

Supplemental Advisory Opinion
(with redactions)

on the

**Socio-economic Impact and
State Guide Plan Consistency**

of the proposed

Clear River Energy Center

Prepared for the:

ENERGY FACILITY SITING BOARD

Docket No. SB-2015-06

By the:

Statewide Planning Program

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PART ONE: INTRODUCTION

A. BACKGROUND

On August 3, 2016, the Statewide Planning Program (“SPP” or “Program”) issued an Advisory Opinion to the Energy Facility Siting Board (“EFSB”) on the Clear River Energy Center project (“Project” or “CREC” or “Facility”). On January 11, 2017, Invenergy Thermal Development LLC (“Applicant”) submitted a revised water supply plan to replace the application’s original water supply plan. Subsequent to this revision, on April 13, 2017, the EFSB issued a Decision and Order for “additional and supplemental advisory opinions” on the project. With respect to the SPP, the EFSB ordered:

The Statewide Planning Program within the Division of Planning shall supplement its original informational advisory opinion to address Invenergy’s new water supply plan and address the elements of the State Guide Plan. In supplementing its original opinion, the Statewide Planning Program should consider the additional information obtained in response to its data requests to Invenergy.

B. STATEWIDE PLANNING PROGRAM REVIEW PROCESS

1. Role of Statewide Planning Program Staff

As with the original advisory opinion, Statewide Planning Program’s staff had the primary responsibility for creating a draft of this supplemental advisory opinion for consideration by the State Planning Council.

2. Coordination with other Agencies

As with the original advisory opinion, the Program requested technical assistance from several State agencies. These include:

- The Department of Administration’s Office of Management and Budget (“OMB”) to determine whether the findings of the original opinion regarding economic and revenue impacts remain valid given the new water supply plan.
- The Department of Administration’s Office of Energy Resources (“OER”) as to whether the revised water supply plan could alter the original finding of consistency with *Energy 2035: Rhode Island State Energy Plan* and if it could alter the findings regarding the socio-economic aspect of energy costs and reliability.
- The Department of Transportation (“RIDOT”) as to traffic impacts related to the revised water supply plan.

- The Rhode Island Department of Environmental Management (“RIDEM”) for information on potential impacts to groundwater, wetlands, fish and wildlife habitats, state conservation priorities and plans, as well as public recreation on state conservation lands and nearby parks and management areas.

3. Information Requests and Responses

In executing the supplemental review process, there were instances in which SPP and OMB staff required clarification of issues discussed in the revised water supply plan or identified issues that needed to be supplemented with additional information. As such, several additional informational requests were made to the Applicant. Specifically, information pertaining to the following was requested.

- Changes to the Facility’s footprint.
- Areas of disturbance and restoration.
- Whether the revised water supply plan would result in changes to tax revenues to the State or the tax treaty with the Town of Burrillville.
- Changes to the economic and employment impacts of the Project.

Copies of all SPP information requests as well as the responses received are attached as appendices.

4. State Planning Council Review

As with the initial advisory opinion, the final draft supplemental advisory opinion was submitted to the State Planning Council (“Council”) for initial review on July 21, 2017. In order to avoid the potential of *ex parte* communication, the draft supplemental opinion was not sent EFSB members Parag Agrawal and Janet Coit. Council members were given ten days to enter any objections to the draft supplemental advisory opinion. Having received none, the draft supplemental advisory opinion was thereby accepted by the State Planning Council on August 10, 2017 and subsequently forwarded to the EFSB thereby fulfilling the Program’s responsibilities. Had any objection been received, the matter would have been docketed for discussion and action at the Council’s next regularly scheduled meeting.

PART TWO: SOCIO-ECONOMIC IMPACT ASSESSMENT

A. INTRODUCTION

In its August 3, 2016, initial Advisory Opinion, the Program provided findings on the socio-economic factors listed below.

Economic Impact Assessment

- Energy Costs
- Local and Statewide Business Impacts: Jobs, Earnings, and Economic Output

Revenues

- State Revenue
- Municipal Revenue

Energy Reliability

Social Impact Assessment

- Population Change
- Federally-Protected Populations
- Housing
- School and Library Services
- Police, Fire, and Emergency Services
- Solid Waste Management Services
- Visual Impacts

Of these twelve socio-economic factors, the Program does not believe that Invenergy's revised water supply plan, considered on its own, would necessitate a revision to the findings relative to nine of them; specifically, Energy Costs, Energy Reliability, and the seven Social Impact factors. A tenth factor, Municipal Revenue, was addressed in a response to a request for additional information, whereby Invenergy confirmed that the tax treaty with the Town is unchanged.

Information provided by the Applicant indicates, however, that the revised water supply plan does change the construction and operating costs of the Facility thereby affecting certain calculations of Economic Impacts and State Revenues; an assessment of these follow. Analysis was performed by the OMB using revised data inputs provided by the Applicant and methodologies similar to those documented in the Program's original Advisory opinion.

B. UPDATED ECONOMIC IMPACT ASSESSMENT

Local and Statewide Business Impacts

The following analysis examines both direct, indirect, and induced impacts relating to jobs, earnings, and economic output.

Invenergy's application uses two related economic models to estimate the economic benefits provided by the construction and continued operation of the CREC. Invenergy's application includes an analysis by PA Consulting Group, which uses input-output modeling to estimate the employment, earnings, and total economic output impact of the project. PA Consulting uses two modeling systems, IMPLAN and the National Renewable Energy Lab's Jobs and Economic Development Impact model (JEDI). IMPLAN relies on RIMS II multipliers provided by the federal government's Bureau of Economic Analysis.

Each of these modeling programs use assumptions for multiple categories of spending, as well as estimated local share percentages and other variables. These local share percentages are estimates of the portion of each spending category that will go to Rhode Island firms, rather than out-of-state firms. The outputs from the models estimate both Rhode Island and overall regional effects in three primary categories: employment impact (measured in FTEs per year), earnings impact (measured in millions of dollars per year), and economic output (measured in millions of dollars per year). The models estimate both the direct and indirect/induced impacts. Direct impacts are those directly related to the construction and operation of the facility. Indirect impacts are those that occur throughout the supply chain as a result of the direct impacts. Induced impacts are caused by changes in household spending.

In order to evaluate the employment, earnings, and economic output figures from Invenergy's application, OMB used two methods to analyze the results of Invenergy's analysis. These analyses rely on cost data supplied by Invenergy.¹ Invenergy also provided an estimate of the share of each cost that would be attributable to Rhode Island. This is important because project costs that are not met by Rhode Island-based firms cannot have multiplicative effects on the Rhode Island economy.

OMB used the RIMS II multipliers, available from the Bureau of Economic Analysis website to produce estimates of the economic activity generated by this project.² RIMS II is a backward-linkage model, which means it starts with looking at how a project changes the output of goods in a certain industry. It then looks backwards and considers how inputs into that industry must

¹ Alan Shoer, *Invenergy Response to Statewide Planning Third Set, Supplemental Response - Exhibit A and Exhibit B*. April 17, 2017; updated June 23, 2017.

² Bureau of Economic Analysis, Regional Input-Output Modeling System (RIMS II), <https://www.bea.gov/regional/rims/index.cfm>.

change in order to generate those outputs. The multipliers used in RIMS II are regional, and adjust for the prevalence of a certain industry in that region. RIMS II modeling is a commonly used methodology known to produce upper-bound estimates of direct, indirect, and induced economic activity. The RIMS II analysis, described in more detail below, shows positive economic benefits for Rhode Island from the CREC.

OMB also used the cost estimate inputs and other assumptions provided by Invenergy, as well as default values from the JEDI modelling program, to see if the JEDI model generates similar results. The JEDI Natural Gas Model is available to download from the National Renewable Energy Laboratory's website.³ Adjustments to the assumed costs of the project, as well as the share of each cost category that is spent in-state versus out-of-state (the local share percentage), alter the magnitude of the economic impact of the project. OMB altered many of the local share assumptions to test the sensitivity of the results to various input estimates. While a wide range of economic impacts are estimated during this sensitivity analysis, the impact of the project on employment, earnings, and economic output remains uniformly positive.

Construction Phase⁴

Direct Impacts

Employment: Revised direct construction employment impacts for 2018 through 2021 were provided by Invenergy in a data response from June 23, 2017.⁵ OMB's analysis of the JEDI model uses Invenergy's cost inputs and compares the effect of varying the local share percentages in three scenarios: a scenario that uses the information provided by Invenergy, an extremely conservative scenario, and the JEDI default scenario. OMB's JEDI scenarios generate a lower-bound estimate for total construction period impacts at 477 FTEs and an upper-bound estimate of 1,193 FTEs. This range encompasses Invenergy's provided estimate of [REDACTED] FTEs.⁶ Based on this, the Program deems Invenergy's estimate to be reasonable, and consistent with a finding of positive economic impact.

Earnings: OMB's JEDI scenarios generate a lower bound for direct earnings impact from 2018-2021 of \$74.3 million, and an upper bound estimate of \$194.9 million. Invenergy's provided

³ National Renewable Energy Laboratory, Jobs and Economic Development Impact Models, <http://www.nrel.gov/analysis/jedi/>.

⁴ The following sections contain certain information highlighted in black. All such information was provided by Invenergy and has been ordered to be kept confidential by the EFSB Order dated May 23, 2017.

⁵ Alan Shoer, *Invenergy Response to Statewide Planning Third Set, Supplemental Response, Exhibit A and Exhibit B*, April 17, 2017; updated June 23, 2017.

⁶ Invenergy's estimate from "Direct Employment Impact- Construction Period" from Table 1 of Exhibit B of the Supplemental Response to the Response to Statewide Planning- Third Set, received June 23, 2017.

estimate of [REDACTED] falls just above this range.⁷ Based on this, the Program deems Invenergy's estimate to be reasonable, and consistent with a finding of positive economic impact.

While OMB's analyses generally align with Invenergy's modeling, one specific metric was inconsistent with our assumptions. Comparing the number of FTEs and the amount of direct earnings presented in Invenergy's application generates average earnings per FTE. For the construction phase this average is [REDACTED] per FTE for Rhode Island workers. According to Federal Bureau of Labor Statistics' (BLS) data by industry, the annual pay in 2016 for utility system construction workers in Rhode Island was \$87,000.⁸ The differential may be due to the highly specialized nature of construction involved with natural gas power plants. It is also unclear if these earnings include benefits or overhead. Regardless, using \$87,000 as an input value still yields positive economic effects.

Gross Impact: Direct, Indirect, and Induced Impacts

In addition to the JEDI modeling, OMB used the RIMS II multipliers as a second model to test the robustness of Invenergy's findings. Though magnitudes vary, OMB's model generates values that are generally consistent with Invenergy's application.

