

November 9, 2015

VIA FIRST CLASS MAIL

Jeffrey M. Willis, Deputy Director
Coastal Resources Management Council
Oliver Stedman Government Center
4808 Tower Hill Road, Suite 3
Wakefield, Rhode Island 02879

Re: INVENERGY – Clear River Energy Center – Proposed Energy Generation Facility in Burrillville, RI

Dear Mr. Willis:

On behalf of Invenergy Thermal Development LLC (“Invenergy”) we are submitting this letter to the Rhode Island Coastal Resources Council (“CRMC”) to request a waiver of the need to obtain a CRMC Assent for Invenergy’s Clear River Energy Center Project (“CREC” or “Project”) that Invenergy proposes to construct in Burrillville, Rhode Island. The CREC Project will consist of a combined-cycle electric generating facility to be located at the Spectra Energy Algonquin Compressor Station site, on Wallum Lake Road (State Route 100) in Burrillville, Rhode Island.

Invenergy understands that the CRMC is required to review all inland power generation projects greater than 40 MW pursuant to Section 320 of the Coastal Resources Management Plan (CRMP) and Rhode Island General Laws § 43-23-6, and to determine in the first instance “whether such proposals have a reasonable probability of conflicting with [the CRMP] Program or with adopted CRMC Special Area Management Plans (SAMPS), or have the potential to damage the coastal environment.” CRMP Sections 320.A.1 and 320.B.1.

As described below, Invenergy does not believe that this proposed Project will have any impact on the coastal environment, nor will the CRMC Project have the potential to damage the coastal environment, and further Invenergy does not believe the Project will have any reasonable probability of conflicting with the CRMC Program or with any CRMC SAMP. By this letter Invenergy respectfully requests that the CRMC review the details of the CREC Project provided herein, and determine that no CRMC Assent is required for this CREC Project.¹

¹ On October 28, 2015, Invenergy filed its application with the Rhode Island Energy Facilities Siting Board. Invenergy has also filed for the required Air Permits from the Rhode Island Department of Environmental

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The CREC Project Overview and Project Location

Invenergy, the company that is developing the CREC Project, is an independently owned company that develops, owns, and operates power generation and energy storage facilities across North America and Europe. Invenergy's expertise includes a complete range of fully integrated in-house capabilities, including: Project Development, Permitting, Transmission, Interconnection, Energy Marketing, Finance, Engineering, Project Construction, Operations and Maintenance. To date, the Company has developed over 9,056 MW of utility-scale renewable and natural gas-fueled power generation facilities across the United States, Canada, and Europe, including more than 7,132 MW of projects in operation and over 607 MW under contract or in construction. Invenergy's energy portfolio also includes over 1,316 MW of projects developed and sold under Build/Transfer or Development/Transfer Agreements. The CREC Project is an important Invenergy Project and an important project for the state and the region. This will be the first Invenergy sponsored project to be located in the New England region.

The land area associated with the CREC Project is approximately 67 acres that is currently owned by Spectra Energy. Invenergy has signed an Option to Purchase Real Estate on this property. The 67 acres is a subset of a 730 acre site that contains the existing Burrillville Compressor Station. A site plan showing the CREC Project location is attached with this application as Exhibit "A". The Project site is located in a forested, predominantly rural area very close to the tri-state border of Rhode Island, Connecticut and Massachusetts, in an area commonly known as Pascoag, Rhode Island. The Project is located on a site that is part of a larger parcel of land that includes the regional gas pipelines and electricity transmission lines, each of which have adequate capacity to support the project, without requiring additional costly (and controversial) laterals for each. The Facility will be constructed just south of the existing Algonquin Gas Compressor Station.

The Algonquin Gas Compressor Station is surrounded by dense vegetation. One road, Algonquin Lane, leads to the site. Algonquin Lane is approximately 0.2 miles long and intersects with Wallum Lake Road. The Project will require the installation of a new access road. The closest residents live approximately 0.10 miles north of the North-Northeast corner of the property line.

The CREC Project will participate in the ISO New England Forward Capacity Market in order to address need for new capacity that has been created by retirements of existing generators and the additional potential retirements of other generators in the New England market. As further

Management (RIDEM) and will be filing for the required water permits from RIDEM and any other reviews required, if any, by the State or as requested by the EFSB. Invenergy will also be filing for the required approvals of the Army Corps of Engineers and other federal approvals (FAA), as well as all required Town of Burrillville approvals. Finally, Invenergy is working together with National Grid and the NE/ISO with regard to the interconnection systems and facilities required by the introduction of the CREC Project to the regional electrical grid.

