PETITION OF FUSION SOLAR CENTER, LLC

FOR A DECLARATORY RULING THAT A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED IS NOT REQUIRED FOR THE CONSTRUCTION, OPERATION AND MAINTENANCE OF A 20MWAC SOLAR PHOTOVOLTAIC PROJECT ON POTASH HILL ROAD IN SPRAGUE, CONNECTICUT

JULY 29, 2015

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EXHIBITS

1. INTRODUCTION

Pursuant to Section 16-50k(a) and Section 4-176(a) of the Connecticut General Statutes ("CGS") and Section 16-50j-38 *et seq.* of the Regulations of Connecticut State Agencies ("RCSA"), Fusion Solar Center, LLC ("Petitioner") hereby petitions the Connecticut Siting Council (the "Siting Council") for a declaratory ruling that a Certificate of Environmental Compatibility and Public Need ("CECPN") is not required for the construction, operation and maintenance of a ground-mounted solar photovoltaic ("PV") facility of 20MWac[1] to be constructed in the Town of Sprague, Connecticut (the "Project").

CGS § 16-50k(a) provides, in relevant part:

> Notwithstanding the provisions of this chapter or title 16a, the council shall, in the exercise of its jurisdiction over the siting of generating facilities, approve by declaratory ruling . . .the construction or location of any . . . grid-side distributed resources project or facility with a capacity of not more than sixty-five megawatts, as long as such project meets air and water quality standards of the Department of Environmental Protection . . . .

As described more fully below, the construction, operation and maintenance of the proposed Project satisfies the criteria of CGS § 16-50k(a) and will not have a substantial adverse environmental effect.

[1] Direct current (dc) is used for the bulk transmission of electrical power and is the type of electric power produced by the solar panels (i.e., the panel nameplate rating). Alternating current (ac) is the form in which electric power is delivered to businesses and residences from the utility (i.e., the project's actual output). Accordingly, a solar facility must convert the "dc" power to "ac" before it can be delivered to the utility, which is achieved by the project inverters. Because the sun does not shine all the time and allow the panels to produce at 100% of their nameplate "dc" rating, a higher "dc" rating always exists once the power is converted into "ac" and delivered to the utility (e.g., Fusion will need approximately 30MWdc to produce 20.0MWac).

2. PETITIONER

Fusion Solar Center, LLC is a Delaware limited liability company with an office at 321 E. Main St., Suite 300, Charlottesville, VA 22902. Fusion Solar Center, LLC was organized in 2013 for the purposes of developing, constructing and operating a 20MWac solar photovoltaic project in the Town of Sprague, Connecticut. Leading the development on behalf of the Petitioner is Coronal Development Services, LLC, a company based in Charlottesville, VA ("CDS") and a leading developer of solar energy projects, with clients in over twenty (20) states across the United States. CDS is part of the Coronal Group, owned in part by Panasonic, and its management team and key personnel have decades of experience in renewable energy investment and development that includes 540 megawatts of renewable energy facilities and represents over $1 billion USD in invested capital. Panasonic's backing allows CDS to offer a fully integrated, streamlined development solution extending from project origination through financing, construction, and long-term operation, and ensures that a high-performing and financially strong energy asset will be constructed to contribute to the State's renewable energy portfolio. In addition, CDS, under its former name, HelioSage Energy, successfully secured Siting Council approval for the development of the Somers Solar Center in Somers, Connecticut in 2013.[2] The Somers project, completed in 2013, is a 5.0MWac solar PV installation and is one of the largest solar PV projects in the state.

[2] *See, generally,* Petition No. 1042.

Correspondence and/or communications regarding this petition should be addressed to:

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A copy of all such correspondence or communications should also be sent to the Petitioner's attorney:

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3. PROPOSED PROJECT

3.1. PROJECT HISTORY

Section 6 of Public Act 13-303, *An Act Concerning Connecticut's Clean Energy Goals,* gave the Connecticut Department of Energy and Environmental Protection ("DEEP") the authority to solicit proposals from providers of Class I renewable energy sources to meet up to four percent of the load distributed by the State's electric distribution companies and select projects that were in the interest of ratepayers, consistent with the requirements to reduce greenhouse gas emissions in accordance with CGS § 22a-200a, and in accordance with the policy goals outlined in the Comprehensive Energy Strategy, adopted pursuant to CGS § 16a-3d. Pursuant to this authority, in July 2013, the DEEP conducted a request for proposals ("RFP"). The Project was one of two selected by DEEP pursuant to the RFP.

3.2. SITE SELECTION

The site selection for the Project was based on a detailed evaluation of the following key criteria:

- Site suitability (solar resource size, grade and surrounding topography);
- Site availability (ability to lease or purchase land); and
- Proximity to critical infrastructure (suitable electrical grid access).

Once the initial evaluation was completed, a preferred site was selected by the Petitioner for development and preliminary due diligence work was initiated, including outreach to Town of Sprague ("Town") officials to gauge the Town's interest in hosting such a project. The original development plan included land on the Fusion Paperboard Company property to make use of lower value industrial land historically used as a

paper manufacturing facility. That development plan fell through with the closing of Fusion Paperboard. Fortunately, more suitable lands with similar interconnection opportunities that would not require the Petitioner to restart the interconnection process, good topography and size, and willing landowners were identified just north of the Fusion Paperboard property that would allow for the Project to still be completed in the Town of Sprague and provide important tax revenue to the Town, especially in light of the loss of tax revenue from the paper company.

These lands included the 57 Potash Hill Road, 111 Potash Hill Road and Westminister Road parcels as well as two (2) parcels to the south of the current site ("Melgey Property"). Following DEEP's selection of the Project and the subsequent decision to shift the Project to lands just north of the Fusion Paperboard site, the Petitioner began the preliminary design of a site layout in an effort to avoid or minimize environmental impact while maximizing Project capacity.

