DOCKET NO. 492 - Gravel Pit Solar application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a 120-megawatt-AC solar photovoltaic electric generating facility on eight parcels generally located to the east and west of the Amtrak and Connecticut Rail Line, south of Apothecaries Hall Road and north of the South Windsor town boundary in East Windsor, Connecticut and associated electrical interconnection.	}	Connecticut Siting Council February 19, 2021

DRAFT Opinion

Introduction

On July 31, 2020, Gravel Pit Solar, LLC, Gravel Pit Solar II, LLC, Gravel Pit Solar III, LLC, and Gravel Pit Solar IV, LLC (collectively, GPS or Applicant) submitted an application (Application) to the Connecticut Siting Council (Council), pursuant to Connecticut General Statutes (CGS) §16-50p, for a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance, and operation of a 120 megawatt (MW) alternating current (AC) solar photovoltaic electric generating facility on eight parcels generally located to the east and west of the Amtrak and Connecticut Rail Line, south of Apothecaries Hall Road and north of the South Windsor town boundary in East Windsor, Connecticut and associated electrical interconnection[1].

Jurisdiction

Under the Public Utility Environmental Standards Act, the Council's charge is to balance the need for adequate and reliable public utility services at the lowest reasonable cost to consumers with the need to protect the environment and ecology of the state. Pursuant to CGS §16-50p, for an application for an electric generating facility under CGS §16-50i(a)(3), the Council shall not grant a Certificate, either as proposed or modified by the Council, unless it shall find and determine:

a) A public benefit for the facility and considers neighborhood concerns with respect to the nature of the probable environmental impacts of the facility, including public safety;

b) the nature of the probable environmental impact of the facility alone and cumulatively with other existing facilities, including a specification of adverse effects relative to electric and magnetic fields, impact on and conflict with the policies of the state concerning the natural environment, ecological balance, public health and safety, scenic, historic and recreational values, agriculture, forests and parks, air and water purity and fish, aquaculture and wildlife; and

c) why the adverse effects are not sufficient reason to deny the application.

Pursuant to its selection under the Connecticut Department of Energy and Environmental Protection's (DEEP) Zero Carbon Request for Proposals (RFP), GPS would sell power to electric distribution companies in Connecticut. GPS would also sell power to electric distribution companies in Rhode Island pursuant to Rhode Island's Long-Term Contracting Standard RFP. The balance of the project's capacity would provide energy to a number of New England municipal light departments.

[1] Up to and including the substation and switchyard. Eversource would file a Petition for a declaratory ruling for the interconnection from the switchyard to existing transmission.

Public Benefit

Pursuant to CGS §16-50p(c), 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. Public benefit exists if the Council finds and determines a proposed electric generating facility contributes to forecasted generating capacity requirements, reduces dependence on imported energy resources, diversifies state energy supply mix and enhances reliability[2].

The project would add 120 MW of additional nameplate[3] generating capacity to New England in light of both known and projected power plant retirements. The solar facility would provide electrical energy to the ISO-NE grid using internal generation rather than depending on imported energy sources. It would also diversify both the state and regional energy supply mix, particularly with respect to winter reliability concerns. The solar facility's interconnection to ISO-NE's pooled transmission facility system to serve off-takers throughout New England enhances electric reliability.

GPS applied to ISO-NE to qualify for participation in ISO-NE's Fifteenth Forward Capacity Auction (FCA#15). Subsequent to the close of the evidentiary record of this matter on December 1, 2020, ISO-NE conducted FCA#15 on February 8, 2021. The Council will request GPS submit the FCA #15 results for the project in the Development and Management (D&M) Plan.

Proposed Project

Pursuant to an Option to Lease by GPS for the Northern Capital Regional Disposal Facility Inc. and the Back 124, LLC properties and purchase options for the remaining properties, GPS would construct a 120 MW AC solar electric generating facility on a 485-acre site[4] located on portions of eight separate parcels that total 737 acres.

