

<p>PETITION NO. 1312 – Candlewood Solar LLC petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed construction, maintenance and operation of a 20 megawatt AC (26.5 megawatt DC) solar photovoltaic electric generating facility located on a 163 acre parcel at 197 Candlewood Mountain Road and associated electrical interconnection to Eversource Energy’s Rocky River Substation on Kent Road in New Milford, Connecticut.</p>	<p>} Connecticut } Siting } Council June 6, 2019</p>
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Court-ordered Remand Regarding Visibility.

Opinion

Introduction

On June 28, 2017, pursuant to Connecticut General Statutes (CGS) §§16-50k and 4-176, Candlewood Solar, LLC (CS or Petitioner) submitted a petition to the Connecticut Siting Council (Council) for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need (Certificate) is required for the construction, maintenance and operation of an approximately 20 megawatt (MW) alternating current (AC) solar photovoltaic generating facility located on an approximately 163-acre parcel at 197 Candlewood Mountain Road and associated electrical interconnection to Eversource Energy’s Rocky River Substation on Kent Road in New Milford, Connecticut.

As it applies to this petition, CGS §16-50k¹ 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 air and water quality standards of the Department of Energy and Environmental Protection.” The project would be a “grid-side distributed resources” facility, as defined in CGS §16-1(a)(37), and it would have a capacity of approximately 20 MW.

On November 12, 2015, pursuant to Section 1(c) of Public Act (PA) 15-107 and Sections 6 and 7 of PA 13-303, the Department of Energy and Environmental Protection (DEEP) issued notice of a Request for Proposals (RFP), in coordination with Rhode Island and Massachusetts, for Class I renewable energy sources (Tri-State RFP). CS’ project was submitted in response to the Tri-State RFP. On June 27, 2017, DEEP issued its final determination in the RFP and selected 9 out of 31 proposed projects to enter into long-term power purchase agreements (PPA) with the electrical distribution companies (EDCs) for a combination of energy and environmental attributes. The proposed project was not selected by DEEP. In the Tri-State RFP, Massachusetts and Rhode Island selected 11 out of 31 proposed projects to enter into long-term PPAs with the EDCs. Of those projects selected, one was the approximately 20 MW Candlewood Solar Project in New Milford. CS entered into a PPA with Massachusetts utilities for the sale of electricity and renewable energy credits.

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 a Tri-State RFP.

¹ CGS §16-50k was modified by Public Act 17-218 effective July 1, 2017. Public Act 17-218 does not apply to the proposed project because the petition was received by the Council on June 28, 2017.

Proposed Project

As originally proposed, the project consisted of the installation of approximately 75,000 solar photovoltaic panels and associated ground equipment on approximately 163 acres in New Milford, plus the use of two additional parcels for the electrical interconnection route. The solar array property is currently owned by Wells Fargo Bank NA. The proposed property owner would be New Milford Clean Power, LLC. CS possesses a lease option with New Milford Clean Power, LLC to utilize the property for a solar project. The two parcels to be used for the electrical interconnection are owned by FirstLight Hydropower.

The proposed site is undeveloped and partially wooded with hay fields/horse pasture in the southern portion of the array parcel. Existing utility corridors cross the interconnection parcels. The proposed site is currently located in a MPRDD zone. In the executed PILOT Agreement, the Town requests CS to change the zoning designation to a R-80 zone despite the Town Zoning Commission's classification of the proposed facility as an industrial use and recommendation for a 100-foot vegetative buffer. Under the Town Zoning Regulations, a 50-foot minimum front, side corner and rear yard setback is required in a R-80 zone. CS is proposing a 50-foot vegetative buffer between the property lines and the limits of work. Under the Town Zoning Regulations, a buffer area is defined as an area on a site consisting of natural existing vegetation and/or created by trees, shrubs, fences and/or berms, designed to limit the view of the site to adjacent properties.

Land use directly to the north of the solar array parcel is undeveloped forest. To the east of the solar array site is primarily undeveloped forested areas. Farther to the east/southeast of the solar array site is Candlewood Lake. Land use immediately south of the solar array primarily consists of wooded/forested areas. To the west are single family residences located along Candlewood Mountain Road.

