



# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

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### CERTIFIED MAIL RETURN RECEIPT REQUESTED

January 22, 2018

Christopher Little  
Windham Solar LLC  
c/o Ecos Energy  
222 South 9<sup>th</sup> Street, Suite 1600  
Minneapolis, MN 55402

RE: **PETITION NO. 1328** - Windham Solar LLC petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of one 1-megawatt (MW) and one .99-MW solar photovoltaic electric generating facilities located at 481 Mashamoquet Road, Pomfret, Connecticut.

Dear Mr. Little:

At a public meeting held on January 18, 2018, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal meets air and water quality standards of Department of Energy and Environmental Protection and would not have a substantial adverse environmental effect, and pursuant to Connecticut General Statutes § 16-50k, would not require a Certificate of Environmental Compatibility and Public Need, with the following conditions:

1. The Petitioner shall prepare a Development and Management Plan (D&M) for the project in compliance with Sections 16-50j-60 through 16-50j-62 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Pomfret and the Department of Energy and Environmental Protection (DEEP) Water Permitting and Enforcement Division for comment and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
  - a. A final site plan including, but not limited to, final inverter design and electrical interconnection design;
  - b. Results of a soil survey conducted at the site to ensure proper design and installation of the drainage swale;
  - c. Erosion and sedimentation control plan consistent with the *2002 Connecticut Guidelines for Erosion and Sedimentation Control* including, but not limited to, seeding the site for stabilization purposes prior to installation of racking systems and panels;
  - d. Site clearing, grubbing, stabilization, and stormwater controls phasing plan;
  - e. A stormwater management plan consistent with the *2004 Connecticut Stormwater Quality Manual*;
  - f. Post-construction restoration plan; and
  - g. Vegetation Management Plan including, but not limited to, provisions for frequency of mowing and vegetation maintenance;
2. Provide a copy of the Emergency Response Plan to the Council and local emergency responders prior to facility operation, and, if requested, provide Emergency Response training;

3. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed within three years from the date of the mailing of the Council's decision, this decision shall be void, and the facility owner/operator shall dismantle the facility and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The facility owner/operator shall provide written notice to the Executive Director of any schedule changes as soon as is practicable;
4. Any request for extension of the time period to fully construct the facility shall be filed with the Council not later than 60 days prior to the expiration date of this decision and shall be served on all parties and intervenors, if applicable, and the Town of Pomfret;
5. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
6. The facility owner/operator shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v;
7. This Declaratory Ruling may be transferred, provided the facility owner/operator/transferor is current with payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v and the transferee provides written confirmation that the transferee agrees to comply with the terms, limitations and conditions contained in the Declaratory Ruling, including timely payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v; and
8. If the facility owner/operator is a wholly owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the facility within 30 days of the sale and/or transfer.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the petition dated September 22, 2017, and additional information submitted October 24, 2017, November 29, 2017, and January 4, 2018.

Enclosed for your information is a copy of the staff report on this project.

Sincerely,



Robert Stein  
Chairman

RS/CMW/bm

Enclosure: Staff Report dated January 18, 2018

- c: The Honorable Maureen A. Nicholson, First Selectman, Town of Pomfret  
 Ryan Brais, Zoning Enforcement Officer, Town of Pomfret  
 Walter P. Hinchman, Planning and Zoning Chairman, Town of Pomfret



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**Petition No. 1328**  
**Windham Solar LLC**  
**481 Mashamoquet Road, Pomfret**  
**Staff Report**  
**January 18, 2018**

### Introduction

On September 27, 2017, Windham Solar LLC (WS) submitted a petition to the Connecticut Siting Council (Council) for a declaratory ruling pursuant to Connecticut General Statutes §4-176 and §16-50k for the construction, operation and maintenance of one 1-megawatt (MW) alternating current (AC) and one 0.99-MW AC solar photovoltaic generating facilities located at 481 Mashamoquet Road in Pomfret, Connecticut. Council member Robert Hannon and Christina Walsh and Fred Cunliffe of the Council staff visited the site on November 7, 2017 to review this proposal. Steve Broyer and Brad Wilson attended the field review on behalf of the Petitioner. Realtor Robert Keith and property owner of the proposed site, David Morin also attended the field review.

On or about September 21, 2017, the Petitioner notified Town of Pomfret officials, state officials and agencies, the property owner and abutting property owners of the proposed project. Additionally, although not required by law, the Petitioner published notice of its intent to submit its petition to the Council in the *Hartford Courant* on September 21, 2017. One abutting property owner, located at 515 Mashamoquet Road, was inadvertently excluded from the notification list; however, the landowner was verbally made aware of the projects. Formal notice was sent to the property owner at 515 Mashamoquet Road on January 4, 2018.