The Northern Project Area is located east of the Amtrak and Connecticut Rail Line (Rail Line) and south of Apothecaries Hall Road. The Southern Project Area is located west of the Rail Line and south of Ketch Brook, and it extends south past Plantation Road and approaches the South Windsor Town Line.

The project site contains approximately 76 acres of sand and gravel mining operations; 230 acres of actively farmed agricultural fields (primarily tobacco fields); and 330 acres of wooded areas. Existing dirt farm roads interconnect the fields at the site. An Eversource Energy (Eversource) electric transmission line facility right-of-way (ROW) crosses the site from northwest to southeast and separates the Northern Project Area into two sections. The Rail Line extends north-south through the center of the site. About 15 acres of the site is classified as vacant commercial land.

The solar facility would consist of a mix of fixed solar panels and single-axis tracking solar panels that would likely be between 400 and 550 Watts direct current (DC) each. Final solar panel wattage selection, which may include a mix of wattages, will be included in the D&M Plan. Notwithstanding, the total nameplate AC capacity for the facility would remain 120 MW.

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[2] *Preston v. Connecticut Siting Council*, 21 Conn. App. 85 (1990)

[3] For the purposes of the Forward Capacity Auction, ISO-NE would consider a lower quantity estimated at about 30 MW due to variations in output for solar facilities, but it would still nevertheless be additional capacity.

[4] RCSA §16-50j-2a(29), "Site" means a contiguous parcel of property with specified boundaries, including, but not limited to, the leased area, right-of-way, access and easements on which a facility and associated equipment is located, shall be located or is proposed to be located.

The fixed solar panels would be installed on racking systems generally in an east-west orientation facing the south at an angle of 20 to 30 degrees above the horizontal. They would reach a maximum height of 9 feet above grade. The single-axis tracking solar panels would be installed in north-south strings and would track from east to west. They would reach a maximum height of about 14.7 feet above grade. There would be an approximately 8.8-foot wide aisle between the fixed solar panel racks and 15.2 feet for the single-axis tracking solar panel strings.

The project would include approximately 36 inverter skids on piles with gravel aprons located throughout the project footprint that would include transformers, inverters and electrical panels. Such equipment would reach approximately 10 feet above grade. The inverter skid locations would be connected via 34.5-kV collector lines that could be run aboveground in cable trays or run underground.

The solar array areas and inverters south of Ketch Brook would be electrically connected to the northern project area (east of the railroad line) via 34.5-kV collector lines routed below Ketch Brook (Ketch Brook Crossing Cable) utilizing the horizontal directional drill (HDD) method. The solar array areas and inverters south of Plantation Road would be connected via 34.5-kV collector lines that would run underground across Plantation Road using either a cut and cover construction method or boring.

The facility would be surrounded by an agricultural fence at least seven feet high and with barbed wire on top.

Access to the site would be via two entrances off of Plantation Road and two entrances off of Apothecaries Hall Road. The proposed gravel access drives would be approximately 15 feet wide. GPS would utilize approximately 0.9 mile of existing access and would construct about 4.8 miles of new access to serve all of the solar arrays plus the substation and switchyard.

In response to concerns from abutters regarding the location of one of Apothecaries Hall Road entrance points for the project, GPS is exploring the potential use of another location on Apothecaries Hall Road that is currently used as secondary access to the active gravel mine. GPS is considering relocating its entrance point to this location if land control can be finalized. The Council will request GPS submit the details of the use of the alternative entrance point on Apothecaries Hall Road in the D&M Plan if GPS obtains the right to use it from the property owner.

The closest off-site residence to the project perimeter fence is approximately 125 feet to the west at 25 Plantation Road.

Electrical Interconnection

The GPS Substation would be installed east of the railroad line and south of the Eversource ROW. It would contain a 34.5-kV to 115-kV power transformer to raise the voltage of the collector line output to the nearby transmission line voltage of 115-kV. GPS would own and operate GPS Substation.