Total employment: OMB's estimates for total employment impacts for the construction phase is 3,349 which is [REDACTED] jobs greater ([REDACTED]% higher) than those supplied by Invenergy's estimate of [REDACTED].⁹

Total earnings: The RIMS II analysis generates an estimate of total earnings of \$252.6 million which is [REDACTED] lower ([REDACTED]% smaller) than Invenergy's figure of [REDACTED].¹⁰

Total economic output (RIMS II): Applying the RIMS II multipliers to the cost and local share data provided by Invenergy generates a total economic output figure for the construction phase

⁷ Invenergy's estimate from "Direct Earnings Impact- Construction Period" from Table 1 of Exhibit B of the Supplemental Response to the Response to Statewide Planning- Third Set, received June 23, 2017. Invenergy's dollar figures have been normalized to 2018 dollars.

⁸ Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Table ENU440005052371.

⁹ Invenergy estimates from "Employment Impact- Construction Period" from Table 1 of Exhibit B of the Supplemental Response to the Response to Statewide Planning- Third Set, received June 23, 2017. Includes direct, indirect, and induced employment.

¹⁰ Invenergy estimates "Earnings Impact- Construction Period" from Table 1 of Exhibit B of the Supplemental Response to the Response to Statewide Planning- Third Set, received June 23, 2017. Includes direct, indirect, and induced earnings impacts.

of \$576.8 million which is [REDACTED] higher ([REDACTED]% larger) than Invenenergy's estimate of [REDACTED].¹¹

Total economic output (JEDI): OMB's JEDI scenarios generate a lower-bound estimate for total economic output for the construction phase of \$196.3 million and an upper-bound estimate of \$447.2 million. Invenenergy's provided estimate of [REDACTED] falls within this range.¹² Based on this, the Program deems Invenenergy's estimate to be reasonable, and consistent with a finding of positive economic impact.

Operations Phase

Direct Impacts

Employment: Invenenergy's revised economic development impact analysis claims that [REDACTED] FTEs would be needed to operate the CREC.¹³ OMB consulted the Bureau of Labor Statistics employment statistics in the Rhode Island utility industry. Because there are so few firms in Rhode Island classified as "electric power generation," BLS does not always report on these numbers for reasons of confidentiality and data quality. The last year for which data is available for this category is 2009. Dividing total employees by number of firms generates an average of 12 employees per firm.¹⁴ If the industry category is expanded to "utilities" the average increases to 27 employees per firm.¹⁵ These findings indicate that Invenenergy's estimate of [REDACTED] employees at the CREC plant is reasonable.

Direct operations phase employment impacts for 2020 through 2036 are provided in Invenenergy's data response submitted on June 23, 2017. OMB's analysis of the JEDI model uses Invenenergy's cost inputs, and compares the effect of varying the local share percentages in three scenarios: a scenario that uses the information provided by Invenenergy, an extremely conservative scenario, and the JEDI default scenario. OMB's JEDI scenarios generate a lower-bound estimate for annual operations period impacts at 13 FTEs and an upper-bound estimate of 25 FTEs. This

¹¹ Invenenergy estimates from Exhibit A of the Supplemental Response to the Response to Statewide Planning- Third Set, received June 23, 2017. Invenenergy's dollar figures have been normalized to 2018 dollars. Includes direct, indirect, and induced impacts.

¹² Invenenergy estimates from Exhibit A of the Supplemental Response to the Response to Statewide Planning- Third Set, received June 23, 2017. Invenenergy's dollar figures have been normalized to 2018 dollars. Includes direct, indirect, and induced impacts.

¹³ Invenenergy estimate from "Direct Employment Impact- Facility Operations" from Table 1 of Exhibit B of the Supplemental Response to the Response to Statewide Planning- Third Set, received June 23, 2017.

¹⁴ Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Table ENU4400010522111 (number of employees), Table ENU4400020522111 (number of establishments).

¹⁵ Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Table ENU4400010522 (number of employees), Table ENU4400020522 (number of establishments).

range encompasses Invenenergy's provided estimate of [REDACTED] FTEs.¹⁶ Based on this, the Program deems Invenenergy's estimate to be reasonable, and consistent with a finding of positive economic impact.

Earnings: Comparing the number of FTEs and the amount of direct earnings presented in Invenenergy's application generates an average earning per FTE of [REDACTED] per year for operations (increasing with inflation).¹⁷ According to BLS, the average annual pay for an employee in Rhode Island who works in the utilities sector in 2016 was \$100,000.¹⁸ This BLS data indicates that Invenenergy's direct earnings estimates for employees at CREC are reasonable.

OMB's JEDI scenarios generate a lower bound for annual direct earnings impact of \$0.81 million, and an upper bound estimate of \$1.61 million. Invenenergy's provided estimate of [REDACTED] for the first fully operational year falls within this range.¹⁹ Based on this, the Program deems Invenenergy's estimate to be reasonable, and consistent with a finding of positive economic impact.

Gross Impact: Direct, Indirect, and Induced Impacts

Total economic impact (RIMS II): As described above, OMB uses RIMS II multipliers to estimate the total economic impact of the project. OMB's analysis looked at employment, earnings, and economic output and compared those results to the figures presented in Invenenergy's application. For the operations phase, OMB's model generates values that are generally consistent with Invenenergy's application. Employment is estimated at 161 FTEs ([REDACTED]% larger than Invenenergy's estimate of [REDACTED] FTEs), earnings are estimated at \$6.4 million ([REDACTED]% smaller than Invenenergy's estimate of [REDACTED]), and total economic output is estimated at \$28.1 million ([REDACTED]% smaller than Invenenergy's estimate of [REDACTED]).²⁰ This suggests that the magnitude of the employment, earnings, and economic output benefits described by Invenenergy are reasonable.

¹⁶ Invenenergy estimates from "Direct Employment Impact- Facility Operations" from Table 1 of Exhibit B of the Supplemental Response to the Response to Statewide Planning- Third Set, received June 23, 2017.

¹⁷ Estimate divides "Direct Earnings Estimate-Facility Operations" by "Direct Employment Impact- Facility Operations" from Table 1 of Exhibit B of the Supplemental Response to the Response to Statewide Planning- Third Set, received June 23, 2017.

¹⁸ Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Table ENU4400050522.

¹⁹ Invenenergy estimates from "Direct Earnings Impact- Facilities Operation" from Table 1 of Exhibit B of the Supplemental Response to the Response to Statewide Planning- Third Set, received June 23, 2017. Invenenergy's dollar figures have been normalized to 2018 dollars.

²⁰ Invenenergy estimates from Exhibit A and Exhibit B of the Supplemental Response to the Response to Statewide Planning- Third Set, received June 23, 2017. Includes direct, indirect, and induced impacts.

Total economic output (JEDI): OMB’s JEDI scenarios generate a lower-bound estimate for annual economic output of \$13.3 million and an upper-bound estimate of \$25.6 million. Invenergy’s provided estimate of [REDACTED] for the first fully operational year falls just above this range.²¹ Based on this, the Program deems Invenergy’s estimate to be reasonable, and consistent with a finding of positive economic impact.

Revised State Revenue Analysis

OMB assisted the Program in determining estimated revenue impacts to the state resulting from the construction and operation of the Project. OMB’s analysis included assessment of revenue from personal income taxes, other state taxes, such as business corporations tax, sales and use tax, etc., revenues collected by various State departments and agencies such as licenses, fees, and penalties, and other miscellaneous revenue.

The results of OMB’s assessment are shown in Table 1. OMB based their estimates on Invenergy’s total economic output figures presented in their June 23, 2017 data response.²² OMB used the economic output resulting from construction and facility operations, but did not include economic output resulting from cost savings to customers.

Table 1: Estimated Total General Revenues to the State of RI from Construction and Operation of the CREC (millions \$)²³

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 |
|----------------------|------------|-------------|-------------|------------|------------|------------|------------|------------|------------|------------|
| Personal Income Tax | 2.3 | 3.3 | 3.3 | 1.4 | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 | 0.8 |
| Other State Taxes | 3.2 | 4.6 | 4.5 | 1.9 | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 | 1.1 |
| Departmental Revenue | 0.7 | 1.0 | 1.0 | 0.4 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Other Revenue | 0.8 | 1.2 | 1.2 | 0.5 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 |
| TOTAL | 7.1 | 10.1 | 10.0 | 4.2 | 2.1 | 2.1 | 2.2 | 2.2 | 2.3 | 2.3 |

| | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2026 | Total |
|----------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| Personal Income Tax | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 22.4 |
| Other State Taxes | 1.1 | 1.1 | 1.1 | 1.2 | 1.2 | 1.2 | 1.2 | 1.3 | 1.3 | 30.9 |
| Departmental Revenue | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 7.0 |
| Other Revenue | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 7.8 |
| TOTAL | 2.4 | 2.4 | 2.5 | 2.5 | 2.6 | 2.7 | 2.7 | 2.8 | 2.8 | 68.2 |

²¹ Alan Shoer, *Invenergy Response to Statewide Planning- Third Set, Supplemental Response, Exhibit A and Exhibit B*. April 17, 2017; updated June 23, 2017

²² Ibid

²³ Totals may not be exact due to rounding.

PART THREE: STATE GUIDE PLAN CONSISTENCY

Introduction

As noted in its August 3, 2016 initial Advisory Opinion, given the breadth of the State Guide Plan (“SGP”), it is inevitable that certain goals and policies will come into conflict with other goals and policies. As such, a finding of “State Guide Plan consistency” cannot realistically be based on a project being completely consistent with each and every individual goal, objective, and policy found in the SGP. While each State Guide Plan goal or policy is considered, the final recommendation regarding State Guide Plan consistency is based on the Project’s consistency with the *overall* direction of the SGP.

The State Guide Plan currently consists of 18 elements. They are:

1. Energy 2035: Rhode Island State Energy Plan
2. Rhode Island Rising: A Plan for People Places and Prosperity
3. Land Use 2025: Rhode Island’s State Land Use Policies & Plan
4. State Housing Plan
5. Rhode Island Strategic Housing Plan
6. Transportation 2035
7. Rhode Island Water 2030
8. Water Quality 2035: RI Water Quality Management Plan
9. State Historical Preservation Plan
10. Cultural Heritage and Land Management Plan for the Blackstone River Valley National Heritage Corridor
11. Forest Resources Management Plan
12. Urban and Community Forestry Plan
13. Ocean State Outdoors: Rhode Island’s Comprehensive Outdoor Recreation Plan
14. A Greener Path: Greenspace & Greenways for Rhode Island’s Future
15. Solid Waste 2038: Rhode Island’s Solid Waste Management Plan
16. State Airport Systems Plan
17. Rhode Island Rail Plan
18. Waterborne Transportation Plan

Of these 18, and as previously noted in the initial Advisory Opinion, the Program remains of the opinion that several are not applicable to the Project and therefore were not further considered. These elements are:

1. Rhode Island Strategic Housing Plan
2. Solid Waste 2038: Rhode Island's Solid Waste Management Plan
3. State Airport Systems Plan
4. Rhode Island Rail Plan
5. Waterborne Transportation Plan

Of the remaining 13 applicable elements, the Program considered whether the revised water supply plan could affect its findings as presented in the August 3, 2016 Advisory Opinion. The Program concluded that its original findings remain valid for the following six elements.