The Petitioner retained the following consultants to assist in the evaluation and design of the Project: (1) Archaeological Consulting Services ("ACS"), a local archaeological consulting firm; (2) Fuss & O'Neill ("F&O"), a locally-based, full service engineering and environmental consulting firm; (3) Golden Aerial, a local aerial mapping firm; (4) GeoInsight, Inc., geotechnical consulting engineers and scientists; and (5) All Points Technology Corporation, P.C. ("APT"), a regional environmental consulting firm. These Project consultants conducted preliminary due diligence investigations, wetland and natural habitat assessments, cultural resources and archaeological studies, geotechnical exploration, visual and civil engineering analysis, and communicated with

the Town and applicable state agencies such as DEEP and the State Historic Preservation Office ("SHPO") regarding the Project.

Through these investigations, the Petitioner discovered that there were wetlands and other potentially sensitive environmental areas located in the eastern portion of the development area, including on the Westminister Road parcel, and on the Melgey property. In order to mitigate the impacts to these wetlands and other environmentally sensitive areas while maximizing Project capacity, the Petitioner decided to forego development on the Melgey Property and the Westminister Road parcel and expanded the development area to the west by twenty (20) acres.

3.3. PROPERTY DESCRIPTION

The Petitioner has recorded lease options for the entirety of 111 Potash Hill Road, the eastern-most 85 acres of 57 Potash Hill Road, and the entirety of the Westminister Road property ("Property") comprising a total of approximately 362 acres. The Property is owned by Estelle Houle and Gale Boardman (57 Potash Hill Rd), Allen and Charlotte Rainville (111 Potash Hill Rd), and Lawrence Nadeau Construction Co. (Westminister Rd) and is located in Residential Zones R-80 and R-120. Currently, the Property is agricultural (open hay fields) and wooded with two structures located on the 111 Potash Hill Road parcel. *See* Exhibit K; Exhibit M.

Land uses adjacent to the Project and within the immediate locale are mostly dominated by agricultural production, industrial manufacturing (the former Fusion Paperboard site and other manufacturing facilities) and, to a lesser extent, by residential development and open space. Portions of the Property are currently being used for agricultural production including hay and timber harvesting with timbered, forested area, as of May 2015, totaling approximately 10 acres on the 111 Potash Hill Road parcel and

an additional approximately 75 acres of selectively-cut land on the Westminister Road parcel.

Because of the wetlands located on the Westminister Road parcel, the Project will be located entirely on the 57 Potash Hill Road and 111 Potash Hill Road parcels ("Site"). The "Project Area," which includes the area within the fence line, the tree clearing envelope, and access and electrical facilities located outside of the fence line, comprises approximately 144 acres of the Site.

3.4. PROJECT DESCRIPTION

The Project will consist of the installation of approximately 97,000 PV modules and associated ground equipment, upgrading and installation of an access road, installation of perimeter maintenance/access roads and installation of electrical interconnection facilities. *See* Exhibit A.

The Project will use PV module technology, which has been extensively tested, is in wide use across the solar industry and meets the traditional level of reliability reflected in the solar power generation industry. The Project will use a fixed-tilt, steel or aluminum racking system with pile-driven or ground screw foundations to allow for minimal grading and site preparation, and better overall utilization of the Project area. Although a single-axis tracking system allows for greater energy production per solar module, the existing topography of the Site as well as the desire to minimize, to the extent possible, the environmental impact of the Project, favor the utilization of a fixed-tilt racking system as this design will allow for substantially better use of land area and require significantly less land disturbance and tree clearing area.

The Site will be accessed off of Potash Hill Road as illustrated in Exhibit A. The Petitioner will upgrade an existing farm access point for the main access road to the

Site, which will be approximately 16 feet wide and approximately 700 linear feet long. There will also be a perimeter maintenance/access road around the Project, which will be approximately 16 feet wide and approximately 12,400 linear feet long. A gravel staging and parking area is also planned along the east side of the access drive at the southern end of the Site.

The entire Project will be surrounded by a six foot (6') chain linked fence topped with one foot (1') of barbed wire in accordance with National Electric Safety Code ("NESC") regulations and with mesh size to be determined but no greater than 1.25" in compliance with Siting Council requirements. A copy of the Site development plans illustrating the above-described Project attributes is included as Exhibit A.

At the point of interconnection with The Connecticut Light and Power Company d/b/a Eversource Energy ("Eversource"), Fusion will provide a utility class circuit breaker or recloser equipped with a multifunctional relay to serve as the Interconnection Interruption Device. Revenue metering and a gang operated disconnect switch will be provided on the utility side of the meter. Additional equipment to monitor circuit voltage and to disconnect the facility from the grid will also be installed as needed on existing grid circuits to protect the system during system outage.

The Project is expected to produce in excess of 38,000,000 Kilowatt-Hours (kWh) of energy in the first year of operation. The Project will have a design life of 30 years and efficiency loss of approximately 0.5% per year.

The total estimated cost of the Project is approximately $46,500,000, which includes:

- Materials and equipment costs (approximate): $25,022,000

- Project construction labor costs (approximate): $ 4,237,000
- Other business costs and overhead (approximate): $17,241,000

Construction of the Project is expected to begin in the first quarter of 2016 with mobilization of equipment and land clearing efforts. Further site work and land preparation is expected to be completed by late Spring 2016 with construction and installation efforts for the array equipment completed in Fall 2016. Final site stabilization, testing, and commissioning is expected to be completed by late 2016.

At the end of its useful life, the Project will be decommissioned in accordance with the requirements of the Property leases and the decommissioning plan attached hereto as Exhibit B.

