STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

CANDLEWOOD SOLAR, LLC PETITION FOR DECLARATORY RULING THAT NO CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED IS REQUIRED FOR A 20 MEGAWATT AC SOLAR PHOTOVOLTAIC ELECTRIC GENERATING FACILITY IN NEW MILFORD CONNECTICUT	:	PETITION NO. 1312 September 19, 2017

PREFILED WRITTEN TESTIMONY OF

ROBERT BUKOWSKI AND PAMELA M. CHAN

AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE, INC.

And

BRIAN O. BUTLER, OXBOW ASSOCIATES, INC.

A. INTRODUCTION

Q. Please state your names, titles, and business addresses.

A. Robert Bukowski, Principal Engineer
Amec Foster Wheeler Environment & Infrastructure, Inc.
271 Mill Road, 3rd Floor, Chelmsford, MA 01824

Pamela M. Chan, Senior Project Manager
Amec Foster Wheeler Environment & Infrastructure, Inc.
271 Mill Road, 3rd Floor, Chelmsford, MA 01824

Brian O. Butler, President
Oxbow Associates, Inc.
629 Massachusetts Avenue, Suite 201, Boxborough, MA 01719

Q. Please describe your current responsibilities and professional experience.

A. **Robert Bukowski**: I currently manage the Chelmsford, MA Engineering Department as well as manage many civil and environmental engineering projects. I have approximately 24 years of experience in the civil and environmental engineering field including site development design and stormwater management design.

Pamela Chan: I am a Senior Project Manager in Amec Foster Wheeler's Environmental Planning, Permitting and Compliance group specializing in siting and licensing activities for large-scale energy and infrastructure facilities. I have over 30 years of experience in the commercial energy industry, including over 7 years of direct experience in the regulatory oversight of energy facility siting while employed at the Massachusetts Energy Facilities Siting Board.

Brian Butler: I am a founder and Partner of Oxbow Associates, Inc. and serve as President of the company. I have 25 years of ecological and environmental consulting experience conducting field studies of rare and endangered species and supporting environmental impact assessments for development projects in New England. I have authored numerous peer reviewed publications as well as articles and presentations on wetlands and wildlife subject matter.

Q. What has been your involvement in this Project?

A. **Robert Bukowski**: I am the Project Manager for Amec Foster Wheeler's portion of this project which includes preparation of the Environmental Assessment, including the site civil design.

Pamela Chan: I serve as the environmental task manager, overseeing and coordinating the environmental analyses and studies conducted for the Project site and potential impacts, including preparation of portions of the Environmental Assessment and related documents.

Brian Butler: My firm has been engaged to assist with the assessment of potential impacts to state-listed species, including conducting field survey activities for the Golden-winged warbler and slimy salamander, assisting with habitat assessment and development of protection plans. I am leading this effort and, along with a colleague, conducted the field surveys completed to date. I am also responsible for the preparation of documentation for submittal to the CT DEEP NDDB regarding the survey findings.

Q. Regarding the response to Council's interrogatories to the Project, identify the specific responses which Amec Foster Wheeler was primarily responsible for preparing.

A. Amec Foster Wheeler was primarily responsible for developing the responses to Council interrogatories numbers 4, 7, 11 - 16, 49, 50, 53 – 58, 60, 62 – 66, and 68 – 71.

Q. Do you have any corrections, modifications, or additions to those interrogatory responses that you wish to bring to the Council's attention?

A. Yes, we are providing an update on the status of the cultural and listed species activities discussed in the responses to Council Interrogatories Numbers 15 and 49. Please see below for these updates.

Q. And do you adopt the responses to those interrogatories numbered 4, 7, 11 - 16, 49, 50, 53 – 58, 60, 62 – 66, and 68 – 71 as your sworn testimony in this proceeding?

A. Yes.

Q. What is the purpose of your testimony?

A. The purpose of our testimony is to address the existing environmental conditions and potential project effects to environmental and community resources as detailed in the Environmental Assessment submitted with the Petition for Declaratory Ruling. Specifically, we will address the following topics:

1. Air Quality;
2. Soils, Geology and Topography;
3. Aquatic Resources;

4. Vegetation and Wildlife, including listed species, with support from our subcontractor Brian Butler of Oxbow Associates, Inc.;
5. Water Supply Areas and Water Quality;
6. Stormwater Management and Erosion and Sediment Control;
7. Land Use;
8. Cultural Resources;
9. Visual Impacts, and
10. Scenic and Recreational Areas and Community Facilities.