1. Energy 2035: Rhode Island State Energy Plan
2. Rhode Island Rising: A Plan for People Places and Prosperity
3. Land Use 2025: Rhode Island's State Land Use Policies & Plan
4. State Housing Plan
5. State Historical Preservation Plan
6. Cultural Heritage and Land Management Plan for the Blackstone River Valley National Heritage Corridor

This leaves seven elements to be addressed in greater detail by this supplemental advisory opinion. These elements are:

1. Rhode Island Water 2030
2. Transportation 2035
3. Forest Resources Management Plan
4. Urban and Community Forestry Plan
5. Ocean State Outdoors: Rhode Island's Comprehensive Outdoor Recreation Plan
6. A Greener Path: Greenspace & Greenways for Rhode Island's Future
7. Water Quality 2035: RI Water Quality Management Plan (newly adopted)

What follows provides an overview of each of these elements and puts forward a specific finding for each.

A. Rhode Island Water 2030

Overview

Overall, *Rhode Island Water 2030* describes the potable water resources of the state, and sets goals and policies for the management of issues pertaining to them. It focuses on critical policy and emerging trends for potable water systems at all management and planning levels. It is intended to serve as the foundation for coordinated water supply management and decision making. It identifies where our drinking water comes from, the various types of drinking water systems in the state, and the organizational and managerial responsibilities of our water systems. It overviews the roles and responsibilities of State agencies relative to water allocation but does not address in detail the functions and values of the raw natural resource or the protection of its quality as this subject matter is primarily addressed through *Water Quality 2035: Rhode Island Water Quality Management Plan*.

It is important to note that this Plan does not offer policy considerations for the siting of specific types of water users, nor does it serve as a water allocation plan for the State.

Finding

The Project is not inconsistent with *Rhode Island Water 2030*'s focus on the management of potable water systems.

The revised water supply plan proposes using water from the Scituate Reservoir for the CREC's industrial needs. The Program evaluated the revised plan's consistency especially with respect to:

- Goal WRM-1, Potable Supply Management Policy 4: "Ensure the protection of public health, safety, and welfare as the priority use of potable water while striving to protect other uses and the economic well-being of the State.
- WRM-1 Policy 4, Strategy C - Minimize the use of potable water for non-potable purposes.

Goal WRM-1 recognizes that water is needed for both "public health, safety, and welfare" and "the economic well-being of the State". The Program determined in its socio-economic review that the Project would benefit the economic well-being of the State. The Program then considered whether the Project would imperil the "public health, safety, and welfare" by overtaxing the State's primary source of drinking water.

The January 11, 2017 CREC Water Supply Plan provides information on daily water use under various conditions. Based on this information, the water demand for operation of the Facility would be as follows:

- Full-load normal conditions (approximately 272 days of year): ~15,840 gallons per day (gpd)

- Full-load summer condition (approximately 90 days of year): ~18,720 gpd
- Operation of evaporative coolers (approximately 90 days of year): up to ~36,600 gpd²⁴
- Oil-fired operation (approximately 3-15 days²⁵ of year): ~724,320 gpd

Assuming 15 days of oil fired operation, SPP calculates that the average annual projected water use would be approximately 20 million gallons or 0.46% of the Reservoir's remaining safe yield²⁶, which would result in approximately 4.37 billion gallons per year remaining available projected safe yield for other additional future uses. If we assume 3 days per year of oil-fired operation, the total approximate annual water use would be approximately 11.4 million gallons or approximately 0.26% of the Reservoir's remaining projected safe yield which would result in 4.37 billion gallons per year remaining for other uses.

The Program also considered whether the revised water supply plan would implement Strategy C: “*Minimize* the use of potable water for non-potable purposes”. As with the original application, the revised water supply plan notes that:

The Facility features a dry cooling system, which is similar to the cooling provided by a typical automobile radiator, which cools by the use of ambient air supplied by fans. The use of a dry cooling system by the proposed Facility reduces the amount of water and wastewater generation by more than 90% from that which would have otherwise been required if a more conventional wet cooling tower had been selected.

In addition to the dry cooling system, the revised water supply plan describes several additional water conservation measures not included in the original application²⁷. The water savings over the original design is significant. The original application estimated annual average water use of 102,240 gpd (firing natural gas) as opposed to the revised plan that estimates an average of 15,840 gpd. While the original water supply plan proposed using non-potable water for cooling purposes, that option proved infeasible. Given that the proposed (non-potable) water source was no longer an available option, the inclusion of various water-saving measures to reduce the

²⁴ Operation of evaporative coolers would occur, as needed, as part of the full-load summer condition. Calculation assumes operation of evaporative coolers for eight hours per day.

²⁵ The January 11, 2017 CREC Water Supply Plan uses “three days per year” as its assumption in calculating annual water use; however, the Water Supply Plan also notes that the average over the past five years for electric generation facilities in the region to switch to distillate oil has been five days per year. Furthermore, in its permit submissions to DEM, Invenergy uses 15 days per year as its assumption for distillate oil generation. However, even at 15 days per year, the conclusion regarding the ability of the Reservoir to meet the Project's water demands while retaining sufficient reserves for other future uses remains the same. Please note that the 724,320 gpd is *in addition* to the 15,840 gpd of full load normal conditions.

²⁶ “Remaining available safe yield” is calculated using the projected system demands for 2030 as published in the 2010 Providence Water Supply System Management Plan Executive Summary.

²⁷ ESS Group, “CREC Water Supply Plan”, January 11, 2017, pgs. 5 – 8.

overall water consumption is seen as an important consideration in the Program's conclusion that the revised plan contains provisions that would minimize potable water consumption for process use.

B. Water Quality 2035: Rhode Island Water Quality Management Plan

Overview

This new State Guide Plan Element provides goals for water quality restoration and protection. The Plan addresses the protection and restoration of both surface and ground waters that are threatened or impaired by pollution. It sets forth recommendations for 24 sources of pollution that are known to contribute, or have the potential to contribute, to water quality problems in RI. It addresses reducing water pollution and protecting water resources through the proper management and planning for wastewater.

Finding

Consistency with this Plan is dependent on the Applicant receiving all State and Federal permits. With proper permitting, the Project would be consistent with this State Guide Plan Element.

It is important to note that *Water Quality 2035* does not address or endorse any specific types of wastewater management on a site by site basis. The proposed project site and use was not mentioned as a location or use of concern in this Plan. However, one of the Plan's overarching Pollution Source and Aquatic Habitat Management Policies is, "Ensuring compliance with federal, state, and local regulatory programs for water quality protection and restoration."

Staff of SPP consulted with RIDEM's Office of Water Resources regarding the application for their technical expertise. In response, staff at RIDEM confirmed that the development and operation of the Clear River Energy Center must comply with an assortment of regulatory programs. In particular, RIDEM cited:

- Wastewater Discharges to Surface Waters and Collection Systems;
- Onsite Wastewater Treatment Systems;
- Stormwater Management;
- Groundwater Discharges;
- Hazardous Material and Petroleum Product Spills;
- Underground and Above-Ground Storage Tanks for Hazardous Materials;
- Waste Management;
- Freshwater Wetlands Protection; and

- Water Withdrawals.

If the Applicant provides all the necessary information to RIDEM and the required permits are issued, the Project will be consistent with the specific policies and actions for pollution source control and aquatic habitat management found in *Water Quality 2035*.

C. Transportation 2035

Overview

This State Guide Plan Element provides a long-range framework, goals, policies, and recommendations for the movement of both goods and people. It encompasses the highway system, public transit, transportation system management, bicycle travel, pedestrian, intermodal, and regional transportation needs.

Finding

The revisions to the Project would not have significant impacts on the State's transportation system; therefore, the Program continues to find the Project to be consistent with this State Guide Plan Element.

The primary issue regarding transportation as a result of the revised water plan would be an increase in truck traffic. Accordingly, the Program considered how the revised water supply plan would comport to Goal H, Objective H.1.c: "Minimize congestion" and Policy H.2.c: "Minimize recurring and non-recurring congestion through increased use of other travel modes, effective incident management and access management, and traffic flow improvements". Although the revised water supply plan would require an increase in truck traffic over the original plan, based on information provided in the application, the traffic consultant's report done by McMahon Transportation Engineers and Planners ("McMahon"), and input received from RIDOT, the Program finds the Project to be consistent with the State Guide Plan Element.

McMahon found that the new water delivery plan and revised traffic projections would not change the level of service of the selected study area intersections or of the suitability of the highway route and roadways in question as originally reported. McMahon's opinion is that the additional volume of trucks and their loads (within legal limits) will not be a significant burden on the State Highways (US 295 to US 44 to RI 100). As noted in a RIDOT memo from Steven Pristawa, P.E. to Joseph A. Bucci, P.E., State Highway Maintenance Operations Engineer, "The additional trips associated with facility operations would not represent a noticeable increase in truck traffic" and "The Reports do not identify any geometric constraints in the projected Transport Route which would negatively affect road or intersection operations".

Information that specifically deals with traffic is found in Section 4: Revised Traffic Analysis and in Appendix E: McMahon Transportation Engineers and Planners letter to Invenergy LLC (Traffic Analysis for Water Source Option Clear River Energy Center - Burrillville, Rhode

Island). It identifies potential traffic associated with the operation of the facility with the new water supply plan under two different firing conditions of the plant. The revised water supply plan would require additional truck traffic over the original plan. Under normal, gas-fired operations, this increase would be minor. According to McMahon,

During the normal ambient weather conditions the plant will generate 6 truck trips (3 in and 3 out) per day. The spacing of these trips are anticipated as 2 trips (1 in, 1 out) during the morning peak traffic hours, 2 trips (1 in, 1 out) during non-peak traffic hours, and 2 trips (1 in, 1 out) during the afternoon peak traffic hours.

An increase in truck traffic connected to operation of the CREC would occur during winter weather related oil-fired operation. Under these infrequent circumstances²⁸, the plant could have seen as many as 64 truck trips (in and out) per day following such an event. However, the Applicant intends to reduce the number and impact of additional traffic in two ways. First, the Applicant reduced the number of daily truck trips from the original application during an oil-fired scenario from 64 to 44 by altering the duration of time to refill the onsite tanks. Second, the Applicant intends to minimize trips during peak traffic hour by limiting them to 4 trips (2 in, 2 out) during morning peak traffic and 4 trips (2 in, 2 out) during afternoon peak traffic. These factors are important in considering consistency with Transportation 2035 in that they fulfill the objective of minimizing congestion.

While not an issue of State Guide Plan consistency, the Program supports the development of a traffic management plan during the construction of the Facility and notes that in the RIDOT memo cited above, that the Project could result a significant increase in traffic during construction at the South Main Street/Main Street intersection in Pascoag in the morning and afternoon commuter peaks. A detail officer may be needed to be assigned to direct traffic at that intersection during peak periods while the site is under construction.

