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January 3, 2019

Via Electronic Mail and Hand Delivery

Melanie A. Bachman, Esq. Acting Executive Director Connecticut Siting Council 10 Franklin Square New Britain, CT 06051

RE: *Petition No. 1352* – Nutmeg Solar, LLC, petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 19.6-megawatt AC solar photovoltaic electric generating facility on approximately 162 acres comprised of 9 separate parcels located generally south of Bailey Road and east of Route 191 (Broad Brook Road), and associated electrical interconnection to Eversource Energy's Scitico Substation at 20 Bailey Road in Enfield, Connecticut

Dear Ms. Bachman:

On behalf of the petitioner, Nutmeg Solar, LLC, enclosed please find an original and 15 copies of responses to the Connecticut Siting Council's interrogatories CSC-73 through CSC-94 in connection with the above-referenced proceeding.

Please feel free to contact me or David Bogan of this office (860-541-7711) if you have any questions or require additional information.

Very truly yours,

Kathryn E. Boucher

cc: Service List

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CSC-73

Which project site alternatives, consistent with the Tri-State Clean Energy RFP (Tri-State RFP) requirements, were considered by Nutmeg Solar, LLC (Nutmeg or Petitioner)? What were Nutmeg's site selection criteria? Is the proposed site the only known available site that would meet such criteria?

### Response:

The proposed Project was selected in both DEEP's Small-Scale Clean Energy RFP and the Tri-State RFP. In the Tri-State RFP, the Project was bid as Enfield Solar. The Petitioner has consulted with legal counsel, and is unaware of a requirement in either RFP¹ to consider site alternatives. The site was originally selected and proposed by Ranger Solar and subsequently acquired by NextEra Energy Resources (NEER) in early 2017. DEEP discussed the reason for the Project's selection in its Final Determination.<sup>2</sup>

To the Petitioner's knowledge, the initial site selection performed by Ranger Solar used criteria consistent with NEER's typical approach to evaluating new solar sites. Such criteria include but are not limited to: sufficient solar energy resource, minimal or avoidable environmental constraints, flat topography, land availability (i.e., ability to lease or purchase land), and interconnection feasibility. To the Petitioner's knowledge, Ranger Solar evaluated alternative sites and the selected Project site best conformed to the selection criteria outlined above.

Nutmeg Solar meets this criteria, as follows:

- Solar resource Adequate solar resource unobstructed by any neighboring tall structures
- Environmental Adequate area to avoid and minimize impacts to wetlands, streams, rivers or other natural resources
- **Topography** Generally flat topography containing limited areas of steep slopes (i.e., greater than 15%)

<sup>&</sup>lt;sup>1</sup> The Tri-State RFP was previously available at <a href="https://www.cleanenergyrfp.com">www.cleanenergyrfp.com</a>, but the link appears to be no longer active. See also Request for Proposals, Public Act 15-107– Section 1(b) – 2 -20 MW Renewable, Passive Demand Response and Energy Storage Procurement (March 9, 2016), available at <a href="http://www.ct.gov/deep/energyfilings">https://www.ct.gov/deep/energyfilings</a>.

<sup>&</sup>lt;sup>2</sup> See Final Determination, Public Act 15-107– Section 1(b) – 2 -20 MW Renewable, Passive Demand Response and Energy Storage Procurement (June 27, 2017), available at <a href="http://www.ct.gov/deep/energyfilings">http://www.ct.gov/deep/energyfilings</a>.

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- Land availability Landowners with contiguous property (162 acres in total) willing to lease or sell their property
- Interconnection Close proximity to existing electrical infrastructure (i.e., Eversource's 115 kV Scitico Substation adjacent to Project's northern boundary)

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CSC-74 Were any other raw land sites (consistent with Tri-State RFP requirements) considered? Were any of these sites already developed? Why were such sites rejected?

#### Response:

The Petitioner has consulted with legal counsel, and is unaware of any requirement in the DEEP or Tri-State RFP³ to consider site alternatives. To the Petitioner's knowledge, Ranger Solar considered other raw land sites⁴ in the vicinity of Eversource's 115 kV Scitico Substation. Those alternative sites were not selected due to a variety of factors, including lack of land availability (i.e., landowners unwilling to lease or sell their property), insufficient contiguous acreage to support the Project, and increased distance from the Scitico Substation.