3.5. INTERCONNECTION

The Project will be interconnected to the Eversource distribution network via a new 23 kV distribution feeder that Eversource will construct from the Tunnel 12S substation, located in the Norwich area, to the Site by replacing existing poles in existing easements to accommodate approximately 6.5 miles of new 23kV distribution line to be over-built with the existing distribution circuits.[3]

The interconnection facilities at the Site will consist of the installation of approximately five new 40 foot tall poles[4] with connecting spans of distribution line from the location where the feeder exits Potash Hill Road and terminating at a riser pole near the Project fence line, where the feeder will then connect to the main revenue meter and

[3] Eversource will seek the necessary permits/approvals (if any) for this work.

[4] This is a preliminary estimate based on CDS' experience installing similar projects and is subject to change based on the final results of Eversource's facilities study. The final interconnection design, including the number and height of the poles will be included in the Project's Development and Management ("D&M") Plan.

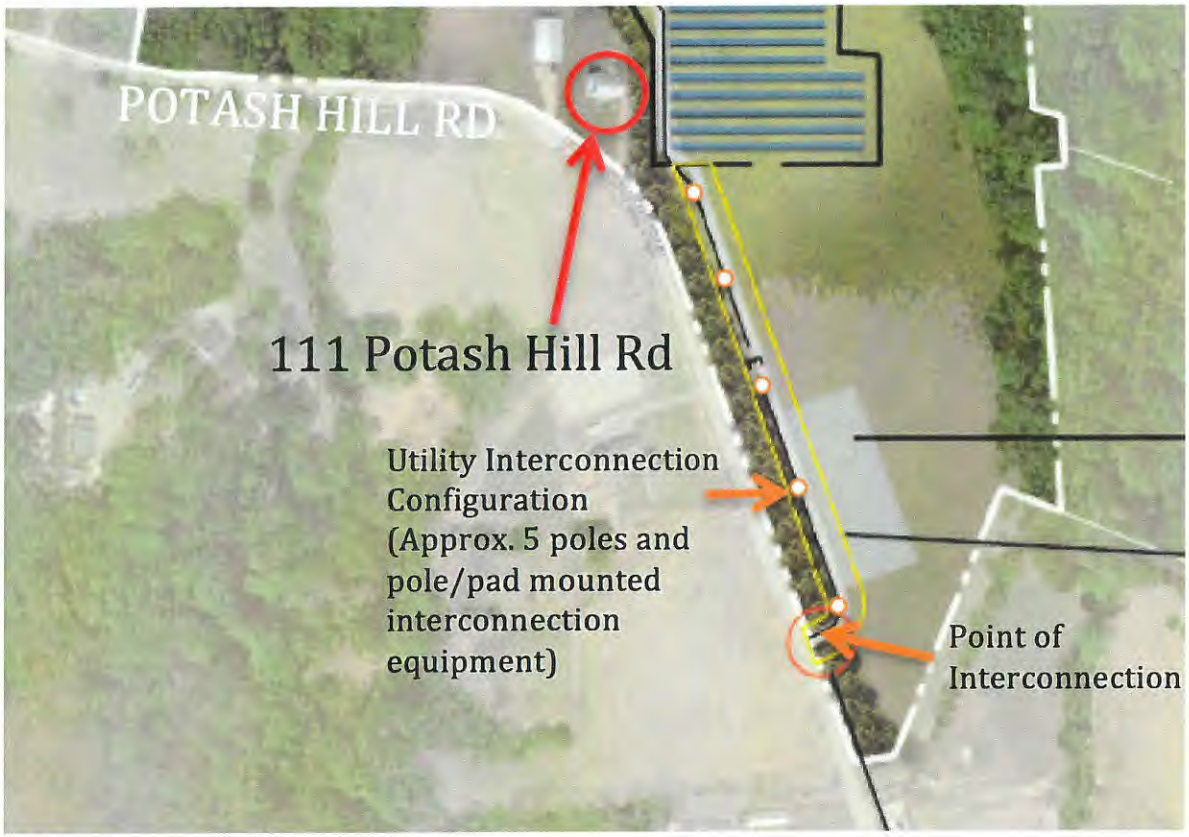
Project switch gear, which will be either pole or pad mounted. All inter-array wiring will be installed underground between the groups of panels, equipment pads and the Project switch gear. In addition, communications and control equipment as well as inverters and transformers will be installed at the Site. The inverters and transformers will be mounted on approximately 20' x 40' concrete equipment pads that will be installed at or just above grade. *See* Exhibit A; Figure 1.

The interconnection facility design and construction will be performed in accordance with the Eversource and The United Illuminating Company Guidelines for Generator Interconnection and State of Connecticut, ISO-New England ("ISO-NE"), and Federal Energy Regulatory Commission ("FERC") requirements. As part of the interconnection process, the Petitioner has successfully completed a utility sponsored Scoping Meeting, Application Request and an Application Review, Feasibility Study, System Impact Study, and is now completing Facilities and Transmission studies with Eversource. The scope of these studies includes:

- Circuit Modeling;
- Power Flow Analysis;
- Voltage Impact Study;
- Thermal Impact Study;
- Short Circuit Study;
- Review of Distribution Equipment Interrupting Ratings;
- Protection Coordination Review;
- Assessment of Transfer Trip Requirements; and
- Review of Protection Schemes.

Completion of the Facilities and Transmission Studies is the final step for an Interconnection Agreement, Interconnection Authorization, Installation, Commissioning Test(s) and final approval to energize the system.

Figure 1 – Interconnection Facility Detail



4. PROJECT BENEFITS

A public benefit exists if a project "is necessary for the reliability of the electric power supply of the state or for a competitive market for electricity." CGS § 16-50p(c)(1). The Project will generate much of its power at peak times, when the demand for electricity is greatest, and will thereby provide the electrical system with flexible peaking capacity that is necessary to keep the electrical grid stable.