On October 24, 2017, the Petitioner submitted revised site plans. Specifically, the solar array has been reduced in physical size/footprint to allow the project and associated area of disturbance to avoid undisturbed slimy salamander habitat and to increase the size of the undisturbed buffer around the cryptic vernal pools. The revised array layout would also provide a buffer around an area of archaeological sensitivity. The angle of the panels with the horizontal was reduced from 15 degrees to 12 degrees, and the number of panels was reduced from 75,000 to 60,000. CS was able to maintain the same AC capacity of 20 MW (despite a decline in DC MW) by utilizing 400 Watt solar panels in the proposed revised project versus the originally proposed 350 Watt panels. The smaller angle reduces row-to-row shading and allows closer spacing of the solar panel row. This combined with less solar panels results in the fenced solar array area being reduced from about 67 acres to approximately 57 acres.

Along with the proposed revised project, the developer of the parcel hosting the project, New Milford Clean Power, LLC, would deed approximately 100 acres (located on the project parcel as well as on adjacent parcels also controlled by the developer) to a local land conservation trust as permanently conserved land. This area to be set aside would encompass the area of three vernal pools and associated prime slimy salamander habitat immediately to the north and east of the area to be used for the project. The area to be placed into conservation would include the location of the summit of Candlewood Mountain which is also the terminus of the "Blue Trail." The Council encourages CS to work with entities such as, the Town of New Milford, DEEP, Weantinoge Heritage Land Trust and/or other local conservation groups to prepare and finalize the conservation easement.

The revised (approved) project area, including the solar field, equipment pads, and access roads, would be located on the same 163-acre subject parcel. Project equipment includes up to 8 inverters and associated transformers on concrete pads. The solar field would be enclosed by a seven-foot high chain link fence.

The future revised project area would incorporate a 50-foot vegetative buffer between the property lines and limits of work. Redesign of the solar array would have to account for some shading loss. CS accepts the loss of production due to portions of the array being shaded.

A roughly 1,316-foot existing dirt access road off of Candlewood Mountain Road that has been historically used to access the fields at the top of the parcel would be improved for use during construction and operation of the project by installing 12 inches of graded gravel. The estimated construction period is approximately 12 months. Once construction is complete, one truck per month or less would enter and exit the site for routine inspections and maintenance.

Electrical Interconnection

The electrical interconnection route would originate near the eastern-most edge of the solar array. In the proposed revised project, a portion of the electrical interconnection corridor immediately east of the facility was slightly altered to follow an existing old road cut. The interconnection route would run through wooded areas as it traverses from west to east and to the north of the dam on the FirstLight property. The route would then turn along an existing paved access road and turn east to run along an existing, already cleared access way owned by FirstLight. This approximately 7,000-foot long electrical interconnection corridor would be cleared to a width of approximately 30 feet and would not be fenced. The interconnection route would have two, three-phase 13.8-kV conductors on poles approximately 45 to 55 feet in height. An underground interconnection route would be difficult to construct, and thus, the Petitioner prefers an overhead interconnection route.

The electrical interconnection line would connect to Eversource's existing Rocky River Substation located on the north or opposite side of Kent Road (Route 7). An on-site substation for the project is not proposed. The interconnection line crossing of Route 7 would be underground, subject to final confirmation from Eversource.

CS' interconnection study is currently under review. Eversource would present the project to the ISO-NE Reliability Committee once the final impact study reports are completed.

Project Alternatives

CS investigated four alternative site parcels for the proposed project: Kimberly Clark Property on Route 7; private farmland; property on Pickett District Road; and Candlelight Valley Country Club. All four sites were rejected for various reasons including, but not limited to, inadequate space, visibility to abutters, wetland issues, and steep grades. CS also considered use of a brownfield site known as the Century Brass Site, but found significant on-site wetland areas and insufficient area for a 20 MW AC solar array.

CS did not specifically evaluate the New Milford Landfill as a possible solar site. However, the Council notes that, according to the record in this proceeding, it is not known who the landowner of the New Milford Landfill is or whether or not the property is available for use for a solar facility.

