



STATE OF VERMONT
PUBLIC SERVICE BOARD

Petition of Chittenden County Solar Partners,)
LLC, pursuant to 30 V.S.A. § 248, for a)
certificate of public good authorizing the)
installation and operation of a 2.2 MW solar)
electric generation facility located at Dubois)
Drive, South Burlington, Vermont, known)
as the "South Burlington Solar Farm")

Docket No. _____

PREFILED DIRECT TESTIMONY OF DAVID RAPHAEL

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

2 Response: My name is David Raphael. I am a registered landscape architect and a
3 planner. I am a Principal in LandWorks, an interdisciplinary planning, design and
4 communications firm located at 228 Maple Street in The Marble Works, in
5 Middlebury, Vermont. I am also on the faculty of the Rubenstein School of
6 Environment and Natural Resources at the University of Vermont where I have
7 taught courses in landscape architecture, recreational and open space planning and
8 sustainable design since 1983.

9

10 **Q. Please describe your background and qualifications.**

11 Response: I have attached my current resume. *Exhibit SBSF-DR-1.*

12 I began my career as landscape architect and planner working for the State of
13 Massachusetts Department of Environmental Management. Since 1986 I have been
14 the Principal and owner of LandWorks, a multidisciplinary planning, design and
15 communications firm based in Middlebury, Vermont. I personally have presented

1 and served as an expert witness before most of the District Commissions in the State
2 and the Vermont Environmental Board, as well as the Public Service Board.

3 LandWorks has extensive experience with regard to visual assessment and
4 environmental impact, Criterion 8 of Act 250, and the design and installation of
5 energy generation and transmission projects. We have been a consultant in this
6 capacity for the Vermont Department of Public Service for over 15 years. We have
7 evaluated the aesthetic and environmental impact of transmission lines and corridors
8 (throughout the state of Vermont, including projects such as the Northwest
9 reliability Project and the Lamoille County Project); transmission structures
10 (throughout the state of Vermont, including successfully advocating for the
11 undergrounding of the PV20 line along the Route 2 causeway in Milton/South
12 Hero); proposed telecommunication facilities and wind energy projects (the
13 Searsburg project developed by Green Mountain Power Corporation) and energy
14 generation facilities such as Vermont Yankee. We have provided aesthetic
15 assessments for a number of utility-scale wind power projects including the Georgia
16 Mountain Community Wind project, the Kingdom Community Wind Project, and
17 the Sheffield Wind Farm project that received a Certificate of Public Good from the
18 Board. I have served as a member of the Design Issues Study Committee appointed
19 by the Secretary of the Agency of Natural Resources, an initiative which clarified the
20 application of the Quechee Analysis for aesthetics and which resulted in the
21 publication of *Vermont's Scenic Landscapes: A Guide for Growth and Protection*. In
22 addition we have prepared zoning ordinances and Management Plans based on
23 scenery preservation and environmental protection guidelines (such as the award

1 winning Lake George Upland Protection Program Manual), prepared scenic highway
2 corridor studies and authored a study and state policy which was adopted for permit
3 review of the night lighting of ski areas (Agency of Natural Resources). My
4 qualifications in planning also include service as my town's delegate to the Addison
5 County Regional Planning Commission over a 15-year period. I continue to chair
6 the Town of Panton Development Review Board and Planning Commission, a
7 position I have been in for over 25 years. I am also a member of the Vermont
8 Urban and Community Forest Council.
9

10 **Q. Have you previously testified before the Public Service Board or in other**
11 **judicial or administrative proceedings?**

12 Response: Yes, on numerous occasions and as cited in my previous answer. Most
13 recently I have testified before the PSB on behalf of the Vermont Department of
14 Public Service in VELCO's application for a CPG for projects such as the Southern
15 Loop, The Gorge Reconstruction Project, and the Lyndonville Substation. I have
16 also recently testified before the Board on behalf of Georgia Mountain Community
17 Wind.
18

19 **Q. What is the purpose of your testimony?**

20 Response: The purpose of my testimony is to describe the work that I have
21 conducted regarding the South Burlington Solar Farm ("Project"), introduce the
22 report that I prepared, and provide my opinion regarding the Project's compliance
23 with the Section 248 criteria pertaining to aesthetics, historic sites, public

1 investments, and town and regional plans as they relate to the orderly development
2 of the region.