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described below, the CREC Project will be the most efficient power generator in the New England market to date and will replace older, more polluting, less efficient modes of power generation that the region currently relies upon. The CREC Project will also help clean up a currently contaminated well in Burrillville that the Town has not been able to remediate. The clean-up will be accomplished by installing a treatment system and utilizing the treated water in the steam cycle.

The CREC Project will comply and support both the U.S. EPA's Clean Power Plan and the recently issued final Rhode Island Energy Plan – Energy 2035 (State Guide Plan Element – Report #120) by utilizing technologies to improve air quality and reduce emissions in a secure, cost effective and sustainable manner that will complement the efforts of the region to move to more renewable energy resources for the generation of electricity.

In short, the CREC Project will provide many benefits to the region including reduced air emissions, improved water quality and improved air quality, lower regional energy costs, employment for skilled local workers during construction and operation, as well as direct economic benefits to the Town of Burrillville and to local businesses and, the CREC Project will deliver these benefits in a manner that does not impact the coastal habitat.

The CREC Project Generation Design and Utility Infrastructure

The Facility will be configured as a two-unit one-on-one (1x1), duct fired, combined cycle generation station. Each unit will consist of an advanced class (G-, H-, or J-class) gas turbine operated in a combined-cycle configuration with a heat recovery steam generator (HRSG) equipped with natural fired duct burners and one steam turbine. The combustion turbine, steam turbine, and generator of each unit will be connected via a common shaft (otherwise referred to as a single shaft machine). Each gas turbine will fire natural gas as a primary fuel and ultra-low sulfur diesel (ULSD) fuel as a backup fuel from a two 1,000,000 gallon on-site storage tanks for limited periods when natural gas is unavailable. ULSD will be delivered to the Facility by truck. The natural gas supply for the Facility will be provided by a pipeline from the adjacent Spectra Energy Algonquin Compressor Station.

The Facility will have a nominal power output at base load of approximately 850-1,000 megawatts (MW) while firing natural gas (with supplementary HRSG duct firing) and 650-800 MW while firing ULSD. The electrical power generated by the Facility will be transmitted through a new 345-kV transmission line to be installed from the Facility through an existing National Grid right-of-way (ROW) to the Sherman Substation.

As described in more detail below for the specific environmental attributes of the Project, each unit will utilize air cooled condensers (ACC) to limit water usage and wastewater discharge. The use of an air cooled condenser reduces the amount of water by approximately 90% compared to a conventional wet cooling tower. The use of a dry cooling system also reduces the amount of

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wastewater generated by the Project. The water supply for the Facility will be provided by the Pascoag Utility District (PUD) through a dedicated pipeline to be installed from the PUD water supply well field to the Facility. Wastewater from the Facility will be discharged to the Burrillville Wastewater Treatment Facility for treatment through a dedicated sewer line to be installed.

The CREC Project Will Deliver Significant Environmental and Economic Benefits

The CREC Project will provide many benefits to Rhode Island and the region. These overall project benefits can be summarized as follows:

- Provide new, highly advanced generating technology that will be one of the most efficient generators in New England, helping to lower regional energy costs;
- Reduce regional air emissions and improve air quality through Best Available emission control technology;
- Modernize the electric generating infrastructure by providing new, highly efficient generation that has fast start and flexible generating capability, replacing older, less efficient, and dirtier generation. The fast start and flexible generating capability will also help support the integration of new and existing renewable generation onto the power grid;
- Utilize previously unusable PUD water supply wells, which were shut down and deemed unsuitable for drinking water purposes more than ten years ago.
- The Project is projected to provide many economic benefits to the region as set forth below:
 - The creation of an anticipated will create an average of more than 660 full-time jobs per year from 2017-2019 and 145 full-time jobs per year from 2020 to 2034 in Rhode Island.
 - From 2017-2021, Clear River will support the creation of approximately \$360 million in earnings to Rhode Island workers, or more than \$70 million per year.
 - From 2017-2021, the total economic impact on Rhode Island is projected to be \$700 million, or approximately \$140 million per year. The overall impact of Clear River on the Rhode Island economy will total more than \$1.2 billion from 2016-2034, or an average of \$65 million annually.

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The CREC Project will Not Impact the Coastal Environment

The Project will have no reasonable probability of conflicting with any CRMP or CRMC SAMP, nor will the CREC Project have any potential to damage the coastal environment. As described herein, the Facility is situated inland in the northwestern part of Rhode Island, approximately 25 miles from the nearest coastal area in the State. Moreover, the environmental impacts of the Project to this upland region in the northwestern part of Rhode Island and to the region will be minimal. The Facility will be equipped with state-of-the art air emissions control and sound abatement systems and has been designed to minimize and avoid impacts to the environment to the greatest extent technologically and economically feasible for such a facility, which will be assured by the numerous environmental permits which will need to be obtained for the Project.