The open field area on the project parcel off of Candlewood Mountain Road was avoided for solar development because of visibility concerns. The area is approximately 5 acres. CS proposes to use this area as a temporary construction laydown area that will be restored back to preconstruction conditions as meadow/field and left as open space upon completion of construction. If some of the panels were moved onto the open field area, there could be some reduction in the amount of forested area to be cleared and some reduction in the amount of solar arrays in the northern portion of the project site. The Council recommends that the possibility of locating a portion of the solar panels in the 5-acre field (with

consideration of visual screening of such areas) be explored in the Development and Management Plan (D&M Plan).

The 5-acre open field area identified as Area 4 in the Phase IA Report will not be graded, no additional tree clearance would occur and no stone walls would be altered. To lessen the potential impact to undisturbed resources, SHPO recommends the use of construction matting in Area 4. The Council will require that plans to restore areas used for parking, equipment, and material storage, i.e. "laydown areas" during construction (and not otherwise occupied by solar panel array installation) be included in the D&M Plan.

DOAg suggested a clustered low impact development with rooftop solar, passive solar or geothermal on a portion of the property with the remaining areas of forestland, wetlands and farmland protected with a conservation easement. Rooftop solar would not be a feasible alternative because of the proposed project size and acreage required.

The Council notes that CS has a commitment to a 20 MW capacity target under its PPA as well as under its selection in the Tri-State RFP. The record reflects that CS believes it has minimized the land area necessary to achieve its electrical capacity target. The proposed site is the only site CS was able to secure that had willing landowners, adequate acreage and proximity to electrical infrastructure.

Public Safety

The proposed project would comply with the National Electrical Code (NEC 2017) and all applicable safety and fire protection codes and standards. In the event of a fault within the facility, the system would have protection systems that would isolate a section of the array or the entire plant if necessary. CS would train emergency responders as to how to handle an emergency at the solar plant. First responders would have a key or code to a key/lock box that could be used to shut down the entire solar facility in the event of an emergency.

The solar panels are designed for a wind pressure loading per the International Electrotechnical Commission (IEC) 61215 standard. The racking system supporting the solar panels would be designed to accommodate the snow load in accordance with applicable American Society of Civil Engineers, International Building Code and Underwriter Laboratories standards. Decommissioning of the project at the end of its useful life would include plant infrastructure removal plans and site restoration plans. The Council will require that a decommissioning plan be provided in the Development and Management Plan (D&M Plan).

Candlelight Farms Airport is located roughly 0.5 miles west of the solar project. The Federal Aviation Administration (FAA) issued Determinations of No Hazard to Air Navigation for the proposed project. No marking or lighting is required for most of the project. However, three select northern locations (based on the originally proposed configuration) are required to be marked/lit, with red lighting recommended approximately 10 feet above ground level. In terms of visual impacts of the red lights to the surrounding area, the Council notes that a 10-foot light height is very low relative to the surrounding average tree height of 90 to 100 feet proximate to the solar array. CS contends that the existing No Hazard Determinations are still valid despite the slight changes to the layout. On April 12, 2018, the FAA issued Determinations of No Hazard to Air Navigation for the revised (approved) solar project layout. The Council will require that a final FAA marking/lighting plan, as necessary, be provided in the D&M Plan.

FAA requires a glare analysis for on-airport solar development at federally obligated airports. FAA does not require a glare analysis for this project. Notwithstanding, a glare analysis has been performed using the Solar Glare Hazard Analysis Tool developed by Sandia National Laboratory. The analysis shows that the glare hazard is minimal and at acceptable levels for safe airport operation. CS contends that the glare analysis conclusions are still applicable to the proposed revised project. On January 5, 2018, CS conducted a second

glare analysis for the revised (approved) project specific to the north and south flight paths at Candlelight Farms Airport consistent with FAA policy. The results indicate there is no glare.

The primary or dominant source of noise for the proposed project would be from the up to eight inverters. The proposed facility would be in compliance with the DEEP Noise Control Standards. Noise resulting from Project construction is exempt from the DEEP noise standards.

Environmental

Historic and Archaeological Resources

The nearest historic resource listed on the National Register of Historic Places (NRHP) to the proposed solar array is Boardman's Bridge, located approximately 1.0 mile to the north. The nearest historic resource listed on NRHP to the electrical interconnection corridor terminus is The Flat Iron Building, located approximately 0.9 miles to the east. No adverse impacts to these NRHP resources would be expected.