<sup>&</sup>lt;sup>3</sup> The Tri-State RFP was previously available at <a href="https://www.cleanenergyrfp.com">www.cleanenergyrfp.com</a>, but the link appears to be no longer active. See also Request for Proposals, Public Act 15-107– Section 1(b) – 2 -20 MW Renewable, Passive Demand Response and Energy Storage Procurement (March 9, 2016), available at <a href="https://www.ct.gov/deep/energyfilings">https://www.ct.gov/deep/energyfilings</a>.

<sup>&</sup>lt;sup>4</sup> Interpreted herein as sites in then-current use as vacant, agricultural, or forest land.

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CSC-75 Were any brownfield sites considered? If yes, provide the addresses of such sites and the reason(s) for rejection.

### Response:

To the Petitioner's knowledge, no brownfield sites were considered for this Project.

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#### **Public Outreach**

CSC-76

On page 17 of the Petition, Nutmeg notes that it held an open house for abutters on August 1, 2017 to provide information and answer questions or concerns about the proposed project. Abutters also attended the presentation at the Enfield Town Hall on August 9, 2017. A community open house was also held on September 26, 2017. What kinds of feedback on the proposed project did Nutmeg receive from abutters based on these meetings? And how did Nutmeg respond to such feedback?

#### Response:

Abutter feedback received at these meetings primarily focused on visual impact concerns. Additional feedback was received from abutters, Enfield residents, and other stakeholders at events held after September 26, 2017. *See* Response to CSC-77 for a list of these events. In response, the Petitioner has taken a number of steps to address visual impact concerns:

- 1) Consolidated the Project footprint by removing the array on the west side of Broad Brook Road, which was a source of concern for some residents on Taft Lane. *See* Figure 4 of Exhibit A of the Petition.
- 2) Developed a plan to provide 1,570 linear feet of vegetative screening to areas of the Project's western array with direct abutters. *See* Figure 7 of Exhibit A of the Petition for an overview of the screening locations. The screening has been designed to blend with the natural landscape by utilizing a mixture of taller evergreen trees (Tier 3), medium evergreen shrubs (Tier 2), and smaller perennial plants (Tier 1) spaced at variable distances. *See* Sheet C-044 of Exhibit G of the Petition for further details. Pursuant to feedback received from the Enfield Town Council on December 17, 2018, the Petitioner plans to enhance the vegetative screening by: i) decreasing spacing of medium shrubs (Tier 2) from 5-feet off center to 4-feet off center; and ii) increasing initial planting height of evergreen trees (Tier 3) from 4-5 feet to 5-7 feet. These changes will serve to create a denser vegetative screen that is anticipated to achieve a more complete visual buffer.
- 3) Relocation of two tobacco barns (identified as #1 and #2 on Figure 7 of Exhibit A of the Petition) to the Project's northwest boundary to function as additional visual screening.

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CSC-77 Were any public information meetings held after September 26, 2017?

#### Response:

*See* updated Outreach Log filed as a supplement to Exhibit N on December 31, 2018. The Petitioner hosted or participated in several public information meetings since September 26, 2017 including:

- Presentation to Enfield Economic Development Commission (November 29, 2017)
- Community Forum hosted by State Representative Carol Hall (February 22, 2018)
- Presentation to Enfield Town Council (June 4, 2018)
- Site Visit and Q&A Session with Enfield Town Staff and Commission Members (November 7, 2018)
  - Attendance included: Planning & Zoning, Inland Wetlands & Watercourses, Conservation Commission, Agricultural Commission, and the Director of Development Services
- Presentation to Enfield Town Council (December 17, 2018)

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### **Proposed Site**

**CSC-78** 

Referencing the response to Council interrogatory 13, the nearest off-site residential property line is about 5.5 feet from the proposed perimeter fence. Provide the distance from the proposed perimeter fence to the closest corner of the residence.

### Response:

The closest corner of the residence at 59 Broad Brook Road is 124 feet from the perimeter fence.

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### **Project Development**

CSC-79 Estimate the total cost of the proposed project. Break down the total cost into categories that the Petitioner deems appropriate.

Response:

Final Project cost estimates are not available at this time.

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CSC-80

Referencing the response to Council interrogatory number 1, Nutmeg provided a list of permits and regulatory approvals required for the proposed project. Of those listed below, indicate which permit/approval applications have already been filed and when, and indicate which applications would be filed later if the project is approved by the Council.

