

STATE OF VERMONT  
PUBLIC SERVICE BOARD

Docket No. \_\_\_\_\_

Petition of Vermont Air National Guard )  
(VTANG) for a Certificate of Public Good )  
authorizing the construction of a 2.1MW )  
solar array at the Vermont Air National Guard )  
Base located at KBTV in South Burlington )  
Vermont. )

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DIRECT TESTIMONY OF WITNESS  
Adam G. Wright

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June 1, 2011

1 **DIRECT TESTIMONY OF ADAM G. WRIGHT**

2 **I. INTRODUCTION**

3 **Q. Please state your name, occupation and business address:**

4 A. My name is Adam G. Wright and I am employed by the Vermont Air National  
5 Guard (VTANG) as the Base Environmental Manager. My business address is  
6 30 Falcon Street, South Burlington, Vermont, 05403.

7 **Q. Please describe your background and experience.**

8 A. I have been the Base Environmental Manager at the VTANG since December  
9 of 2005. From 2001 through 2005, I was the State Environmental Manager at  
10 VTANG (a subordinate position to my current job). Prior to that, I worked for  
11 nine years at the Massachusetts Department of Environmental Protection as an  
12 environmental regulator. I graduated from the University of Massachusetts in  
13 1986 with a bachelor's degree in Environmental Science.

14 **Q. Have you previously testified before the Public Service Board?**

15 A. No.

16 **Q. What is the purpose of your testimony in this case?**

17 A. My testimony will discuss the project's relationship to the orderly development  
18 of the region, and its possible effects on aesthetics, historic sites, air and water  
19 purity, the natural environment, and public health and safety.

20 **Q. Please summarize your testimony.**

21 A. My testimony describes the potential land use and environmental impacts of  
22 the project, and how they have been addressed through project design and  
23 regulatory review. In addition to the Section 248 criteria specifically  
24 addressed herein, the VTANG, a federal facility, must also comply with the

1 National Environmental Policy Act (NEPA). Some of this testimony is drawn  
2 from the environmental analysis conducted for this project under NEPA. (See  
3 Exhibit ANG 10 – CATEX and CATEX Support documents, AF Form 813)

4 My testimony concludes that this project will:

- 5 - Not unduly interfere with the orderly development of the region.
- 6 - Not have an undue adverse effect on aesthetics, historic sites, air and water  
7 purity, the natural environment and the public health and safety, with due  
8 consideration having been given to the criteria specified in 10 V.S.A. §  
9 1424a(d) and § 6086(a)(1) through (8) and (9)(K) as required under 30  
10 V.S.A § 248 (b)(5) and the Public Service Board’s Section 8007(b) Order  
11 regarding Simplified Procedures for Renewable Energy Plants with a  
12 Capacity Between 150 kW and 2.2 MW, dated 8/31/2010.
- 13 - Not involve a facility affecting or located on any segment of the waters of  
14 the state that has been designated as outstanding resource waters by the  
15 Water Resources Board consistent with the policy set forth in 30 V.S.A. §  
16 248(b)(8)

17 **II. PROJECT IMPACTS ON THE ORDERLY DEVELOPMENT OF THE**  
18 **REGION**

19 **Q. Will construction of the proposed facility interfere with the orderly**  
20 **development of the region.**

21 A. No. The VTANG proposes to install this solar photovoltaic project on

1           federally controlled property at the Burlington International Airport in South  
2           Burlington, Vermont. The project will provide renewable energy to the  
3           distribution grid, and will serve as both a demonstration project for the use of  
4           solar technology in Vermont and a renewable energy educational tool.

3           As a federal facility under the jurisdiction of the United States Department of  
4           Defense, the VTANG base must comply with the following statutory and  
5           policy mandates regarding energy use:

- 6           - The Energy Policy Act (EPACT) of 2005
- 7           - Executive Orders 13423 and 13514
- 8           - The Energy Independence and Security Act (EISA) of 2007
- 9           - Department of Defense Instruction 4170.11, dated 11 Dec 2009
- 10          - Air Force Policy Directive (AFPD) 90-17 and Air Force Instruction (AFI)  
11            90-  
12          - 1701, both dated 16 July 2009

13           The installation of this solar array to generate renewable power helps VTANG  
14           meet the renewable energy usage, greenhouse gas reduction, and sustainability  
15           goals and requirements of these statutory and policy mandates.

