

# **FPS Vernon Solar**

**20 MW<sub>AC</sub> Solar PV in Vernon, VT**

**Proposal Submitted by Freepoint Solar LLC**



**Pursuant to the**

**Request for Proposals**

**For**

**Long-Term Contracts for Renewable Energy**

**Issued September 12, 2018**

**Submitted to:**

**The Narragansett Electric Company d/b/a National Grid**

**Prepared by:**

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***Submitted October 29, 2018***

**List of Exhibits**

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<b>Exhibit #</b>	<b>Exhibit Description</b>
1	CPPD
2	PVSyst
2A	12x24 Production
3	Freepoint Financial Statements
4	Site Plan
5	(intentionally left blank)
6	Memo of Option to Lease/Purchase
7	Initial Environmental Analysis / Critical Issues Report
8	Map Showing Route from Project Site to the POI and to the ISO-NE PTF
9	Interconnection Application
9A	One Line Diagram
9B	ISO-NE Feasibility Study
9C	Curtailement Study
9D	Electrical Models
10	JEDI

## Section 1: Proposal Certification

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Please see **Exhibit 1**: Certification, Project & Pricing Data (“CPPD”) for the Proposal Certification. This proposal provides firm pricing for a period of 270 days following the date of submission of this Proposal.

## **Section 2: Proposal Summary / Contact Information**

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Please see **Exhibit 1**: Certification, Project & Pricing Data (“CPPD”) for the Proposal Summary and Contact Information for this bid.

## Section 3: Executive Summary of the Proposal

**3.1 Introduction** | In response to the Request for Proposals for Long-Term Contracts for Renewable Energy issued September 12, 2018 by the Narragansett Electric Company d/b/a National Grid (the “Buyer”), Freepoint Solar LLC is pleased to submit this proposal for the sale of the output of FPS Vernon Solar (the “Project”), a 20 MW<sub>AC</sub> utility-scale solar PV facility [REDACTED]

The Project is being developed by Freepoint Solar LLC (“Freepoint” or “Bidder”), a wholly-owned subsidiary of Freepoint Commodities Holdings LLC, a physical commodity merchant headquartered in Stamford, CT. Freepoint was formed in early 2011 by the former principals of Semptra Energy Trading, which was the third largest independent physical commodities trader globally when it was acquired by The Royal Bank of Scotland Plc. Freepoint is an active trader in North American and European wholesale electricity and gas markets, and its senior professionals have extensive transaction experience, including utility-scale development. Freepoint has significant capital resources that will assure there are financial resources necessary to support the successful development of the Project.

Freepoint has executed a joint development agreement with SunEast Development LLC (“SunEast”), a solar development company based in Old Saybrook, CT. SunEast specializes in the development of solar PV facilities in the Northeastern United States, with over 500 MWs of solar projects under development. The principals of SunEast have been responsible for the development and construction of over 700 MW of renewable energy projects in New York and New England over the past ten years.

As a development team, Freepoint and SunEast (together the “Developer”) bring a unique capability to the development of clean, affordable, renewable energy in New England.

**3.2 Facility Description** | The Project is proposed as a 20 MW<sub>AC</sub> fixed tilt ground mount solar farm. We will utilize Tier-1 system components, including state-of-the-art polycrystalline solar modules, inverters, and racking. Based on our production forecasting, the expected annual energy generation of the facility in year one of operation is [REDACTED] MWh.

**3.3 Siting** | The 20 MW<sub>AC</sub> project will be [REDACTED]

[REDACTED] The Project site is currently undeveloped land. It is in an undeveloped, rural area with no visibility from nearby residences or public roads. [REDACTED]

[REDACTED] 1.

**3.4 Site Control** | The Project has executed two Option to Purchase Agreements (the “Option Agreements”) with two private landowners providing for an option period of up to 36 months. The rights provided under the Option Agreement are sufficient to allow for the Project to acquire rights to the land

for construction and operation of the facility and access to the point of interconnection. A copy of these Option Agreements is provided as proof of land control.

**3.5 Pricing** | The Project will be generating electricity and Renewable Energy Certificates (“RECs”). Freepoint proposes the bundled sale of both attributes via [REDACTED] Power Purchase Agreement (“PPA”). The price schedule being offered is summarized below:

	Term (Years)	Peak Energy Price Year 1 (\$/MWh)	Off-peak Energy Price Year 1 (\$/MWh)	Annual Energy Price Escalator (beginning Year 2 and each Year thereafter)	REC Price Year 1 (\$/MWh)	Annual REC Price Escalator (beginning Year 2 and each Year thereafter)
<b>Pricing Proposal</b>	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

### 3.6 Bid Submittals to Other RFPs | [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].

#### **Section 4: Pricing Information and Schedules**

Please see **Exhibit 1**: Certification, Project & Pricing Data (“CPPD”) for the Pricing information and Schedules.

## Section 5: Operational Parameters

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### 5.1 Maintenance Outage Requirements

Partial outages may be required for up to █ days per year due to maintenance. No planned complete outages will be required for the Project.

### 5.2 Operating Constraints

The Project will only operate during daytime hours due to the nature of solar PV technology. The peak generating hours will differ in different months. Generally, the peak generating hours range from 10 a.m. to 4 p.m., based on our production projection from PVSyst, shown in Exhibit 2, and the 12x24 energy production forecast shown in Exhibit 2A.

### 5.3 Reliability

Given its location in far southern Vermont, the Project will interconnect to █

Given this point of interconnection, the Project will directly contribute to the electric reliability of the ISO-NE, and southern New England specifically. In addition, if selected for a PPA through this RFP, the Project plans to offer its capacity into the ISO-NE FCA process, and provide capacity to ISO-NE thereby enhancing system wide electrical consumption and generation support, through this capacity commitment.

Due to the nature of solar generation, the Project would generate the entirety of its energy during the on-peak hours of each day (on a 7-day per week basis), which would coincide with peak loads in ISO-NE. As is shown in Exhibit 2A, the production from this planned Solar PV facility has peak generation during summer on-peak hour periods when ISO-NE loads are at their peak, with much of the production coming during the “super-peak” hours of HE1400 – HE 1900.