- a) DOT Encroachment Permit;
- b) Town of Enfield Building Permit;
- c) Town of Enfield Electrical Permit; and
- d) CT PURA Class I Certification.

#### Response:

No applications for the permits listed above have been filed. If the Project is approved by the Council, the permit applications will be submitted as follows:

- a) DOT Encroachment Permit: Prior to construction.
- b) Town of Enfield Building Permit: Prior to construction.
- c) Town of Enfield Electrical Permit: Prior to construction.
- d) CT PURA Class I Certification: After the Project begins operation. PURA requires that a facility be operational as a condition for filing for Class I certification.

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CSC-81

Based on the 400 W solar module configuration versus the originally proposed 345 to 355 W configuration, could the solar facility be potentially decreased in area or physical size?

#### Response:

The Petitioner considered several module technology options for the Project and ultimately selected 400 W modules for the current design. The 345-355 W module specification sheet originally submitted with the Petition should have been updated prior to filing to reflect the 400 W module selection. The Project's DC capacity (*see* Revised Response to CSC-14), proposed site plan layout, and energy production profile/net capacity factor (*see* Response to CSC-17) are based on the 400 W configuration.

As a result, the Project's physical size cannot be decreased without compromising valuable energy production which will serve to bolster electric grid reliability and contribute to meeting Connecticut's clean energy and carbon emission reduction goals. The Project as proposed consists of an efficient footprint that avoids and minimizes environmental impacts to the greatest extent practicable while meeting the Project's stated purpose and need.

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### Capacity

**CSC-82** 

Referencing the response to Council interrogatory 14, Nutmeg notes that, "The proposed Project has a 32.14 MW DC capacity based on current solar module power rating assumptions." Is that based on the updated 400 MW DC panels or the originally proposed 345 W to 355 W panels? How was 32.14 MW DC computed based on the 72,520 modules of not more than 400 W each? Explain.

#### Response:

*See* Revised Response to CSC-14. The revised response indicates that the DC capacity of the Project is 29.008 MW DC. The 72,520 modules were multiplied by 400 watts to get 29,008,000 watts DC or 29.008 MW DC.

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#### **Public Benefit**

CSC-83

On page 112 of the Electric Power Sector portion of the 2018 Comprehensive Energy Strategy, it notes that, "Most recent analyses indicate that there should be adequate Class I resources available to meet Connecticut's Class I Renewable Portfolio Standards (RPS) goals in 2020." However, is it correct to say that this February 8, 2018 report was based on the (then current) "20 percent by 2020" RPS requirement?

### Response:

The 2018 Comprehensive Energy Strategy was released on February 8, 2018. The Connecticut Class I RPS goals were amended as a result of Public Act 18-50, which was signed into law on May 24, 2018. The Petitioner assumes that any conclusions by DEEP were based on circumstances and requirements that existed at that time. However, the Petitioner has no firsthand knowledge as to DEEP's assumptions in rendering its report.

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#### Interconnection

CSC-84

Referencing the response to Council interrogatory 32, the Petitioner expects that the equipment and modifications at the Scitico Substation would be provided as part of a Development and Management Plan if ordered by the Council. Generally, what types of modifications would be required for the Scitico Substation? Would such modifications necessitate an expansion of the fenced substation?

#### Response:

The modifications to Scitico Substation will be performed and managed by Eversource. As a result, at the Petitioner's request, Eversource has provided the following response:

- a. The types of modifications proposed at the Scitico Substation for this project are as follows:
  - Replacement and relocation of the existing 1976 Line wood monopole structure located within Eversource ROW outside the substation fence with a new weathering steel monopole.
  - Replacement and relocation of one 115-kV galvanized steel dead-end terminal structure located within the Scitico Substation fence.
  - Relocation of the existing 1976 Line conductor and appurtenant equipment from the existing structure to the new terminal structure.
  - Installation of a new 115-kV galvanized steel cable termination structure with lightning arresters within the Scitico Substation fence for the underground cable connection.
  - Installation of one 115-kV motor-operated disconnect switch on the cable termination structure.
  - Installation of three 115-kV coupling capacitor voltage transformers on the cable termination structure.
  - Installation of the 115-kV underground cable to the Point of Interconnection with Nutmeg Solar's facilities.
- b. The proposed modifications would not expand the existing fence at the substation.