D. A Greener Path... Greenspace & Greenways for Rhode Island's Future

Overview

Produced in 1994, *A Greener Path... Greenspace & Greenways for Rhode Island's Future* recommends the development of a mapped system of specific protected open spaces, greenspace resource areas, greenbelts, primary and secondary natural corridors, and bikeway and trail corridors. *A Greener Path* was originally written as an adjunct to the State Comprehensive Outdoor Recreation Plan to identify areas most valuable for inclusion in a greenspace network and provide a 25-year implementation plan. It is supported by policies intended to provide

²⁸ While Table 2.5: Additional Trucks Trips, p.14, "CREC Water Supply Plan", January 11, 2017 estimates one 3-day event per year for this scenario, it must be noted that the Plan also acknowledges that the average over the past five years for electric generation facilities in the region to switch to distillate oil (which would require additional truck trips) has been five days per year. Furthermore, in its permit submissions to DEM, Invenergy uses 15 days per year as its assumption for distillate oil generation.

general guidance to State, local, and private efforts undertaken in support of the plan and to provide a foundation for assessing the consistency of future proposals which may (positively or negatively) impact upon attainment of the goal of the plan. *A Greener Path* concludes with a series of recommended actions for achieving the plan. These broadly include providing leadership and coordination, funding acquisition and protection, providing incentives to private landowners, providing planning and technical assistance support, fostering creative development, involving communities, and properly managing public assets.

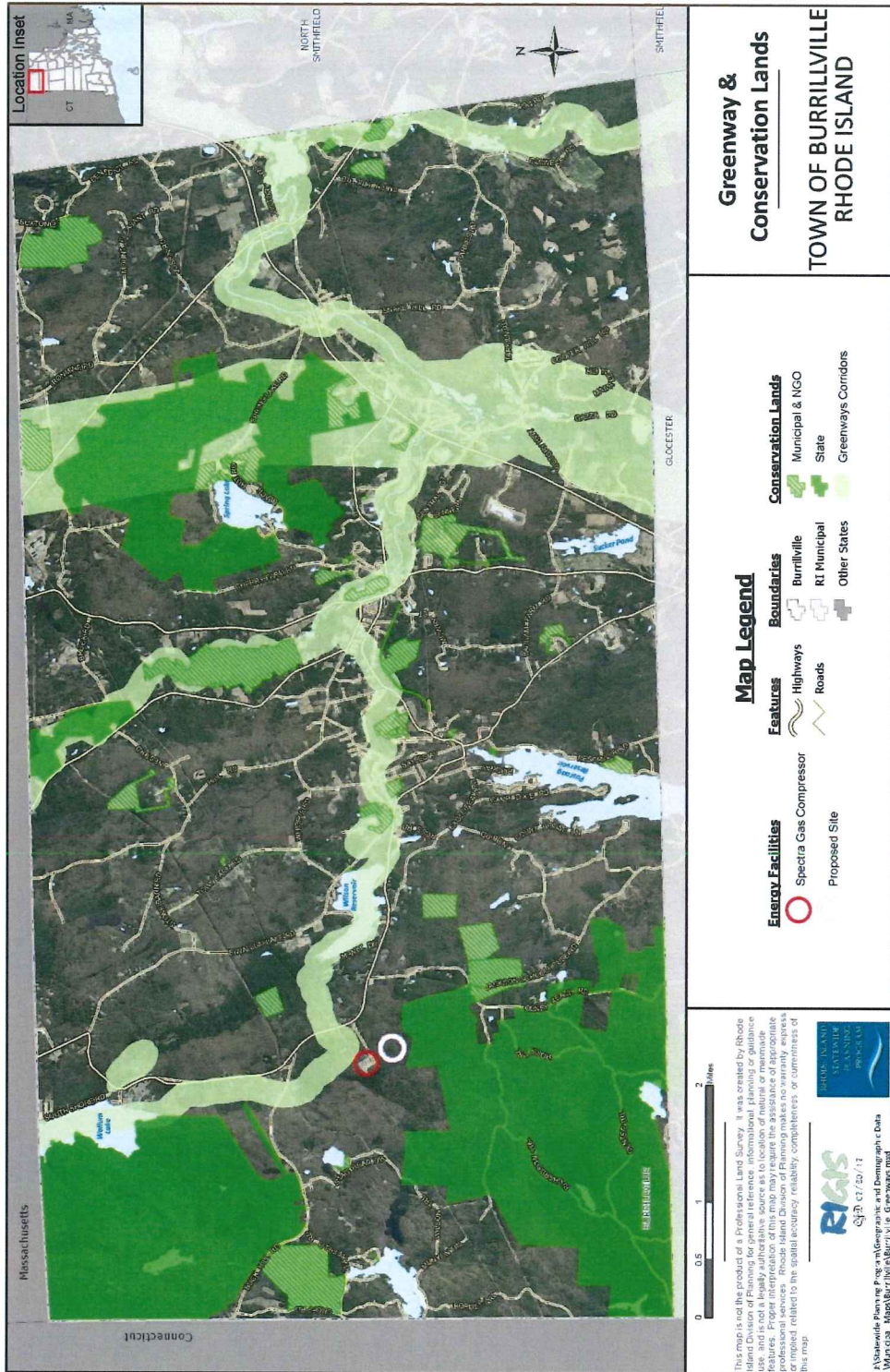
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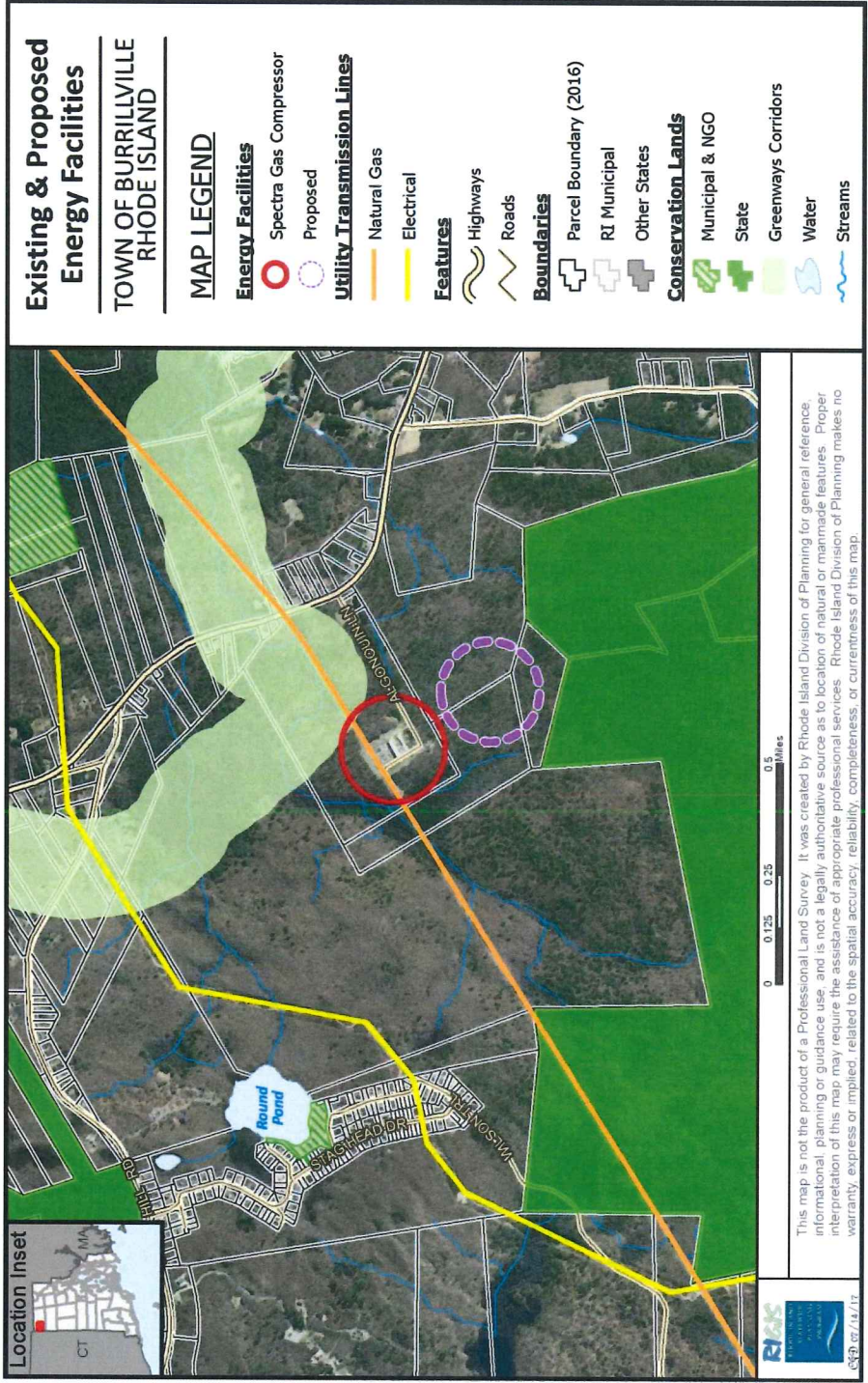
Development of the project site is not in conflict with *A Greener Path* because the location is not identified as a mapped component of the State's Greenspace and Greenways Plan²⁹.

The Project site is a 67-acre subset of a 730-acre property that is privately owned by Spectra Energy. It is immediately adjacent to the Algonquin Gas Compressor Station and natural gas pipeline which has been developed for industrial energy-related purposes for at least three decades prior to the adoption of this State Guide Plan Element.

The illustrations on the following page show that the project site is close to, but outside of, the greenspace network envisioned in *A Greener Path*, leading to the finding that the Project is not inconsistent with this State Guide Plan Element. Although the Project is not located in an existing or proposed greenspace or greenway area, it should be noted that it is in close proximity (within $\frac{1}{10}$ of a mile) to the George Washington Management Area (which is part of the Greenspace network) to the south and a primary natural greenways corridor that appears to be based on a buffer of the Dry Arm Brook to the site's east. Buck Hill Management Area is located 1.7 miles to the north of the site. Additionally, the site is within $\frac{1}{2}$ mile of a DEM designated natural heritage area abutting Wilson Reservoir.

²⁹ As designated on the map titled "State of Rhode Island Greenspace and Greenways Plan", *A Greener Path...Greenspace and Greenways for Rhode Island's Future*, page 6.7





E. Ocean State Outdoors: Rhode Island’s State Comprehensive Outdoor Recreation Plan (SCORP)

Overview

Ocean State Outdoors is the State of Rhode Island’s comprehensive plan for outdoor recreation, conservation, and open space. It builds off of *A Greener Path* by envisioning a statewide system of connected greenspaces and greenways, a network made up of critical natural and cultural resources, outdoor recreation facilities, public spaces, community and urban forests, and public and private open spaces.