16           The project location is within the boundary of the Burlington International  
17           Airport and is incompatible with any residential or commercial development  
18           being in the path of cross wind runway 1/19 approach zone. Therefore a  
19           ground mounted solar array is a productive use of otherwise vacant

1 undeveloped airfield space.

2 **III. PROJECT IMPACTS ON AESTHETICS, HISTORICAL SITES, AIR**  
3 **AND WATER PURITY, NATURAL ENVIRONMENT AND PUBLIC**  
4 **HEALTH AND SAFETY**

5 **Q . Will construction have any undue adverse impacts on aesthetics, historic**  
6 **sites, air and water purity, natural environment, and public health and**  
7 **safety? More specifically, please address the criteria listed in Title 10, §**  
8 **6086(a)(1) through (8) and (9)(K) as numbered sequentially below.**

9 A. The project will not have an undue adverse impact on any of these resources.  
10 The solar arrays will be located on previously developed land on VTANG  
11 property, and will be most visible to passengers flying into and out of the  
12 Burlington International Airport, as well as VTANG and airport employees.  
13 Air and water purity will not be adversely impacted. There are no streams,  
14 shorelands or wetlands on the solar array sites. No known endangered species  
15 habitat or necessary wildlife habitat will be impacted by the project. There  
16 will be no undue adverse impacts to historic resources at the project site.  
17 These items will be addressed in more detail below.

18 **Q. (a)(1). Will the project result in undue water or air pollution?**

19 A. While construction work will cause a temporary increase in air emissions from  
20 heavy equipment, this is not anticipated to significantly affect air quality in the  
21 region. Airborne dust generation during construction will be minimized by

1 wetting the work area as needed. An Air Pollution Control Permit from the  
2 ANR is not required for this project. Operation of the completed solar array  
3 will likely result in a net positive effect on air quality, due to reduced  
4 greenhouse gas and criteria pollutant emissions from fossil fuel power  
5 generation facilities currently providing power to the regional grid. Noise  
6 generation during construction will be limited to heavy equipment operation on  
7 the VTANG property and truck traffic on National Guard Avenue.  
8 Construction work on site is routinely conducted Monday – Friday from 7:00  
9 a.m. until 5:00 p.m., and will not significantly add to the noise level of the  
10 airport. The operating solar arrays and electrical infrastructure will be  
11 inaudible to nearby residents.

12 **Q. (A) Headwaters. Is the project located on lands located in headwaters of**  
13 **watersheds; drainage area of 20 square miles or less; above 1,500 foot**  
14 **elevation; watersheds of public water supplies; or areas supplying**  
15 **significant recharge waters to aquifers?**

16 A . No, the project is not located in a headwaters area.

17 **Q . (B) Waste Disposal. Will this project involve disposal of wastes?**

18 A. All top soil and subsurface soil removed to install the solar array will be reused  
19 on site for the project or taken by the contractor for reuse at other construction  
20 sites. Any trees and stumps to be removed will be chipped and brought to the  
21 McNeil wood fired generating facility in Burlington Vermont. This project

1 does not involve the injection of wastes or toxic substances into ground waters.  
2 Any chemicals used during construction of the solar arrays will be managed  
3 and all waste disposed properly. Operation of the solar array will not typically  
4 require the use of hazardous materials, nor generate hazardous waste. The  
5 VTANG spill response plan and/or hazardous waste management plan will be  
6 followed in the event of spills and/or hazardous waste generation.  
7 Construction and operation of the solar arrays will not have a significant  
8 impact on water quality in the area. No wetlands are impacted as a result of the  
9 project. An EPA Construction General Permit for stormwater has been  
10 obtained, and was assigned EPA Tracking Number VTR10A95F. In  
11 accordance with this permit, the VTANG prepared a stormwater pollution  
12 prevention plan (SWPPP) for the construction project, and inspections,  
13 training, and best management practices have been implemented. (Federal  
14 facilities in Vermont are required to obtain the Federal EPA Construction  
15 General Permit, instead of the equivalent State of Vermont permit as of this  
16 date.)  
17 A State of Vermont Stormwater Operation permit (#3105-9015) has been  
18 obtained to cover stormwater management at the completed solar array site. In  
19 accordance with this state permit, all stormwater from the completed solar  
20 array will infiltrate to the subsurface, and will not be discharged directly to any  
21 surface water body. Additionally, a State of Vermont Wastewater System and

1 Potable Water Supply Permit (#WW-4-1873-1) has been obtained for the large  
2 solar array site, due to the need to relocate a portion of the base's main sanitary  
3 sewer force main as part of the project. This force main carries sewage from  
4 the base's central lift station to the City of South Burlington's Airport Parkway  
5 Wastewater Treatment Facility. There is no on-site septic system associated  
6 with the solar array.