The State Historic Preservation Office (SHPO) has noted that although no properties listed on the NRHP have been documented within the project parcels, the project area is situated on well-drained soils adjacent to wetlands. Additionally, this project site is within close proximity to both Candlewood Lake and the Housatonic River. This type of environmental setting tends to be associated with pre-contact Native American settlement, and several archaeological sites have been recorded in the region surrounding the affected parcels. Accordingly, SHPO requested that a professional cultural resources assessment and reconnaissance survey be completed prior to construction. A Phase 1A Cultural Resources Assessment Survey Report (Phase 1A Report) was prepared for CS by its consultant and submitted to SHPO on or about September 18, 2017.

The Phase 1A Report concluded that no additional archaeological examination of the proposed access road or electrical interconnection route is recommended. However, the central portion of the proposed solar facility area can be considered to retain a moderate/high archaeological sensitivity, and a Phase 1B cultural resources reconnaissance, using subsurface testing techniques, was recommended for those areas that would be impacted by construction. A Phase 1B Cultural Resources Reconnaissance Survey was performed, and a Phase 1B Report was prepared. Examination of the moderate/high archaeologically sensitive areas associated with the proposed solar facility and potential temporary construction parking and laydown area resulted in the identification of eight cultural resource loci known as Locus 1 through Locus 8.

In the Phase 1B Report, CS' consultant determined that no additional archaeological examination of seven out of the eight loci were necessary. However, Locus 7 was assessed as potentially significant, and an avoidance plan was recommended. Accordingly, the proposed revised project includes a revision that would provide an approximately 69-foot buffer from the limits of work to Locus 7. In addition, the 100-acre permanent conservation restriction would include Locus 7 and would provide additional protection. On or about October 26, 2017, the Phase 1B Report with an avoidance and protection plan for Locus 7 were submitted to SHPO. By letter dated November 28, 2017, SHPO recommended precautionary measures to lessen the potential impact to undisturbed resources, including the use of construction matting in the proposed temporary construction staging area referred to as Area 4 in the Phase 1A Report. The Council will require plans to comply with SHPO's recommended precautionary measures to be included in the D&M Plan.

Visibility

The solar panels would be black or blue in color with an anti-reflective coating to reduce reflection as much as possible. The solar array would also be shielded in all directions by tree buffers. Shielding does not

necessarily mean not visible; shielding refers to limiting or obscuring a view. As such, CS does not propose landscape plantings around the solar facility. Where lack of screening is a concern, additional vegetative screening may be installed to further minimize visual impacts on abutting residential properties. CS anticipates planting evergreens. Furthermore, CS is in the process of revising the proposed limits of work to provide a minimum vegetative buffer of 50 feet between the property line and the limit of work. The future 50-foot buffer is based on the Town's residential zoning regulations for a residential parcel abutting a residential parcel and would result in less visual impact of the facility than the revised (approved) project. There are existing forested areas in most directions on adjacent parcels.

Nearby recreational resources include the approximately 5,420-acre Candlewood Lake, located approximately 815 feet east of the proposed revised solar array and approximately 467 feet east of the electrical interconnection corridor. Lynn Deming Park is located on the northeastern side of Candlewood Lake (approximately 1,698 feet from the edge of the proposed revised solar array) and includes the use of the lakefront and the lake. Recreational uses associated with Lynn Deming Park and Candlewood Lake include, but are not limited to, swimming, picnicking, fishing, boating, kayaking, canoeing, scuba diving, and water skiing. However, CS does not expect that the solar array or associated electrical interconnection poles would be visible from any portion of the main body² of Candlewood Lake based on the originally proposed project and the proposed revised configuration and the future revised project. Also, views of the solar facility from the Housatonic Range Trail/Blue Trail System (located approximately 933 feet north of the northern limit of work) would be screened by existing intervening vegetation.

The approved solar facility will be located between approximate elevations 728 and 918 feet above mean sea level (amsl). Land surrounding the solar project site is located between approximate elevations of 250 feet to the north and 700 feet to the west and south.