Next to GPS Substation, GPS would construct the Eversource Switchyard and later transfer it (on or about the time of commissioning) to Eversource. Thus, Eversource Switchyard would ultimately be owned and operated by Eversource. The Eversource Switchyard would connect to the 115-kV side of GPS Substation. The existing Eversource ROW contains two 115-kV transmission lines: #1100 Line and #1200 Line. A line loop and at least one new pole would be necessary to facilitate the connection of Eversource Switchyard to the #1200 Line. Eversource would file a Petition for a Declaratory Ruling for the interconnection of Eversource Switchyard with the existing electric transmission line facility.

Project Alternatives

GPS considered the following factors in its site selection process:

a. Sufficient parcel size, e.g. in excess of 700 contiguous acres;
b. Environmental constraints such as wetlands, rare species, etc.;
c. Cultural resource areas;
d. Topography;
e. Compatibility with land use regulations;
f. Cost to construct the project at a given site;
g. Willing landowners; and
h. Proximity to electrical transmission with sufficient capacity to accommodate the project.

GPS considered four possible sites for the proposed project: two in Connecticut, one in Massachusetts and one in Vermont. Three of the four sites were rejected due to various reasons including, but not limited to, cost to accommodate a 345-kV electrical interconnection; existing transmission constraints or lack of proximity to existing transmission; existing agricultural easement; and forest, soil and wetland impacts. The proposed site was the only site that met all of GPS' evaluation criteria. 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.[5]

Neighborhood Concerns

The Council held a public comment session via Zoom conferencing on November 12, 2020 that commenced at 6:30 p.m. During the public comment session, the First Selectman and two members of the public provided oral limited appearance statements in support of the project.

While the public comment record was open, approximately 3 interested persons provided written limited appearance statements. Oral and written limited appearance statements received by the Council and comments received by GPS regarding the facility, concerns include, but are not limited to, aesthetics associated with the entrance points, the amount of dust associated with active gravel mines and construction sediment entering municipal roads from entrance points.

Public Safety

The project would comply with the National Electrical Code (NEC), the National Electrical Safety Code (NESC) and any applicable National Fire Protection Association codes and standards. Emergency responders would have access to the site via the access gates. The gravel access roads would be sufficient to support emergency response and would act as a fire break.

The solar facility would have an internal protection system to shut down, as appropriate, the affected portion(s) of the solar facility should a fault occur. The protection system could also shut down the entire facility if necessary.

GPS would provide appropriate training and access to individuals with authorized or emergency access to the facility.

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

GPS would implement appropriate traffic management measures during construction. Post-construction, the Council notes that the traffic levels at the site would be reduced as compared to the traffic levels associated with existing gravel mining and farming operations.

The project is located within a within a Federal Emergency Management Agency designated 100-year flood zone, except for a portion of the Ketch Brook Crossing Cable. There are no 500-year flood zones within the project area.

Noise generated during facility operations would comply with the DEEP Noise Control Standards. Noise resulting from construction is exempt from DEEP Noise Control Standards.

The project has an anticipated life of 30 years. Decommissioning of the project would include infrastructure removal and site restoration. Removal and disposal of plant components would comply with DEEP recommendations for best practices. Salvageable components and equipment would be sold for reuse or recycled to the maximum extent feasible. Also, at the time of decommissioning, GPS' Agricultural Soil Protection Plan (ASPP) includes restoring farmland soils in order to maintain or improve soil quality.

A certification regarding Toxicity Characteristic Leaching Procedure (TCLP) is generally not available from the solar panel manufacturer in advance. Notwithstanding, it has been GPS' experience that solar module disposals have been accepted at non-hazardous waste disposal facilities.