7 **Q. (D) Floodways. Is the project within a floodway, and if so, is it designed**  
8 **so as not to restrict or divert the flow of flood waters?**

9 A. The project is not located in a floodway.

10 **Q. (E) Streams. Is the project located on or adjacent to the banks of a**  
11 **stream, and if so, will it maintain the natural condition of the stream?**

12 A. There are no streams on or adjacent to the project site. There are no streams  
13 within 250 feet of the project, and there are no perennial streams or rivers  
14 within 100 feet of the project.

15 **Q. (F) Shorelines. Is the project located on a shoreline, and if so, will it**  
16 **retain it in its natural condition, allow continued access to the waters,**  
17 **retain vegetation to screen the project from the waters, and stabilize the**  
18 **bank from erosion as necessary with vegetative cover?**

19 A. The project is not located on a shoreline.

20 **Q. (G) Wetlands. Is the project in compliance with the rules of the Water**  
21 **Resources Board relating to significant wetlands?**



1       A.       Yes, the project will not involve any activities within a Class 1, Class 2 or  
2               Class 3 wetland, or within a wetland buffer area.

3       **Q.       4. Will the project cause unreasonable soil erosion or reduction in the**  
4               **capacity of the land to hold water so that dangerous our unhealthy**  
5               **conditions may result?**

6       A.       No. In accordance with the EPA Construction General Permit obtained for this  
7               project as referenced above (EPA Tracking Number VTR10A95F), best  
8               management practices have been implemented during construction work.  
9               These include installation and maintenance of silt fence down gradient of all  
10              ground disturbance or clearing prior to work beginning, installation and  
11              maintenance of stabilized construction entrances, stabilization of disturbed  
12              areas as soon as possible and within 48 hours of final grading, and other  
13              specific practices as set forth in the SWPPP and the project design documents.  
14              At a minimum, weekly inspections are conducted by base personnel and the  
15              contractor to assure erosion is not occurring at the project site.  
16              Once the solar array is completed, all stormwater that falls within the footprint  
17              of the project area will infiltrate in accordance with the State of Vermont  
18              Stormwater Operation permit (#3105-9015) referenced above. This also  
19              complies with a federal mandate that all new construction at federal facilities  
20              be designed such that stormwater runoff from the completed project is equal to  
21              pre-development conditions whenever feasible.

1       **Q.       5. Will the project cause unreasonable congestion or unsafe conditions**  
2                   **with respect to use of the highways, waterways, railways, airports or**  
3                   **airways, and other means of transportation existing or proposed?**

4       A.       No. Road traffic on National Guard Avenue will not be significantly impacted  
5                   during construction. National Guard Avenue is not a heavily travelled road,  
6                   and construction vehicles will have two access points to the site (a construction  
7                   entrance from National Guard Avenue, and access from within the VTANG  
8                   base). Construction vehicles can be staged on the VTANG base, and will not  
9                   routinely be stopped on National Guard Road. Road traffic after construction  
10                  is completed will not be impacted by the solar array, as access to the array will  
11                  be from within the VTANG base, and no additional full time personnel will be  
12                  required to operate and maintain the array.

13                  Burlington International Airport and FAA personnel were consulted as to the  
14                  location and construction of the solar arrays, and these parties agreed that the  
15                  location and design of the arrays complies with applicable requirements and  
16                  regulations. (See Exhibit ANG-11 – FAA review letter)

17       **Q.       7. Will the project cause an unreasonable burden on the ability of the**  
18                   **local government to provide municipal or governmental services?**

19       A.       This project will not require any additional municipal or governmental  
20                   services.

