PETITION NO. 1443 - SR North Stonington, LLC petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 9.9-megawatt AC solar photovoltaic electric generating facility on five parcels located north and south of Providence New London Turnpike (State Route 184), west of Boombridge Road and north of Interstate 95 in North Stonington, Connecticut, and associated electrical interconnection.	}	Connecticut Siting Council September 3, 2021

DRAFT Opinion

Introduction

On February 25, 2021, SR North Stonington, LLC (SRNS or Petitioner) submitted a petition (Petition) to the Connecticut Siting Council (Council), pursuant to Connecticut General Statutes (CGS) §16-50k and §4-176, for a declaratory ruling for the construction, maintenance, and operation of a 9.9-megawatt AC solar photovoltaic electric generating facility located on five parcels north and south of Providence New London Turnpike (State Route 184), west of Boombridge Road and north of Interstate 95 in North Stonington, Connecticut, and associated electrical interconnection.

In addition to the Petitioner, one party, the Town of North Stonington (Town) participated in the proceeding.

Jurisdiction

As it applies to this petition,[1] CGS §16-50k states in relevant part, "…the Council shall, in the exercise of its jurisdiction over the siting of generating facilities, approve by declaratory ruling…(B) the construction or location… of any grid-side distributed resources project… with a capacity of not more than sixty-five megawatts, as long as such project meets the air and water quality standards of the Department of Energy and Environmental Protection and the Council does not find a substantial adverse environmental effect…" The project is a "grid-side distributed resources" facility, as defined in CGS §16-1(a)(37) and has a capacity of approximately 9.9 MW.

On March 9, 2016, pursuant to Section 1(b) and 1(c) of Public Act (PA) 15-107, the Department of Energy and Environmental Protection (DEEP) issued notice for a Request For Proposals (RFP) for Class I renewable energy sources with a nameplate capacity rating of more than 2 MW and less than 20 MW (Small Scale RFP). On June 27, 2017, DEEP issued its final determination in the Small Scale RFP and selected 25 out of 107 proposed projects to enter into long-term power purchase agreements (PPAs) with the electric distribution companies for a combination of energy and environmental attributes. The proposed Project is one of the 25 projects selected. SRNS entered into 20-year PPAs with The Connecticut Light and Power Company d/b/a Eversource Energy (Eversource) and The United Illuminating Company (UI) for the sale of electricity and renewable energy credits. The PPAs are based on a facility size of 9.9 MW AC, and any AC capacity reduction would negatively impact the financial viability of the project.

[1] The project was selected by DEEP in a solicitation before July 1, 2017; thus, the project is expressly exempt from the requirement set forth in CGS §16-50k(a) regarding written representation from DEEP that the project will not materially affect core forest or written representation from DOAg that the project will not materially affect prime farmland.

Public Benefit

Pursuant to CGS §16-50p, a public benefit exists when a facility is necessary for the reliability of the electric power supply of the state or for the development of a competitive market for electricity. PA 05-1, An Act Concerning Energy Independence, portions of which were codified in CGS §16-50k, established a rebuttable presumption that there is a public benefit for electric generating facilities selected in RFPs. This project was selected in DEEP's Small Scale RFP. However, the project selected in the RFP was proposed by Connecticut Energy Parks, LLC on the Southern Parcels and was to include energy storage, a microgrid and a park. SRNS acquired the project from Renewable Ventures, LLC in 2017.

SRNS did not participate in Independent System Operator – New England (ISO-NE) Forward Capacity Auction (FCA) #15 held in 2021. SRNS has no plans to participate in FCAs at this time but would evaluate the possibility of future participation on an annual basis.

