

January 22, 2018

**Via Federal Express/Electronic Mail**

Todd Anthony Bianco, PhD, EFSB Coordinator  
RI Energy Facilities Siting Board  
89 Jefferson Blvd.  
Warwick, RI 02888

**Re: *Invenergy Docket No. SB-2015-06***

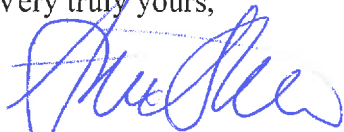
Dear Dr. Bianco:

On behalf of Invenergy Thermal Development LLC and the Clear River Energy Center Project (“Invenergy”), enclosed please find an original and three (3) copies of Invenergy’s responses to the Rhode Island Office of Energy Resources’ (“OER’s”) 4<sup>th</sup> Set of Data Requests (Exhibits Redacted).

Additionally, enclosed please find one confidential copy of the Confidential Exhibits.<sup>1</sup> A copy of these confidential documents will be transmitted to those parties that have signed Non-Disclosure Agreements with Invenergy.

Please let me know if you have any questions.

Very truly yours,



ALAN M. SHOER  
[ashoer@apslaw.com](mailto:ashoer@apslaw.com)

Enclosures

cc: Service List

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<sup>1</sup> The Confidential Exhibits are updated excel spreadsheets previously filed in response to OER’s second and third sets of data requests. The Energy Facility Siting Board previously granted Invenergy’s Motion for Protective Treatment of the information contained in these excel spreadsheets. *See* Order No. 99, effective Oct. 3, 2016, dated Oct. 5, 2016. Accordingly, for the same reasons the Board ruled to protect the information contained in these excel spreadsheets previously, these Exhibits are confidential and should be protected under the Board’s previous Order.

**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' FOURTH SET OF DATA REQUESTS**

OER 4-1: The pre-filed supplemental testimony of Ryan Hardy of PA Consulting Group, Inc. ("PA") on behalf of Invenergy summarized the results of PA's updated analysis of the Clear River Energy Center ("CREC") under the assumption that CREC Unit 2 clears FCA-13 instead of FCA-12. Results were provided for the years 2019-2025. Please confirm whether this encompasses the entire of the study period analyzed in this update. If additional years were modeled, please provide the results of those years in the same format as was provided for study years 2019-2025, in electronic spreadsheet format with all cell formats and cell references intact.

RESPONSE 4-1 PA Consulting Group's ("PA") analysis was conducted for the years 2019-2025 and results for all available years have been provided through prior data requests and through the pre-filed supplemental testimony of Ryan Hardy.

RESPONDENT: Ryan Hardy, PA Consulting Group

Date: January 22, 2018

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OER 4-2: On page 7 of Mr. Hardy's pre-filed supplemental testimony, he states that he expects the one-year delay of CREC Unit 1 would not significantly change his conclusions regarding ratepayer savings or emissions reductions. Please provide an updated analysis of Invenergy's proposed CREC project, assuming both CREC Unit 1 and 2 are delayed by one year (i.e. Unit 1 does not come on line until June 2021 and Unit 2 does not come online until 2022). 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 CO<sub>2</sub>, NO<sub>x</sub>, and SO<sub>2</sub> emissions ascribable to the addition of CREC across New England and New York.
- (b) Provide the emissions of CO<sub>2</sub> 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. The data should cover the same years for which Invenergy provides CO<sub>2</sub> impact results.
- (d) 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 plans
  - (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.

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RESPONSE 4-2: (a) Please refer to emissions impacts provided in the confidential spreadsheet attachment entitled "PA - Clear River OER Data Request 4-2 to 4-4 a 01-17-18".

(b-e) Please refer to the generation, heat input and CO2 results provided in a similar format as prior similar data requests for OER, which are included in the confidential spreadsheet attachment entitled "PA - Clear River OER Data Request 4-2 b-e 01-17-18".

RESPONDENT: Ryan Hardy, PA Consulting Group

DATE: January 22, 2018

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- OER 4-3:                   The Commonwealth of Massachusetts has initiated in Sections 83C and 83D of the Energy Diversity Act two large-scale procurements that are expected to result in long term contracts for renewable and other clean energy resources. The Long Island Power Authority has also executed a long-term contract with South Fork Wind Farm, an offshore wind project. Please provide an updated analysis of the Invenergy's proposed CREC project, assuming that these renewable resources are developed and therefore should be included in the model runs with and without CREC. For the purpose of this analysis, represent the buildout under Section 83C as 400 MW of offshore wind interconnected in the Rhode Island load zone with an in-service date of 2023 and another 400 MW with an in-service date of 2025. Also assume that 90 MW of offshore wind, representing the South Fork Wind Farm, is in service in 2022 and interconnected in New York Zone K. As a proxy for resources to be procured under Section 83D, assume that a new 1,000 MW HVDC transmission line delivers Canadian hydropower at a 90% capacity factor to one of the northern New England states (either Vermont, New Hampshire, or Maine, to be specified by Invenergy). For this analysis, assume a June 2020 in-service date for CREC Unit 1 and an in-service date of June 2022 for CREC Unit 2. 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 CO<sub>2</sub>, NO<sub>x</sub>, and SO<sub>2</sub> emissions ascribable to the addition of CREC across New England and New York.
  - (b) Provide the emissions of CO<sub>2</sub> 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. The data should cover the same years for which Invenergy provides CO<sub>2</sub> impact results.
  - (d) For each technology type listed below, provide the annual MWh of generation with and without CREC, for ISO-NE and NYISO.
    - (1) Combine cycle plants
    - (2) Combustion turbines
    - (3) Oil-fired steam plans
    - (4) Coal-fired plants
    - (5) Nuclear
    - (6) Wind
    - (7) Hydro (excluding pumped storage)
    - (8) Solar
    - (9) Imports
    - (10) Biomass, landfill gas
    - (11) Other