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### **Magnetic Fields**

CSC-85

Referencing pages 8 and 9 of the Petition, there would be an underground 115-kV transmission line from the collector substation to Eversource's Scitico Substation. Would it be one circuit or two? Would the Petitioner expect that the transmission line design would comply with the Connecticut Siting Council's <u>Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Lines in Connecticut?</u>

### Response:

The underground 115-kV transmission line will be constructed and managed by Eversource. As a result, at the Petitioner's request, Eversource has provided the following response:

- a. There would be one underground transmission circuit.
- b. Yes, this line would comply with the Council's <u>Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Lines in Connecticut</u> (EMF Best Management Practices). This line is proposed as underground cable and does not involve "special circumstances" that would warrant any additional mitigation measures as referenced in the Council's EMF Best Management Practices.

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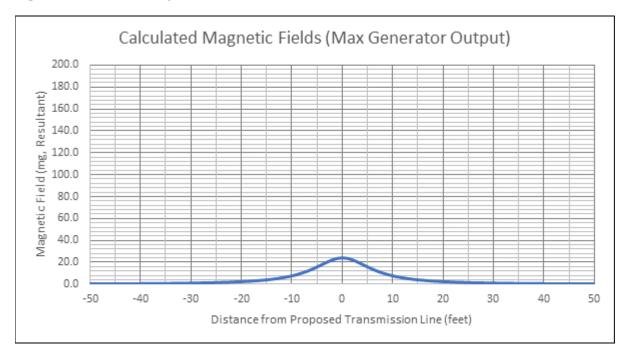
CSC-86

Provide a projected magnetic field profile in milliGauss (mG) of a cross-section of the proposed 115-kV underground line based on peak load conditions. Identify the highest projected magnetic field in that profile in mG.

### Response:

The underground 115-kV transmission line will be constructed and managed by Eversource. As a result, at the Petitioner's request, Eversource has provided the following response:

The maximum anticipated field was calculated at 24.4 mG. This was assuming that the cables were carrying 100 amperes per phase, which is equivalent to 20 MVA at 115-kV. The cables were assumed to be at a depth of 42 inches below grade level for this calculation.



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CSC-87

Would the proposed modifications to Scitico Substation be expected to materially affect magnetic field levels at the boundaries of property the Scitico Substation is located on?

#### Response:

The proposed modifications to the Scitico Substation will be constructed and managed by Eversource. As a result, at the Petitioner's request, Eversource has provided the following response:

No. The modifications that would most contribute to changes in the magnetic field level would be from modifications to or the addition of transmission lines, rather than substation equipment. However, the proposed structure relocations (within and outside the substation fence line) and installation of approximately 500 feet of an underground 115-kV line to connect into the new Nutmeg Solar substation are not anticipated to materially affect the magnetic field levels at the boundaries of the (combined) subject property.

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**CSC-88** 

Would the proposed on-site collector substation or inverter/transformer pairs be expected to materially affect magnetic field levels beyond the boundaries of the (combined) subject property?

### Response:

No. The proposed on-site collector substation and inverter/transformer pairs are not expected to materially affect magnetic field levels beyond the boundaries of the (combined) subject property.

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### **Environmental**

CSC-89 Would the change to 400 Watt panels materially affect the "Life Cycle Greenhouse Gas Assessment" under Tab M of the Petition? If yes, please provide an update.

### Response:

No. The Life Cycle Greenhouse Gas Assessment was conducted using an energy production profile consistent with the Project's 400 W panel configuration, therefore, no update is required.

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CSC-90

Is the EPA Greenhouse Gas Equivalencies calculations provided as response to Council interrogatory number 45 based on the current 400 Watt panel configuration? If no, please provide updated calculation sheets if necessary.

### Response:

See Revised Exhibit CSC-45, which is based on the current 400 watt panel configuration. The Project will reduce greenhouse gas emissions by approximately 1,096,002 metric tons of carbon dioxide equivalent (CO<sub>2</sub>e) over the first 20 years of its operations as compared to providing an equivalent amount of new electricity generation from a conventional, fossil-fuel source (see Exhibit M of the Petition). This reduction is equivalent to the amount of carbon dioxide emitted from the consumption of 2,537,476 barrels of oil.

Any references to greenhouse gas emissions reductions in the Petition should reflect the calculations in Revised Exhibit CSC-45.

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CSC-91 Provide the post-construction percent developed Critical Terrestrial Habitat area.