The Council issued interrogatories to WS on October 11, 2017, November 15, 2017 and December 22, 2017. On October 25, 2017, the Petitioner submitted responses to the Council's first set of interrogatories. On November 30, 2017, the Petitioner submitted responses to the Council's second set of interrogatories. On January 5, 2018, the Petitioner submitted responses to the Council's third set of interrogatories.

On November 9, 2017, pursuant to Connecticut General Statutes (CGS) §4-176(e) of the Uniform Administrative Procedure Act (UAPA), which requires an administrative agency to take action on a petition within 60 days of receipt, the Council voted to set the date by which to render a decision on the above-referenced petition by March 26, 2018. March 26, 2018, is the statutorily-mandated 180-day decision deadline for this petition under CGS §4-176(i).

### Municipal Consultation

On September 19, 2017, the Petitioner submitted the site plan package to Town of Pomfret Zoning Enforcement Officer, Ryan Brais. The Petitioner stated that its initial conversation with the town was positive with no major issues. On September 28, 2017, the Council sent correspondence to the Town of Pomfret stating that the Council has received Petition No. 1328 and inviting any questions or comments regarding the petition by October 31, 2017.

### State Agency Comments

On September 28, 2017, the Council sent correspondence requesting comments on the proposed project from the following state agencies: Department of Energy and Environmental Protection (DEEP); Department of Agriculture (DOAg); Department of Public Health (DPH); Council on Environmental



Quality (CEQ); Public Utilities Regulatory Authority (PURA); Office of Policy and Management (OPM); Department of Economic and Community Development (DECD); Department of Emergency Services and Public Protection (DESPP); Department of Consumer Protection (DCP); Department of Labor (DOL); Department of Construction Services (DCS); Department of Transportation (DOT); the Connecticut Airport Authority (CAA); and the State Historic Preservation Office (SHPO). No state agencies commented on the project.

### **Public Act 17-218**

Effective July 1, 2017, Public Act 17-218 requires, “for a solar photovoltaic facility with a capacity of two or more megawatts, to be located on prime farmland or forestland, excluding any such facility that was selected by DEEP in any solicitation issued prior to July 1, 2017, pursuant to section 16a-3f, 16a-3g or 16a-3j, the DOAg represents, in writing, to the Council that such project will not materially affect the status of such land as prime farmland or DEEP represents, in writing, to the Council that such project will not materially affect the status of land as core forest.” The proposed solar project has a capacity of 1.99 MW. Therefore, it is exempt from the provisions of Public Act 17-218.

### **Public Benefit**

The project would be a distributed energy resource facility as defined in CGS § 16-1(a)(49). CGS § 16a-35k establishes the State’s energy policy, including the goal to “develop and utilize renewable energy resources, such as solar and wind energy, to the maximum practicable extent.” The 2013 Connecticut Comprehensive Energy Strategy emphasizes low- or no-emission sources of electric generation and development of more distributed generation. The proposed facility is distributed generation. Specifically, the proposed facility will contribute to fulfilling the State’s Renewable Portfolio Standard as a zero emission Class I renewable energy source.

The Petitioner has contracts with Eversource under the state’s Low and Zero Emissions Renewable Energy Credit Programs (LREC/ZREC Program) to sell the renewable energy credits from both facilities. The LREC/ZREC Program was developed as part of Public Act 11-80, “An Act Concerning the Establishment of the [DEEP] and Planning for Connecticut’s Energy Future.” Unfortunately, the LREC/ZREC Program is not among the competitive energy procurement programs that are exempt from Public Act 17-218.

The LREC/ZREC Program creates a market-driven bidding process for renewable energy projects ranging from rooftop solar panels to fuel cells to compete to obtain a 15-year revenue stream from the sale of renewable energy credits (RECs) to the electric utilities. It requires Eversource and the United Illuminating Company (UI) to procure Class I RECs under 15-year contracts with owners or developers of renewable energy projects in the state. The LREC/ZREC Program is designed to run for a six year period during which developers can sell electricity from qualifying projects of Class I RECs to the utilities at a fixed price for the life of the contract. At the end of the LREC/ZREC Program, Eversource and UI are required to purchase \$1.02 billion of RECs directly from customers, site owners and/or developers of clean energy projects. Of that amount, \$300 million is to be spent on LRECs, and \$720 million is to be spent on ZRECs.

WS has contracts with Eversource under the LREC/ZREC Program to sell the RECs from the three 2 MW solar facilities and the two 1 MW solar facilities, but does not yet have a contract to sell the energy or capacity. WS is pursuing a contract for energy and capacity from Eversource and the petition for that contract is currently pending before PURA under Docket No. 16-03-08RE01.

WS does not have a contract to sell the energy or capacity from the project. WS would sell the energy and capacity on the wholesale market until a long-term power purchase agreement can be secured.