Proposed Project

The proposed site is located on five parcels totaling approximately 157 acres. The Southern Parcels consist of Four contiguous parcels totaling approximately 126 acres located between Interstate 95 and Route 184. The Northern parcel consists of one parcel totaling approximately 31 acres located north of Route 184. All of the site parcels are owned by Silicon Ranch Corporation (SRC)[2] and are located within the R-60 Medium-density Residential District in North Stonington. The Southern Parcels contain former agricultural land, a former sand and gravel mining operation, small family cemetery and forested uplands and wetland areas. The Northern Parcel contains forested uplands and wetland areas.

The surrounding land uses include low density residential, two dog kennels, a dog breeder, Route 184 and I-95.

For the Original Project, SRNS proposed a total of four, separate fenced array areas known as Area 1, located on the west side of the Northern Parcel; Area 2, located on the east side of the Northern Parcel; Area 3, located on the west side of the Southern Parcels; and Area 4, located on the east side of the Southern Parcels. Each of the four areas would be surrounded by a 7-foot tall chain link fence with a foot of barbed wire on top and a two-inch gap at the bottom. The total amount of fencing for the Original Project was 15,433 linear feet. Within the four areas, the Original Project consisted of a total of 28,890 fixed bifacial solar panels rated at approximately 455 Watts direct current (DC) each. The panels would be oriented facing the south at a 25 degree angle and would reach a height of 11 feet above grade.

For the Revised Project, SRNS would still utilize the four fenced array areas. Each of the four areas would be surrounded by a 7-foot tall chain link fence with a foot of barbed wire on top and a two-inch gap at the bottom. However, the modifications would reduce the total amount of fencing from 15,433 to 13,967 linear feet. Within the four areas, SNRS would install a total of 29,675 fixed bifacial solar panels rated at approximately 475 Watts DC each. This results in an increase in nominal DC capacity from approximately 13.1 MW to 14.1 MW to compensate for the effects of inter-row shading associated with the footprint modifications of the Revised Project as compared to the Original Project. The panels would be oriented facing the south at a 25 degree angle and would reach a height of 11 feet above grade.

[2] SRNS is a wholly owned subsidiary of Silicon Ranch Corporation (SRC).

Access to the four areas would be via four individual 16-foot wide gravel access drives. New access drives would be constructed for Areas 1 through 3 off of Route 184. Area 4 would utilize an upgraded farm access drive off of Boombridge Road.

The Area 1 access would cross Wetland A-2. The Area 4 access route crosses Wetlands A/1A and B/1B. The Council will require that the final plans for the wetland crossings be included in Development and Management (D&M) Plan.

For the both the Original Project and the Revised Project, the nearest property line is located approximately 6 inches north of the fence line of Area 4. For the Original Project, the nearest residence is located approximately 104 feet north of the fence line of Area 4. For the Revised Project, the nearest residence is located approximately 82 feet southeast of the fence line of Area 2.

Electrical Interconnection

Electrical intra-connections between the solar area Areas 1 through 4 would generally be underground. The intra-connection of Areas 1 and 2 on the Northern Parcel would run underground along the access drive of Area 1, along a portion of the north side of Providence New London Turnpike, and along the access drive of Area 2. The intra-connection of Areas 3 and 4 would run in an east-west direction on the Southern Parcels.

The intra-connection of Areas 3 and 4 would require a crossing of Wetland E. SRNS could perform this wetland crossing by boring under the wetland or via an overhead connection spanning the wetland to avoid impacts. The intra-connection of Areas 1 and 2 would need to cross of Wetland A-2. The Council will require that the final plans for the wetland crossings be included in D&M Plan.

The project would have a single, independently-metered electrical interconnection to a new 13.8-kV distribution feeder that Eversource would construct from Shunock Substation. SRNS' point of interconnection would be located off of Route 184 and within Area 3 near its access drive. The electrical interconnection would be overhead and would utilize approximately three 50-foot tall utility poles. The demarcation point would be the load side of the primary meter. SRNS completed a distribution System Impact Study which determined that the project is compliant with Eversource and UI technical standards.