The Project will implement significant and state-of-the-art air pollution and storm/waste water controls, in addition to decreasing overall regional gas emissions and lead to substantial improvements to groundwater quality in the Pascoag area. To the extent there are any environmental impacts these are not expected to have any affect to any CRMP, SAMP or coastal habitat. However, in order for CRMC to reach the determinations requested in this preliminary request for a waiver of the CRMC Assent we next describe with more details the particular air and water pollution control features of the Project, as well as the storage facilities, appurtenant structures and utility interconnections that are part of the design for the CREC Project.

1. Air Pollution Control

The Project will comply with all applicable air pollution control regulations and air quality standards and will have a significant positive impact on air quality in the region. The CREC Project will be the most efficient and lowest emitting fossil fuel fired electric generating facility in the region. The power generated will displace power currently being produced by less efficient and higher emitting coal, oil, and natural gas fired generating resources. As a result, there will be significant decreases in criteria pollutant, hazardous air pollutant, and greenhouse gas emissions from the electric generating sector in the region resulting from the operation of the CREC Project. These decreases in emissions will lead to improved air quality, helping the region achieve and maintain attainment with the National Ambient Air Quality Standards. The expected decreases in greenhouse gas emissions will help Rhode Island and other neighboring states to achieve compliance with the EPA's Clean Power Plan and other state and regional greenhouse gas emission reduction goals and initiatives, including the recently issued Rhode Island State Energy Plan.

The Project will utilize state-of-the-art air emission controls. Each gas turbine/heat recovery steam generator will be equipped with a Selective Catalytic Reduction system to control nitrogen oxides, an oxidation catalyst for the control of carbon monoxide and volatile organic compounds and hazardous air pollutants. Water injection will also be used during diesel fuel firing in order

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to control nitrogen oxide emissions. The Project will utilize clean burning, low sulfur, low ash fuels and the most efficient gas turbine combustion technology commercially available thereby reducing emissions of carbon dioxide, sulfur dioxide, sulfuric acid mist, and particulate matter from the gas turbines/heat recovery steam generators. The Project's auxiliary boiler and dew point heater will control nitrogen oxide emissions through the use of ultra-low nitrogen oxide burners and flue gas recirculation.

An air quality impact analysis has been completed for the Project which demonstrates that the projected new emissions, when combined with existing ambient air background concentrations and the ambient air impacts from nearby interacting emission sources, will not cause or contribute to an exceedance of any National Ambient Air Quality Standards or Acceptable Ambient Levels for air toxic compounds as established by RIDEM, at or beyond its property line. The results of the air quality impact analysis conducted for the Project have demonstrated that air quality in the area surrounding the Project will be maintained at levels which have been deemed by the EPA and RIDEM to be protective of human health and the public welfare, including the most sensitive of the population, with a margin of safety.

2. On Site Storage Facilities, Appurtenant Equipment and Interconnection

The CREC Project will include the following on site storage tanks and appurtenant equipment.

- Fuel Oil Storage Tanks - The Facility will include two 1,000,000 gallon above ground ULSD storage tanks equipped with secondary containment, as required by law. These welded steel tanks will be approximately 30 feet tall and 80 feet in diameter.
- Demineralized Water Storage Tank – The Facility will include one demineralized water storage tank with approximately 1,000,000 gallon storage capacity. The tank will be approximately 30 feet tall and 110 feet in diameter. This storage capacity will provide water for approximately 10 days of continuous operation on natural gas at summer conditions.
- Waste Water Storage Tank – Blowdown from the HRSGs, evaporative coolers and other wastewater from the Facility will be collected in an approximately 160,000 gallon waste water storage tank. The tank will be approximately 30 feet tall and 30 feet in diameter.
- Fire Water / Service Water Storage Tank – Plant service water /fire water will be stored in a tank with a storage capacity of approximately 800,000 gallons. The tank will be approximately 30 feet tall and 68 feet in diameter.
- Ammonia Storage Tank – Part of the plant emissions control systems will include selective catalytic reduction systems for controlling NOx emissions in the HRSGs.

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The SCR systems will use ammonia as a reagent. Aqueous ammonia will be stored at a concentration less than 20% in a storage tank with a storage capacity of approximately 40,000 gallons.