The Quanta Technology technical report and ISO-NE Feasibility Study results concluded that the Project does not cause any significant adverse impact on the New England Transmission System. A copy of the ISO-NE Feasibility Study Report and the Quanta Technology technical report are provided in Exhibits 9B and 9C.



## Section 6: Energy Resource Plan

## 6.1 Solar Resource

The methodology used to determine the Project's expected output utilized industry standard practices. The National Renewable Energy Lab (NREL) publishes a dataset of expected solar irradiance that is used to calculate the expected production. PVSyst is a simulator program that allows for inputs of common design parameters and runs a Monte Carlo simulation to determine the systems production characteristics. The Project utilized the engineering firm Tighe & Bond to run the PVSyst model to determine the production profile of the Project, a copy of which is provided in **Exhibit 2**.

Solar PV systems have an operating life in excess of 25 years, with the primary replacement parts being the inverters, which carry a 5 year warranty. Over time, the efficiency of the panels degrades at a rate of less than 0.5% per year.

## 6.2 Energy Generation Delivery Plan

PVSyst summary calculation 12x24 results are as shown in the table below (and in **Exhibit 2A**).

FPS Vernon Solar

Nameplate MW<sub>AC</sub>

Estimated Solar Production (MW<sub>AC</sub>) by Hour by Month - Year 1

### **6.3 REC Delivery Plan**

The Project is located within and ISO-NE and will confirm delivery its REC to Buyer through the NEPOOL GIS certificate protocol.

## Section 7: Financial / Legal

### 7.1 Long-term Contract Support for Financing of Project

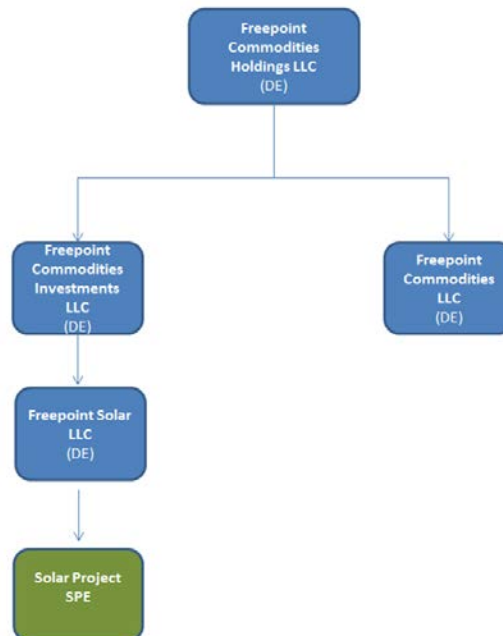
A long-term PPA is generally considered a prerequisite for financing cost-competitive utility-scale solar projects. An executed PPA between the Project and the Buyer would enable the Project to obtain project financing for the Project and advance the facility from development into construction and operation. Freepoint may seek third-party tax equity financing at COD with a large institutional investor, which would also require a long-term offtake contract with a high-quality counterparty. The tax-equity market is very mature as it relates to solar generation projects with long-term creditworthy power purchase arrangements in place.

Freepoint will remain flexible in terms of securing the best source of both construction and long-term capital, which may include a combination of internal financing and institutional debt and tax-equity financing, each of which would be available only to projects with viable long-term offtake agreements.

### 7.2 Corporate Structure

The Project will be owned by a subsidiary (the “Solar Project SPE”) of Freepoint Solar LLC, a Delaware limited liability company with the business address of 58 Commerce Rd, Stamford, CT. Freepoint Solar LLC is a wholly-owned subsidiary of Freepoint Commodities Holdings LLC, which is backed by [REDACTED] and was founded in March 2011 and is currently funded with more than [REDACTED] million dollars of equity capital.

#### Organization Chart:



#### Project Level LLC:

A Special Purpose Entity (“SPE”) would be formed to hold the assets of the Project. The SPE would be solely owned by Freepoint. During the development period, it is expected that the Project would be

funded entirely by equity from Freepoint. During the construction and operation period of the Project, it is expected that the SPE would be capitalized by a combination of sponsor equity, tax equity and project debt.

In order to execute the contract with the Buyer, the Project SPE would need to obtain the approval from the Freepoint Commodities Holdings management team.

### 7.3 Financing Plan

During development, the Project would be funded with equity from Freepoint's balance sheet. The Project does not intend to seek third party financing during the development stage (including: preliminary design, equipment specification, interconnection application and impact studies, level one environmental assessment, legal review, specific permitting, and development period security). However, the Project intends to seek additional financing (including either debt or equity financing) to be included in the SPE's capital structure beginning at either commencement of construction or commencement of operation of the Project. Should the Project elect to include a Tax Equity investor in the capital structure of the Project, this investor would be expected to be added immediately prior to the Project reaching commercial operation. Freepoint would retain the option to be positioned as the investor in one or more of the debt or equity components of the capital structure.

The Project's total capital expenditure as discussed above, is expected to be financed via a combination of debt, tax equity, and sponsor equity capital. The estimated Project cost breakdown is as follows:

Development	

A long-term PPA is generally considered a prerequisite for financing cost-competitive utility-scale solar projects. An executed PPA between the Project and the Buyer would enable the Project to obtain project financing for the Project and advance the facility from development into construction and operation. Freepoint may seek third-party tax equity financing at COD with a large institutional investor, which would also require a long-term offtake contract with a high-quality counterparty. The tax-equity market is very mature as it relates to solar generation projects with long-term creditworthy power purchase arrangements in place.

Freepoint will remain flexible in terms of securing the best source of both construction and long-term capital, which may include a combination of internal financing and institutional debt and tax-equity financing, each of which would be available only to projects with viable long-term offtake agreements.

### 7.4 Experience in Securing Financing

Both Freepoint and SunEast have extensive experience developing, financing, and constructing projects which have utilized tax and cash equity funding structures. Projects developed and financed by members of the development team which utilize the type of financing structure contemplated for this Project include:

Project Type	Project Location	Project Nameplate (MW)	COD Year	Project Financing Amount
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

## 7.5 Financial Resources

[REDACTED]

[REDACTED]

## 7.6 Financial Statement/Credit Rating

The previous year's audited financial statements showing Freepoint's financial capabilities are included as **Exhibit 3**.