B. PROJECT SPECIFIC TESTIMONY

1. AIR QUALITY

Q. Please summarize the potential air quality impacts from the proposed Project.

A. As detailed in Section 3.3 of the EA, the Facility will not produce air emissions of regulated air pollutants or greenhouse gases during operation. No air permit is required for construction or operation of the Facility. Temporary construction related emissions will be controlled by implementing appropriate measures (e.g., dust control, limits on idling of equipment, proper maintenance of vehicles and equipment, etc.). Any potential air quality effects resulting from construction activities for the Project would be localized, temporary and de-minimis. As detailed in the response to Council Interrogatory Number 48, carbon emissions avoided through generation of electricity by the proposed solar facility will offset the carbon sequestration loss from tree clearing for the Project in less than two days per year of operation.

Q. Will the Project meet air quality standards of the DEEP?

A. Yes.

2. SOILS, GEOLOGY AND TOPOGRAPHY

Q. Please summarize the potential impacts to site soils, geology and topography from the construction and operation of the Project.

A. Construction of the proposed solar array would result in minimal alterations to soils, geology and topography at the Site. As detailed in the response to Council Interrogatory Number 60, limited grading within the proposed footprint of the array is proposed where slopes exceed the maximum allowable slope of the racking equipment. Grading will also be required to implement construction-phase best management practices (BMPs) for erosion and sedimentation control, as described in the Erosion and Sediment Control Plan (EA Attachment D, Appendix D), which will be converted to permanent stormwater quality BMPs to maintain water quality following construction. Please also refer to the response to Council Interrogatory #64.

Overall, the site topography will remain largely unchanged. No impacts to site geology are proposed. Should ledge be encountered when installing the vertical posts for the solar panels, the rock will be pre-drilled, and no chipping or blasting of ledge or rock is proposed.

See below for additional information on stormwater management and erosion and sediment control plans.

Q. Will the construction of the Project result in <u>any</u> impacts to NRCS mapped, state-designated Prime Farmland and/or Important Agricultural Soils?

A. No.

3. AQUATIC RESOURCES

Q. Will the construction of the solar array result in any direct impacts to wetlands or waterways?

A. No. The solar array, associated appurtenances, access road and tree clearing area has been designed to avoid any direct impacts to wetlands or waterways. As detailed in Section 3.5 of the EA, the limits of tree clearing would occur to within 15 feet of

Wetlands I and III associated with the solar array, and the fence would be located 50 feet from Wetland III at its closest point and 65 feet from Wetland I at its closest point. The closest the Facility will be from wetlands is 67 feet from Wetland III.

Q. Will the Project adhere to the recommended measures as prescribed by Calhoun and Klemens (2002) for the protection of the vernal pool on the site?

A. Yes. As detailed in Section 3.5 of the EA, and the response to Council Interrogatory Number 60, recommended measures prescribed by Calhoun and Klemens (2002) will be followed to protect the vernal pool and associated critical terrestrial habitat (CTH). Specifically, no impacts will occur within the vernal poos depression or 100-foot envelope. In addition, any Project work areas and impacts will be limited to less than 25% of the entire vernal CTH.

Q. Will the construction of the electric interconnect result in any loss of wetlands?

A. No. The construction of the electric interconnect will result in the conversion of approximately 2,322 square feet of wetland areas from forested wetlands to emergent and/or shrub wetlands, but no loss of wetland area is proposed. Specifically, as detailed in Section 3.5 of the EA, trees will be cleared from small portions of Wetlands VI, VII, VIII and IX to provide vertical clearance for the overhead utility lines. As detailed in the response to Council Interrogatory Number 51, stumps will be left in place and no soil disturbance in wetlands is planned to accomplish the tree cutting. No direct impacts to wetlands or watercourses would be required to install the utility poles and guy wires associated with the electric interconnection.

Q. Will the Project meet the conditions for coverage under the U.S. Army Corps of Engineers General Permits for Connecticut?