21       **Q.       8. Will the project have an undue adverse effect on the scenic or natural**

1           **beauty of the area, aesthetics, historic sites or rare and irreplaceable**  
2           **natural areas?**

3           A.       The Public Service Board cites the “Quechee Test” as appropriate to analyze  
4           the aesthetic impacts of proposed projects. The first step is to determine if the  
5           project will have an adverse impact on aesthetics. A project’s impact is  
6           adverse if its design is out of context or not in harmony with the area in which  
7           it is located. If it is found that the impact would be adverse, it is then  
8           necessary to determine that such an impact would be undue.

9           The solar array installation at VTANG will not have an adverse impact on  
10          aesthetics or natural beauty. The VTANG base, the Burlington International  
11          Airport, and much of the immediate surrounding area are developed  
12          commercial and industrial properties. The solar array is an orderly design of  
13          parallel rows of solar panels over a crushed stone bed, surrounded by a service  
14          road and lawns maintained in accordance with VTANG and airport standards.  
15          Existing areas of trees will remain around the northern boundary of the solar  
16          array. The array will not be easily seen from National Guard Avenue itself,  
17          but will be clearly visible from the air by aircraft passengers and pilots. It will  
18          be somewhat visible from parts of the Burlington International Airport main  
19          terminal and parking garage. The array is lower in height than most of the  
20          buildings on the airfield, and the panels are a non-reflective type that will not  
21          cause excessive glare or reflections that would be detrimental to aviators.

1 Many of the buildings on the VTANG base are of a modern design, and the  
2 solar array will fit well within the existing context of the base. The associated  
3 transformer pad and electrical infrastructure is similar to other such structures  
4 on base and in context with the general commercial/industrial atmosphere.  
5 The project will not impact historic or cultural resource sites. A cultural  
6 resources survey was conducted on base, and test pits were excavated within  
7 areas of this project. No significant architectural or archaeological resources  
8 were found in the project areas for the solar arrays. A formal comment request  
9 was submitted to Scott Dillon of the Vermont Division for Historic  
10 Preservation, and is attached for reference. (See Exhibit ANG-10 – Letter to  
11 VTDHP)

12 There are no rare or irreplaceable natural areas in the project area.

13 **Q. 8(A). Will the project destroy or significantly imperil necessary wildlife**  
14 **habitat or any endangered species?**

15 A. No. There are no known areas of necessary wildlife habitat or endangered  
16 species habitat in the project area. The US Fish and Wildlife Service and the  
17 Vermont Department of Fish and Wildlife have provided opinions as recently  
18 as 2008 that no threatened or endangered species are known to occur on base  
19 property. Correspondence from these agencies as well as an excerpt from the  
20 August 2010

21 Environmental Impact Statement for another project on base is attached. (See

1 Exhibit ANG-10 – T&E Species attachments)

2 **Q. 9(K). Will the project unnecessarily or unreasonably endanger any public**  
3 **or quasi-public investment in the facility, service, or lands, or materially**  
4 **jeopardize or interfere with the function, efficiency, or safety of, or the**  
5 **public’s use or enjoyment of or access to the facility, service or lands?**

6 A. No. The function, efficiency and safety of the Burlington International  
7 Airport, the Vermont Air National Guard base, and the public use of National  
8 Guard Avenue will not be jeopardized by the installation of this solar energy  
9 project at VTANG. Representatives from the Federal Aviation Agency (FAA)  
10 and the Burlington International Airport have reviewed the project design, and  
11 have authorized the installation of the array. (See Exhibit ANG-11).  
12 This renewable energy project is being conducted with federal funding, and is  
13 therefore a public investment in the VTANG base and regional energy grid.  
14 The VTANG Fire Department provides first response to the airport, and  
15 mutual aid to nearby areas of South Burlington and Colchester. The services  
16 provided by the VTANG Fire Department will not be impacted by the project.  
17 All work on the project will be conducted in accordance with the National  
18 Electric Code. The project is designed and will be constructed with proper  
19 safety and security measures in place to assure that no undue adverse effect on  
20 the public health and safety is created during construction and operation of the  
21 solar array.

1       **Q.       Could you discuss the project's impacts relative to 10 V.S.A § 1424a(d)?**

2       A.       The project is not located on or near any Outstanding Resource Waters as  
3               identified by the Vermont Water Resources Panel.

4       **Q.       Does this conclude your testimony?**

5       A.       Yes.