Neither Freepoint nor SunEast receives credit ratings from credit rating agencies.

## 7.7 Board of Directors and Officers

**Officers of Freepoint Commodities Holdings LLC, parent company of the Bidder Include:**

- [REDACTED]
- [REDACTED]
- [REDACTED]

- [REDACTED]  
[REDACTED]  
[REDACTED]

**Officers of the Bidder (Freepoint Solar LLC) Include:**

- [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

As the Project owner, Freepoint would be the sole owner and investor in the Project and intends to fund the Project during development with equity from its balance sheet.

**7.8 Ability to Provide Security**

Freepoint intends to post security on behalf of the Project for the amount of credit support required in the form of cash or letter of credit. Freepoint currently has a [REDACTED]

with sufficient capacity to support collateral requests upon execution of a PPA.

Freepoint also has very strong relationships with more than a dozen commercial banks, [REDACTED] credit lines to support its activities.

**7.9 Credit Issues**

None

**7.10 Tax Credits**

The Project plans to utilize the Investment Tax Credit (“ITC”) and 100% expensing (“bonus” depreciation) available to a qualifying solar project as part of the Project’s financing plan. These tax attributes are modeled in a manner that enables the Project to offer more favorable pricing for its energy and RECs to Rhode Island ratepayers. Given that the 30% ITC provisions currently in place are applicable to Solar Projects constructed through 2019 (and continued beyond 2019 at slightly lower levels), the Project and the New England ratepayers are assured of being able to benefit from the price reductions made possible from the Project’s receipt of the ITC.

**7.11 Litigation (current or past 5 years)**

None

**7.12 Operating Life**

The operating life for the facility will be at least 30 years.

### **7.13 Financing Agreement**

Because the Project development costs would be equity funded by Freepoint, the Project has not yet obtained a financing commitment for the Project. However, we are actively engaged with our financial partners, in exploring general financing opportunities for the Project. Securing a long-term PPA from a credit-worthy counterparty for the Project will enable us to obtain cost-effective long-term financing for the Project. Upon notice of selection for a PPA by one of the Distribution Companies, Freepoint would commence identifying and implementing specific financing structures with appropriate financing investors and institutions.

### **7.14 Previous Power Sales Agreements**

The Project has not yet entered into any contracts, hedges, or other agreements for the sale of energy, RECs or capacity from the Project.

### **7.15 Affiliated Entities**

Freepoint's parent company, Freepoint Commodities Holdings LLC, is a merchant of physical commodities, and a financier of upper-and mid-stream commodity-producing assets. Freepoint Commodities Holdings also provide physical supply services and related structured solutions for counterparties. Freepoint Commodities Holdings actively trades physical and financial products in oil, refined products, coal, gas, electricity and metals. The company is headquartered in Stamford, CT, but has major trading desks in Houston and London and branch offices in Portland, Calgary, Zug, Singapore and Shanghai.

### **7.16 Previous Bankruptcies (past 5 years)**

Neither the Bidder, nor any affiliate of Bidder has in the last five years, (a) consented to the appointment of, or was taken in possession by, a receiver, trustee, custodian or liquidator of a substantial part of its assets, (b) filed a bankruptcy petition in any bankruptcy court proceeding, (c) answered, consented or sought relief under any bankruptcy or similar law or failed to obtain a dismissal of an involuntary petition, (d) admitted in writing of its inability to pay its debts when due, (e) made a general assignment for the benefit of creditors, (f) was the subject of an involuntary proceeding seeking to adjudicate that Party bankrupt or insolvent, (g) sought reorganization, arrangement, adjustment, or composition of it or its debt under any law relating to bankruptcy, insolvency or reorganization or relief of debtors.

### **7.17 Conflicts of Interest**

None known

### **7.18 Litigation and Disputes Against the Buyer**

None

### **7.19 Litigation and Disputes – Previous Contracts**

None

### **7.20 Governmental Investigation**

None

**7.21 Approvals for Execution of Agreement**

The Project will need to get approval from Freepoint Commodities Holdings management teams for execution of the PPA. The executed PPA will be subject to RI regulatory approval following negotiations with the Buyer.

**7.22 Affiliations with the Narragansett Electric Company and Affiliates**

None



## Section 8: Siting & Interconnection

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### 8.1 Site Plan

Please see the Project Site Plan prepared by our environmental engineer attached as **Exhibit 4**.

### 8.2 Real Property Rights

The Project has an executed Option Agreement with two landowners for the [REDACTED] on which the Project is to be located. The rights provided under the Options are sufficient to allow for the Project to acquire rights to the land for the Project as required for construction, operation and interconnection of the Project and provide for an option period up to 36 months. A copy of the Option Agreements is provided in **Exhibit 6**.

In addition to site control for the land required for installation of the solar panels and associated equipment, the land under Option provides the Project a right-of-way access to the planned point of interconnection [REDACTED]  
[REDACTED]

### 8.3 Zoning of Project Site

#### i. Zoning and Permitting Issues

There are no specific zoning districts in the town of Vernon. The property is currently designated as undeveloped land.

Pursuant to Vermont General Statutes S248, the Project will fall under the Vermont PSB Certificate of Public Good (CPG) process for approval of the site for solar generation. There is sufficient case history that properties similar to our Project site are deemed as suitable for and have been approved under the CPG process.

#### ii. Permitting Plan and Timeline

The timeline for the preparation of environmental studies to support the Project's petition to the Vermont PSB is approximately [REDACTED], and the expected timing for the review and approval of such petition is expected to take an additional [REDACTED] based on Vermont's PSB's recent review of solar projects.

Please see the Initial Environmental Assessment study performed by the Project's environmental engineer, attached hereto as **Exhibit 7**, for complete details on required permits and licenses, and the Project's environmental consultant's environmental evaluation and outline of our permitting plan.