- Standby diesel generator – The Facility will include a 2 MW standby diesel generator.
- Natural gas system - A natural gas fuel yard will be installed at the Facility that includes fuel gas filters, fuel gas dew point heaters, gas regulation trains and flow meters and a gas compressor.
- Duct burner fuel skids – Each HRSG will be equipped with a dedicated natural gas control and regulation skid to reduce pressure and measure and modulate gas flow to the duct burners.
- Hydrogen tube trailer – The unit generators will use gaseous hydrogen for cooling and heat rejection. Truck trailer mounted hydrogen tube racks will be used for on-site hydrogen storage and makeup to the generators. Alternately a hydrogen generator may be used for this purpose.
- Waste water collection – Wastewaters generated by the Facility will be collected and pumped via a forced main to a connection with the Burrillville Sewer Authority wastewater treatment system.
- BOP Electrical – Balance of plant electrical systems (medium and low voltage transformers, switchgear and distribution systems) will be installed in an enclosure adjacent to each combined cycle unit. These systems will be energized by the station auxiliary transformers that will reduce voltage from the generator voltage to the appropriate medium voltage.

The transmission facilities for the CREC Project are summarized as follows:

For the CREC Project Switchyard each 1x1 combined cycle unit will have a generator step-up (GSU) transformer to increase the voltage from the generator voltage to 345kV. The GSU transformers will be connected to the Facility switchyard located along the western edge of the site via underground cable duct banks. The Facility switchyard will occupy a footprint of approximately 370 feet by 155 feet and will be configured as a 345kV three-breaker collector bus switchyard. The switchyard will be separately fenced and will include a separate control enclosure, auxiliary power systems and an overhead 345kV transmission line for the connection to the National Grid Sherman Road Switching Station.

The Facility will connect to the National Grid electric utility system at the Sherman Road Switching Station as determined from a recently completed feasibility study conducted by ISO

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New England (ISO-NE). The transmission line will be installed and owned by National Grid as part of the generation interconnection application process. Connection to the Sherman Road Switching Station will be via a new 6-mile long 345kV transmission line that will be constructed. The transmission line will run from the Facility switchyard to the west along a new right of way to the right of way for the two existing 345 kV transmission lines west of the Facility. The new transmission line will run on new towers set within the National Grid right of way from a point just west of the Facility to the Sherman Road Switching Station.

The Facility will connect to the National Grid Sherman Road Switching Station via a new 6-mile long 345kV transmission line. In addition, the 345kV Sherman Road Switching Station will also be expanded to add a breaker to accommodate the new transmission line connection and generation capacity addition. Other transmission system improvements proposed to accommodate the interconnection include upgrades to Line 3361, a 10.8 mile line from the Sherman Road Switching Station to ANP Blackstone with a minimum (NOR/LTE/STE) rating set of: 1400/1685/1685 MVA.

Underground construction will include concrete foundation substructures as well as site utility piping for water, natural gas, fuel oil and electrical cables. The Facility will include underground duct banks to route high voltage electrical cables at 345kV to connect the two Generator Step Up transformers to the Facility switchyard.

3. Cooling Systems

The CREC Project has been configured to use dry-type heat rejection systems using an ACC. Each combined cycle unit will have a dedicated ACC and associated subsystems and piping. Steam turbine exhaust steam will be ducted through large horizontal ducts feeding several vertical risers on each ACC. Each riser will deliver steam to a distribution manifold that will run horizontally along the top of a row of finned tube air cooled heat exchangers arranged in an A-frame configuration. Fans will be used to move ambient air over the finned tubes causing the steam to condense releasing heat to ambient air and the condensate will be drained back to the condensate collection system. Each ACC will occupy a footprint of approximately 350 feet by 150 feet and be approximately 120 feet tall.

The facility will also include air cooled closed cycle cooling water heat exchangers (one for each combined cycle unit) to reject heat from various auxiliary systems such as lube oil and hydrogen cooling. The heat exchanger will use fans to move ambient air over the finned tubes carrying the hot closed cycle cooling water.

4. Wastewater/Stormwater Controls

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As discussed above, the Project will use air-cooled condensers for cycle heat rejection, which will significantly reduce water use and the production of waste water. Wastewater generated will be segregated by area into separate wastewater streams according to the source of the wastewater. Process wastewater sources needing pH adjustment will be treated by a wastewater neutralization system and wastewater from the general service system will be collected and treated through an oil/water separator to remove oil that might be in drains from various pieces of equipment. Wastewaters generated from process wastewater and general service water sources will be collected and stored in an on-site wastewater storage tank and ultimately treated and discharged within the existing Burrillville Wastewater Treatment plant. Wastewaters collected will be periodically pumped via a force main to a sewer connection with the Burrillville Sewer Authority wastewater system.