Further, the Project supports the State's energy policies as set forth in CGS § 16a-35k, including the goal to "develop and utilize renewable energy resources, such as solar and wind energy, to the maximum practicable extent." The Project will provide clean, renewable, solar-powered electricity and assist the State in meeting its legislatively mandated obligations under the Renewable Portfolio Standards.

The Project will also assist the State of Connecticut in reducing greenhouse gas emissions and reducing criteria air emissions pollutants associated with the displacement of older, less efficient, fossil fuel generation. As part of larger state, national and global strategies, reductions in greenhouse gas emissions from this Project will have long-term secondary biological, social and economic benefits. Similarly, the advancement of renewable resources at a distributed level contribute to our Nation's desire for energy independence and reduces our dependency upon foreign countries where geo-political issues may not align with National policy or the virtues of democracy. The Project will also hire local labor, as practical, and be a source of increased revenue for local businesses during construction.

5. LOCAL INPUT & NOTICE

Throughout the process, the Petitioner has kept officials from the Town apprised of the Project's progress and the Petitioner is committed to continuing to solicit input from Town officials, other relevant agencies and from the general public in an effort to develop an ultimate design that results in the most public benefit with the least environmental impact. The Petitioner has developed a good working relationship with Town officials and the local community by pursuing a multi-faceted and inclusive public outreach effort that included:

- Meeting on December 15, 2014 with Sprague's First Selectman Catherine A. Osten;
- A Project presentation and Public Information Session on April 14, 2015 attended by Selectman Osten and dozens of Sprague citizens at Sprague Town Hall building, 1 Main St, Baltic, CT 06330 (*See* Exhibit C);
- E-mail correspondence with landowners who signed up for more information at the Public Information Session; and
- Briefings with local officials and surrounding landowners regarding site layout and Project development.

Through continued coordination with First Selectman Osten, the Project obtained an official letter of support from the Town. *See* Exhibit L. In addition, because of the Project's proximity to their borders, on June 8, 2015, the Petitioner also conducted outreach with officials from the Towns of Lisbon and Canterbury to discuss the Project. As required by RCSA § 16-50j-40(a), the Petitioner also provided notice of its intent to file this petition to: (a) those adjacent property owners listed on Exhibit D; and (b) the municipal officials and government agencies listed on Exhibit E. In addition, the Petitioner provided a copy of the petition to: Sprague's First Selectman, Catherine A. Osten; Town of Canterbury First Selectman, Patricia Allyn Mechare; Town of Lisbon

First Selectman, Thomas W. Sparkman; and to the Site owners (Estelle Houle and Gale Boardman; Allen and Charlotte Rainville).

6. POTENTIAL ENVIRONMENTAL EFFECTS

The Petitioner and its consultants, F&O, APT and ACS, conducted a comprehensive environmental and archaeological impact assessment of the Project in November 2014 - June 2015. As part of this process, relevant agencies were consulted, Project facilities were overlaid onto the Site, environmental impacts were evaluated and mitigation was applied as appropriate. By April 2015, the public was informed and the Town had played an active role in the design of a project that will produce the maximum amount of energy on the land available while avoiding, reducing and mitigating potential environmental impact to the extent possible.

6.1. NATURAL ENVIRONMENT AND ECOLOGICAL BALANCE

Historical aerial photographs indicate that the majority of the Project Area was cleared agricultural land in 1934, and remnant field stone walls can still be seen in many wooded areas of the Site. Although stone walls and piles within the fence line area will be removed as part of the clearing and site preparation process, consistent with ACS' recommendations, stone walls and piles outside of the fence line, including those demarcating property boundaries, will be maintained to the fullest extent possible. *See* Section 6.5.

The solar array layout will utilize existing grades to minimize the required amount of earth work. Some soil disturbance will be required to install foundations for the PV panels and associated equipment. There may also be some limited grading required for installation of the main access road as well as the perimeter road. Racking will follow existing grade in nearly all cases, with little to no grading occurring for installation and only minor surface finish grading. No significant cut or fill operations are planned. Panel

foundations will be secured using ground screw or driven pile technology. All racking will be designed to meet applicable local building codes for wind and snow loads.

No hazardous substances will be used or stored on Site during construction or operation of the Project. The Phase I Environmental Site Assessment ("ESA") concluded that the Site contained one recognized environmental condition ("REC"), which consists of a farm dump (consisting of some surface debris including metal containers, old appliances and scrap metal) near an existing access road, that warranted additional investigation or action. Based on this, a Phase II ESA to test the soils in the REC area was recommended by F&O. *See* Figure 2.

Preliminary results of the Phase II ESA indicate the presence of lead in excess of the Residential Direct Exposure Criteria at two sampling locations (*See* Figure 2, Locations SS-02A, SS-03). The first sample location was beneath a discarded automotive battery located on the 57 Potash Hill Road parcel. The second sample location, which was located near the border of 57 Potash Hill Road and 111 Potash Hill Road, was in an area of discarded containers, including paint cans and rusted metal debris, and may be associated with residual material from discarded lead paint. F&O believes the extent of contamination is likely minimal given the sizes of the apparent source material. The Petitioner intends to aid the landowners in proper remediation, including the disposal of the underlying soil using appropriate handling precautions and further sampling, to ensure that contaminants have been properly remediated.

Figure 2 – Locations of ESA Phase II Testing

In order to design and install the most efficient and effective Project, the Petitioner conducted a "shading" study and analysis in order to determine what trees on the Site will create a shading effect on the PV panels and whether their removal is necessary. *See* Exhibit F. In order to allow for the installation of the Project and avoid or minimize shading on the PV panels, tree removal will be required. However, the final Project design and configuration attempt to minimize the removal of trees from the Property.