### 8.4 Description of Area Surrounding the Facility

The topography of the site and setback from existing development indicate there would be little or no visibility from any residential neighborhood, and no visibility from public roads. There are significant trees and wooded areas surrounding much of the Project site that provide a visual buffer between the Project site and any adjacent properties structures. There are no residences that would have a view of the panels or associated equipment.

Please refer to **Exhibit 7**, the Environmental Fatal Flaw Analysis for flood plain information and land.

## 8.5 Interconnection Map

The map in **Exhibit 8** shows the path from the Project location to the point of interconnection and to the ISO-NE Pool Transmission Facilities (because the POI is on a PTF line, the POI is also the proposed delivery point for energy under the PPA).

## 8.6 Status of Planned Interconnection to the Grid

The Project submitted a valid Interconnection Request, provided in **Exhibit 9**, to ISO-NE and intends to interconnect to [REDACTED] e. The Project ISO-NE Application was assigned a Queue Position [REDACTED] requesting Capacity Network Resource Interconnection. The Project's use of this point of interconnection will help minimize the Project's environmental impact. The Delivery Point under the PPA with the Buyer will likely be the [REDACTED]

[REDACTED] indicates that the Project's estimated solar generation will be able to connect to the existing sub-transmission line without any additional system upgrades. This initial indication was confirmed through the ISO-NE Feasibility Study results. We expect the reasonable estimated interconnection costs for the Project to be [REDACTED]. The results of the feasibility study were used in preparing the bid and typical timelines associated execution of the interconnection will support the proposed Project schedule.

## 8.7 Impact to Reliability of Grid; Interconnection Study Status

Given its location in far southern Vermont, the Project will interconnect to the existing [REDACTED]. This point, although physically within the State of Vermont, is considered electrically to be within the [REDACTED]. With this point of interconnection, the Project will directly contribute to the electric reliability of the ISO-NE, and southern New England specifically. In addition, if selected for a PPA through this RFP, the Project intends to offer its capacity into the ISO-NE FCA process, and provide capacity to ISO-NE thereby enhancing system wide electrical consumption and generation support, through this capacity commitment.

An ISO-NE Feasibility Study was completed and is provided in **Exhibit 9B**, and currently ISO-NE is executing the System Impact Study with an anticipated completion by [REDACTED]

The Project expects to follow the ISO-NE standard protocol for interconnection, resulting in a completed a System Impact Study, Facilities Study and executed Interconnection Agreement as early as fourth quarter 2019, but no later than the third quarter of 2020.

## 8.8 Technical Reports

The Quanta Technology technical report and ISO-NE Feasibility Study results concluded that the Project does not cause any significant adverse impact on the New England Transmission System. A copy of the ISO-NE Feasibility Study Report and the Quanta Technology technical report are provided in **Exhibits 9B** and **9C**.

## 8.9 Alternative Interconnection Scenarios

N/A

### **8.10 Electrical Models in Accordance with Tariff Schedules 22 & 23**

The Project electrical models are provided in **Exhibit 9D** and are in accordance with the filing requirements of the ISO-NE Tariff Schedule 23.

### **8.11 Electrical One Line Diagrams**

Electrical one-line diagrams showing the interconnection facilities and the relevant facilities of the transmission and/or distribution are shown in **Exhibit 9A**.

### **8.12 Incremental Data for Transmission Facilities**

N/A

### **8.13 Studies Supporting Deliverability to The Narragansett Electric Company**

A technical report performed by Quanta Technology evaluated the feasibility of interconnecting the Project as shown in **Exhibit 9C** attached hereto. The Quanta Technology technical report concluded that the Project does not cause any significant adverse impact on the New England Transmission System and should be able to generate at full capacity without any curtailments for all system conditions.

### **8.14 Documentation Regarding Full Dispatch of Generation Profile**

A technical report performed by Quanta Technology evaluated the feasibility of interconnecting the Project as shown in **Exhibit 9C** attached hereto. The Quanta Technology technical report concluded that the Project does not cause any significant adverse impact on the New England Transmission System and should be able to generate at full capacity without any curtailments for all system conditions.

## Section 9: Environmental Assessment and Permit Acquisition Plan

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### 9.1 Permits, Licenses and Assessments

Please see Exhibit 7 for complete details on required permits and licenses, and the Project's environmental consultant's evaluation and outline of our permitting plan.

### 9.2 Timeline for Permits

The timeline for the preparation of environmental studies to support the Project's petition to the Vermont PSB is approximately [REDACTED] and the expected timing for the review and approval of such petition is expected [REDACTED] on Vermont's PSB's recent review of solar projects.

### 9.3 Preliminary Environmental Assessment

The Project's environmental consultant Tighe & Bond has performed an environmental critical issues analysis of the site. This review included both desktop and field work to evaluate impacts to the project that may be caused by wetlands, flood plains, threatened or endangered species, archaeological and historical resources, environmental easements or protected space, and visual impact considerations. Based on this assessment, it has been determined that the Project site is advantageous versus many other potential solar sites in the region. The results of this critical issues analysis are included in Exhibit 7.

Following award of a project PPA we will complete additional environmental studies, the majority of which we expect to complete [REDACTED], to finalize the siting and layout of the Project. The requirements for studies to be included in the application to the Vermont PSB are included in Exhibit 7.

### 9.4 Public Support / Community Outreach

[REDACTED]

[REDACTED]

In managing the community outreach program, the Project's focus will be educational and highlight:

- Economic benefits to the Town from property taxes paid over the Project lifespan
- Addition of construction and service related jobs during construction
- Solar projects are good neighbors – no noise, emissions, and virtually no traffic
- Improved soil health and storm water runoff from deep rooted vegetation
- Native plants and grasses utilized for ground cover and landscape screening
- Plant pollinator habitat to support the local pollinator population, which in turn aids farmers and crop development

- Land remains fallow for 20+ years recharging and is well prepared to return to agriculture
- Decommissioning plan to remove all equipment at the end of the Project's useful life

[REDACTED]

[REDACTED]

### 9.5 Qualifications Conforming with R.I.G.L. §39-26-5

The Project technology, Solar PV, located within ISO-NE qualifies per R.I.G.L. §39-26-5.