SRNS discussed with Eversource the possibility of installing the electrical interconnection underground. Eversource is reviewing this possibility but notes that they have not previously performed an interconnection with such configuration. The Council will require SRNS to provide final plans for the electrical interconnection to Eversource's distribution system and final plans for electrical intra-connections among the four solar array areas in the D&M Plan.

Project Alternatives

Site selection for the RFP Project was based on the following factors:

a. Size, grading and topography;
b. Availability for lease or purchase;
c. Proximity to electrical grid; and
d. Local land use considerations.

Subsequent to the DEEP Small Scale RFP, SRNS acquired such project from Renewable Ventures, LLC and did not consider alternative locations. The RFP Project area consisted of the Southern Parcels. Due to

environmental constraints on the Southern Parcels, SRNS acquired the Northern Parcel to develop the project.

Pursuant to CGS §16-50p(g), the Council has no authority to compel a parcel owner to sell or lease property, or portions thereof, for the purpose of siting a facility[3].

Public Safety

The project would comply with the National Electrical Code (NEC), the National Electrical Safety Code (NESC) and the National Fire Protection Association (NFPA) code, including, but not limited to, NFPA Fire Code Section 11.12.3-Ground-Mounted Photovoltaic System Installations. The solar modules and racking system would be designed to meet the State Building Code for wind and snow loading. Emergency responders would be provided access to the site via a "knox box" or its equivalent to allow access through the site gates.

SRNS would remotely monitor the facility on a 24/7 basis. In the event of a fire, SRNS would remotely disconnect the facility from the Eversource grid, cease inverter operation and de-energize the project.

Prior to commencement of operation, SRNS would meet with the Town first responders to provide them with information regarding response to emergencies on solar facilities, discuss industry best practices and provide a tour of the site and project.

Most of the Project is located within Federal Emergency Management Agency (FEMA) designated Zone X, an area outside of the 500-year flood zone. The southwestern portion of the site is located within FEMA designated Zone A, a high flood risk area, but no development is proposed in that area.

Noise generated during facility operations are expected to comply with the DEEP Noise Control Standards. The Original Project had a maximum predicted sound level at surrounding receptors of 44.9 dBA, which is in compliance with DEEP Noise Control Standards. While the Revised Project contained changes to inverter and transformer locations, the changes are not expected to be significant. Noise resulting from construction of the facility is exempt from DEEP Noise Control Standards.

The stormwater basin storage volumes and embankment heights appear to be under the threshold for a dam permit or registration. The Council will require SRNS to consult with the DEEP Dam Safety Division regarding permitting requirements, if any, for the proposed stormwater basin prior to site construction.

SRNS provided Toxicity Characteristic Leaching Procedure (TCLP) results from a solar panel manufacturer for panels that are similar to those proposed for the Project. Based on these results, metals used to construct the solar panels are not present at levels that would be considered toxic by the United States Environmental Protection Agency. The Council will require SRNS provide verification that the final solar panels selected pass the TCLP test.

The solar panels are projected to have a service life of at least 40 years. SNRS has no plans at this time to replace the panels at the end of their service life. At the end of the facility's lifespan, project components that cannot be recycled will be decommissioned and removed from the site. The site would be restored to its original condition, with the exception of any access roads and fencing, which may remain if useful for future use of the site.

[3] Corcoran v. Connecticut Siting Council, 284 Conn. 455 (2007); CGS §16-50p(g) (2019)

Construction hours would be Monday through Saturday from 7:00 AM to 7:00 PM and Sunday, if necessary. Approximately 60 to 70 construction vehicles would visit the site daily. Due to the amount of truck traffic necessary for construction, the Council will require SRNS to develop a traffic control plan in consultation with the Town, to be submitted as part of the D&M Plan for the project.

Environmental

Historic and Archaeological Resources

North Stonington Village Historic District is listed on the State Register of Historic Places and is located approximately 3 miles west of the proposed site.