A. Yes.

4. VEGETATION AND WILDLIFE

Q. Please summarize the potential impacts to vegetation and wildlife from the construction and operation of the Project.

A. As detailed in the EA, the fenced solar array, access road and associated cleared areas will be located on approximately 73 acres of an approximately 163.5 acre parcel. In addition, the electric interconnect will traverse two adjacent parcels. Approximately 90.5 acres of the 163.5 acre facility parcel will not be utilized for the Facility or related appurtenances and will remain undisturbed. This area includes the northernmost portion of the parcel as well as most of the eastern side of the parcel, and the horse pasture and vegetated buffer adjacent to Candlewood Mountain Road (see EA Figure 2). Existing vegetation and wildlife habitat, including all delineated aquatic resources in these areas will be unaltered by construction and operation of the Project. In addition to the areas to be cleared for the solar array, approximately 4.3 acres will be cleared of trees along the interconnect route. Remaining portions of the largely forested parcels traversed by the interconnect will be unaltered.

As detailed in Section 3.6 of the EA, construction of the solar array will alter the upland forested areas, converting them to upland herbaceous areas and thus altering their habitat type. Existing herbaceous cover areas within the solar array area will remain herbaceous following construction. As noted, wetland habitats will not be directly impacted by construction of the solar array. Along the interconnect route, tree clearing will be required for clearance for the overhead electric lines, but remaining understory vegetation will be allowed to remain in both upland and wetland areas.

Construction activities will disturb local wildlife, including wildlife proximate to, but beyond the limits of work. Following construction, habitat changes will alter the use of the site by local wildlife. The increased herbaceous / shrub habitats will be of less value to wildlife species that prefer forested habitats, but will provide increased habitat for those species preferring herbaceous, scrub and forest edge habitats. With the exception of species of concern identified by NDDB, these alterations are not expected to adversely impact overall wildlife populations within the Project area. Appropriate protection measures will be agreed to with NDDB to protect listed turtle and salamander species

which may be present. Therefore, construction and operation of the Project will not result in substantial adverse effects to vegetation or wildlife.

Q. Please provide an update on the status of surveys for state listed species and/or associated habitat(s) at the site, as requested in the NDDB letter of July 10, 2017.

A. As noted in the response to Council Interrogatory Number 49, Oxbow Associates, Inc., was engaged to conduct surveys for the slimy salamander and its habitat, as well as perform a habitat assessment for the Golden-winged warbler, (a species survey for the Golden-winged warbler was not conducted as its breeding season is from May through July, prior to the field work being conducted). The survey field work was conducted during the week of September 11. With respect to the Golden-winged warbler, the NDDB letter of July 10 referenced the field habitats on the site as potential breeding habitat. Specifically, three horse field/hay pasture areas are located within the southern portion of the proposed solar array footprint. Field review of these areas has determined that they do not represent suitable breeding habitat for this species, and, in fact, these areas wholly lack the particular ephemeral seral stage, commonly referred to as scrub-shrub or old-field habitat that is required for successful breeding by this species. Therefore, we conclude there is virtually no probability of breeding by Golden-winged warblers on the Project Site. A report detailing these findings will be prepared and submitted to the NDDB for review. A copy of the report will be submitted to the Council when complete.

With respect to the slimy salamander, the field survey identified areas of potential habitat within the overall parcel proposed for the solar array. Specifically, areas with mature second growth forest on steep rocky hillsides with exfoliating bedrock and moist soils are present in portions of the site. Notably, these areas are not present throughout the majority of the southwestern, upland portion of the parcel where development is proposed. The survey documented several relatively common herpetozoan species, including two salamanders and six anurans (frogs and toads); however, no slimy salamanders were documented in the examination of more than 400 suitable cover objects in diverse portions of the parcel. While no slimy salamanders were documented, we

cannot conclusively determine whether or not individuals of the species may occur within the larger Project parcels. As such, we are proceeding to develop further information regarding the locations of potential habitat for this species relative to proposed work locations, as well as protection plans for construction, and will submit this information, along with details of the survey activities, to NDDB for review and further consideration. A copy of the NDDB submittal will be submitted to the Council when complete. CS will work with NDDB to ensure potential impacts to this species are avoided or adequately mitigated for.