It articulates State goals and policies, guiding municipal governments and not-for-profit groups, and, in particular, maps out a five-year action agenda for State agencies, led by the Department of Environmental Management. It was last updated in 2009 and its three goals include the following:

1) Building the Greenspace Network... Preserve and Protect Natural and Cultural Resources

Rhode Island will strengthen and expand the statewide network of Greenspaces and Greenways, with natural and cultural resources and outdoor recreation areas as major features of the network.

2) Meeting Critical Needs... Improve Recreation Opportunities and Resource Conservation

Rhode Island will improve its system of outdoor recreation facilities and conservation areas to meet the needs of its citizens.

3) Stewardship and Partnership... Improve Accessibility, Operations, and Resource Management

Rhode Island’s public and private partners will join as strong stewards of the state’s outdoor recreation and open space system and will protect, maintain, and improve its essential features.

Finding

The Project is not inconsistent with this State Guide Plan Element because it does not prevent the State from building the planned network of greenspaces and greenways or improving its system of outdoor recreation facilities and conservation areas.

As noted in our assessment of *A Greener Path*, the Project is not located in an existing or proposed greenspace or greenway area. Additionally, the site is privately-owned and would not require the conversion of any existing protected land. While the Project site is located in a general area of high conservation value and important recreational resources, the development of the subject property would not hinder the State from expanding the statewide network of greenspaces and greenways elsewhere.

In determining consistency with the SCORP’s goal to “improve its system of outdoor recreation facilities and conservation areas”, we note that the Project is in close proximity (within $\frac{1}{10}$ of a

mile) to the border of the State-owned George Washington Management Area. Despite the Project's proximity to this resource, the Program finds the Project to be consistent as the construction of the CREC would not physically occur within the Management Area and therefore would not prevent the State from improving it. This position should be revisited by the EFSB, however, should DEM determine that secondary visual, audible, or air quality impacts would significantly degrade the natural character of this management area.

The SCORP's goal to "Improve accessibility, operations, and resource management," primarily provide guidance to DEM as to how it should approach appropriately funding facilities, their design, operation, staffing, public outreach, education, coordination, and overall management. The Project will not affect DEM's ability to provide the appropriate level of operations and management to the Management Area.

In consideration of the Project's proximity to the George Washington Management Area, we recommend that the Applicant include all feasible measures to protect the area from noise, light, or visual intrusion, including providing additional vegetative buffering on the Project site.

F. Rhode Island Forest Resources Management Plan

Overview

The 2005 *Rhode Island Forest Resources Management Plan* establishes a vision, goals, and policies and provides recommendations focused on the management of tree resources within the State of Rhode Island. When construed and applied in conjunction with the *Rhode Island Urban and Community Forest Plan*, (1999) this guidance is intended to advance the effectiveness of public and private stewardship of the state's tree and forest resources.

Finding

Provided that the Applicant receives all State and Federal permits and follows Best Management Practices, the proposed development of the CREC would be consistent with this State Guide Plan Element because the Plan recognizes that private development will occur and that the appropriate control of such development is through State and municipal regulation.

Through its stated goals and policies, the *Rhode Island Forest Resources Management Plan* communicates the overall importance of the state's forest resources and establishes the need to:

- Manage public resources wisely.
- Ensure that sufficient forests exist to provide for future generations.
- Protect them from natural and fire induced health threats.
- Optimize the environmental, recreation, and economic returns they can provide.

- Minimize further fragmentation of forest resources.

When analyzing the more detailed objectives and strategies of the plan it is evident that the intended means of achieving the associated goals and policies is through:

- Increasing overall public awareness of the importance of forests.
- Direct management of state/public resources.
- Conservation of additional private forest lands through outright purchase and or acquisition of development rights.
- Through the implementation of state and local regulatory programs intended to ensure that private development of forested lands occurs in a context sensitive manner.

This plan does not, however, establish policies for the outright prohibition of the development of forested lands. Private land owners have the right to utilize and develop their forested lands until such time that direct conservation acquisitions are made or formal land management regulations are enacted through appropriate public channels at the state or local level.

That being said, the Program also feels it important to highlight the fact that the forested lands in this region are some of the largest, least fragmented, and highest quality within the state. They are identified as part of a “core natural area” in DEM’s *Rhode Island Wildlife Action Plan* and as part of the “initial and future land conservation priorities” in DEM’s 2010 *Rhode Island Forest Resources Assessment and Strategies*. Moving forward and in addition to meeting all pertinent existing environmental regulatory standards, the Applicant is therefore encouraged to work with DEM’s Division of Forestry experts in taking appropriate steps to mitigate the negative impacts that can result from the level of deforestation proposed. Options could include:

1. Minimizing the clearing of trees wherever possible, especially in the laydown area.
2. Survey the site to identify any historic or special trees and find means to preserve them whenever possible.
3. When timber is cleared, seek a means to put it to a beneficial economic use.
4. Utilize the existing road for permanent access rather than building a new one.
5. Reforest cleared areas that are not needed for short-term operations.
6. Permanently conserve remaining on and/or offsite resources as a means of offsetting project losses.

G. Urban and Community Forest Plan

The 1999 *Urban and Community Forest Plan* seeks to stabilize the erosion of forested lands while recognizing that some fluctuations in forested land coverage are both unavoidable and

necessary. It was a precursor of the 2005 *Forest Resources Management Plan* discussed above, and as noted, when construed together and applied in conjunction, their guidance is intended to advance the effectiveness of public and private stewardship of the state's tree and forest resources

Finding

Even if the CREC was to be constructed, the level of forest land coverage that will remain in Burrillville is expected to be within close proximity to the forest coverage guidelines established by this State Guide Plan Element.

As noted above, the 1999 *Urban Community and Forest Plan* and the 2005 *Forest Resources Management Plan* are intended to work in conjunction with each other. The *Urban Community and Forest Plan* policies and strategies are similar to the *Forest Resources Management Plan*; therefore, the Program's analysis of the *Forest Resources Plan* applies here as well (see above). However, a distinguishing feature of the *Urban and Community Forest Plan* is its establishment of specific forest land coverage guidelines for each of the state's 39 cities and towns.

In this instance, the 2020 target for retention of forest land coverage in the Town of Burrillville is 27,213 acres³⁰. According to the most recent data set available through the Rhode Island Geographic Information System (Ecological Communities Classification), Burrillville contained 28,250 acres of forested land as of 2011. If one subtracts the estimated 105 acres of land that are expected to be cleared as a result of the project, Burrillville would still retain 28,145 acres of forested land, which is 932 acres above the proposed target. The Program also calculated a straight line projected estimate of 738 acres³¹ of potential new developed land by 2020 which would still leave the town approximately 200 acres over the target.

³⁰ This figure was derived based on the Plan's target that communities having 50 percent or higher forest land cover in the 1995 land use survey, should seek to avoid a more than 2 percent decrease below their 1995 baseline of forest land cover through the year 2020. *Urban Community and Forest Plan*, Table 6.1: Rhode Island Urban and Community Forest Cover, p. 6.4 and accompanying text p. 6.5

³¹ SPP subtracted the acreage of developed land in the RIGIS 2003/04 Land Use & Land Cover dataset from the 2011 dataset (developed lands for this purpose included institutional, cemeteries, residential, industrial, commercial, power lines, water and sewage treatment, waste disposal, developed recreation, mines, quarries, gravel pits, and transitional urban areas). This resulted in an average of approximately 82 acres of development per year. 82 acres per year x 9 years (2011 to 2020) = 738 acres.

PART FOUR: CONCLUSION

The Statewide Planning Program evaluated the Project's socio-economic impacts and consistency with the State Guide Plan with respect to the Project's revised water supply plan and additional information which was not available at the time of the initial advisory opinion.

Socio-economic Impact Conclusion

While the revised water supply plan for the construction and operation of the CREC does change certain economic variables, it does not affect the Program's original conclusion that the Project will have an overall positive socio-economic impact for the State of Rhode Island.

State Guide Plan Consistency Conclusion

Many Elements of the State Guide Plan focus on the wise use and conservation of our natural, cultural, and recreation resources. At the same time, the State Guide Plan recognizes that additional development is needed for the wellbeing of our society in terms of housing, jobs, and particularly with regard to our need for viable energy sources both over the long-term as well as the immediate future.

The Program recognizes that the Project site is in an area that contains natural resource value due to its location within a larger block of forested area in the northwest corner of the state. However, although the area is relatively undeveloped, the Project is adjacent to existing energy infrastructure systems; namely, the Spectra Algonquin natural gas pipeline and compressor station and National Grid's electrical transmission lines. One of the primary tenets of the State Guide Plan (found in several sections throughout) is that development should occur in close proximity to the underlying infrastructure that is needed to support it. In this instance, close proximity of the primary fuel source that is needed to produce the electrical energy and the transmission network that is needed to distribute it is particularly relevant.

APPENDIX A: INFORMATION REQUEST MARCH 21, 2017



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Administration

DIVISION OF LEGAL SERVICES

One Capitol Hill, 4th Floor

Providence, RI 02908-5890

Tel: (401) 222-8880

Fax: (401) 222-8244

Jennifer Sternick, Esq.

Chief of Legal Services

March 21, 2017

Alan M. Shoer, Esq.
Adler, Pollock & Sheehan, P.C.
One Citizens Plaza, 8th Floor
Providence, RI 02903

VIA ELECTRONIC MAIL

Re: Invenergy Thermal Development LLC/Clean River Energy Center Application, EFSB
Docket No. SB-2015-06

Dear Attorney Shoer:

I am forwarding the following data request from Statewide Planning:

The Department of Administration, Division of Planning requests an update to the data that was previously requested on April 20th, 2016 and provided by Alder, Pollock, and Sheehan, P.C. in May 2016. This update should account for any changes to the CREC project that are not reflected in that data, such as changes to the CREC project size, construction/operational phase timelines, generation capacity, or water plan. The Division of Planning requests that the updated data include all of the inputs that were used in the input-output modeling described in section 5 of the application for both the IMPLAN and the JEDI models. The Division of Planning also requests an update to the project cost data, including the project costs by category and the share of each of these cost categories that will go to in-state vs. out-of-state firms.

Additionally, please advise as to whether the updated information takes into account the fact that the project is split from one-stage to two-stage construction.

Thank you for your assistance with this request.