Approximately 57 acres considered to possess moderate to high sensitivity for containing archaeological resources were subjected to subsurface testing via shovel tests. The yielded materials from a total of 202 test pits are identified as field debris and are not consistent with a potentially significant archaeological site; therefore, no additional surveys were recommended.

By letter dated December 28, 2020, SHPO determined no additional testing of the project area is warranted; and no historic properties would be affected by the solar facility.

A small cemetery is located in the westerly portion of the site. SRNS would maintain a 100-foot buffer between the project development area and the cemetery. SRNS consulted with SHPO regarding the proposed 100-foot buffer, and SHPO concurs.

Remnant stone walls are located within several wooded areas of the proposed site. Stone walls and piles located outside of the project fence lines would be maintained to the fullest extent possible. SRNS is exploring the possibility of reconstructing existing stone walls and/or constructing new stone walls using material from on-site to further mitigate views of the facility.

Visibility

The solar panels are designed to absorb incoming solar radiation and minimize reflectivity. A small percentage of incidental light would be reflected off the panels. A majority of the project would be shielded from view due to existing landscaping and topography. Most of the project would be set back from adjoining roadways and behind vegetative buffers.

Some portions of the project may be visible from public roadways and adjoining parcels. Specifically, the fence line and associated landscaping associated with Area 3 and Area 4 would be visible from portions of Route 184. Due to existing vegetation north of Route 184, Area 1 and Area 2 would not be visible from Route 184. Additionally, the Revised Project increased the tree buffer from Route 184 to the solar arrays in Area 1 and Area 2 from 110 feet to 180 feet. Seven homes would have year-round views of some portion of the solar arrays.

Some abutting property owners contacted SRNS regarding visual impacts and mitigation. Specifically, SRNS is in discussions with the property owners of 116 Boombridge Road; 435 Providence New London Turnpike; 476 Providence New London Turnpike; and 477 Providence New London Turnpike regarding visual screening options. The Council will require that a final landscaping plan and the final plans to minimize the visual impacts of the project and the electrical interconnection to abutting properties during and after construction be included in the D&M Plan.

No publicly accessible recreational resources would have visibility of the project.

Agriculture

Approximately 0.5-acre of the project limits of disturbance is located on Prime Farmland Soils. This disturbance area remains the same for both the Original Project and the Revised Project.

For vegetation maintenance, SRNS proposes Adaptive Multi-Paddock sheep grazing at the site to supplement mowing. The sheep grazing is not an integral part of the project, but it would reduce the need for motorized landscaping vehicles/equipment and would reduce operational costs. Sheep could be located at the site during the months of June through October and could be rotated through the array areas and/or subdivided portions of the array areas. SNRS has not yet finalized which of the areas would host sheep and has not yet contacted the United States Department of Agriculture Natural Resources Conservation Service regarding an appropriate quantity of sheep per acre. The Council will require that final plans for hosting sheep grazing at the site be included in the D&M Plan.

The solar facility would utilize a suitable seed mix to achieve soil stabilization, meet habitat and pollinator support goals and be compatible with hosting livestock. The Council will require that the final seed mix be included in the D&M Plan.

Forest and Parks

The Revised Project would reduce the total tree clearing area from approximately 46 acres to 44 acres as compared to the Original Project. Core forest impacts would decrease from approximately 3.51 acres to 0.2 acre for the Revised Project.

Wildlife

On May 16, 2017, DEEP issued a Preliminary Natural Diversity Database (NDDB) Assessment that identified six state-listed plant and animal species known to occur within or near the boundaries of the site: sparkling jewelwing; eastern pearlshell; low frostweed; hoary plantain; red bat; and eastern spadefoot. SRNS performed an amphibian breeding season field survey during 2017 through 2020. SRNS performed a survey for state-listed plant species in November 2018. SRNS' eastern spadefoot surveys are still ongoing. Thus, the Council will require that a final species protection plan, taking into account the results of the eastern spadefoot surveys, be included in the D&M Plan.

