synapse analysis (e.g., will it be released or able to be obtained via FOI request) so perhaps a call would be useful?

Some other considerations:

- **Timing:** Many of the questions (assumed retirements, electric load forecast, etc.) are about assumptions that the states reviewed and agreed to back in the March/April timeframe in the context of the Gas-Electric Study. Others (Northern Pass assumption, rationale for assuming a submarine line, why there are not specific transmission paths, etc) are issues the Hydro Advisory Group talked about and agreed to over the summer. So, many of the answers likely reside in emails we and the MA DOER have. It would nevertheless take us some time to pull it all together. DOER indicates that the Synapse work is on an extremely aggressive timeframe. It wants to complete the work by the end October. As a contractual matter, we cannot put more work to B&V so time on

the questions would have to be by internal resources. I am out this week. Ben is out three days next week. Over the next couple of weeks, the time we have to work on the Hydro Study needs to be on bringing forward the revised draft. The point is simply to note that we may not be able to satisfy MA DOER's time urgency unless you want us to reschedule matters next week.

- **Incremental analysis from B&V:** A couple of questions ask for B&V to provide detailed transmission information. The B&V Study did not as a matter of scope include detailed transmission analysis. We do not have the contractual ability to ask B&V for detailed incremental transmission analysis.
- **Market sensitive information:** A couple of the questions seek proprietary information that has market value for B&V (related to gas forecasts). We could produce that information for internal state use but there may very well be issues with turning B&V work product that has commercial value to another consultant that we'd need to explore and seek consent from B&V. It would be preferable not to have to pursue this with B&V while we are working on the revised version with them and seeking their cooperation about presentation of information.
- **Forthcoming information:** A couple of the questions request information that will be in the revised Study. We had requested B&V identify sources for certain research findings and cost estimates, for example. We also had already asked B&V to identify some examples of the commercial options for transmission development.

Questions re August 27, 2013 draft of *Analysis of Hydroelectric Power Imports* prepared by B&V

1. Are costs in the analysis reported in nominal dollars or in constant year dollars? If constant year, what year? If nominal, what is the assumed inflation rate?
2. The analysis develops estimates of transmission costs for three 1,200 MW HVDC lines
 - a. Please identify the sources of the estimates of capital costs for each transmission line, and construction approach, reported on page 4-1.

- b. Please provide the financial assumptions used for the evaluation of each transmission line in terms of capital recovery period, recovery rate, lifetime, etc.
- c. Regarding Transmission Configuration # 1
 - i. Please identify the sources of hydro power in New Brunswick and/or Northern Maine assumed to supply this line. If the sources in NB and ME are not hydro, please explain how they could feed into a HVDC line
 - ii. Please identify the sources of hydro power in Quebec assumed to supply this line, and how those sources would reach the NB border
 - iii. Please identify the sources of hydro power in Newfoundland and Labrador assumed to supply this line, and how those sources would reach the NB border
 - iv. Please explain the rationale for assuming a submarine line
- 3. Please provide the following input assumptions use in the market simulation of the Base Case Supply / Base Case Transmission
 - a. Electric energy load forecast, and source
 - b. carbon dioxide emission allowance prices by year from 2013 onward
 - c. transmission paths and capacity by year from 2013 onward, within New England and between New England and external control areas
 - d. operation of Vermont Yankee from 2015 onward (third bullet page 5-3)
 - e. retirements of existing capacity by year from 2013 onward (third bullet page 5-3)
 - f. additions of new capacity by type by year from 2013 onward, including assumption re Northern Pass project (third bullet page 5-3)
 - g. Renewable energy certificate (REC) prices in New England from June 2013 onward, and source of those projections
 - h. wholesale natural gas supply price in New England for electric generation by month by year from 2013 onward. Please indicate pricing point, e.g., Algonquin City Gate, Tennessee Zone 6
 - i. Henry Hub prices from 2013 onward
 - j. Forward capacity Market (FCM) prices by FCM year (June to May) from June 2013 onward, and source of those projections
 - k. Base Case Supply of hydro capacity in Quebec, Newfoundland/Labrador, Nova Scotia and new Brunswick by year from 2013 onward potentially available for export

4. The analysis simulates the energy market in New England for seven different scenarios involving various increments of imported hydro from up to three new transmission lines.
 - a. Please indicate the ultimate location at which each of the three new transmission lines is assumed to interconnect with the ISO-NE grid. For example, does the analysis assume each line will be built with sufficient upgrades of the New England grid to allow it to deliver power into the New England hub?
 - b. For each scenario please indicate the percentage of the capacity rating of each line the analysis assumes ISO-NE will treat as firm capacity for planning purposes and compensate as firm capacity in its Forward Capacity Market, and the rationale for those assumed percentages
 - c. For each scenario please indicate the capacity factor at which the analysis assumes, or simulates, each transmission line will operate, at the finest level of temporal granularity modeled, and the rationale for those assumed capacity factors
 - d. For each scenario please identify retirements of existing capacity by year from 2013 onward that are different from the Base Case scenario
 - e. For each scenario please identify additions of new capacity by type by year from 2013 onward that are different from the Base Case scenario, other than the additions of the new transmission lines
5. The analysis of cost-effectiveness appears to be limited to a 12 year period, 2018 through 2029.
 - a. If our understanding is correct, please explain why cost-effectiveness of import projects was not evaluated over a longer period, for example 20 or 25 years? If cost-effectiveness of import projects was evaluated over 20 or 25 years, please provide that analysis or indicate where it is presented in the Draft.
 - b. Please indicate the discount rate used to evaluate the net present value of costs and benefits and the rationale for choosing that discount rate
6. The analysis discusses three basic commercial options for new transmission development, page 6-1. Please provide examples of comparable transmission line projects that have been actually developed to deliver power into a deregulated wholesale electric market under each of the three models in the past five years