Sincerely,

Jennifer S. Sternick

APPENDIX B: INFORMATION REQUEST MARCH 29, 2017



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Administration

DIVISION OF LEGAL SERVICES

One Capitol Hill, 4th Floor
Providence, RI 02908-5890

Tel: (401) 222-8880

Fax: (401) 222-8244

Jennifer Sternick, Esq.
Chief of Legal Services

March 29, 2017

Alan M. Shoer, Esq.
Adler, Pollock & Sheehan, P.C.
One Citizens Plaza, 8th Floor
Providence, RI 02903

VIA ELECTRONIC MAIL

Re: Invenergy Thermal Development LLC/Clean River Energy Center Application, EFSB
Docket No. SB-2015-06

Dear Attorney Shoer:

I am forwarding the following data request from Statewide Planning:

In addition to the data requested on March 21, 2017, the Department of Administration, Division of Planning requests an update to the data and analyses provided in Sections 4.0 and 5.0 of Invenergy's Filing and Supplemental Filing, including the economic and employment analyses. This update should reflect the new project plan, and should include calculations of Rhode Island employment, earnings, and economic output effects. It should also include an update to the information provided by PA Consulting Group, Inc. in a memo dated November 4, 2015 that separates the direct and indirect Rhode Island employment and earnings impacts. Finally, it should note any changes to the underlying assumptions or methodology of the analyses that were used to account for changes to the CREC project.

Given the time constraints imposed by the EFSB for production of amended advisory opinions and internal staffing needs for the end of the legislative session, I am requesting that this data and the data requested in Planning's Data Request of March 21, 2017 be provided, if possible, by **April 7, 2017**. Thank you for your assistance.

Sincerely,

Jennifer S. Sternick

APPENDIX C: INVENERGY RESPONSES TO INFORMATION REQUESTS

ADLER POLLOCK & SHEEHAN P.C.

One Citizens Plaza, 8th floor
Providence, RI 02903-1315
Telephone 401-274-7200
Fax 401-751-0604 / 351-4607

175 Federal Street
Boston, MA 02110-2210
Telephone 617-482-0600
Fax 617-482-0604

www.apslaw.com

April 25, 2017

Via Federal Express/Electronic Mail

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

Re: Invenergy Docket No. SB-2015-06

Dear Mr. Bianco:

On behalf of Invenergy Thermal Development LLC ("Invenergy"), enclosed please find:

- (1) an original and seven (7) copies of Invenergy's Response to the Department of Administration, Division of Planning's April 10, 2017 Data Requests; and
- (2) an original and seven (7) copies of Invenergy's Response to the Office of Energy Resources' April 10, 2017 Data Requests.

Please let me know if you have any questions.

Very truly yours,



ALAN M. SHOER
ashoer@apslaw.com

Enclosures

cc: Service List

405180V003\858373.v1

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 RESPONSE TO
THE STATE OF RHODE ISLAND DEPARTMENT OF ADMINISTRATION,
DIVISION OF LEGAL SERVICES' DATA REQUESTS DATED APRIL 10, 2017

REQUEST:

On January 11, 2017, Invenergy Thermal Development LLC submitted a revised Water Supply Plan for the Clear River Energy Project. Although the revised Water Supply Plan includes a revised traffic analysis, it does not include revised analyses for environmental impacts. The original application notes that construction of the proposed project will result in the alteration of up to approximately 67 acres of the existing forested lands, some of which will be restored, some of which will be permanently replaced by structures or low-growing vegetation which includes:

- Clearing forest within the proposed construction laydown areas;
- Permanently replacing forest with impervious surfaces within the footprint of the proposed generation facility, the substation location and along the alignment of the site access road;
- Permanently replacing forest with low-growing vegetation along the proposed overhead transmission line corridor and the proposed new gas line to the facility;

Given the revised submission, the Department of Administration, Division of Statewide Planning would like to know:

1. Are there changes to CREC footprint? If so, please provide a revised site layout.
2. What is the acreage that will be cleared for construction of the facility and associated infrastructure such as electrical transmission lines and natural gas pipelines.
3. How much of the disturbed area will be revegetated and restored.
4. What impact will the revision have on tax revenues to the State and the tax treaty with the Town of Burrillville?

RESPONSE:

1. There are minor changes to the Clear River Energy Center (CREC or Facility) footprint and a revised site layout is enclosed. The minor changes include:
 - a.) The center line spacing between the two power blocks was reduced from 350 feet to 300 feet; this allowed relocation of the site perimeter road to be moved out of the wetland buffer area.
 - b.) The fuel oil storage tank was relocated from the southeast side of the site to the northwest and the tank design was changed from two one-million-gallon storage tanks to a single two-million-gallon tank.
 - c.) The switch yard design was modified at the request of National Grid.
 - d.) Ammonia tank was relocated and its size reduced.
 - e.) The property line boundary was re-located to avoid any portion of the site being located within a designated aquifer recharge zone (the A-80 Zone) based on comments and concerns raised by the Burrillville Building Inspector and Zoning Official.
2. The acreage that will be cleared for construction of the Facility and associated infrastructure such as electrical transmission lines and natural gas pipelines, are as follows:
 - a.) The 67 acres described in the original application is the size of the entire parcel for the Facility. Only 36.1 acres will be disturbed (same as cleared) for construction of the facility and natural gas pipeline infrastructure.
 - b.) The electric transmission line has two components. Approximately 55 acres will be cleared in the portion owned by National Grid along the existing Narragansett Electric Company Right of Way (TNEC ROW). Approximately 14.5 acres will be cleared in the portion that will be owned by CREC from the power plant to the existing TNEC ROW.
 - c.) Trees will be cleared and some vegetation removed to open the corridor for the construction of the transmission line. Post-construction maintenance of the transmission line ROWs will comprise of vegetation management in accordance with TNEC's Right of Way Vegetation Management Plan, which encourages growth of low growing shrubs, ferns, wildflowers and grasses.
3. A total of 8.2 acres of the disturbed area at the Facility will be revegetated and restored.
4. There will be a slight increase in tax revenues to the State associated with the trucking of water from Johnston to the project site and there will be added taxes paid to the town of Johnston associated with the truck facility. There is no change to the tax treaty with the Town of Burrillville.

The acreage references described above are included in the "Application to Alter Freshwater Wetlands – Clear River Energy Center and Burrillville

Interconnection Project,” which has been submitted to the Rhode Island Department of Environmental Management.