Although suitable habitat exists on-site for some of the listed species, none of the listed species were found during the field surveys, and any preferred habitat areas would not be affected by the solar facility.

During its field surveys, SRNS observed three additional state-listed Species of Special Concern at the site: the ribbon snake, the eastern box turtle (EBT), and the spotted turtle. SRNS would apply the protective measures recommended by DEEP to be protective of the EBT. Construction activities would be outside of the preferred habitat of the ribbon snake, and vernal pool habitats for the spotted turtle would be conserved. SRNS submitted a subsequent NDDB review request in June 2020 but is yet to receive a response. The Council will require the Final DEEP NDDB Determination Letter be included in the D&M Plan.

The red bat, a state-listed Species of Special concern, and the northern long-eared bat (NLEB), a federally-listed Threatened Species and state-listed Endangered Species, may utilize portions of the site. SRNS would avoid tree clearing during the June and July pup season of the NLEB and the red bat to be protective of both species.

Air Quality

The project would meet DEEP air quality standards. Site operation would not produce air emissions of regulated pollutants or greenhouse gases. Thus, no air permit would be required.

A natural gas-fueled electric generating facility of equivalent size would produce a mean value of about 315,905 metric tons of carbon dioxide equivalent (MT CO2eq) over an equivalent 40-year service life. The solar project would have an estimated carbon debt of 31,590 MT CO2eq. Thus, the solar facility would result in a 90 percent reduction in greenhouse gas emissions compared to a natural gas-fueled electric generating facility.

Water Quality

The project site is located outside of a DEEP-designated Aquifer Protection Area but within the Town's Aquifer Protection Zone. Groundwater is classified as "GA" which indicates it is presumed suitable for human consumption without treatment; however, no impacts on water quality are anticipated to result from the project.

There are no drinking water wells at the site. Impacts to surrounding wells are not expected because, although well construction specifics are not known, it is likely that any potable drinking water wells installed within the bedrock aquifer are at depths far below the construction zone. Thus, no disruptions to well water flows or water quality is anticipated, and no specific precautions are warranted.

Wetlands and Watercourses

The Inland Wetland and Watercourses Act (IWWA) strikes a balance between economic activities and wetlands preservation. The impact of a proposed activity on the wetlands and watercourses that may come from outside the physical boundaries of the wetlands or watercourses is a major consideration. Defined upland review areas, such as 100 feet, provide a trigger for reviewing whether a regulated activity is likely to affect wetlands and watercourses. Under CGS §22a-41(d), regulatory agencies shall not deny or condition an application for a regulated activity in an area outside wetlands or watercourses on the basis of an impact or effect on aquatic, plant, or animal life *unless such activity will likely impact or affect the physical characteristics of such wetlands or watercourses.*

Wetland inspections/delineations were performed during April 2017, November 2018, May 2019, and June 2019. 22 wetlands were identified in the study area. Of the 22 wetlands, 19 are located on the Southern Parcels, and three are located on the Northern Parcel.

Per the *2004 Connecticut Stormwater Quality Manual* (2004 Stormwater Manual), generally, a 100-foot undisturbed upland buffer along a wetland boundary or on either side of a watercourse should be maintained to promote water quality.

For the Northern Parcel, the Original Project included wetland buffer distances (from the fence lines to the wetlands) of 25 feet for Wetlands A-2, B-2 and C-2. For the Revised Project, the buffer for Wetland B-2 has been increased to 100 feet, and the buffers for Wetlands A-2 and C-2 increased to 50 feet[4].

For the Southern Parcels, the Original Project included wetland buffer distances (from the fence lines to the wetlands) of 25 feet for Wetlands B, 1B and C and at least 100 foot buffers for the remaining wetlands. For

[4] SNRS would maintain a 100-foot buffer from the wetlands to the solar panels.

the Revised Project, all wetland buffers were increased to at least 100 feet except for Wetland E. The Revised Project has an approximately 25 foot buffer for Wetland E, while still maintaining a 100-foot distance from the solar panels to the nearest fence line.