CS performed a topographic survey of the project site. All of the structures on the properties adjacent to the project site are situated at a lower elevation than the project site and the fronts of the structures face away from the solar array:

- a) Candlewood Lake is at an elevation of approximately 429 feet amsl.
- b) 195 Candlewood Mountain Road is located at elevations approximately between 700 and 800 feet amsl. 195 Candlewood Mountain Road is in a residential zone;
- c) 185 Candlewood Mountain Road is located approximately between elevations of 690 and 720 feet amsl. 185 Candlewood Mountain Road is in a residential zone;
- d) The undeveloped Dunham parcel to the south of the solar project property boundary is located at elevations approximately between 640 and 810 feet amsl. The undeveloped Dunham parcel is partially in a residential zone and partially in a business zone;
- e) Candlelight Farms Inn property is located at an elevation of approximately between 690 and 720 feet amsl. Candlelight Farms Inn is in a business zone; and
- f) Candlelight Farms Airport is located at an elevation of approximately 675 feet amsl. Candlelight Farms Airport is in an airport zone.

Existing trees and topography on and off the project property would provide a visual buffer from the solar array. There are existing forested areas in most directions on adjacent parcels. Any views of the 5-acre construction staging area would be temporary and this area will be restored back to preconstruction conditions as meadow/field and left as open space upon completion of construction.

² An approximately 100-foot section of the electrical interconnection route may be visible from the discharge canal to the northeast of Lynn Deming Park, but not from the main body of Candlewood Lake.

The Council notes that the top of the solar panels would be approximately six feet above grade. This would be similar to the height of the proposed seven-foot tall chain link fence and comparable to the inverter and transformer heights of roughly eight feet. Thus, the proposed solar facility would not significantly protrude above the top of the fence line. Lastly, the proposed electrical interconnection poles would have approximate heights of 45 to 55 feet, which is significantly lower than the average tree canopy height of 90 to 100 feet. The Council believes that all of these design features would reduce any visual impacts on surrounding neighbors and recreational areas.

Agriculture and Soils

The state has not purchased any development rights to the proposed site nor is the proposed site part of the Public Act 490 Program. CS obtained soil survey data from the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) mapping to determine that the solar array parcel does not contain any prime or important farmland soils. Connecticut Prime Farmland Soils and Connecticut Important Agricultural Soils are mapped on portions of the interconnection parcels; however, these locations would not be impacted by construction of the electrical interconnection. Also, the project array area does contain Paxton and Montauk fine sandy loams soils, very stony, with three to eight percent slopes. The Town of New Milford GIS mapping indicates that this is a locally important farmland soil.

With respect to the solar array parcel, mapped soils for the project site are listed as having a very stony or extremely stony surface modifier. This is what has kept the soils from being considered prime or important farmland soils. If decades of agricultural activity have removed the stones, then it is possible that the soil could meet the criteria for prime and important farmland. DOAg indicated that a field visit to evaluate surface stone removal would determine if prime and important farmland soils are present on the site. Such field evaluation has not been performed. Notwithstanding, the Council finds that CS has performed its due diligence in researching the existing USDA NRCS soil survey data in its preparation of this Petition.

The Council encourages CS to incorporate pollinator habitat on-site post-construction.

Core Forest

The 2004 Environment Canada Report cited by the University of Connecticut Center for Land Use Education and Research suggests that 250 acres of upland forest should be considered the absolute minimum forest patch size needed to support area-sensitive edge-intolerant bird species. The recommended minimum forest patch size is 500 acres, as this is likely to provide enough suitable habitat to support more diversity of interior forest species.

Currently, approximately 788 acres of contiguous forest is present on and adjacent to the project area. Of this 788 acres, 443 acres are considered core forest, and 345 acres are considered edge forest (or areas not more than 300 feet from non-forested areas). Although the proposed revised project would result in a (post-construction) reduction of core forest to 359 acres, the Council notes that this would still be about 43.6 percent above the absolute minimum threshold of approximately 250 acres and about 28.2 percent below the recommended minimum threshold of approximately 500 acres. The proposed revised project would increase forested edge habitat by eight to nine percent. Additionally, portions of the 100-acre conservation restriction area are to the north, northwest and east of the project site that will be permanently conserved in a natural state.

Wildlife

In a July 10, 2017 preliminary Natural Diversity Database (NDDB) assessment letter to CS, the DEEP Wildlife Division identified known extant populations of nine state-listed species within or near the

boundaries of the proposed site. The assessment also concurred with conservation measures suggested by the Petitioner for the protection of the vernal pools and recommended additional mitigation measures. The nine state-listed species referenced in the NDDB preliminary assessment letter include: little brown bat, golden-winged warbler, slimy salamander, Jefferson salamander “complex,” wood turtle, eastern box turtle, red bat, silver-haired bat and hoary bat.