Given that solar panel technology and manufacturing processes are continually changing, and the final solar panel model(s) has not been selected, the Council will order GPS to utilize solar panels that are characterized as non-hazardous through Toxicity Characteristic Leaching Procedure (TCLP) testing and that do not contain per- and polyfluoroalkyl substances (PFAS).

Environmental

Historic and Archaeological Resources

Based on existing records, no previously identified archaeological sites or properties listed on the State or National Register of Historic Places were identified within one mile of the site. As part of a subsequent Phase IA Assessment, 41 historic period buildings were identified as located on or adjacent to the site including, but not limited to, tobacco sheds, several English-style barns, residences, a water tower, and ancillary structures. Additional examination/documentation of these buildings is recommended to be performed so that the potential for eligibility for National Register of Historic Places (NRHP) for such structures could be determined.

The Phase IA Assessment concluded that 278.1 acres retain no to low archaeological potential, and approximately 238.9 acres possess a moderate sensitivity for producing archaeological resources. No additional archaeological examination of the no to low potential areas was recommended. However, a Phase IB Survey of the areas of moderate sensitivity is recommended.

By letter dated June 2, 2020, SHPO concurred that a Phase IB survey with subsurface techniques be performed in areas that retain a moderate to high potential to contain intact archaeological deposits. SHPO also concurred that additional examination and documentation of exteriors and interiors (where possible) of the structures be performed to ascertain potential eligibility on either the State or National Register of Historic Places.

A Phase IB Survey was subsequently prepared and identified four archaeological loci, but none were deemed significant per NRHP criteria. Thus, no impacts to archaeological resources would be expected to result from construction of the project, and no additional archaeological examination of the site is recommended.

The Phase IB architectural survey determined that six tobacco sheds, three other buildings, and a water tower, would not be impacted directly by the project. SHPO concurs with the results of the Phase IB architectural survey. However, SHPO indicated the Markowski Farms may be eligible for listing on the NRHP, and the project would include the demolition of at least 22 contributing structures. As a result, SHPO would like to continue its consultations with GPS to discuss minimization measures and mitigation options.

GPS met with SHPO on October 16, 2020 to review the aboveground structures and discuss which structures GPS proposes to remove and which structures GPS would leave in place. Subsequent to its October 16, 2020 meeting with SHPO, GPS visited the site to determine which barns could safely be left in place from a public safety perspective, e.g. fire safety and possible unauthorized entry. GPS plans to continue discussions with SHPO regarding the barns in order to reach an agreement. The Council recommends GPS continue such discussions with SHPO.

Visibility

The visibility areas for the project would be largely contained within the project site itself due to the relatively low-profile of the panels and the presence of mature vegetation surrounding the project site. Approximately 3.9 percent of the two-mile radius visual study area (VSA) could have some level of visibility of the project. Visibility areas would likely be limited to a 0.25 mile radius of the project. While the tracking panels are 5.7 feet taller than the fixed panels, the inclusion of tracking panels has a negligible effect on the total visibility area.

Local roads with potential visibility include Apothecaries Hall Road, Windsorville Road, Plantation Road, and Wapping Road, and such roads are located directly adjacent to the project site. A small area of potential visibility extends beyond these roads and the site into a small open field and residential area north of Apothecaries Hall Road. Homes located along Apothecaries Hall Road directly adjacent to the site may experience some level of visual impact due to the introduction of solar panels and perimeter fencing. Vegetative mitigation may be effective at reducing impacts to these areas.

Homes located along Plantation Road may have some limited views of the project area through an existing hedgerow; thus, supplemental screening may minimize project visibility.

A few homes located along Rye Street may have limited views into the proposed project area. Selective plantings may be effective in reducing or eliminating visibility from these locations.

In southern portions of the site, visibility would extend to an open field south of Wapping Road. A narrow hedgerow separating this field from a residential development provides a vegetative buffer which could partially screen views of the project.

A small area of visibility of the project would extend from the site onto the Topstone Golf Course located south of Wapping Road.