### 9.6 Tracking System for Energy and RECs

The Project will ensure that a unit-specific accounting of the delivery of Clean Energy Generation will be available to enable the Department of Environmental Protection, in consultation with RI PUC, to accurately track production of clean energy from the Project, which will allow the RI PUC to measure progress in achieving the state's long term economic and greenhouse gas emissions goals. The RECs and environmental attributes generated by the Project will be delivered into the NEPOOL GIS accounts as directed under the PPA.

The Project will follow all protocols for the use of the NEPOOL GIS tracking system for production of energy and RECs by the Project.

### 9.7 Existing or Pending Claims Impacting Project Feasibility

None

### 9.8 Manufacturer Emissions Estimates

Project Anticipated Emissions Expressed in Pounds/Megawatt-Hour (lbs/MWh)

Source of Information	Date of Test (if applicable)	Greenhouse Gases (all except methane) Expressed as Carbon Dioxide equivalent (CO <sub>2</sub> e)	Nitrogen Oxides (NO <sub>x</sub> )	Sulfur Oxides (SO <sub>x</sub> )	Carbon Monoxide (CO)	Particulate Matter (PM 2.5)	Methane (CH <sub>4</sub> )
Manufacturer	n/a	0	0	0	0	0	0

### 9.9 Investments to Improved Emissions Profile

N/A

## Section 10: Engineering and Technology

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### 10.1 Preliminary Engineering Plan

The Project will utilize Tier 1 solar PV panels for installation at the site. The liquidity of the solar PV market is such that thousands of similar panels and inverter systems have been installed and are operating reliably across the U.S. and the world. Our current plan is to use the equipment listed below. However, our specific choice of equipment may change prior to construction based on availability, technology advancements, etc.

### 10.2 Equipment Suppliers Under Consideration

- [REDACTED]

[REDACTED]

[REDACTED]

### 10.3 Proposed Equipment Operational History

- [REDACTED]

[REDACTED] hipments in 2017 alone.

- Inverter: SMA sold over 8 GWs of solar inverters worldwide in 2016

### 10.4 Ability to Transfer Technology

N/A, as solar PV is a proven technology.

### 10.5 Complete List of Equipment

Bidder has submitted a full and complete list of equipment required for the Project up to the point of interconnection to ISO-NE, including the PV panel system, associated generation facility equipment, and transmission lead lines. The Project expects to finalize the project equipment selections following award of a PPA and completion of the ISO-NE Facilities Study.

### 10.6 Securing Equipment

The Applicant has not yet secured its primary equipment (solar PV panels, inverters and racking systems) for the Project. Given the availability and liquidity of the solar PV equipment market, we are confident that Tier 1 equipment will be available for inclusion in the Project construction based on our proposed timetable.

## Section 11: Operation and Maintenance

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### 11.1 O&M Plan

The Project will be operated using an experienced, financially stable third-party O&M company. Operations will include facility performance monitoring system to help proactively plan for scheduled and unscheduled maintenance and when unexpected events arise, to work towards a quick resolution. The daily, weekly and monthly reporting protocols will allow for consistent insight into site operations. In operations, we will focus on improving key metrics such as time and energy availability with a goal of increasing on-site production.

[REDACTED]

[REDACTED]

The Project will contract with an experienced third-party solar facility O&M services company to provide the services required during the life of the Project. This contracting will be on a medium- to long-term basis with the Project having shorter-term contract off-ramps in the event specific performance metrics are not met. We would expect to enter into such an agreement three to six months prior to commencement of operation of the facility. The scope of the O&M contract will cover a comprehensive range of services and will include the following responsibilities:

- Inspect the System's general site conditions, PV arrays, electrical equipment, mounting structure, data acquisition system, and balance of the System.
- Test the System and the data acquisition system ("DAS"), including string level open circuit voltage and DC operating amperage tests, at least once each calendar year.
- Recalibrate or replace the DAS sensors and meters in compliance with all manufacturers' instructions, at least once every calendar year, and conduct calibration testing of each Meter at least once every calendar year to ensure the accuracy of such Meters.
- Conduct inverter preventive maintenance in compliance with all manufacturers' operation guidelines, at least once each calendar year.
- Clean the inverter cabinet air vents, at least twice each calendar year.
- Clean and change the inverter air filters in compliance with all manufacturer's warranty requirements, at least once each calendar year.
- Check the torque marks and re-tighten the appropriate wiring connections to design specification torque force in compliance with all manufacturers' guidelines, at least once each calendar year.
- Remove any materials (e.g., trash, bird nests, etc.) that may be found under the PV array modules obstructing airflow, at least once each calendar year.

- Wash panels annually to remove visible dirt, etc. particularly upon evidence of reduced production/output from the System.
- Inspect the array mounting structure, conduit runs and other physical components for wear or damage, at least once each calendar year.
- Provide a written System Maintenance report no later than 10 business days following the performance of any maintenance services.
- Supply, or cause to be supplied, all goods and materials, including spare parts, required to operate and maintain the System in accordance with the provisions of the O&M Agreement.
- Perform quarterly inspections, including meter inspection, and prepare a report thereof.
- Perform or cause to be performed necessary major repairs of the System.
- Make and coordinate claims for reimbursement and/or replacement under any available warranty from manufacturers, installers or other similar entities relating to any or all of the System.
- Using the Data Acquisition System, monitor, meter and record the Output. All such records from the meters shall be made available to System Owner.
- Prepare System event deviation reports, which shall include to the extent possible a description of the cause of such system events and steps taken to repair the System.
- Upon notice from System Owner or the DAS that the System is not performing in accordance with the specifications and performance obligations, perform an in-person inspection of the System within twenty-four (24) hours, or as soon as practicable, to identify and troubleshoot the performance nonconformity and remedy same.
- In the event of system production deficit (i.e., the weather corrected data indicates that production is not consistent with expected production) an email will be sent to our local representative to respond in a timely manner to resolve the problem.

## 11.2 O&M Funding Mechanism

Sufficient cash generated by the operation of the facility would be held within the Project entity to assure that funds were available for any planned or unplanned maintenance at the facility.