The petitioner completed surveys of the project area for state-listed species referenced in the NDDB preliminary assessment letter. None of the species were found on the site during the surveys; however, the Petitioner identified protection measures for the species, and the petitioner would commit to best management practices, protection measures and mitigation for the NDDB listed species.

While DEEP identified potential breeding habitat suitable for the golden-winged warbler, a state-listed endangered bird species, it breeds in old-field habitat generally 10 acres or greater in size. The identified areas are upland, actively hayed and/or pastured and contain virtually no tall growing forbs, shrubs or tree seedlings, which are typically associated with inhabited golden-winged warbler habitat. Therefore, suitable breeding habitat for the species does not exist on the site, and no protection measures are proposed.

The three State-listed NDDB bat species are tree roosting bats that roost high in large coniferous and deciduous trees. For the protection of bat species, tree clearing would be limited to November 1 through March 30. The Council notes that the tree clearing restriction is in effect during the mid-May through late October wedding season at Candlelight Farms Inn and Candlelight Farms Airport.

There were no observations of wood turtles or eastern box turtles, both state-listed species of special concern. However, protection measures are proposed for these species.

Vernal pool indicator species in Connecticut include wood frog, spotted salamander, marbled salamander, Jefferson salamander/blue-spotted salamander and fairy shrimp. Species observed at the cryptic vernal pools associated with Wetland I include marbled salamanders, four-toed salamanders, mole salamanders, post-metamorphic wood frogs, an eft stage eastern newt, and sub-adult American toads.

The Jefferson salamander complex is a state-listed species of special concern that may occur at the site. During site surveys, no observations of this species occurred.

Site surveys for assessing slimy salamander habitat were conducted on September 12, 22, 30 and October 4, 2017. No slimy salamanders were observed during these site surveys. However, during the September 26, 2017 public field review of the site, a small, dark salamander was observed that was identified as potentially being a lead-back salamander or a juvenile slimy salamander. The salamander escaped before identification could be confirmed. Notwithstanding, the Council notes that the field survey time of year was not ideal as the optimal time of year to capture slimy salamanders in Connecticut is between May and June.

Preferred slimy salamander habitat includes mature deciduous woodland with slopes greater than 35 percent. Approximately 30 percent of the solar array area is high-quality slimy salamander habitat. However, the entire site has the potential to be slimy salamander habitat. Approximately 2 percent of on-site high-quality slimy salamander habitat would be directly altered through the proposed clearing and development of the facility.

Three specific areas of high-quality slimy salamander habitat were identified including: north of Wetland I, southeast of Wetland I and east of the existing haul road from Candlewood Mountain Road. The habitat associated with the haul road is isolated and would be further isolated from the expansive contiguous habitat east and north of the arrays. The two habitat areas near Wetland I would remain intact and development would not pose a barrier to long-term dispersal of the species.

The Council notes that, for the protection of the slimy salamander and the Jefferson salamander, the same exclusion barrier from the fenced solar array proposed for the protection of eastern box turtle species is proposed. Additionally, the petitioner would create an approximately 100-acre contiguous, steep slope, mature forest perpetual conservation parcel to allow for preservation of slimy salamander habitat, conservation of existing unfragmented forest, and protection of existing wetlands and vernal pools.

Air Quality

The project would have no adverse effect on air quality. During operation, the proposed project would not produce air emissions of regulated air pollutants or greenhouse gases. Thus, no air permit would be required. The proposed project would meet DEEP air quality standards. Given the loss of carbon dioxide sequestration over the life of the facility due to tree clearing versus the net carbon dioxide emissions reduction resulting from the solar facility displacing existing fossil fueled generation in the grid portfolio, the “carbon debt payback period” would be, on average, less than one full day of solar facility operation per year.

Water Quality

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.*

There are nine wetland areas within the properties that comprise the project. Approximately 0.05 acres of tree clearing would be necessary in wetland areas. Wetlands VI, VII, VIII and IX would be converted from forested wetlands to emergent and/or shrub wetlands to allow for vertical clearance for the proposed electric utility line. The proposed facility fence line would be approximately 64 feet from Wetland III and approximately 470 feet from the watercourse associated with Wetland I. The Council finds that no wetlands or watercourses would be directly impacted by the installation of the proposed facility.