RESPONDENT: John Niland, Invenergy Thermal Development LLC

DATE: April 25, 2017

INVENERGY THERMAL DEVELOPMENT LLC
By its Attorneys,

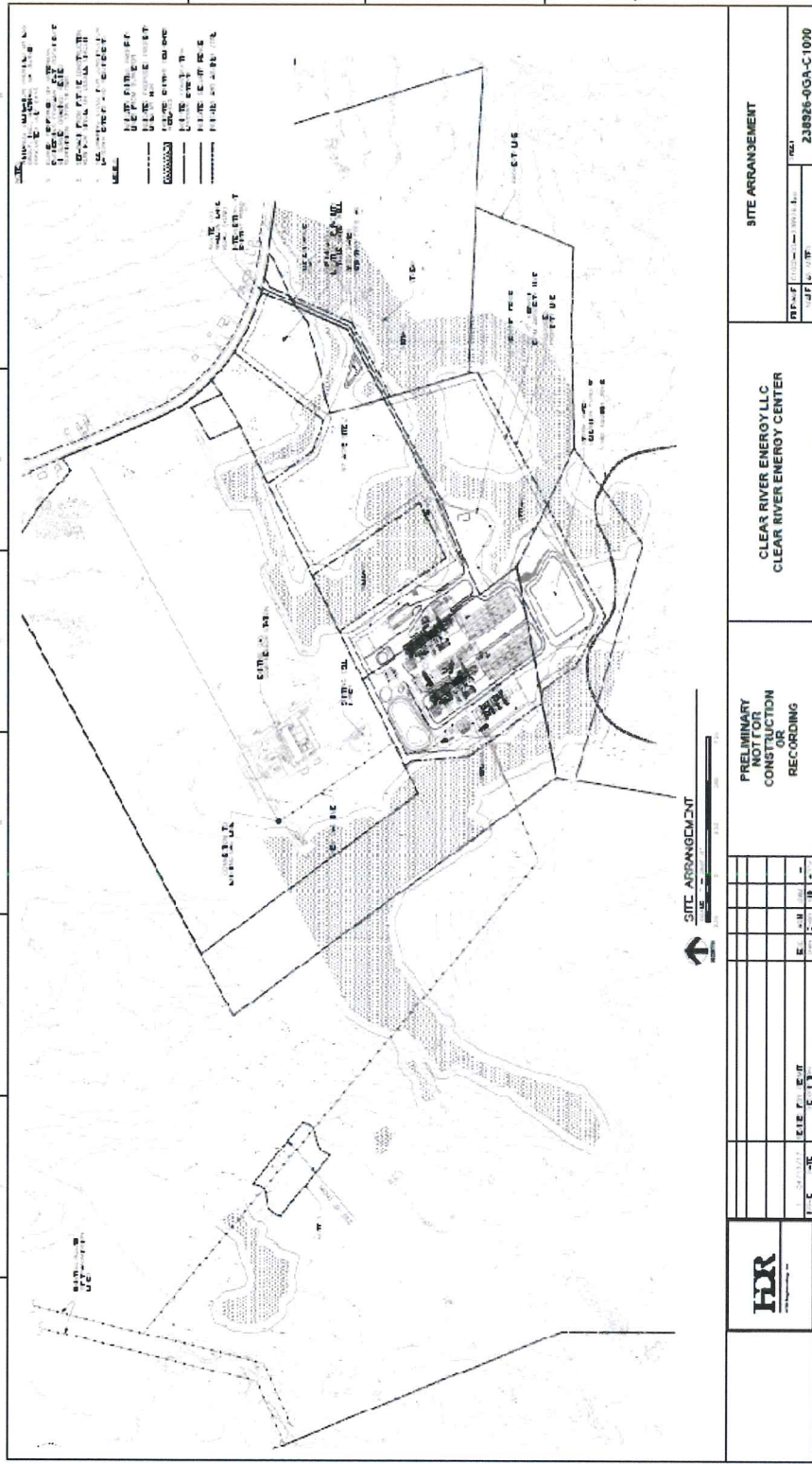
/s/ Alan M. Shoer

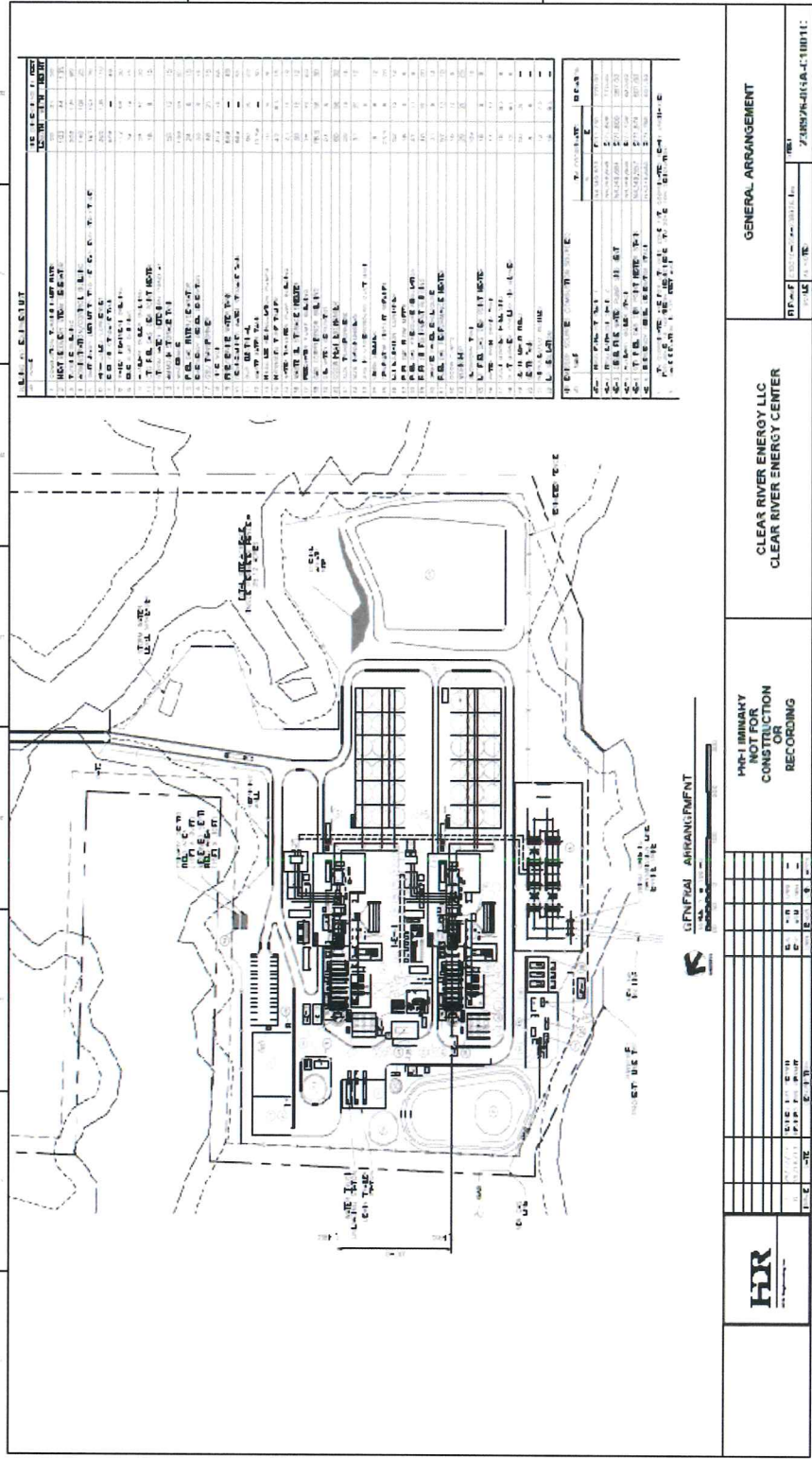
Alan M. Shoer, Esq. (#3248)
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ADLER POLLOCK & SHEEHAN, P.C.
One Citizens Plaza, 8th Floor
Providence, RI 02903-1345
Tel: 401-274-7200
Fax: 401-751-0604
Dated: April 25, 2017

CERTIFICATE OF SERVICE

I hereby certify that on April 25, 2017, I delivered a true copy of the foregoing responses to the State of Rhode Island Department of Administration, Division of Legal Services' Data Requests dated April 10 2017, via electronic mail to the parties on the attached service list.

/s/ Alan M. Shoer





| NO. | DESCRIPTION | DATE | BY | CHKD. |
|-----|--------------------|----------|----|-------|
| 1 | NOTICE TO BE BUILT | 12/12/16 | JL | JL |
| 2 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 3 | PROPERTY LINES | 12/12/16 | JL | JL |
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| 27 | PROPERTY LINES | 12/12/16 | JL | JL |
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| 29 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 30 | PROPERTY LINES | 12/12/16 | JL | JL |
| 31 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 32 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 33 | PROPERTY LINES | 12/12/16 | JL | JL |
| 34 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 35 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 36 | PROPERTY LINES | 12/12/16 | JL | JL |
| 37 | EXISTING UTILITIES | 12/12/16 | JL | JL |
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| 39 | PROPERTY LINES | 12/12/16 | JL | JL |
| 40 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 41 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 42 | PROPERTY LINES | 12/12/16 | JL | JL |
| 43 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 44 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 45 | PROPERTY LINES | 12/12/16 | JL | JL |
| 46 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 47 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 48 | PROPERTY LINES | 12/12/16 | JL | JL |
| 49 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 50 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 51 | PROPERTY LINES | 12/12/16 | JL | JL |
| 52 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 53 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 54 | PROPERTY LINES | 12/12/16 | JL | JL |
| 55 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 56 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 57 | PROPERTY LINES | 12/12/16 | JL | JL |
| 58 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 59 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 60 | PROPERTY LINES | 12/12/16 | JL | JL |
| 61 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 62 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 63 | PROPERTY LINES | 12/12/16 | JL | JL |
| 64 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 65 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 66 | PROPERTY LINES | 12/12/16 | JL | JL |
| 67 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 68 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 69 | PROPERTY LINES | 12/12/16 | JL | JL |
| 70 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 71 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 72 | PROPERTY LINES | 12/12/16 | JL | JL |
| 73 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 74 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 75 | PROPERTY LINES | 12/12/16 | JL | JL |
| 76 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 77 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 78 | PROPERTY LINES | 12/12/16 | JL | JL |
| 79 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 80 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 81 | PROPERTY LINES | 12/12/16 | JL | JL |
| 82 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 83 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 84 | PROPERTY LINES | 12/12/16 | JL | JL |
| 85 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 86 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 87 | PROPERTY LINES | 12/12/16 | JL | JL |
| 88 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 89 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 90 | PROPERTY LINES | 12/12/16 | JL | JL |
| 91 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 92 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 93 | PROPERTY LINES | 12/12/16 | JL | JL |
| 94 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 95 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 96 | PROPERTY LINES | 12/12/16 | JL | JL |
| 97 | EXISTING UTILITIES | 12/12/16 | JL | JL |
| 98 | PROPOSED UTILITIES | 12/12/16 | JL | JL |
| 99 | PROPERTY LINES | 12/12/16 | JL | JL |
| 100 | EXISTING UTILITIES | 12/12/16 | JL | JL |

GENERAL ARRANGEMENT

NOT FOR CONSTRUCTION OR RECORDING

CLEAR RIVER ENERGY LLC
CLEAR RIVER ENERGY CENTER

GENERAL ARRANGEMENT

DATE: 12/12/16
BY: JL
CHKD: JL

June 23, 2017

Via Federal Express/Electronic Mail

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

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

Dear Mr. Bianco:

On behalf of Invenergy Thermal Development LLC and the Clear River Energy Center Project ("Invenergy"), enclosed please find:

- (1) an original and three (3) copies of Invenergy's Supplemental Responses to the Department of Administration, Division of Planning's ("Division of Planning") March 21, 2017 and March 29, 2017 Data Requests;
- (2) an original and three (3) copies of Edinaldo Tebaldi and PA Consulting Group, Inc.'s June 9, 2017 Memorandum, which supplements the April 14, 2017 Memorandum (exhibit to the Supplemental Responses to the Division of Planning's Data Responses above);
- (3) an original and one (1) copy of PA Consulting Group's revised and confidential "Clear River Economic Impact Analysis Inputs and Results" file, which supplements the file that was filed with the Board on April 17, 2017 (exhibit to the Supplemental Responses to the Division of Planning's Data Responses above); and
- (4) an original and three (3) copies of Invenergy's Supplemental Responses to the Office of Energy Resources ("OER") Third Set of Data Requests;
- (5) an original and one (1) copy of PA Consulting Group's revised and confidential "Clear River – Emissions Generation and Heat Input Results" file, which supplements the file that was filed with the Board on August 18, 2016 (exhibit to the Supplemental Responses to OER's Data Responses above);
- (6) an original and one (1) copy of PA Consulting Group's revised and confidential "Clear River – Market Assumptions" file, which supplements the file that was filed with the

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ADLER POLLOCK & SHEEHAN P.C.

Board on August 18, 2016 (exhibit to the Supplemental Responses to OER's Data Responses above); and

(7) an original and three (3) copies of Invenergy's Motion for Protective Treatment.

Please let me know if you have any questions.

Very truly yours,



ALAN M. SHOER
ashoer@apslaw.com

Enclosures

cc: Service List

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: INVENERGY THERMAL DEVELOPMENT LLC's
APPLICATION TO CONSTRUCT THE
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BURRILLVILLE, RHODE ISLAND

DOCKET No. SB-2015-06

**INVENERGY THERMAL DEVELOPMENT LLC'S SUPPLEMENTAL
RESPONSES TO THE DEPARTMENT OF ADMINISTRATION,
DIVISION OF PLANNING'S MARCH 21st AND MARCH 29th, 2017 DATA REQUESTS**

March 21, 2017
Request No. 1:

An update to the data that was previously requested on April 20, 2016. This update should:

- a. Account for any changes to the CREC project that are not reflected in that data, such as changes to the CREC project size, construction/operation phase timelines, generation capacity, or water plan.
- b. Include all of the inputs that were used in the input-output modeling described in section 5 of the application for both the IMPLAN and the JEDI models.

April 17, 2017
Response:

Updated JEDI and IMPLAN economic impact analysis assumptions employed by Edinaldo Tebaldi and PA Consulting Group, Inc. ("PA") are enclosed in the attached confidential spreadsheet titled: "Clear River Economic Impact Analysis Inputs and Results," and in the attached Memorandum dated April 14, 2017. The updates and changes can be summarized as follows:

- a. There have been some adjustments and increases in the revised anticipated Clear River Energy Center ("CREC" or "the Project") construction costs as compared to the values previously provided. These increased costs are attributed to several factors, including but not limited to the shift in Project scheduling by about one year due to delays in permitting and to reflect the anticipated two-stage construction schedule. There are also increased costs associated with the Project's electrical interconnect with National Grid, additional labor costs, bid estimates and firm quotes for equipment and construction to account for the two-stage construction process.
- b. The revised Water Supply Plan, filed with the Board on January 11, 2017, results in a required adjustment on the Project's capital and operating costs due to:
 - i. The replacement of the Project's original design for a permanent on site water treatment system with the revised

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Water Supply Plan utilizing rental demineralized water treatment trailers. This change in design is expected to reduce capital costs by approximately \$2 million.

- ii. The replacement of the original design utilizing a Pascoag Utility District ("PUD") water supply well, its carbon filter treatment system and associated pipeline with a supply system utilizing trucked water from the Town of Johnston. This reduced the initial capital costs due to the elimination of the water pipeline and the PUD well treatment system and added a truck facility and long-term agreement with the Town of Johnston. The associated costs for the new water plan will include a new truck filling facility in that Town of Johnston and its associated benefits package, as outlined in the agreement that Invenergy Thermal Development LLC has with the Town of Johnston. The net effect of this change was a reduction in up-front capital costs of \$2 million. This change will increase annual water costs and reduce original annual catalyst, piping and chemicals costs.
- iii. The elimination of the waste water force main and replacement with a storage tank and added recycle filter system. The net effect of this change was a reduction in up-front capital costs of \$1 million for a total reduction of \$5 million dollars (when combined with capital cost reductions from items i and ii).
- c. There have been no changes to the CREC project size or generation capacity.
- d. The above items have been included in the attached revised (confidential) Clear River Economic Impact Analysis Inputs and Results file.