[REDACTED]

## 11.3 Warranties / Guarantees

The following warranties would be expected to be obtained for the Project's equipment:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

## 11.4 Project O&M Plan

The Developer intends to utilize a third-party service provider for O&M services at the Project. Criteria for selection of the provider will include operating experience (both number of locations, length of



history), average availability, and financial strength. The O&M Scope will be generally as provided in greater detail in Section 11.1 above and will include availability incentives.

### 11.5 Bidder O&M Experience

Our Project team members have extensive experience soliciting, negotiating and managing third party operations contractors. We have secured and managed several of these agreements as part of our work experience at major utility such as [REDACTED]. In specific regard to solar O&M contracts, these are typically negotiated in conjunction with the project EPC agreement. This provides the Project additional assurances that the Workmanship Warranty will be honored on the full PV system. Our team has led and/or supported negotiations for O&M Agreements on the following facilities:

Project Type	Project Location	Project Nameplate (MW)	COD Year
<b>Solar</b>	Panoche, CA	140	2017
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

### 11.6 Decommissioning Plan

The purpose of this Decommissioning Plan is to establish the approach to conduct decommissioning activities for the permanent closure of the Project at the end of the Project life. The facility is intended to operate for a minimum of 30 years. This Plan describes the approach for removal and/or proper abandonment of facilities and equipment associated with the Project and describes anticipated land restoration activities to take place following the end of the Project's life.

The Decommissioning Plan covers the following elements.

1. Removal of solar module structures and all appurtenant above ground equipment;
2. Removal of overhead poles and above ground electrical lines within the Project site;
3. Removal of the on-site equipment, as applicable;
4. Removal of battery storage equipment, as applicable;
5. Restoration of disturbed soil on the site to a condition consistent with the pre-development conditions;
6. Restoration or reclamation of Project roads to their pre-construction condition unless the land owner requests to retain the improved roads for access throughout the land owner's property;

#### *Project Decommissioning and Recycling*

The activities involved in the facility decommissioning would depend on the expected future use of the site. The property owner has the option to request removal at the end of the lease term. Assuming the project will be removed, certain facility equipment and features may be left in place for future uses, such as roads, and drainage features, if applicable. The key Project components to be affected by decommissioning

activities are discussed below. The individual Project components to be decommissioned will be recycled to the maximum extent practicable or removed from the site and disposed of at an appropriately licensed disposal facility. The general decommissioning approach would be the same whether a portion of the Project or the entire Project would be decommissioned.

#### *Permits and Approvals*

Depending on the regulatory requirements at the time of decommissioning, permits or approvals may be required for the decommissioning activities. These approvals will likely at a minimum require demolition/building permit from the Town. Appropriate applications for approvals and permits would be submitted and issued prior to decommissioning activities commencing.

#### *PV Equipment Removal and Recycling*

During decommissioning, Project components that are no longer needed would be removed from the site and recycled or disposed of at an appropriately licensed disposal facility. Above ground portions of the PV module supports will be removed. The demolition debris and removed equipment may be cut or dismantled into pieces that can be safely lifted or carried with the onsite equipment being used. The debris and equipment will be processed for transportation and delivery to an appropriately licensed disposal facility or recycling center. Modules will be recycled in accordance with the current recycling program. No hazardous materials or waste will be used during operation of the solar facility, and disposal of hazardous materials or waste will not be required during decommissioning.

#### *Site Restoration*

Once removal of all Project equipment is complete, compacted portions of the site (area beneath the transformer pad and any removed access roads) will be fluffed with an excavator bucket and graded level with existing contours. The areas to be backfilled include excavations that were created during the demolition of foundations and removal of gravel areas. Backfill will be with native onsite material. The vegetative cover of each array will be left in place and allowed to grow to natural, unmaintained conditions. We assume that at the time of removal of the system, the vegetative cover will be in good condition. If, upon inspection, the vegetative cover of the area is not in good condition, a restoration plan will be prepared and submitted to the property owner and/or Town/State for approval.

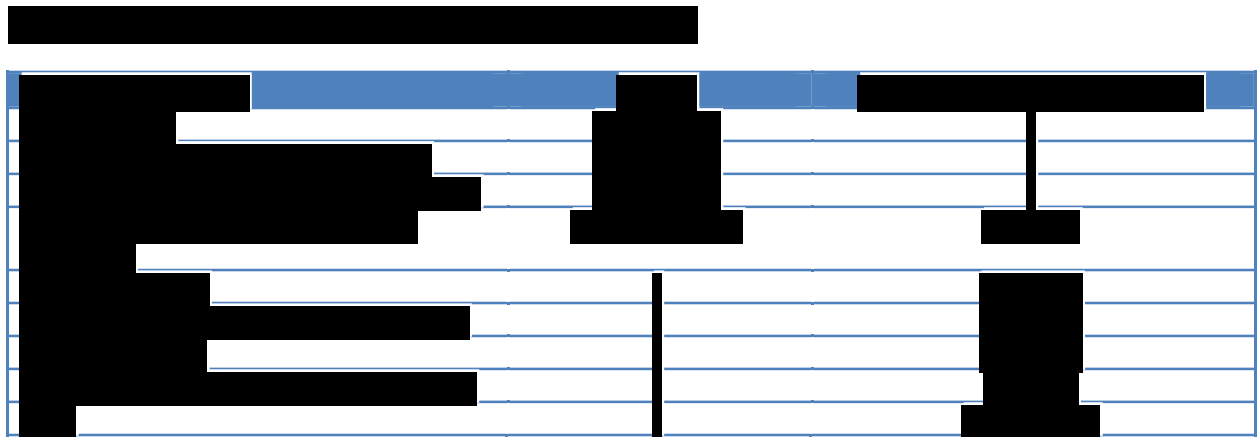
#### *Future Land Use*

While the decommissioning plan is based upon the site being returned to a condition consistent with preconstruction use, the actual activities involved in the facility closure would depend on the actual future use of the property by the property owner. Certain facility equipment may be utilized for future uses, such as the electrical facilities, roads, and drainage features. Therefore, the actual extent of site closure activities would be determined at the time of the closure.