Although the ideal scenario is that shading loss due to trees be near 0%, in order to minimize impacts to wetland areas and maintain natural buffers at Property

boundaries, the Petitioner determined that it could still achieve target energy output numbers with the Project layout proposed in this Petition, which will result in an average annual shading loss of approximately 4.6%. In order to achieve this percentage, the Petition will need to clear approximately 134 acres of trees, resulting in the clearing of approximately 21,130 trees with a six inch (6") or greater diameter at breast height. *See* Exhibit G; Exhibit K.

At the end of design life of the Project, all equipment (e.g. racking system, panels, inverters, electrical collection system, etc.) will be removed in accordance with the Decommissioning Plan. *See* Exhibit B.

6.2. PUBLIC HEALTH AND SAFETY

Overall, the Project will meet or exceed all health and safety requirements applicable to electric power generation. Each employee working on Site will:

- Receive required general and Site specific health and safety training;
- Comply with all health and safety controls as directed by local and state requirements;
- Understand and employ the Site health and safety plan while on the Site;
- Know the location of local emergency care facilities, travel times, ingress and egress routes; and
- Report all unsafe conditions to the construction manager.

During construction, heavy equipment will be required to access the Site during normal working hours, and it is anticipated that 35 - 40 construction vehicles (average size light-duty) will make daily trips onto the Site. After construction is complete and during operation, minimal traffic is anticipated. For standard operations and maintenance activities, on average, one to two light-duty vehicles will visit the Site on a monthly recurring basis. There will not be permanent staff present at the Site.

The Project will not produce significant noise during operation. While, during the construction of the Project, higher levels of noise are anticipated, all work will be conducted during normal working hours and it is not anticipated that the levels of noise will exceed State or local noise standards or limits. *See* Exhibit K.

Because the solar modules are designed to absorb incoming solar radiation and minimize reflectivity, only a small percentage of incidental light will be reflected off the panels. This incidental light is significantly less reflective than common building materials, such as steel, and the surface of smooth water. In addition, a majority of the Project will be shielded from view due to existing and proposed landscaping and topographical conditions and the panels will be tilted up toward the southern sky at approximately 25 degrees, further reducing reflectivity.

Prior to operation, the Petitioner will meet with Town first responders to provide them information regarding response to emergencies at PV facilities and provide a tour of the Project.

6.3. AIR QUALITY

Overall, the Project will have minor emissions of regulated air pollutants and greenhouse gases during construction and no air permit will be required. During construction of the Project, any air emission effects will be temporary and will be controlled by enacting appropriate mitigation measures (e.g., water for dust control, avoid mass early morning vehicle startups, etc.). Accordingly, any potential air effects as a result of the Project construction activities will be de-minimus.

During operation, the Project will not produce air emissions of regulated air pollutants or greenhouse gases (e.g., PM10, PM2.5, VOCs, GHG or Ozone). Thus, no air permit will be required. Moreover, the Project will result in the annual elimination of

approximately 26,892 metric tons of CO_2 equivalent, which is equal to taking 5,662 vehicles off the road and the amount of carbon sequestered by 22,043 acres of U.S. forests in one year.[5]

6.4. SCENIC VALUES

The Petitioner conducted a preliminary view shed analysis during Site visits and by using aerial and topographic mapping in April 2015, which identified a substantial amount of natural screening in the area, primarily in the form of heavily forested land in proximity to the Site. As shown in Figure 4, in almost all instances, there is a substantial amount of heavy forest cover between the Site and potential observation points. In addition, the Project is generally located at a higher, less visible elevation than the surrounding areas, further shielding the Site from view. Furthermore, no public hiking paths or other potential public non-vehicular trails were found to be present in the area that would serve as potential observation points. Despite these natural buffers, the view shed analysis did identify one potential area of visibility along an approximate quarter mile stretch of Potash Hill Road that borders the southern edge of the Site.

As part of its assessment, ACS also examined the view shed impacts to existing and possible registered cultural resources and determined that the Project will have minimal negative impact on the two resources of significance identified in the ACS assessment and located at 85 Potash Hill Road and 111 Potash Hill Road (*see* Figure 5) if it: (a) maintains a several hundred foot treed buffer area in the southwest corner of the 111 Potash Hill Road parcel; and (b) provides a landscaping buffer for the visible portion of the array along the southern edge of the 111 Potash Hill Road parcel. *See*

[5] U.S. EPA Greenhouse Gas Equivalencies Calculator.

Exhibit J. The Project design maintains the recommended buffer in the southwest corner of the 111 Potash Hill Road parcel and includes the installation of a landscape buffer of eight foot (8') tall arborvitae (or similar) plantings along Potash Hill Road, which will screen the portion of the array along the southern edge of the 111 Potash Hill Road parcel and will screen a majority of the Project Area from view along Potash Hill Road. *See* Exhibit A; Exhibit G; Exhibit I.