### **Proposed Site**

The proposed solar project is located within approximately 7.9 acres on the western portion of a 25.1 acre property owned by David and Lorena Morin. The property is within a rural residential zoning district. The property is partially wooded and partially open fields and is currently unused vacant land. Surrounding land uses include undeveloped land to the north and east and low-density residential to the south and west.

During its site search, WS investigated several properties that were for sale. The proposed site was selected due to favorable characteristics.

### **Proposed Project**

The proposed project consists of two solar facilities on the same property including a 1 MW AC (1.201 MW DC) solar facility that would consist of approximately 3,484 solar modules and a 0.99 MW AC (1.195 MW DC) facility that would consist of approximately 3,466 solar modules. The modules would be installed on a fixed-tilt racking system and oriented to the south at a 15 degree angle. The modules would be mounted to the racking system in a landscape orientation with four rows of modules per rack. The modules would be installed to maintain a ground clearance of approximately 36 inches.

The proposed racking system would consist of steel piles that are driven or screwed into the ground and would not require concrete foundations. The pile embedment would be determined after a geotechnical and structural analysis but it is typically six to eight feet deep. WS expects to install a string inverter design which would require approximately thirty-three 60-kilowatt inverters to be installed throughout the project area as opposed to a centralized inverter system. The proposed transformer and inverters would be approximately seven feet tall. The final determination on inverter design would be made once electrical engineering has commenced.

The power output from each inverter would feed into a step-up transformer to increase the collected 390 volt three-phase AC output to a 4.8 kilovolt distribution circuit. The petitioner expects 1.6 percent losses due to inverter efficiency and 0.5 percent losses due to inverter clipping.

The efficiency of the proposed facility ranges from 15 to 18 percent and decreases over time at an average rate of 0.5 percent per year.

Electrical interconnection of the facilities would be via an Eversource electric distribution connection along Mashamoquet Road. Eversource does not currently have a three-phase overhead electrical distribution line on Mashamoquet Road but the existing circuit would be upgraded to a three-phase circuit to accommodate the proposed facilities.

The proposed electrical interconnection would consist of Eversource-specified metering and protection for each facility that would be done pursuant to Eversource's Guidelines for Generator Interconnection. The petitioner has completed an interconnection application request and a System Impact Study for the projects. Eversource has confirmed the proposed facilities could be interconnected.

The useful life of the facility equipment is approximately 45 years. The petitioner intends to operate each facility until the equipment has exhausted its useful life.

The total fenced area of the solar arrays would be 7.9 acres. Fencing would consist of a seven foot chain-link fence with two inch mesh. Access to the site would be via a padlocked gate. The petitioner would provide access codes or keys to the local fire department. A gap at the bottom of the fence can be installed but it

would need to be small enough so that a small person could not crawl under the fence. WS proposes a security system at the site that would alert the company to intruders or a breach in the perimeter of the site.

Video and meteorological equipment would be mounted on 12 to 15-foot poles. Approximately six to ten fence posts per facility area would be installed at a height of 12 feet and would have motion detecting video cameras mounted to each.

The nearest residence to the proposed facility is located at 515 Mashamoquet Road and is approximately 140 feet to the west of the nearest portion of the proposed solar panels. The limits of disturbance of the proposed projects are approximately 62 feet from the property boundary of 515 Mashamoquet Road. A 14-foot wide gravel access road would extend approximately 875 feet from Mashamoquet Road along the western portion of the project area between the proposed solar arrays and the property line at 515 Mashamoquet Road.

Construction is expected to typically occur Monday through Saturday from 7:00 a.m. through 5:00 p.m. Construction hours and days may be expanded to account for reasons such as inclement weather or a delay in the project schedule. Construction of the proposed project would take approximately four to five months from initial groundbreaking to full operation. Approximately 16 to 20 construction vehicles would make daily trips to the site during construction.

Following construction of the project, any graded ground area within the solar facilities would be hydro-seeded with a fescue and clover seed mix for low/slow growing groundcover. The areas outside of the graded areas would remain with existing ground cover.

The facilities are not expected to generate offsite noise, harmful glare, vibrations, or damaging emissions.

The proposed project would comply with the National Electric Code, National Electric Safety Code and National Fire Protection Association Codes and Standards. Breakers would be installed in the system to protect the system in the event of a fault. Reclosers would be used to prevent the facilities from delivering power during a power outage. The reclosers are capable of detecting abnormal grid conditions and would open during any event that would potentially harm the facilities or the grid. Once operational, the petitioner would work with local fire and law enforcement officials to provide necessary information and ability to access the facilities.