To the west of the site, views from Abraham George Lane and Rye Street would be substantially, if not entirely, screened due to the presence of a thick vegetative buffer.

The nearest scenic road is a portion of Route 74 which is a state-designated scenic road. Due to the distance of approximately four miles from the site, the project would not be visible from this scenic road.

The nearest publicly accessible recreational area to the solar project is Pierce Memorial Park, located approximately 600 feet east of the nearest project boundary. Visibility of the solar facility from the park will be screened by an existing, dense vegetative buffer and multiple residences that are located along Windsorville Road.

GPS developed a Landscape Visual Mitigation Plan (LVMP) that includes native plantings to reduce and minimize potential visual impacts of the facility. The LVMP includes three levels or tiers of screening. As part of the LVMP, GPS could also enhance the access road entrance areas with features such as agricultural or split rail fencing, wooden entry gates, and landscape plantings around the entrance areas. The Council will require that the final LVMP details be included in the D&M Plan.

Agriculture

Five parcels are classified and recorded as "farm" and "forest land" under Public Act 490. DOAg has not purchased any development rights for the site or any portion of the site as part of the Statewide Program for the Preservation of Agricultural Land.

GPS estimates that the solar facility footprint would occupy a total of roughly 227 acres of mapped Prime Farmland Soils currently and primarily used to grow tobacco.

GPS developed an Agricultural Soil Protection Plan (ASPP) which includes, but is not limited to, the following components: conduct baseline inventory sampling and analysis prior to commencement of construction; utilize construction methods to minimize compaction/disturbance of agricultural soils; separately windrow the topsoil along trenches separate from subsoil/substrate stockpiles; perform seeding per *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* (2002 E&S Guidelines); manage topsoil on-site to promote continued viability; and perform test soil strength/quality after decommissioning.

In its November 4, 2020 comments, DOAg opposes the project and notes that it would adversely impact the status of prime farmland because after decommissioning, soil productivity would be compromised and require restoration. GPS' consultant, Duraroot, performed soil compaction testing on approximately 148 acres of GPS' Tobacco Valley Solar Project (TVSP) in Simsbury. Two dominant soil types exist at the TVSP site: Inceptisol and Entisol. Duraroot found no statistically significant differences between the disturbed Inceptisol soils within array areas versus soils unimpacted by solar construction. The Inceptisol soil is the dominant soil type at the subject site. Based on the data from TVSP, construction would not likely result in soil compaction. Soil compaction and subsequent change in hydrologic group would not be anticipated based on soil physical properties and the reclamation plans.

GPS continues to evaluate the possibility of agricultural co-uses, such as sheep grazing, at the site, but it has not made a final decision at this time. GPS met with DOAg in July and September 2020 and intends to continue discussions with DOAg to look at ways in which discrete mitigation practices can be further incorporated into the project. The Council recommends GPS to continue such discussions with DOAg.

Forest and Parks

There is no core forest located within or near the site. No state forests or parks are located within or near the site.

Wildlife

On December 19, 2019 and March 4, 2020, DEEP issued preliminary Natural Diversity Database (NDDB) assessments that identified 15 state-listed plant and animal species that occur within or near the boundaries of the site: big sand tiger beetle; bog copper; eastern pearlshell; scribbled sallow moth; climbing fern; dwarf huckleberry; short-awned meadow foxtail; purple milkweed; American brook lamprey; American kestrel; red-headed woodpecker; Savannah sparrow; sharp-skinned hawk; short-eared owl; and wood turtle.

On July 20, 2020, GPS submitted its recommended conservation/protection strategies based on surveys and habitat assessments performed for the state-listed species. Specifically, GPS proposes a mitigation plan that is protective of the eastern pearlshell and the American brook lamphrey; potential mitigation measures for the host plant associated with the scribbed sallow moth; mitigation plans including a seasonal restriction on tree clearing to avoid the early May through mid-August nesting season for breeding birds; and a mitigation plan to protect the wood turtle. The remaining identified NDDB species were not observed at the site and/or suitable habitat was not identified; thus, no mitigation measures were recommended.