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

RESPONSE 4-3: PA has updated its analysis per OER’s request. Specific assumption changes include:

- The addition of a 400 MW off-shore wind facility with an online date of June 1, 2023 electrically interconnect to Rhode Island at a 45% capacity factor.
- The addition of a 400 MW off-shore wind facility with an online date of June 1, 2025 electrically interconnect to Rhode Island at a 45% capacity factor.
- The addition of the 90 MW South Fork Wind Farm electrically interconnect to New York Zone K at a 45% capacity factor.
- The addition of the 1,000 MW HVDC Northern Pass Transmission Line electrically interconnect to New Hampshire at a 90% capacity factor.

For this analysis, June 2020 was assumed to be the in-service date for CREC Unit 1 and an in-service date of June 2022 for CREC Unit 2.

(a) Please refer to emissions impacts provided in the included confidential spreadsheet attachment entitled “PA - Clear River OER Data Request 4-2 to 4-4 a 01-17-18”.

(b-e) As agreed to with OER, the emissions of CO2 for each control area or RTO across the study region, other than New England and New York, were not meaningful and have not previously been provided and are not included here. Please refer to the generation, heat input and CO2 results provided in a similar format as prior similar data requests for OER, and which are included in the confidential spreadsheet attachment entitled “PA - Clear River OER Data Request 4-3 b-e 01-17-18”.

RESPONDENT: Ryan Hardy, PA Consulting Group

DATE: January 22, 2018

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OER 4-4: Please conduct the same analysis requested in Data Request 4-3, but assume a June 2021 in-service date for CREC Unit 1 and an in-service date of June 2022 for CREC Unit 2. Provide the same information from PA's market model requested in Data Request 4-3 in electronic spreadsheet format with all cell formats and cell references intact.

RESPONSE 4-4 PA has updated its analysis per OER's request, as outlined in the data response for 4-3. However, for this analysis, June 2021 was assumed to be the in-service date for CREC Unit 1 and an in-service date of June 2022 for CREC Unit 2.

(a) Please refer to emissions impacts provided in the included the confidential spreadsheet attachment entitled "PA - Clear River OER Data Request 4-2 to 4-4 a 01-17-18".

(b-e) As agreed to with OER, the emissions of CO2 for each control area or RTO across the study region, other than New England and New York, were not meaningful and have not previously been provided and are not included here. Please refer to the generation, heat input and CO2 results provided in a similar format as prior similar data requests for OER, and which are included in the confidential spreadsheet attachment entitled "PA - Clear River OER Data Request 4-4 b-e 01-17-18".

RESPONDENT: Ryan Hardy, PA Consulting Group

Date: January 22, 2018

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OER 4-5: Please provide in map format the trucking route that would be used, including mileage, to draw water from the Lower Wood Watershed as proposed in CRECs Proposed Water Use from the Lower Wood Watershed from October 23, 2017.

RESPONSE 4-5 Invenergy Thermal Development LLC recently filed an informational filing with the Energy Facility Siting Board noting that the agreement between the Narragansett Indian Tribe and Clear River Energy LLC is terminated and deemed null and void. Accordingly, the Lower Wood Watershed is no longer a proposed water source for the Clear River Energy Center.

RESPONDENT: John Niland, Invenergy Thermal Development LLC

Date: January 22, 2018



INVENERGY THERMAL DEVELOPMENT LLC  
By its Attorneys,

**/s/ Alan M. Shoer**

Alan M. Shoer, Esq. (#3248)

Richard R. Beretta, Jr. Esq. (#4313)

Nicole M. Verdi, Esq. (#9370)

ADLER POLLOCK & SHEEHAN, P.C.

One Citizens Plaza, 8<sup>th</sup> Floor

Providence, RI 02903-1345

Tel: 401-274-7200

Fax: 401-751-0604

Dated: January 22, 2018

**CERTIFICATE OF SERVICE**

I hereby certify that on January 22, 2018, I delivered a true copy of the foregoing responses to Office of Energy Resources' Fourth Set of Data Requests via electronic mail to the parties on the attached service list.

**/s/ Alan M. Shoer**

**INVENERGY THERMAL DEVELOPMENT LLC**  
**ATTACHMENTS TO THE OFFICE OF ENERGY**  
**RESOURCES 4<sup>TH</sup> SET OF DATA REQUESTS**

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**REDACTED**