3
4 **Q. Please describe the work you have performed with respect to the Project.**

5 Response: The staff at my firm and I have prepared an assessment report that
6 summarizes our research, field reconnaissance, and analysis of the aesthetics, historic
7 context, and land use of the area.

8
9 **Q. Have you created a report based on the work you performed for this Project?**

10 Response: We have prepared a report entitled "Aesthetic Assessment of the
11 Proposed South Burlington Solar Farm" dated March 25, 2010, which is introduced
12 as *Exhibit SBSF-DR-2* here. This exhibit contains a series of figures identifying the
13 viewshed of the Project, line of sight sections, and a simulation of the proposed
14 improvements from a variety of vantage points. It also discusses the potential
15 impacts from the Project using the Quechee Analysis. *Exhibit SBSF-DR-2*.

16
17 **Q. Please summarize your assessment of the Project's visual impacts.**

18 Response: My conclusion is that the Project should not have an adverse aesthetic
19 impact because it has limited impacts beyond the project site and will not be
20 extensively visible. See *Exhibit SBSF-DR-2*. However, given the low threshold for
21 determining adverse impacts in prior cases that applied the Quechee test, the Project
22 arguably may have an adverse, although minimal, impact on aesthetics. The off-site
23 visual impacts from this Project will be minimal due to the location of the Project

1 site, the relatively low profile of the Project elements and the extensive existing
2 screening that surrounds the site. This site is an excellent location for a project of
3 this nature due to its location in a compatible area - with the industrial/commercial
4 area to the north and extensive surrounding vegetation to separate from the
5 residential land uses to the east and south. Additionally, the extensive screening and
6 the siting of the solar arrays themselves will limit, if not eliminate, any off-site sun
7 reflection from the panels. *Exhibit SBSF-DR-2.*

8
9 **Q. Will the Project have an undue adverse effect on aesthetics or the scenic or**
10 **natural beauty of the area?**

11 Response: No. Based on our analysis, as presented in our Aesthetic Assessment, we
12 conclude unequivocally that the Project, if constructed, would not result in an undue
13 adverse impact to the aesthetics and scenic beauty of the area. The Project's impacts
14 will not be unduly adverse because: 1) the Project will not be shocking or offensive
15 to the average person due to its low profile, the nature and purpose of the Project
16 and the fact that it will not be readily visible from any surrounding vantage points; 2)
17 the Project does not violate any clearly written community standard; and 3) the
18 Petitioner has taken reasonably available mitigation steps to reduce the Project's
19 aesthetic impacts. These include the site selection itself and its relative isolation from
20 a visual perspective, the use of suitable materials and colors which will blend with the
21 Project surroundings and reduce the apparent visual presence and consequent visual
22 impact from the project, and the retention of extensive screening surrounding the
23 Project site. In addition, the Petitioner has agreed to establish a public pedestrian

1 easement along the south side of the Project parcel, although I would note that this
2 is not required mitigation under the Quechee Test as the Project is located on private
3 land and is not impacting any pre-existing public trails.

4 In summary, this is an appropriate project sited in an appropriate location
5 that will have limited, if any, off-site aesthetic impacts.