GPS met with DEEP NDDB staff on October 23, 2020 and November 20, 2020 to discuss the mitigation measures for wildlife. GPS anticipates receipt of the DEEP NDDB final determination.

With respect to federally-listed species, the northern long-eared bat (NLEB), a federally-listed Threatened Species and state-listed Endangered Species, is known to occur at the site. In the absence of a bat survey, GPS will assume that the species is present at the site as a precaution. GPS will follow the guidance provided by the U.S. Fish & Wildlife Service Final 4(d) Rule. Specifically, no tree clearing would be performed during the June and July NLEB pup season.

Air Quality

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

The solar facility would have net carbon dioxide emissions over a 30-year service life of approximately 230,105 metric tons of carbon dioxide equivalent (MT CO_2eq). This would be about 98.1 percent less than the approximately 12,036,544 MT CO_2eq for an equivalently-sized natural gas fueled facility over the same service life.

Water Quality

The project would meet DEEP water quality standards.

The northeastern portion of the project would be located within a DEEP-designated Aquifer Protection Area (APA). GPS would implement an Aquifer Protection Program (APP) to protect the aquifer. The APP would include best management practices including, but not limited to, proper water quality treatment and avoiding storage of fuels and refueling within the APA.

There are two wells located within the project site. One well serves a cluster of greenhouses for irrigation purposes. The other well is associated with a seasonal camp that is used by tobacco workers. Both the greenhouses and camp buildings would be removed during construction. GPS may utilize these wells for non-potable uses during construction.

Impacts to groundwater quality are not expected to result from construction. Blasting would not be required, and the site grading within agricultural fields would be minimal. Also, erosion and sedimentation control measures and the Spill Prevention Control and Countermeasure Plans would minimize impacts to groundwater.

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.*

A total of 16 wetlands are identified within the project's study area. The majority of the wetlands within the study area are scrub-shrub and forested wetlands with some depressional wetlands. One intermittent watercourse known as IWC-1 is located in the western limits of the subject property.

The project would minimize direct impacts to wetlands, except for Wetland 10. Wetland 10 is an isolated and poorly developed wetland that has been subject to disturbance during farming and mining operations. The project would eliminate Wetland 10.

Best management practices including erosion and sedimentation control measures per the 2002 E&S Guidelines would be implemented to avoid or minimize indirect impacts to wetlands and watercourses during construction.

Vernal Pools

Vernal pool surveys were conducted during March, April and May 2020. Six vernal pools (VP) were identified at the site: VP1 at Wetland 16; VP2 at Wetland 8; VP3 at Wetland 1; VP4 and VP4 at Wetland 6; and VP6 at Wetland 12.

No project development would extend into the 100-foot Vernal Pool Envelopes. However, project development would extend into the 100-foot to 750-foot Critical Terrestrial Habitats (CTH) of the VPs. The CTH with the most impact would be associated with VP1. The percent development area for the CTH of VP1 would increase from 35 percent (pre-construction) to 42 percent (post-construction). However, the project would be located within previously-developed areas with minimal tree clearing on the edges of the developed areas; thus, it would not impede amphibian travel passage within the upland forest and wetlands. The project would also comply with the 2015 U.S. Army Corps of Engineers New England District Vernal Pool Best Management Practices.

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 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 E&S Guidelines.

The project has been designed to comply with the *2004 Connecticut Stormwater Quality Manual* (2004 Stormwater Manual) and the 2002 E&S Guidelines.

GPS' stormwater management plan would result in no net increase in runoff to any surrounding properties.