The Project will employ significant stormwater discharge controls. Stormwater management will comply with the requirements of RIDEM's Rhode Island Stormwater Design and Installation Standards Manual (as amended March 2015). The Project will meet the Minimum Stormwater Management Standards, if applicable, to the extent practicable. Source control and pollution prevention measures will be employed to minimize the impact on stormwater runoff. A Stormwater Pollution Prevention Plan and Soil Erosion and Sediment Control Plan will be developed in accordance with provisions of the Rhode Island Soil Erosion and Sediment Control Handbook and best practices. Illicit discharges not expressly authorized under a National Pollutant Elimination Discharge Elimination System permit will be prevented. A stormwater management system operation and maintenance program will be developed and included as part of the stormwater management program. The operation and maintenance program will be implemented following termination of coverage under construction stormwater permits.

5. Water Supply Systems and Treatment

Water supplied to the Project will be provided from the Pascoag Utility District (PUD) by re-activation and treatment of a currently inactive PUD groundwater well that became contaminated in 2001 by an off-site contamination source. As a result of this well-documented groundwater contamination event, PUD was forced to terminate its use of its primary well water supply and interconnect its water supply system with the Harrisville Fire District (HFD) to meet the requirements of its customers for potable water. As a result of that 2001 contamination event and the closure of PUD's primary groundwater supply PUD currently receives approximately 88% of its water supply from the HFD under a wholesale water purchase agreement. PUD's average annual water demand today is approximately 0.3 MGD with a summer peak of approximately 0.35 MGD. PUD supplements the water supplied from HFD from PUD's only operating groundwater well (Well #5) which was not impacted by the 2001 contamination event. PUD's wholesale water supply agreement with the HFD is for a maximum supply of 0.6 MGD provided through PUD's Main Street interconnection with the HFD water supply system.

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Although PUD has a wholesale water agreement with the HFD for as much as 0.6 MGD, PUD currently only draws a portion of that maximum flow to meet its daily needs. To meet the water supply requirements for the Project, Invenergy and PUD will execute a water supply agreement that PUD will, on an exclusive basis, provide water treated to an industrial standard to the Project from PUD's contaminated well water supply (well #3A). Water to be supplied will be treated by an activated carbon treatment system producing water of sufficient quality for use by the Project. This treated water will be supplied in a dedicated water supply pipeline that will not be interconnected into the PUD potable water supply system; there will be no other users of this industrial water supply. None of this treated water intended for use by the Project will be used as a potable water supply and none of the water produced by the carbon treatment system will be supplied to any other user in the community. Costs related to the treatment of the PUD contaminated supply will be covered entirely by the Project under a long term water supply agreement with PUD. PUD will secure, with the help of CREC, all of the required permits and authorizations to implement this water supply agreement.

The Project's daily water demand with both combustion turbines firing natural gas under full-load normal conditions will be approximately 104,000 gallons per day (gpd) or 0.104 million gallons per day (MGD), a full-load summer condition will be approximately 225,000 gpd, or 0.225 MGD assuming the evaporative cooler is running 24 hours a day. During the infrequent periods when the Project is requested to fire one of the gas turbines on oil, the daily water demand for the Project will increase to approximately 925,000 gpd, or 0.925 MGD for each day of oil firing. Although the total water use of the Project increases when requested by ISO-NE to fire ULSD oil, the total number of days that the Project will be required to fire oil will be determined solely by the grid operator (ISO-NE) based on the severity of winter conditions when there is a need to conserve natural gas for heating needs of the region. Generally, the number of days per year the Project will be requested to use ULSD will be approximately five days.

Conclusion

In sum, Invenergy submits that the proposed Project will not likely have an impact on the coastal environment and therefore will not require CRMC Assent. The Project is situated in an inland area that is significantly distant from any coastal feature so as to preclude or otherwise minimize any adverse impacts on the coastal environment. The Project will also implement significant and state-of-the-art air pollution and storm/waste water controls, in addition to utilizing a water supply system that will lead to the remediation of contaminated groundwater in the area near the site. Invenergy has applied, or will apply, for all applicable permits, and will take steps to ensure that all applicable regulations administered by aforementioned agencies will be strictly adhered to during construction and operation of the Facility. For these reasons, Invenergy respectfully requests that the CRMC determine that no Assent from CRMC is required for this Project.

ADLER POLLOCK & SHEEHAN P.C.

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Thank you.

Very truly yours,

A handwritten signature in black ink, appearing to read "Alan M. Shoer". The signature is fluid and cursive, with a large initial "A" and "S".

ALAN M. SHOER
ashoer@apslaw.com

Enclosures

cc: John Niland, Invenergy
Tyrone Thomas, Esq.