## Section 12: Project Schedule

### 12.1 Elements on Critical Path

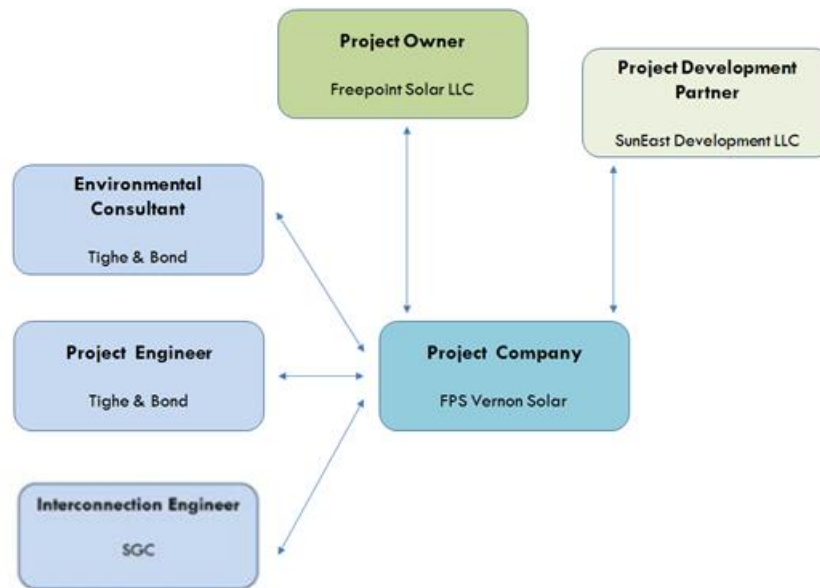
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## Section 13: Project Management/Experience

### 13.1 Organizational Chart

Please see Section 7.2 for an organization chart of the Project ownership structure. In addition, the following chart shows the relationships between the Project stakeholders:



### 13.2 Experience Bidder and Project Participants

#### Project Owner | Freepoint Solar LLC

Freepoint Solar LLC is a solar development company with over 400 MWs of projects in development across six states. Its parent company, Freepoint Commodities Holdings LLC is both a merchant of physical commodities and a financier of upper-and mid-stream commodity-producing assets. Freepoint also provides physical supply services and related structured solutions for counterparties. Private equity funds managed by Stone Point, together with Freepoint management and senior employees, have provided Freepoint with approximately \$400 million dollars of equity capital. Freepoint is based in Stamford, Connecticut.

#### Project Development Partner | SunEast Development LLC

SunEast is a solar development company which specializes in the development of solar PV facilities in the Northeast United States. The principals of SunEast have been responsible for the development of over 700 MW of renewable energy projects in New York and New England over the past seven years, including multiple projects with executed, utility-scale power purchase agreements with operating subsidiaries of Northeast Utilities. SunEast is based in Old Saybrook, Connecticut.

**Project Engineer / Environmental Engineer | Tighe & Bond**

Tighe & Bond began as a broad-based civil engineering firm specializing in water resources, bridges and roadways has continued to evolve in response to the changing needs of clients in a changing environment. Tighe & Bond now also specializes in various aspects of environmental engineering — such as water, wastewater, solid waste and storm water management. The experience ranges from consulting on limited projects for small businesses to designing two of the largest wastewater residuals drying facilities in the world.

The portfolio of expertise also includes environmental consulting for brownfields, hazardous materials, wetland and ecological services, permitting, planning and more. In addition, Tighe & Bond provides an array of building, geographic information systems, and sustainability services for a wide range of clients. Tighe & Bond has offices in Westfield, MA, and Middletown and Shelton, Connecticut.

**Interconnection Engineer | SGC Engineering**

SGC Engineering (SGC) is a multidisciplinary engineering firm serving clients throughout North America. Established in 1999, SGC provides deployment of advanced technology to provide cost-effective survey engineering services and engineered solutions for power transmission and distribution facilities, as well as other applications. SGC offers expertise in the planning and design of high-voltage electrical transmission lines, substations and associated electrical distribution facilities. SGC supports electric utilities in all aspects of electrical power grid improvements, including route selection, capital planning, engineering design, permitting, land acquisition and regulatory requirements to bring new power infrastructure on line, working with utilities from the initial stages of a project through the construction phase.

SGC provides comprehensive engineering, environmental, construction management, and survey services working with state and federal environmental agencies, municipal boards, communities, planners, and code enforcement staff. SGC offers the following services: power systems engineering and design, transmission line design, grid interconnect, civil engineering, construction management and survey engineering. SGC has offices in New England and along the East Coast.

**Curtailment Study | Quanta Technology, LLC**

Quanta Technology is an expertise-based, independent technical consulting firm that helps electric utilities and other power industry companies by providing solutions to complex transmission and distribution challenges. The company draws from a vast network of experienced power system experts from around the world, ensuring efficient, objective and credible outcomes for our clients. As an independent consulting arm of Quanta Services, Quanta Technology is able to deliver end-to-end solutions that span the spectrum from business consulting, all the way through to engineering, procurement and construction.

Quanta Technology, LLC is headquartered in Raleigh, NC with offices in Boston, MA; Chicago, IL; Oakland, CA; Escondido, CA; Toronto, Canada and Ecuador in South America. Our parent company, Quanta Services, is headquartered in Houston, TX, and is a member of the S&P 500. Quanta Services is the largest specialty engineering constructor in North America, serving energy companies and communication utilities.

**ISO-NE Capacity Consultant | Boreas Renewables, LLC**

Established in 2008, Boreas Renewables, LLC has been providing electricity market, transmission system planning, and project development consulting services to renewable energy developers, owners, operators,

and advocates in New England. Boreas Renewables provides a broad range of services related to renewable energy project development and operations.

Areas of focus include: interconnection, forward capacity market, new generator registration and requirements, variable energy resource integration, tracking changes to wholesale electricity markets, representation within the NEPOOL stakeholder process, regional transmission system planning review and advocacy and Power Purchase Agreement negotiations support related to wholesale electricity market issues.