Figure 4 – View Shed Assessment

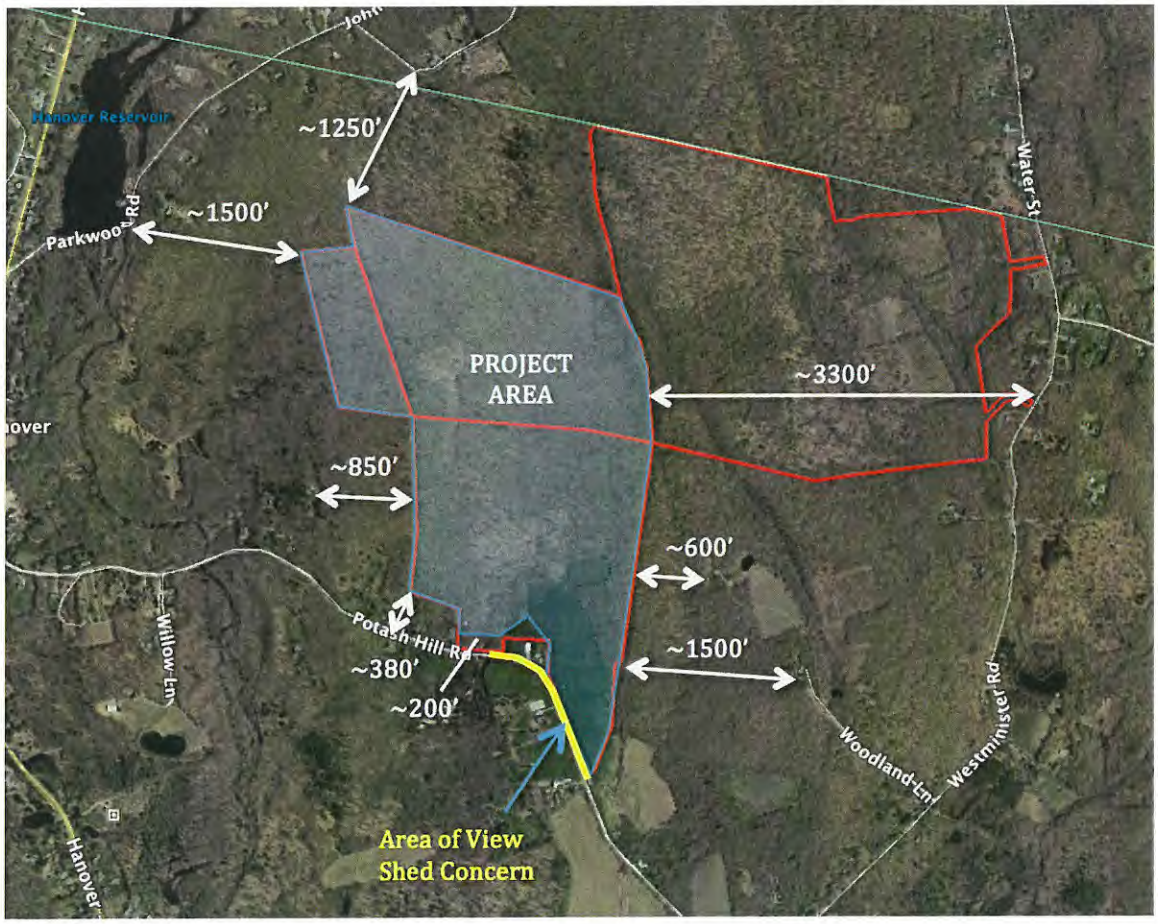
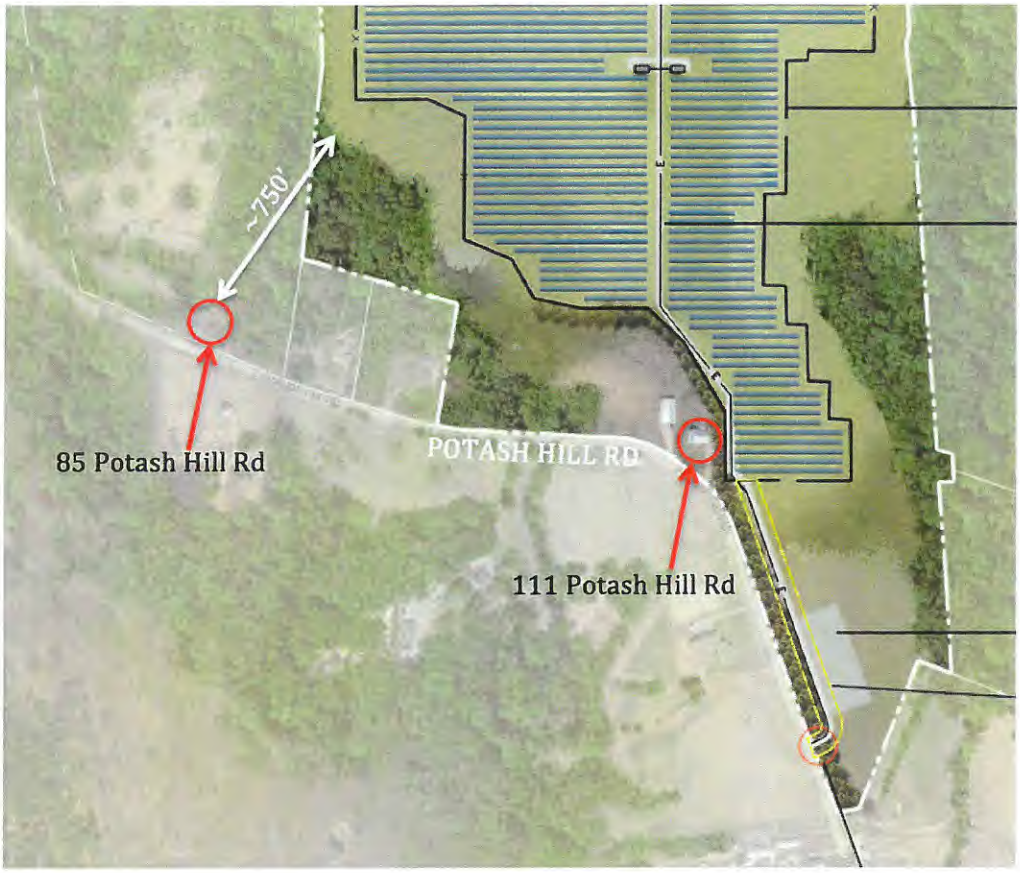


Figure 5 – Historic Resource Locations



After incorporating ACS' recommendations into the Project design, to verify the potential visibility of the Project, F&O produced visual renderings, using existing site photos in tandem with Trimble SketchUp and Adobe Photoshop, from various locations along the highlighted stretch of Potash Hill Road. *See* Exhibit H. In preparing the renderings, existing site photos were imported into the model and matched to SketchUp's camera by loading a digital picture and calibrating SketchUp's camera to the position and focal length of the camera used to take the actual photo. Solar arrays, fencing and landscape buffering depicted in the Site plans were modeled to represent actual dimensions and scales. Once modeling was complete, images were created and enhanced with Adobe Photoshop to create the final renderings.