#### Response:

The Critical Terrestrial Habitat<sup>5</sup> (CTH) associated with the identified vernal pool is currently comprised of approximately 29% agricultural field and 71% forested land, totaling 40 acres. Following construction, the Project will occupy 84% of the Critical Terrestrial Habitat (this includes all of the existing agricultural fields within the CTH). Approximately 1.4 acres, or about 4% of the CTH, will be developed as a site road and the remainder (approximately 32 acres) will be maintained as meadow habitat beneath and around the solar array. Of the 15% of the CTH remaining forested, 10% is part of a 15-acre directional buffer that will be left intact to connect the vernal pool to a forested wetland that occurs off site to the south of the Project.

Defined in Calhoun and Klemens, <u>Best development practices: Conserving pool-breeding amphibians in residential and commercial developments in the northeastern United States</u> as the 750-foot Critical Terrestrial Habitat. This excludes the 100-foot vernal pool envelope.

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CSC-92

Referencing page 2 of the Connecticut Department of Energy and Environmental Protection (DEEP) comments dated November 28, 2018, does Nutmeg have any proposed best management practices to maintain the proposed berms? If yes, please summarize such best management practices.

### Response:

The Petitioner proposes to implement the Best Management Practices for stormwater basins and berms outlined in the Connecticut Stormwater Quality Manual (the Manual), which include regular inspections and maintenance activities. Per the Manual, the following are components of the stormwater basins, including the berms, which would require routine inspection and maintenance:

#### **Embankment (Berm) and Emergency Spillway**

- Vegetation and ground cover adequate
- Embankment erosion
- Animal burrows
- Unauthorized planting
- Cracking, bulging, or sliding of embankment/dam
- Seeps/leaks on downstream face
- Slope protection or riprap failure
- Vertical/horizontal alignment of top of dam "As-Built"
- Emergency spillway clear of obstructions and debris

#### **Basin Interior Areas**

- Vegetation coverage adequate
- Undesirable vegetative growth
- Undesirable woody vegetation
- Standing water or wet spots
- Sediment and/or trash accumulation

#### **Condition of Outfalls**

- Riprap failures
- Slope erosion

Inspections of basins are required every 6 months. If any of the deficiencies listed above are noted during inspections, they will be addressed by the Petitioner.

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CSC-93

Under Tab O of the Petition, DEEP notes that it concurs with the best management practices included in the July 27, 2018 Herpetofauna Avoidance and Mitigation Plan (July 2018 HAMP) that will be implemented to protect state listed amphibians and reptiles from project impacts. Under Tab D of the Petition, Nutmeg has included its "Herpetofauna Avoidance and Mitigation Plan" dated October 2, 2018 (October 2018 HAMP). Is the October 2018 HAMP the same or substantially the same as the July 2018 HAMP that DEEP refers to? If no, explain how and why the plan changed or was updated.

### Response:

Yes. The Petitioner has proposed no material changes to the avoidance and mitigation measures between the July 27, 2018 and October 2, 2018 versions of the Nutmeg Solar Herpetofauna Avoidance and Mitigation Plan. There are some small differences between the July 27, 2018 and October 2, 2018 versions of the plan; these differences are related to formatting changes and updates to the two figures included in Appendix A.

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### **Decommissioning Plan**

CSC-94

Page 4 of DEEP's comments dated November 28, 2018 note that, "[T]he decommissioning plan does not specifically state the land will be returned to a state capable of supporting agricultural use." Please respond to this DEEP comment. What are Nutmeg's plans for the subject properties at the end of the useful life of the facility?

#### Response:

At the end of the Project's useful life, the equipment removal and site restoration activities identified in the Decommissioning Plan (*see* Exhibit L of the Petition) will return the Project site land to a state capable of supporting agricultural use. In addition, the Farmland Soil Mitigation Plan (*see* Exhibit E of the Petition) provides that upon site decommissioning, disturbed farmland soils will be re-tested to ensure soil health is consistent with baseline conditions established prior to construction.

#### **CERTIFICATION**

I hereby certify that on January 3, 2019, the foregoing was delivered by electronic mail and regular mail, postage prepaid, in accordance with § 16-50j-12 of the Regulations of Connecticut State Agencies, to all parties and intervenors of record, as follows:

Maria S. Eldsen, Esq. Acting Town Attorney Town of Enfield 820 Enfield Street Enfield, CT 06082 townattorney@enfield.org

David W. Bogan

Commissioner of the Superior Court