### **13.3 Existing Facilities – Experience**

N/A, as the Project is a new facility.

### **13.4 Key Personnel**

#### ***Peter Ford – Managing Director, Freepoint Solar***

Mr. Ford has over 20 years of experience in the development and origination of competitive energy projects and deal structures. Accomplishments include the development and financing of over 1,000 MWs of competitive energy projects in the PJM and NYISO markets. Other experience includes leading large M&A transactions, securing long-term off-take arrangements and solving novel regulatory challenges related to selling Capacity and Firm Energy across RTO service territories. Prior to joining Freepoint, Mr. Ford led development and origination organizations at firms including Nextera Energy, Sempra Energy Trading, and Morgan Stanley Capital Group.

#### ***Henry Anreder – Portfolio Investments Associate, Freepoint Solar***

Mr. Anreder provides financial analysis, regulatory and market research, and operational support to Freepoint's solar project development initiatives. Prior to this position, Henry worked in business development as a client development specialist at a large law firm in Washington, DC. He also has experience in management consulting and government affairs from previous roles at Teneo and Kivvit.

Henry holds an M.A. in International Affairs and Economics with a concentration in Energy, Resources, and the Environment from the Johns Hopkins University School of Advanced International Studies (SAIS), and graduated with a B.A. in World Politics from Hamilton College.

#### ***Tom Swank – President, SunEast Development***

Mr. Swank has more than 25 years' experience in the merchant power and renewable energy markets, and has held management positions in marketing and trading, project development, and asset management. Prior to founding SunEast in 2012, he was Senior Vice President of Quantum Utility Generation, LLC, a \$700MM private equity fund focused on investing capital in power generation facilities in North America. Previous industry experience includes his role as Chief Commercial Officer of Noble Environmental Power, and senior positions with Quantum Utility Generation, Sempra Energy Trading, El Paso Merchant Energy, and Dynegy Corp. Career highlights include the commercial management of a 2,500 MW generation portfolio, and the negotiation and execution of over 1,000 MWs, of hedges and PPAs for renewable energy projects. Mr. Swank holds a Bachelor of Science in Commerce from the University of Virginia.

#### ***Reed Wills – Chief Operating Officer, SunEast Development***

Mr. Wills has been involved in the United States independent power market since 1988. Initially a project finance analyst, Reed quickly advanced to lead development projects and team management, with over 2,000 MW of projects developed or acquired in his first ten years in the industry. Reed has worked primarily with two utility subsidiaries, NRG Energy and Duke Energy, where Reed recently retired after

nine years of service. Since early 2011, Reed has worked exclusively in the U.S. solar market, evaluating acquisitions and managing development commercial rooftop, small ground mount and utility-scale solar facilities. Mr. Wills holds a B.A. in Geography and Urban Planning from Temple University, and an M.S. in Energy Management and Policy from the University of Pennsylvania.

**David Ross – Vice President, SunEast Development**

Mr. Ross leads project development and management for SunEast projects in the Eastern and Mid-Western United States. David has 25 years of economic, development and engineering consulting experience in the electric utility industry. He possesses an expert understanding of the deregulated markets, coupled with strong technical background in generation. David's career includes experience inside large energy development companies and utilities, including senior management positions with Exelon, Duke Energy and NRG Energy. David has extensive energy market expertise that has supported the acquisition of over 3,000MW's of energy generating assets and \$6 billion of energy project financings. David holds a Masters of Business Administration from Villanova University, a Bachelor of Science in Mechanical Engineering from Pennsylvania State University and is a registered Professional Engineer.

**Mike Beckner - Vice President, SunEast Development**

Mr. Beckner is responsible for project development in the Northeastern United States. He has more than 12 years' experience in renewable energy and has held management positions in project development and project finance. Prior to SunEast, he was Vice President of AWCC Capital, focused on real estate and infrastructure financings for solar projects throughout North America. Previous industry experience includes senior management positions with Quantum Utility Generation, LLC, a \$700MM private equity fund focused on investing capital in power generation facilities in North America and Noble Environmental Power. Career highlights include the development of a 1,000 MW generation portfolio and 400 million in solar project financings. Mr. Beckner holds a Bachelor of Science in Accounting from Clemson University and served as a Captain, Cavalry in the United States Army during Operation Iraqi Freedom II.

### 13.5 Developer Project Experience

The following table shows the renewable and clean energy projects developed or constructed by Freepoint, SunEast, and their team members:

Project Name / Type	Project Location	Project Nameplate (MW)	COD Year

Due to confidentiality restrictions with various project partners and stakeholders, we are unable to provide specific project information, including operational net capacity factor and availability information at this time. Individual references for each of the above projects can be provided upon request.

### **13.6 Project Responsibilities**

- Construction Period Lender, if any: N/A
- Operating Period Lender and/or Tax Equity Provider, as applicable: N/A
- Financial Advisor: N/A
- Environmental Consultant: Tighe & Bond
- Facility Operator and Manager: TBD
- Owner's Engineer: Tighe & Bond
- EPC Contractor (if selected): N/A
- Transmission Consultant: SGC
- Legal Counsel (Internal): Richard Squadron/Brandon Diket
- Legal Counsel (External): Foley & Lardner LLP

### **13.7 Experience in ISO-NE**

Freepoint is planning to act as the Lead Market Participant and has extensive experience in the management of generation assets in power markets. They have acted as Lead Market Participant for over [REDACTED] generation in ISO-NE.



## Section 14: Alternative Proposals

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None

## Part 15: Contribution to Employment and Economic Development and Other Direct and Indirect Benefits

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### 15.1 Direct Economic Benefits to the State of Rhode Island - Jobs

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

#### *B. Construction Period:*

[REDACTED]

#### *C. Operations Period:*

[REDACTED]



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## 15.2 Indirect Job Creation for Rhode Island

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### 15.3 Direct Economic Benefits to Entities in the State of RI - Payments

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## 15.4 Additional Benefits to Rhode Island

[illegible]

## 15.5 Economic Impact to the New England Region in General

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## **Part 16: Section 16: Exceptions to Draft Contract**

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