**Supplemental
Response:**

The attached confidential Excel file entitled "Clear River Economic Impact Analysis and Results_06-15-2017.xlsx," attached as **Exhibit A** and "PA Consulting Group – Clear River

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Employment Impact Breakdown Memo_06-09-17.pdf," attached as **Exhibit B** summarize the latest results. The only change from the previous analysis is a revised forecast of ratepayer savings, based on the latest market assumptions for ISO-NE. The primary changes from the previous analysis include the updated Net CONE and convex demand curve shape from the forward capacity auction (FCA11), updated load forecast for ISO-NE from the 2017 CELT Report, and updated supply assumptions based on FCA11. We have also included a range of ratepayer savings based on the retirement of approximately 1 GW of the PSNH assets, which are currently being divested.

Respondent: John Niland, Invenergy Thermal Development LLC
Ryan Hardy, PA Consulting Group, Inc.

Date: June 23, 2017

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: INVENERGY THERMAL DEVELOPMENT LLC's
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March 21, 2017
Request No. 2:

An update to the project cost data.
This update should include:

- a. The project costs by category; and
- b. The share of each of these cost categories that will go to in-state vs. out-of-state firms.

April 17, 2017
Response:

Please see the attached (confidential) file detailing all CREC economic impact analysis assumptions employed by Edinaldo Tebaldi and PA Consulting in the attached confidential spreadsheet titled: "Clear River Economic Impact Analysis Inputs and Results." All construction and operating costs as well as in-state Rhode Island share percentages have been updated where appropriate to reflect the new construction timeline and the changes discussed in the response to Request No. 1. Assumptions that have been changed are highlighted in the attached confidential spreadsheet titled: "Clear River Economic Impact Analysis Inputs and Results" with notes added where appropriate.

The inputs shown on the Energy Market Cost Savings tab in the confidential spreadsheet titled: "Clear River Economic Impact Analysis Inputs and Results" reflect PA's June 2016 projection of the energy and capacity market savings of \$210 million to Rhode Island ratepayers as a result of CREC, with the four-year totals (2019-2022) from that analysis applied to the first four years of commercial operations and as described in the Public Utilities Docket 4609.

It is important to note that these projections of energy and capacity market saving will be updated. The projections shown were completed after FCA 10 (when only one of two units cleared), and thus do reflect a two-stage construction process, but they do not reflect the current Project schedule and market assumptions following FCA 11. PA will be updating its analysis by the end of

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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. Once PA has updated its projection of energy and capacity market savings to Rhode Island ratepayers, the economic impact analysis will be updated accordingly.

**Supplemental
Response:**

The attached **Exhibit A (confidential)** and **Exhibit B** summarize the latest results. The only change from the previous analysis is a revised forecast of ratepayer savings, based on the latest market assumptions for ISO-NE. The primary changes from the previous analysis include the updated Net CONE and convex demand curve shape from the forward capacity auction (FCA11), updated load forecast for ISO-NE from the 2017 CELT Report, and updated supply assumptions based on FCA11. We have also included a range of ratepayer savings based on the retirement of approximately 1 GW of the PSNH assets, which are currently being divested.

Respondent: John Niland, Invenergy Thermal Development LLC
Ryan Hardy, PA Consulting Group, Inc.

Date: June 23, 2017

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IN RE: INVENERGY THERMAL DEVELOPMENT LLC's
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March 21, 2017
Request No. 3

Advise as to whether the updated information takes into account the fact that the project is split from one-stage to two-stage construction.

April 17, 2017
Response:

As noted in the previous response, PA's updated economic impact analysis takes into account the construction and operating phase assumptions consistent with the latest two-stage construction schedule, with a revised commercial on-line date of June 1, 2020.

Also, as explained in the previous response, the energy market cost savings four-year total of \$210 million also reflects a two-stage construction process (post-FCA 10), but have not yet been updated to reflect the current Project schedule and market assumptions following FCA 11. PA will be updating that analysis to account for the subsequent delay since those results were completed and the fact that the second unit did not clear in FCA 11.

As noted, PA will be updating its analysis of energy and capacity market savings utilizing market assumptions from the ISO-NE's 2017 CELT Report, scheduled to be released in the first week of May 2017. Once PA has updated its projection of energy and capacity market savings to the RI ratepayer, PA will provide an updated analysis of the economic impact of those cost savings on the Rhode Island economy. Once the 2017 CELT is released, the time required to update the energy and capacity cost savings is approximately four to five weeks, so PA expects to have an updated economic impacts analysis accounting for the updated energy and capacity cost savings by the end of June 2017.

**Supplemental
Response:**

Exhibit A (confidential) and **Exhibit B** reflect the two-stage construction process, with CREC Unit #1 coming online in June 2020 and CREC Unit #2 coming online in June 2021.

Respondent:

John Niland, Invenergy Thermal Development LLC

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Ryan Hardy, PA Consulting Group, Inc.

Date: June 23, 2017

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March 29, 2017
Request No. 1:

An update to the data and analysis provided in Sections 4.0 and 5.0 of Invenergy's Filing and Supplemental filing, including the economic and employment analysis.

This update should:

- a. Reflect the new project plan;
- b. Include calculations of Rhode Island employment, earnings, and economic output effects;
- c. Include an update to the information provided by PA Consulting Group, Inc. in its November 4, 2015 Memorandum that separates the direct and indirect Rhode Island employment and earnings impacts; and
- d. Note any changes to the underlying assumptions or methodology of the analysis that were used to account for changes to the CREC project.

April 17, 2017
Response:

Edinaldo Tebaldi and PA have provided an updated version of the November 4, 2015 memorandum. The enclosed memorandum, dated April 14, 2017, reflects Rhode Island employment and earnings projections consistent with the current CREC construction schedule as well as the latest construction and operating cost assumptions. The latest input assumptions and commentary on changes since the 2016 analysis can be found in the enclosed confidential Clear River Economic Impact Analysis Inputs and Results file. The same file also includes a summary of projected Rhode Island employment, earnings and economic output resulting from the construction, operation and energy and capacity market cost savings to Rhode Island ratepayers resulting from CREC.

As noted in previous responses, PA will be updating its analysis of energy and capacity market savings utilizing market assumptions

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from the ISO-NE's 2017 CELT Report, scheduled to be released in the first week of May 2017. Once PA has updated its projection of energy and capacity market savings to the RI ratepayer, it will provide an updated analysis of the economic impact of those cost savings on the RI economy.

**Supplemental
Response:**

The attached **Exhibit A (confidential)** and **Exhibit B** summarize the latest results. The only change from the previous analysis is a revised forecast of ratepayer savings, based on the latest market assumptions for ISO-NE. The primary changes from the previous analysis include the updated Net CONE and convex demand curve shape from the forward capacity auction (FCA11), updated load forecast for ISO-NE from the 2017 CELT Report, and updated supply assumptions based on FCA11. We have also included a range of ratepayer savings based on the retirement of approximately 1 GW of the PSNH assets, which are currently being divested.

Respondent: John Niland, Invenergy Thermal Development LLC
Edinaldo Tebaldi
Ryan Hardy, PA Consulting Group, Inc.

Date: June 23, 2017

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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, 8th Floor
Providence, RI 02903-1345
Tel: 401-274-7200
Fax: 401-751-0604
Dated: June 23, 2017

CERTIFICATE OF SERVICE

I hereby certify that on June 23, 2017, I delivered a true copy of the foregoing responses to the Energy Facilities Siting Board via electronic mail to the parties on the attached service list.

/s/ Alan M. Shoer

EXHIBIT A
(REDACTED)

EXHIBIT B



1700 Lincoln Street
Suite 1550
Denver, CO 80203
USA

Tel: +1 720 566 9920
Fax: +1 720 566 9680
www.paconsulting.com

June 9, 2017

To Whom It May Concern,

At the request of Invenergy LLC ("Invenergy"), Edinaldo Tebaldi and PA Consulting Group ("PA") have prepared this memorandum to isolate the direct economic development impacts resulting from the construction and ongoing operation of the Clear River natural gas-fired combined cycle generation facility.

Figure 1 shows the jobs and income projected to be created by the construction and ongoing operations of Clear River in the State of Rhode Island. The construction of Clear River is projected to generate 306 direct jobs in 2018, 427 in 2019, and 365 in 2020, the three full years of construction, and nearly the same number of indirect and induced jobs in those years. The ongoing operation of the facility will create 23 onsite (direct) jobs annually from 2021 through 2036, and over 105 additional indirect and induced jobs (including the contractors and service professionals involved in the regular operation and maintenance of the facility).

Table 1: Employment and Earnings Impact – Rhode Island Only, 2018-2036

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Direct Employment Impact (FTEs per year) | | | | | | | | | | | | | | | | | | | |
| Construction Period | 306 | 427 | 365 | 89 | | | | | | | | | | | | | | | |
| Facility Operations | | | 15 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 |
| Indirect & Induced Employment Impact (FTEs per year) | | | | | | | | | | | | | | | | | | | |
| Construction Period | 265 | 371 | 317 | 77 | | | | | | | | | | | | | | | |
| Facility Operations | | | 62 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 |
| Total Employment Impact | 571 | 798 | 768 | 295 | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 129 |
| Direct Earnings Impact (\$ - millions) | | | | | | | | | | | | | | | | | | | |
| Construction Period | 51.7 | 73.9 | 64.5 | 16.1 | | | | | | | | | | | | | | | |
| Facility Operations | | | 1.0 | 1.7 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.1 | 2.1 | 2.2 | 2.2 | 2.3 | 2.3 | 2.4 |
| Indirect & Induced Earnings Impact (\$ - millions) | | | | | | | | | | | | | | | | | | | |
| Construction Period | 17.4 | 24.8 | 21.6 | 5.4 | | | | | | | | | | | | | | | |
| Facility Operations | | | 5.0 | 8.8 | 9.0 | 9.2 | 9.4 | 9.6 | 9.8 | 10.0 | 10.2 | 10.4 | 10.7 | 10.9 | 11.1 | 11.4 | 11.6 | 11.9 | 12.2 |
| Total Earnings Impact | 69.1 | 98.7 | 92.2 | 32.0 | 10.7 | 11.0 | 11.2 | 11.6 | 11.7 | 12.0 | 12.2 | 12.5 | 12.8 | 13.0 | 13.3 | 13.6 | 13.9 | 14.2 | 14.6 |

For any questions, please contact:

Ryan Hardy
Member of PA's Management
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617-252-0528

Mason Smith
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Edinaldo Tebaldi
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