As those visual renderings demonstrate, the proposed Project will not have a substantial adverse visual effect on residences or passersby in the foreground viewing threshold (up to 300-feet from the Property line) because the immediate foreground threshold views into the Site are limited due to existing and proposed vegetative screening as well as site topography. *See* Exhibit H. The use of low profile Project components (e.g., racking system, panels, inverters, etc.) that generally are not taller than ten (10) feet also significantly reduces the potential visual impact of the Project. Although the electrical interconnection poles will be visible, they are similar in character to existing distribution lines already located along the same stretch of Potash Hill Road.

6.5. HISTORIC VALUES

On November 12, 2014, F&O requested a review of the Project by the SHPO. *See* Exhibit I. In its response, the SHPO requested that "a professional cultural resources assessment and reconnaissance survey" be completed for this project. *See* Exhibit I. CDS contracted with ACS to perform several services: (a) a Phase I-A Archaeological (Desktop) analysis to determine sensitive areas for further field study; (b) a Cultural Resources Viewshed Analysis; (3) an Architectural History Analysis; and (4) a Phase I-B Archaeological Field Analysis to perform test-pit based explorations of sensitive areas.

Through its analyses, ACS determined that there are no archaeological resources present on any part of the Site. *See* Exhibit J. ACS also recommended that stone walls and certain stone piles on the Site be preserved to the extent possible. *See* Exhibit J. While it is not feasible from a design, access, maintenance, and safety perspective to maintain stone walls and piles within the fence line, stone walls and piles outside of the fence line, including those demarcating property boundaries, will be maintained to the

fullest extent possible. As discussed in Section 6.4, ACS also made recommendations to mitigate the visual impact of the Project on cultural resources in the area, which were incorporated into the Project design. ACS' analysis and recommendations were reviewed and accepted by the SHPO. *See* Exhibit I.

6.6. WILDLIFE & HABITAT

Extensive field and habitat surveys were conducted to characterize potential special-status plants, wildlife and their associated habitat that may occur on the Site. In particular, F&O and APT performed the following:

- Phase I Environmental Site Assessment – May 2015; and
- Environmental Assessment – July 2015 (*see* Exhibit K).

Based upon a review of available DEEP Natural Diversity Database ("NDDB") mapping, no threatened, endangered, or special concern species or critical habitats were identified on the Property. In order to confirm those findings, in June 2015, APT requested an NDDB State-Listed Species review by DEEP. DEEP noted the presence of three listed species in the vicinity of the Project and also noted that bald eagles nest along the Quinebaug River, which is located several miles east of the Property. APT's field surveys identified two additional listed species on the Property. However, APT's assessment concluded that none of the listed or observed species would be negatively impacted by the Project. *See* Exhibit K. Nevertheless, the Petitioner will implement applicable protective measures during construction activities to promote avoidance of unintentional injury or mortality to any species potentially using the Property.

6.7. WATER QUALITY

The Project will use no water during operations in the production of electricity. Any water utilized during the construction of the Project for dust suppression will be

minimal and have no impact on the water quality in the vicinity of the Site. The Site is within Flood Zone X, designated by the Federal Emergency Management Agency ("FEMA") as an area outside of the 500-year floodplain area with a minimal risk for flooding. In addition, neither the DEEP's 2011 Connecticut Environmental Conditions Online (DEEP, 2011) nor the Atlas of Public Water Supply Sources and Drainage of Connecticut (CTDEP, 1982) show any public water-supply wells or aquifer protection areas within a one-half mile radius of the Site. Thus, no impacts on water quality or supply would occur with the construction or operation of the proposed Project.

6.7.1 Wetlands

APT completed wetland inspections and delineations on May 28, 2015 and June 3 through 5, 2015 (see Exhibit K) and those delineations were used to design the Project's physical layout in an effort to avoid wetlands features.

The vast majority of the Site is comprised of upland areas. One large wetland complex is located proximate to the Project and contains seasonal intermittent stream channels and six (6) vernal pools. However, no direct impacts to these resources will occur as a result of the development and operation of the Project. The fence line will be located within approximately 115 feet of this wetland's westernmost point. The nearest solar arrays are located 140 feet west of the wetland. Although the Project's clearing limits extend within nine feet (9') of this wetland, no clearing will occur in this resource.

Similarly, no direct impact to any vernal pool is proposed and no activity is proposed within any vernal pool envelope conservation zone (i.e., 0 to 100 feet). The nearest proposed activity to a vernal pool is approximately 280 feet. Although the Project does fall within the critical terrestrial habitat (i.e., 100 to 750 feet) of the wetland's vernal pools, the Project is compliant with established guidelines.

Potential short-term, temporary impacts associated with construction activities will be minimized through the proper design, installation and maintenance of sedimentation and erosion controls in accordance with the 2002 *Connecticut Guidelines for Soil Erosion and Sediment Control*. Further, due to the close proximity of the proposed development to nearby wetlands, the Petitioner will implement a wetland protection plan during construction to provide additional measures to avoid temporary wetland impacts. *See* Exhibit K, Appendix.

