

**STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD**

IN RE: INVENERGY THERMAL DEVELOPMENT LLC	:	
APPLICATION TO CONSTRUCT AND	:	
OPERATE THE CLEAR RIVER ENERGY	:	SB-2015-06
CENTER, BURRILLVILLE, RHODE ISLAND	:	

**INVENERGY THERMAL DEVELOPMENT LLC’S RESPONSES TO
THE OFFICE OF ENERGY RESOURCES’ THIRD SET OF DATA REQUESTS**

OER 3-1: Pre-filed testimony submitted by Ryan Hardy of PA Consulting Group, Inc. (“PA”) on behalf of Invenegy summarized the results of PA’s analysis of the Clear River Energy Center (“CREC”) on the New England electricity markets. Mr. Hardy’s analysis concluded that the addition of CREC “will lead to an average annual reduction of 1,037,000 short tons of CO₂, 2,399 short tons of NO_x, and 2,984 short tons of SO₂ in the New England and New York region over the 2019-2022 timeframe.” For New England alone, the analysis revealed that average annual reduction in CO₂ due to the addition of CREC would be 135,000 short tons. (See p. 16 of 30.) Exhibit RH-2 (Confidential) to Mr. Hardy’s testimony, dated April 22, 2016, provides details of the analytic method. Please address the following with respect to Exhibit RH-2:

(a) What was the source of the load forecast data for New England and New York in PA’s analysis? Are more recent forecasts publicly available?

(b) What was the source and vintage of the natural gas price forecasts for Henry Hub, Algonquin Basis and Algonquin Delivered shown in Table 1 of Exhibit RH-2? Please provide an updated gas price forecast.

(c) What was the source and vintage of the projected Regional Greenhouse Gas Initiative (“RGGI”) CO₂ allowance prices shown in Table 3? Please provide an updated CO₂ allowance price forecast, in light of recent RGGI auctions, the 2016 RGGI Program Review, and other regulatory and market developments.

(d) Please provide an update to Tables A.4(a) and A.4(b), firm capacity additions and retirements summary, in light of recent market developments, including the results of FCA #11, and new renewable and clean energy resources procured through state initiatives.

RESPONSE 3-1 (a) For ISO-NE: 2015 CELT Load Report. FOR NYISO: 2015 Load and Capacity Data Report. PA Consulting Group (PA) will be updating its analysis by the end of June utilizing market assumptions from the ISO-NE’s 2017 CELT Report, which is scheduled to be released by May 1, 2017. The CELT load forecast is a primary input within PA’s modeling and could have material impact on the forecasted market outlook used to calculate capacity pricing, energy pricing, and emissions savings, among other results.

(b) Henry Hub natural gas prices for 2016-2017 are sourced from NYMEX forwards as of 12/30/15, and long term natural gas prices (2022+) are sourced from BTU Analytics’ December 2015 forecast, with the interim years interpolated (2019-2021). Algonquin natural gas basis prices for 2016 are sourced from NYMEX forwards as of 12/31/15. For Algonquin Basis 2017-2025: BTU Analytics. PA will also update its analysis with natural gas price assumptions as of 4/30/17.

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(c) For RGGI 2015: Clearing price from RGGI Auction 30, 12/2/2015. For RGGI 2016-2025: Trends from RGGI Auction 30 clearing price in 2015 to PA's internally developed forecast for 2021-2025. PA will also update its analysis with RGGI CO2 assumptions as of 4/30/17.

(d) PA will update its analysis, including firm capacity and retirements and other impacts of FCA#11 when the ISO-NE 2017 load forecast is released in the first week of May.

RESPONDENT: Ryan Hardy, PA Consulting Group

Date: April 25, 2017

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OER3-2: For each subpart (a) through (d) in Data Request 3-1 above, describe how applying the information updated since April 22, 2016 to PA’s analysis would change Mr. Hardy’s conclusions regarding the average annual reduction of CO₂ emissions in New England and New York, and New England alone, ascribable to the addition of CREC.

- RESPONSE 3-2:
- a) PA has not yet evaluated the impact of an updated load forecast, but plans to do so in May 2017. Overall, the addition of Clear River Energy Center (CREC) to ISO-NE will still result in a more efficient market, so it is our expectation that CREC will still result in lower CO₂ emissions.
 - b) PA has not yet evaluated the impact of an updated natural gas price forecast, but plans to do so in May 2017. Overall, the addition of CREC to ISO-NE will still result in a more efficient market, so it is our expectation that CREC will still result in lower CO₂ emissions.
 - c) PA has not yet evaluated the impact of an updated CO₂ price forecast, but plans to do so in May 2017. Overall, the addition of CREC to ISO-NE will still result in a more efficient market, so it is our expectation that CREC will still result in lower CO₂ emissions.
 - d) PA has not yet evaluated the impact of revised additions and retirements, but plans to do so in May 2017. Overall, the addition of CREC to ISO-NE will still result in a more efficient market, so it is our expectation that CREC will still result in lower CO₂ emissions.

RESPONDENT: Ryan Hardy, PA Consulting Group

DATE: April 25, 2017

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OER 3-3: Please provide an updated analysis of the Invenergy’s proposed CREC project, using the most currently available information on New England and New York markets, including the updates identified in Data Request 3-1. Provide the following information derived from PA’s market model in electronic spreadsheet format with all cell formats and cell references intact.

- (a) Provide the annual change in CO₂, NO_x, and SO₂ emissions ascribable to the addition of CREC across New England and New York.
- (b) Provide the emissions of CO₂ for each control area or RTO across the study region, other than New England and New York, for each year of the forecast, with and without CREC.
- (c) Provide the fuel use by type (including but not limited to natural gas, coal, distillate fuel oil, kerosene, jet fuel, residual fuel oil), for each year of the forecast, with and without CREC.
- (d) The data should cover the same years for which Invenergy provides CO₂ impact results.

For each technology type listed below, provide the annual MWh of generation with and without CREC, for ISO-NE and NYISO.

- (1) Combined cycle plants
- (2) Combustion turbines
- (3) Oil-fired steam plants
- (4) Coal-fired plants
- (5) Nuclear
- (6) Wind
- (7) Hydro (excluding pumped storage)
- (8) Solar
- (9) Imports
- (10) Biomass, landfill gas
- (11) Other

- (e) Provide the total annual generation (MWh) for the Rhode Island zone

RESPONSE 3-3: As noted above, PA has not yet evaluated the impact of revised market assumptions, but plans to update its analysis in early May 2017, following the release of ISO-NE’s updated load forecast.

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RESPONDENT: Ryan Hardy, PA Consulting Group

DATE: April 25, 2017

INVENERGY THERMAL DEVELOPMENT LLC
By its Attorneys,

/s/ Alan M. Shoer

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Dated: April 25, 2017

CERTIFICATE OF SERVICE

I hereby certify that on April 25, 2017, I delivered a true copy of the foregoing responses to Office of Energy Resources' Data Requests via electronic mail to the parties on the attached service list.

/s/ Alan M. Shoer

SB-2015-06 Invenergy CREC Service List as of 04/17/2017

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