6
7 **Q. Please summarize your assessment of the Project's impacts, if any, to historic**
8 **structures that are listed or eligible for listing on the Vermont or National Register of**
9 **Historic Places.**

10 Response: I have reviewed the available resource information related to historic sites
11 and structures within the vicinity of the Project and our office has contacted the
12 Vermont Division for Historic Preservation (DHP) with regard to the potential
13 impact to such resources. The only state listed historic structures within 1 mile are
14 located primarily along Route 116 and Van Sicklen Road. These structures will have
15 no visibility of the Project. As a result, we have concluded that there will be no
16 impacts to historic sites or structures in the vicinity of the Project. The Vermont
17 Division of Historic Preservation agrees with this assessment and conclusion and has
18 stated this in a letter. *Exhibit SBSF-PM/DG-8.*

19
20 **Q. Will the Project have an undue adverse effect on historic sites?**

21 Response: No, as noted above. As stated, my opinion is corroborated by the
22 Division for Historic Preservation, which concurs that the Project will not impact

1 historic sites or structures and has provided a letter outlining its position on the
2 matter. *Exhibit SBSF-PM/DG-8*.

3
4 **Q. Please summarize your assessment of any specific land conservation**
5 **measures contained in the South Burlington Comprehensive Plan that would pertain**
6 **to the Project.**

7 Response: This Project is situated within the City's Southeast Quadrant's Scenic
8 Overlay, but there are no standards or provisions contained within that Overlay
9 document that this Project would violate. Although a portion of the project site is
10 included within a scenic overlay, this project does not violate the only standard
11 associated with that district as it does not exceed a height of 393.5 feet above sea
12 level plus 5.8 feet. This provision is contained within Article 10 G., page 10-13 of
13 the South Burlington Land Development Regulations. The scenic overlay standard
14 appears to be designed to ensure that views to the hills and mountains beyond are
15 protected. The project site is at 350 feet above sea level and the highest structure
16 will be 19 feet high, so this project will not exceed the stated height restriction.
17 Thus, the project will not affect or interfere with any view within the overlay or
18 surrounding area. Regardless, there are no real impacts to the scenic quality of the
19 surrounding area due to the visually isolated nature of the Project and its location.
20 The concerns that the City has raised in its recommendation letter to the project
21 developers, *Exhibit SBSF-PM/DG-XX*, with regard to reflectivity and trail access
22 have been addressed. For more detailed analysis and example photographs, please
23 see *Exhibit SBSF-DR-4*, pp 8 and 9, and Figures 3 and 5 of our assessment.

1
2 **Q. Please summarize your assessment of the provisions of the Chittenden**
3 **County Regional Plan that would pertain to this Project.**

4 Response: There are no provisions in the Chittenden County Regional Plan that
5 specifically address aesthetics or scenic resources in this particular area. There are
6 provisions in the Regional Plan that support the development of renewable energy
7 projects such as this Project. See *Exhibit SBSF-DR-4*.

8
9 **Q. Please summarize your conclusions as to this Project's effects on the Orderly**
10 **Development of the Region and its impact on Public Investments?**

11 Response: This Project will not interfere with the orderly development of the region
12 and is, in fact, consistent with the local and regional plans and those plans' advocacy
13 for the development of in-state renewable energy resources and generating facilities.
14 The relevant portions of the South Burlington Comprehensive Plan are provided
15 here as *Exhibit SBSF-DR-3*, and the relevant portions of the Chittenden County
16 Regional Plan are provided here as *Exhibit SBSF-DR-4*. This Project is part of the
17 region's orderly development, is proposed for a site that is suitable for the use being
18 proposed and will, in fact, support orderly development by providing a local source
19 of renewable energy that is necessary for such development to occur.

20 The only public investment to which this Project is adjacent is the conserved
21 lands that are part of the Muddy Brook stream corridor, which is located to the east
22 of the Project site. This Project will have no material effect on the functional,
23 aesthetic or recreational qualities of this public investment. The pedestrian easement

1 that will be created to ensure public access through the property to connect with
2 other trails in the Muddy Brook area ensures that the public investment is not
3 affected, and in fact, that investment will be enhanced by formally providing such a
4 connection.

5
6 **Q. Does this conclude your testimony at this time?**

7 Response: Yes.