6.7.2 Storm Water Management

The Project Area is generally hilly with a bedrock-controlled topography and numerous glacial erratics. The Site is located on a southerly facing highland area and storm water runoff drains as overland flow to the south, east and west following the ground topography. The topography generally slopes downward at approximately 5-10% to the south, east and west. Wetland areas have been delineated along the eastern edge of the Site.

The majority of the Site is currently wooded and converting this wooded area to grass fields with a higher runoff coefficient will increase the amount of storm water runoff from the Site. The runoff will continue to drain as overland flow into surrounding wooded areas on the east and west sides of the Site, and existing cleared fields to the south of the Site.

Currently, the grassed and wooded ground surfaces lend to a high degree of soil stability and precipitation infiltration, minimizing erosion and sedimentation from storm water runoff. Installation of PV panels will, by design, block much of the sunlight required by vegetation to survive below and between the individual panels. Lack of an established surface would make the ground vulnerable to erosion from upstream runoff,

drip lines from the edges of PV panels; however, this issue will be mitigated by replacing existing ground cover around the panels with shade tolerant species that promote infiltration. The grass surface cover will be properly maintained to ensure that localized channeling and point discharges do not occur that can lead to erosion and sedimentation. Any areas that experience concentrated flow will be addressed with appropriate erosion control measures.

The Project will require some soil disturbance to install foundations for the PV panels, associated electrical equipment pads and conduits, and perimeter fence foundations. The foundations will result in some increase in impervious surface over existing conditions. However, the total increase in impervious ground cover is less than 0.5% of the Project Area. Gravel service roads will also be installed through and around the perimeter of the array. The gravel service roads are pervious surfaces, but they will have a higher runoff coefficient than the surrounding grass fields. Storm water runoff from the gravel service roads will drain as sheet flow into the adjacent grass areas.

The installation of panels on elevated racks is not expected to change the overall drainage pattern for the grass field. Runoff from the panels will fall around the perimeter of each panel onto grass surfaces and continue to drain as sheet flow to the south, east and west. As a result, the overall effect of the solar panels on the storm water runoff rate is not anticipated to increase compared to the grass field.[6]

Since construction of the Project will disturb more than one (1) acre of land, the Petitioner will register under the DEEP's General Permit for the Discharge of Stormwater

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[6] *See* Cook, L.M. and McCuen, R.H. (2013) 'Hydrologic Response of Solar Farms,' Journal of Hydrologic Engineering, 18: 536-41 (The authors studied the hydrologic changes when solar arrays are constructed and concluded that when the array is constructed over well-maintained grass there was little or no change in the pre- to post- construction hydraulics of a site).

and Dewatering Wastewaters Associated with Construction Activities at least thirty (30) days prior to commencing any construction activities. The Petitioner intends to request coverage under the existing Connecticut General Permit, DEEP-PED-GP-015, by submitting a complete and accurate General Permit Registration Form and Transmittal prior to construction activities and in accordance with applicable rules at the time of filing. In connection with that registration, the Petitioner will implement a storm water management plan to minimize any potential adverse environmental effects. These procedures will be outlined in the Storm Water Management Plan with Storm Water Pollution Prevention Plan ("SWMP" with "SWPPP") for the Project. Upon receipt, the Letter of Coverage under the General Permit will become part of the SWMP with SWPPP for the Project.

Additionally, an Erosion and Sediment Control Plan will be prepared in accordance with CGS §§ 22a-325 through 22a-329 during the final site design of the Project. During construction, measures will be taken to reduce erosion and manage sedimentation from disturbed surfaces. Minimal grading will be required to construct the solar panels and the following Best Management Practices will be employed:

- Silt fence will be installed at clearing limits and the down-gradient perimeter of the disturbed portion of the Site.
- Construction entrances will be installed at the entrance from Potash Hill Road to prevent tracking of sediment into local roads.

After construction of the Project, disturbed surfaces will be restored with vegetative cover (i.e., turf) to maintain soil stability. The existing and restored vegetation will act as a vegetated buffer between the development and the receiving watercourses. This buffer will improve water quality by promoting infiltration and reducing flow velocity.

7. CONCLUSION

The Project will provide numerous and significant benefits to the Town, the State of Connecticut and its citizens, and will place the Town at the forefront of green energy development while producing substantial environmental benefits with minimal environmental impact. Pursuant to CGS §16-50k(a), the Council shall approve by declaratory ruling the construction or location of a grid-side distributed resources project or facility with a capacity of not more than 65 MW, as long as such project meets DEEP air and water quality standards.

The Project is a "grid-side distributed resources" facility, as defined in CGS §16-1(a)(37), because the Project involves "the generation of electricity from a unit with a rating of not more than sixty-five megawatts that is connected to the transmission or distribution system..." and, as amply demonstrated herein, the Project will meet DEEP air and water quality standards. Further, the Project:

- Will not produce air emissions during operations (PM10, PM2.5, VOCs, GHG or Ozone);
- Will not utilize water to produce electricity or be in conflict with any Federal, State, or Local requirements related to water quality and quantity;
- Will not produce significant noise;
- Was designed to avoid wetland and biological impacts to the extent possible;
- Will not have substantial adverse visual, land use, storm water, recreational, cultural, human or biological impacts; and
- Will further the State's energy policy by developing and utilizing renewable energy resources.

For all the foregoing reasons, the Petitioner requests that the Siting Council issue a declaratory ruling that the proposed Project will comply with DEEP air and water quality standards, will not have a substantial adverse environmental effect and,

therefore, that a CECPN is not required for the construction, operation and maintenance of the Project.

Respectfully submitted,
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