Despite SRNS' efforts to increase wetland buffers and property line setbacks, the Council remains concerned about the project wetland buffers and setbacks to property lines. The Council will require SRNS to submit plans to further increase wetland buffers and property line setbacks in the D&M Plan.

Total direct wetland impact areas associated with the access drive crossings for array Areas 1 and 4 were approximately 4,006 square feet (sf) for the Original Project. SNRS subsequently modified the crossings and culvert designs for the Revised Project and reduced the total wetland impact area by 32 percent to 2,720 sf.

Vernal Pools

Vernal pool habitat surveys were performed during April of 2017, 2018 and 2019. Eleven vernal pools were identified in the study area. Of the eleven vernal pools, 10 are located on the Southern Parcels, and one is located on the Northern Parcel.

For the Original Project, construction would occur within the 100-foot vernal pool envelopes (VPEs) of two vernal pools: VP-1 and VP-E. For the Revised Project, increased buffers result in no construction within the VPEs of any vernal pools.

For the Revised Project, nine vernal pools would have less than 25 percent post-construction development of the 100-foot to 750-foot Critical Terrestrial Habitat (CTH) areas. The percent post-construction development areas of the CTHs for VP-1 and VP-E would exceed 25 percent for the Revised Project. However, consistent with the US Army Corps of Engineers Best Management Practices for Vernal Pools, directional corridors and optimal CTH habitat for both VP-1 and VP-E would be conserved.

Stormwater

Pursuant to CGS §22a-430b, DEEP retains final jurisdiction over stormwater management and administers permit programs to regulate stormwater pollution. DEEP regulations and guidelines set forth standards for erosion and sedimentation control, stormwater pollution control and best engineering practices. The DEEP Individual and General Permits for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (Stormwater Permit) require implementation of a Stormwater Pollution Control Plan (SWPCP) to prevent the movement of sediments off construction sites into nearby water bodies and to address the impacts of stormwater discharges from a project after construction is complete. A DEEP-issued Stormwater Permit is required prior to commencement of construction.

DEEP has the authority to enforce project compliance with its Individual or General Permit and the SWPCP, including, but not limited to, the installation of site-specific water quality protection measures in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* (2002 E&S Guidelines).

The project has been designed to comply with the 2004 Stormwater Manual and the 2002 E&S Guidelines.

Stormwater calculations were performed for 2, 25, 50, and 100-year storms, and the engineered stormwater management system for the Revised Project would not result in a net increase in peak flows, erosive velocities or volumes, or adverse impacts to downstream properties.

The Revised Project would comply with Appendix I of the Stormwater Permit. On June 9, 2021, SRNS attended a pre-application meeting with DEEP Stormwater Division regarding the Revised Project. There were outstanding questions or comments from DEEP Stormwater Division at that time. As of July 8, 2021, SRNS had not yet discussed sheep grazing at the site with DEEP Stormwater Division and would address this in a future meeting.

Conclusion

Based on the record of this proceeding, the Council finds that there would not be a substantial adverse environmental effect associated with the construction, maintenance and operation of an approximately 9.9 MW solar photovoltaic electric generating facility and an associated electrical interconnection located north and south of Providence New London Turnpike (State Route 184), west of Boombridge Road and north of Interstate 95 in North Stonington, Connecticut.

The proposed project is a grid-side distributed resources project with a capacity of less than 65 MW under CGS §16-50k, it was selected through the DEEP Small Scale RFP, it is consistent with the state's energy policy under CGS §16a-35k, and the proposed project would meet all applicable U.S. Environmental Protection Agency and DEEP Air and Water Quality Standards. Therefore, the Council will issue a declaratory ruling for the proposed project.