DEEP Stormwater Division requested that areas of the project that do not have the ability to discharge off-site nonetheless be included under the project's stormwater permit. DEEP also requested that GPS provide a summary of how the project is compatible with the January 8, 2020 Appendix I, Guidance Regarding Solar Arrays, as well as the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities and that GPS justify any condition that is met by alternative or appropriate methods. GPS has submitted such information to DEEP. GPS expects to submit its stormwater permit application to DEEP after receipt of the DEEP NDDB final determination for the project.

EMF

Electric and Magnetic Fields (EMF) from the solar panels, substation and switchyard equipment and power inverters would not appreciably change the existing EMF levels outside of the site boundary, including the nearest residence located over 150 feet from the site boundary. Thus, the sources of EMF that could potentially affect field levels at the boundaries of the site include the 115-kV transmission lines and the underground 34.5-kV collector lines.

Scientific evidence indicates that exposure to electric fields, beyond levels traditionally established for safety, does not cause adverse health effects, and as safety concerns for electric fields are sufficiently addressed by adherence to the NESC, as amended, health concerns regarding EMF focus on magnetic fields (MF) rather than electric fields.

MF levels for the 115-kV transmission for Locations XS-1 and XS-2 would increase to a post-project level of 16 milligauss (mG) based on average load conditions. MF levels for the 34.5-kV collector lines for Locations XS-3 and XS-4 would reach 4.2 mG and 11 mG, respectively, based on average load conditions and directly above the underground duct banks. This is below the International Commission on Non-Ionizing Radiation Protection recommended maximum exposure of 2,000 mG and the International Committee on Electromagnetic Safety recommended maximum exposure of 9,040 mG.

The Council is satisfied that the project's EMF have been demonstrated to be well below recommended exposure standards established by the International Commission on Non-Ionizing Radiation Protection and the International Committee on Electromagnetic Safety and are not of a concern.

Cost

The project has a total estimated cost of $125M based on the mix of fixed and tracking solar panels. By decision dated November 27, 2019, in PURA Docket No. 18-05-04, PURA determined that the project is cost effective.

Hypothetically, if the project only contained fixed solar panels, the total cost would be approximately $121.5M. Thus, the Council notes that the inclusion of tracking panels increases the total cost by $3.5M or about 2.88 percent to reach the grand total of $125M. Including tracking panels also increases the capacity factor from 17 percent to 18 percent[6]. Thus, the tracking panels would result in about 5.88 percent more annual AC electrical energy output (MWh) for about 2.88 percent additional cost. The Council believes that the inclusion of tracking panels is a prudent and economic way to maximize the production of Class I renewable energy from this facility.

Conclusion

Based on the record of this proceeding, the Council finds and determines that there is a public benefit for the facility. The Council also finds and determines that the proposed project is not in conflict with the policies of the state concerning the natural environment, ecological balance, public health and safety, scenic, historic and recreational values, agriculture, forest and parks, air and water purity, and fish, aquaculture and wildlife, together with all other environmental concerns, including EMF, and balanced the interests in accordance with C.G.S §16-50p(a)(3)(B) and C.G.S §16-50p(a)(3)(C). The environmental effects that are the subject of C.G.S §16-50p(a)(3)(B) can be sufficiently mitigated and do not overcome the public benefit for the facility.

The Council will require GPS to submit a D&M Plan for the proposed project to include, but not be limited to, final site plan; an erosion and sediment control plan consistent with the 2002 E&S Guidelines *2002*; site construction sequence/phasing plan; Final Visual Mitigation Plan; Final DEEP NDDB Determination; and solar module specifications that indicate the selected modules will not contain PFAS and will not be characterized as hazardous waste.

With the conditions listed above, the Council will issue a Certificate for the construction, maintenance, and operation of a 120 MW AC solar photovoltaic electric generating facility on eight parcels generally located to the east and west of the Amtrak and Connecticut Rail Line, south of Apothecaries Hall Road and north of the South Windsor town boundary in East Windsor, Connecticut and associated electrical interconnection.

[6] This is based on 450 Watt solar panels and could vary based on the final panel selection.