5. WATER SUPPLY AREAS AND WATER QUALITY

Q. Will the construction or operation of the Project have the potential to adversely impact public water supplies?

A. No. The Project Site is not located within an Aquifer Protection Area. Further, the Project will not require any water withdrawals for operation and will not result in any wastewater or sanitary water discharges. Any water supplies needed during construction (dust control, etc.) will be supplied to the site via truck.

Q. Will the construction or operation of the Project have the potential to adversely impact groundwater quality underlying the site?

A. No. As detailed in Section 3.7 of the EA, appropriate measures will be implemented during construction to prevent accidental releases of fuels from vehicles and equipment. In addition, no fuels or hazardous materials will be stored at the Project Area during operation. As noted, the Project will not generate any wastewaters, including sanitary wastewaters during operation. Therefore, construction and operation of the Project will not result in any adverse impacts to groundwater quality underlying the site.

Q. Will the construction or operation of the Project have the potential to adversely impact surface water quality of streams or Rivers in the Project vicinity or of Candlewood Lake?

A. No. As detailed in EA Attachment D and further discussed below, appropriate erosion and sediment controls and stormwater management measures will be implemented during construction and operation to protect water quality of wetlands and watercourses on and near the Site.

6. STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL

Q. Please provide an update on the finalization of the stormwater management and erosion and sediment control plans for the Project.

A. The site and stormwater design have been advanced to provide additional detail for contractors that may be performing the site work. The overall stormwater management approach remains as initially presented, however, additional detail on grading, BMP sizing, site stabilization, and compliance with Connecticut stormwater guidelines has been included. An updated Stormwater Management Plan, Soil Erosion & Sediment Control Plan, and site plans will be submitted to the Siting Council following review with CT DEEP.

Q. Please summarize the proposed plans for stormwater management and erosion and sediment control during construction and operation, as updated.

A. During construction, stormwater runoff will be managed at an overall landscape scale through phasing of construction activities. No more than 5 acres of the proposed array (draining to a common discharge point) will be disturbed at any one time. Runoff will be directed through stabilized conveyances to sediment traps. Downgradient areas along the limit of work will be lined with perimeter controls (i.e., berms, silt logs, or compost socks).

Stormwater management during operation will be managed through conveyance swales, water quality swales, sand filters, and level spreaders. This combination of best management practices has been developed to meet the requirements of the 2004 Connecticut Stormwater Quality Manual.

Q. Will construction of the Project comply with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control?

A. Yes. The Erosion and Sediment Control Plan provides the rationale and supporting calculations for selection and design of the best management practices to be employed during construction. Best management practices were developed using the criteria specified in the guidelines.

Q. Do the proposed stormwater management practices meet the requirements of the 2004 Connecticut Stormwater Quality Manual?

A. Yes. The Stormwater Management Plan provides the rationale and supporting calculations for selection and design of the permanent best management practices to be constructed for this project. Permanent best management practices were developed using the criteria specified in the guidelines.

Q. Will the Project seek coverage under the Connecticut DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities?

A. Yes. As the project will disturb greater than one acre of land, coverage under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities will be required. As such, a Stormwater Pollution Control Plan will be prepared in compliance with the General Permit.

7. LAND USE

Q. Please summarize the changes to land use on the Project Site, including along the interconnect corridor, which will result from construction of the Project.

A. The Project Site includes portions of three (3) adjacent parcels. The privately owned Facility Parcel has a total area of 163.5 acres (Parcel 26/67.1) which currently consists primarily of undeveloped, forested land, with four cleared areas (totaling approximately 21 acres) utilized as hay field/horse pasture (see EA Figure 2). Following construction of the Facility, land use on approximately 73 acres out of the 163.5 acre overall parcel

including approximately 16 acres of hay field/horse pasture, will be altered to solar power generation. The remaining 90.5 acres of the Facility Parcel (including an approximately five (5) acre horse pasture located adjacent to Candlewood Mountain road) will be unaltered and will remain undeveloped forest and horse pasture (see EA Figure 12). Existing forested areas between the site of the solar array and adjacent land uses will remain unaltered. An existing access roadway into the site will be utilized for access to the Facility.

Land use on the two additional parcels crossed by the interconnect corridor (Parcels 34/31.1 and 9/6), both of which are owned by FirstLight Power, will be unchanged. Both these parcels currently consist primarily of undeveloped land crossed by utility facilities and access roads. The interconnect will follow existing utility/access roadway alignments for the majority of its route.