Vernal Pools

There are three vernal pools at the project site: one is located in Wetland V, and two cryptic vernal pools are located within Wetland I. Construction of the project would not directly impact any of the vernal pools or the 100-foot vernal pool envelopes (VPE).

Two cryptic vernal pools were delineated within Wetland I on September 30, 2017. The two cryptic vernal pools were evaluated for potential impacts together as a single system because they are both part of the same wetland. The proposed facility would completely avoid the two cryptic vernal pools and the 100-foot VPE of Wetland I. Development of the project would develop 41.4 percent of the 100-foot to 750-foot critical terrestrial habitat (CTH). The post-development condition of the cryptic vernal pool in Wetland I exceeds the recommendation for less than 25 percent developed area within a CTH that is a guideline of Calhoun and Klemens 2002 (C&K BDPs), but approximately two percent of the CTH in Wetland I vernal pools is currently altered field area. The nearest point of proposed construction area would be no closer than 145 feet from the cryptic vernal pools in Wetland I.

Wetland V is a Tier I vernal pool. The Wetland V vernal pool is just beyond the northern end of the project within a narrow cut between two granite outcrops. The facility would completely avoid disturbance of the vernal pool and the 100-foot VPE of Wetland V. The project would require the development of 17.3 percent of the CTH of Wetland V.

While some post-construction development within the vernal pool CTH areas would exceed the 25 percent maximum recommended in C&K BDPs, the Council notes that the approximately 100-acre conservation area and construction BMPs would provide adequate protection of these vernal pools. **The DEEP NDDDB Final Determination requires CS to establish the 100-acre conservation restriction.**

Stormwater

Minimal grading within the footprint of the array would be required where slopes exceed the maximum allowable slope for the racking equipment. Grading would also be required to implement construction phase best management practices (BMPs) for erosion and sedimentation control which would be converted to permanent stormwater quality BMPs to maintain water quality after construction.

DEEP has final jurisdiction over stormwater management. On or about March 14, 2019, DEEP rejected CS's application for a General Permit without prejudice. CS would modify the stormwater design to accommodate the proposed revised project and the future revised project in accordance with specific DEEP comments on the stormwater management plans, the General Permit, *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* and *2004 Connecticut Stormwater Quality Manual* prior to construction. CS stated it would comply with the recommendations from DEEP outlined in "Stormwater Management at Solar Farm Construction Projects" dated September 8, 2017. In accordance with DEEP General Permit guidelines, stormwater design components would be installed in five-acre stages to control stormwater flows onto adjacent properties during construction. Clearing, stump removal and limited grading would be performed such that the total area of disturbed, exposed ground surface contributing to stormwater runoff to a common point would not exceed five acres at a time. Once an approximately five-acre sub-area has been stabilized, work at the next downgradient sub-area can begin.

The Petitioner contends that the final post-construction discharge rates associated with the proposed revised project would be no greater than the existing discharge rates. The Council notes that, while a housing development project at this site (known as Dunham Farms) was denied by the Town of New Milford in 2007, in part due to stormwater issues, the development of the proposed revised solar project is very different in terms of impervious area. Specifically, the proposed revised solar project would not involve the installation of paved roads³ and housing.

The Council will require final stormwater design plans and its related phasing plan, as well as plans to comply with the recommendations from DEEP outlined in "Stormwater Management at Solar Farm Construction Projects" dated September 8, 2017, to be included in the D&M Plan. **Any changes to the stormwater management plans in the DEEP General Permit application process that result in a project redesign would be submitted to the Council as D&M Plan revisions.**

Conclusion

Based on the record in 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 20 MW Solar Photovoltaic Project on an approximately 163-acre parcel and associated electrical interconnection

³ Notwithstanding, the proposed gravel access drive would be modeled as impervious, consistent with DEEP guidance provided to CS.

parcels located generally north of Candlewood Mountain Road in New Milford, 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 a Tri-State RFP under CGS §16a-3f, it is consistent with the state's energy policy under CGS §16-35k, 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.