The nearest airport to the proposed facilities is the Woodstock Airport, which is approximately five miles to the north/northeast. Additionally, the Danielson Airport is 5.7 miles to the southeast of the facilities. The petitioner contends that a glare analysis is not necessary per the Federal Aviation Administration rules because the airports are greater than two miles from any airport.

### **Environment, Cultural and Scenic Values**

The proposed racking structures could be installed on the existing topography with up to 15 percent slope. Grades steeper than 15 percent would require grading. Additionally, grading would be required for construction of the access road and stormwater controls. Approximately four acres of the project area would require grading.

Approximately 4.4 acres of trees would be removed for the installation of the solar facilities. Depending on project timing, the petitioner may try to limit tree clearing to the period of November 1<sup>st</sup> to April 15<sup>th</sup>, which is outside of the active bat season. If it becomes necessary for trees to be cleared outside of that timeframe, the Petitioner would perform a bat hibernacula survey in consultation with the United States Fish and Wildlife Service.

There are no expected impacts to known state-listed species pursuant to Regulations of Connecticut State Agencies Sec. 26-306.

The racking system would be supported by H-beams that would be driven into the ground. If subsurface boulders or ledge is encountered in solar module location, an alternative grouted foundation would be used. Approximately 4,060 cubic yards of cut and 3,700 cubic yards of fill would be required for the construction of the proposed project. Any excess topsoil would be blended in on site and seeded.

The proposed project is not within an aquifer protection area; nor within a Federal Emergency Management Agency-designated 100-year or 500-year flood zone.

The topography of the property slopes west to east. The eastern portion of the property is heavily wooded and contains a stream and a wetland. The proposed facility would be located on the western upland portion of the property and project boundaries are more than 700 feet from the nearest wetland resources. No vernal pools were found on the site.

Representatives of the Petition conducted site walks of the entire property on April 10, 2017, April 18, 2017, May 6, 2017 and May 11, 2017 to identify wetland areas and complete vernal pool survey work. Four additional site visits were made outside of the amphibian breeding season.

Existing trees and other vegetation would be maintained outside of the project limits to screen the facilities from views along the roadways and neighboring properties. Views of the facilities from the east and north would be screened by existing vegetation. The petitioner proposes to plant 250 green giant arborvitae plants along the western and southern boundaries of the project sites to screen views of the facilities. The proposed landscaping would be staggered in two rows.

The nearest recreational area is the Airline State Park Trail North, which is approximately 900 feet east of the proposed projects. The project would be approximately 3,200 feet from the nearest state park, Mashamoquet Brook State Park. No historic properties are expected to be affected by the solar facilities.

The parcel contains 8.42 acres of prime farmland soils, 5.03 acres of which would contain solar arrays. The project parcel is not enrolled in the Public Act 490 Program. Based on a title search, there are no conservation easements or other documents of record conveying any of the development rights for the property. No portion of the property is currently in agricultural use.

The petitioner will register for DEEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities. Two sediment traps would be constructed on the site to provide for permanent stormwater management. Temporary sediment traps would be installed throughout the project area as required by the Connecticut General Permit. The project would be phased to ensure earth disturbance would be kept to a maximum of five acres of soil disturbance or less at any given time during construction. The Petitioner would comply with the DEEP Stormwater Guidelines for "Stormwater Management at Solar Farm Construction Projects" dated September 8, 2017.

Each five-acre area would have its own detention basin that would be excavated, seeded and riprapped. After blanketing or hydro-seeding the detention basin, the petitioner would move on to the construction of the next five acre increment.

The project would comply with noise and air regulations. Operation of both facilities over 45 years would result in the offset of approximately 100,857 tons of carbon dioxide. The carbon payback period would equal 2.92 days for each year of generation of 131.28 days over the life of the facility. The solar project would not produce air emissions of regulated air pollutants or greenhouse gasses during operation.

A Decommissioning Plan was included in the Petition and has provisions for project removal after a service life of up to 45 years. Following the removal of project related equipment; the site would be restored and revegetated. Any soils that are determined to be compacted to the point that vegetation would not grow, would be decompacted using a common soil decompaction method.

### **Conclusion**

The project is a grid-side distributed resource with a capacity of not more than sixty-five megawatts, meets air and water quality standards of the DEEP, and would not have a substantial adverse environmental effect. The proposed project will not produce air emissions, will not utilize water to produce electricity, was designed to minimize environmental impacts, and furthers the State's energy policy by developing and utilizing renewable energy resources and distributed energy resources. Furthermore, the project was selected under the state's LREC/ZREC Program.

### **Recommendations**

Staff recommends inclusion of the following conditions:

1. Approval of any minor project changes be delegated to Council Staff; and
2. Prior to the commencement of construction, submission of a final site plan including, but not limited to, the final inverter design and electrical interconnection design.



Proposed site layout



Overall Landscape Plan