8. CULTURAL RESOURCES

Q. Please provide an update on the status of the Phase 1A Reconnaissance Survey and report for the Project Site.

A. As noted in the response to Council Interrogatory Number 14, Heritage Consultants, LLC (Heritage) was retained to complete the Phase IA Reconnaissance Survey and report for the Project Site. That work has been completed and a copy of the Phase IA report is attached as an Exhibit . The Report concludes that portions of the Project Site exhibit moderate to high sensitivity for cultural resources and the report recommends that Phase IB cultural survey using subsurface testing be conducted in these areas. A copy of the report is being submitted to the SHPO and CS has directed Heritage to proceed with the Phase IB work. Once complete, a Phase IB report will be prepared and submitted to the SHPO. CS will work with the SHPO to ensure that any potential adverse impacts to cultural resources are avoided or appropriately mitigated for. A copy of the Phase IB report and future SHPO correspondence will be submitted to the Council.

9. VISUAL IMPACTS

Q. Please summarize the potential for the Project elements to be visible from surrounding areas.

A. As detailed in Section 3.10 of the EA and the response to Council Interrogatory Number 13, the Project will be screened from view by existing forested areas to remain, and terrain from nearly all surrounding locations. This is due to the low profile of the solar panels and associated equipment, the presence of mature forested buffers surrounding the facility which will remain, and the elevation of surrounding visual receptor locations relative to the solar array. No views of the solar array will be possible from locations adjacent to the Facility parcel or along Candlewood Mountain Road. As depicted in the before and after photos from Viewpoint numbers 1 and 5 included in the EA, limited views of the solar array on the western facing side of Candlewood Mountain are anticipated to be possible from more distant locations to the west. As the Facility will be small relative to the overall viewshed from these locations and partially screened by intervening vegetation, the impact of these limited views will be minimal.

Views of the solar array from locations to the north, east and south of the solar array will be precluded by intervening topography and existing forest.

10. SCENIC AND RECREATIONAL AREAS AND COMMUNITY FACILITIES

Q. Will the Project result in any change to public access to scenic or recreational areas or community facilities, or place any additional demands on the use of these resources?

A. No. The Project will not impact public access to scenic or recreational areas or community facilities. The Project will be unstaffed once constructed and will not result in any increased demands on scenic or recreational areas or community facilities in the Project area.

Q. Will the Project result in visual, noise, traffic, air quality, or any other adverse impacts to scenic or recreational areas or community facilities?

A. No. The Project will not be visible from surrounding areas with the exception of limited, distant views from isolated locations to the west. Views from the Housatonic Range Trail / Blue Trail System, Candlewood Lake and associated public parks (Lynn Deming, Millstone Ridge Beach) will be precluded by intervening vegetation and terrain. As detailed in the CS response to Council Interrogatory Number 39, when operating, the Project will meet the DEEP noise control standards for Class A receptors. Additionally, when operating the Project will not generate air emissions and will not generate daily traffic on area roadways.

Q. Does this conclude your prefiled written testimony?

A. Yes.

CERTIFICATION

I hereby certify that on September 19, 2017, 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:

John D. Tower, Esq.
New Milford Town Attorney
Cramer & Anderson LLP
51 Main Street New Milford, CT 06776
Phone: (860) 355-2631
Fax: (860) 355-9460
jtower@crameranderson.com

Kirsten S. P. Rigney
Bureau of Energy Technology Policy
Department of Energy and Environmental Protection
10 Franklin Square New Britain, CT 06051
(860) 827-2984 (phone)
(860) 827-2806 (fax)
Kirsten.Rigney@ct.gov

Jason Bowsza
Connecticut Department of Agriculture
450 Columbus Blvd Hartford, CT 06103
(860) 713-2526
Jason.Bowsza@ct.gov

Keith R. Ainsworth, Esq.
Law Offices of Keith R. Ainsworth, Esq., LLC
51 Elm Street, Suite 201
New Haven, CT 06510-2049
(203) 435-2014
(203) 865-1021 – fax
keithrainsworth@live.com

Paul R. Michaud
Commissioner of the Superior Court