

**STATE OF VERMONT
PUBLIC UTILITY COMMISSION**

Petition of Chelsea Solar LLC, pursuant to)
30 V.S.A. § 248, for a certificate of public)
good authorizing the installation and)
operation of the “Chelsea Solar Project,” a)
2.0 MW solar electric generation facility)
located off Willow Road in Bennington,)
Vermont)

Docket No. 17-5024-PET

**PREFILED DIRECT TESTIMONY
OF DORI BARTON
ON BEHALF OF PETITIONER**

November 27, 2017

EXHIBITS

Exhibit CS-DB-1	Resume of Doris Barton
Exhibit CS-DB-2	Site Environmental Assessment Report
Exhibit CS-DB-3	RTE Species Mitigation Report
Exhibit CS-DB-4	Interconnection Environmental Assessment Report

1 **Q1. Please state your name, occupation, and business address.**

2 A1. My name is Dori Barton. I am a Wetland Ecologist with Arrowwood Environmental
3 (“AE”). My business address is 950 Bert White Road in Huntington, Vermont.

4
5 **Q2. Please describe your educational background and work experience.**

6 A2. I received a Master of Science degree in Watershed Science from Colorado State
7 University with a focus on surface water hydrology. I have been a consulting ecologist in the State
8 of Vermont since 1997. I have included a copy of my resume as *Exhibit CS-DB-1*, which sets
9 forth my educational background and professional experience.

10

11 **Q3. Have you previously testified before the Public Utility Commission or in other**
12 **judicial or administrative proceedings?**

13 A3. Yes. I have provided testimony in a number of PUC (formerly PSB) proceedings including
14 the following recent projects: Otter Creek Solar LLC (Docket 8797 and 8798), Chelsea Solar
15 (Docket 8302), Apple Hill Solar (Docket 8454), Cambridge Landfill GLC Solar, Randolph GLC
16 Solar, and Orchard Road Solar.

17

18 **Q4. What is the purpose of your testimony?**

19 A4. My testimony describes natural resources found at the proposed location for the Chelsea
20 Solar Project (the “Project”), and it provides an assessment of the Project’s potential impacts in
21 regards to the following statutory criteria: air and water purity (30 V.S.A. § 248(b)(5)), the natural
22 environment (30 V.S.A. § 248(b)(5)), outstanding resource waters (30 V.S.A. § 248(b)(8) and 10

V.S.A. § 1424a(d)), the use of natural resources (30 V.S.A. § 248(b)(5)), headwaters (10 V.S.A. § 6086(a)(1)(A)), floodways (10 V.S.A. § 6086(a)(1)(D)), streams (10 V.S.A. § 6086(a)(1)(E)), shorelines (10 V.S.A. § 6086(a)(1)(F)), wetlands (10 V.S.A. § 6086(a)(1)(G)), necessary wildlife habitat (10 V.S.A. § 6086(a)(8)(A)), and endangered species (10 V.S.A. § 6086(a)(8)(A)).

Q5. What work have you conducted with respect to the Project?

A5. AE was retained to conduct an environmental assessment for the proposed Project on Willow Road in Bennington, Vermont. The assessment involved the review of materials regarding the proposed Project and Project property, review of publicly-available natural resources data, multiple site visits to evaluate onsite resources, wetlands delineation, RTE species surveys, wildlife habitat assessment and multiple conversations with representatives of the Vermont Agency of Natural Resources (“ANR”).

Q6. Please generally describe the Project property and any important natural resources found there.

A6. The Project property is a 27.3 acre parcel located on Willow Road in Bennington, Vermont. The detailed results of our site analysis are described in the included Site Environmental Assessment Report (*Exhibit CS-DB-2*), RTE Species Mitigation Report (*Exhibit CS-DB-3*), and Interconnection Environmental Assessment Report (*Exhibit CS-DB-4*). The Project site is primarily forested and generally characterized by a young overstory of bitternut hickory, red oak, red maple, and staghorn sumac. There is a dense understory of honeysuckle and buckthorn throughout much of the site. The site sits within a relatively developed landscape with residential

1 development to the north, the Route 7 corridor to the west, the Route 7 and Route 279 interchange
2 and mixed and residential development to the south. The site lacks landscape connectivity to
3 significant forest lands in the Green Mountain National Forest to the east and to undeveloped forest
4 lands further to the west and southwest.

5
6 **Q7. Please generally describe the Project's design and potential for impact on natural**
7 **resources.**

8 A7. As described in *Exhibits CS-DB-2, CS-DB-3, and CS-DB-4*, the proposed Project does
9 not create any undue adverse impact upon natural resources on the Project property or surrounding
10 areas. AE concludes that the Project has been sited and designed to avoid undue adverse impacts
11 to the following environmental resources: shorelines, outstanding resource waters, streams,
12 floodways, wetlands, rare, threatened and endangered species and necessary wildlife habitat.
13 There are no streams, shorelines, floodways, outstanding resource waters, wetlands, necessary
14 wildlife habitat, or rare or irreplaceable natural areas in the Project area. Thus, there will be no
15 impact. Chelsea Solar LLC (the "Petitioner") worked with Vermont Agency of Natural Resources
16 to mitigate impacts to this resource. This mitigation plan (*Exhibit CS-DB-3*) has resulted in the
17 Project having no undue adverse impacts to this species.

18
19 **Q8. Does the project have an undue adverse effect on air and water purity? (30 V.S.A. §**
20 **248(b)(5))**

21 A8. While a full analysis of the Project's potential impacts on air and water purity were not
22 within the scope of my analysis (as certain topics, such as stormwater flow, are covered by other

expert consultants providing testimony on behalf of the Petitioner), I describe in my site environmental assessment report (*Exhibit CS-DB-2*) that the Project does not have an undue adverse effect on certain water resources, including headwaters, floodways, streams, shorelines, and wetlands.

Q9. Does the Project have an undue adverse effect on the natural environment? (30

V.S.A. § 248(b)(5))

A9. No. AE concludes that the Project has been sited and designed to avoid undue adverse impacts to the following environmental resources: shorelines, outstanding resource waters, streams, floodways, wetlands, rare, threatened and endangered species and necessary wildlife habitat. There are no streams, shorelines, floodways, outstanding resource waters, wetlands, necessary wildlife habitat, or rare or irreplaceable natural areas in the Project area. Thus, there will be no impact on these resources. A population of a rare plant species was documented within the Project area. The Petitioner worked with Vermont Agency of Natural Resources to mitigate impacts to this resource. This mitigation plan (*Exhibit CS-DB-3*) has resulted in the Project having no undue adverse impacts to this species. For these reasons, we conclude that the Project will not have an undue adverse effect on the natural environment.

Q10. Does the Project have an undue adverse effect on the use of natural resources? (30

V.S.A. § 248(b)(5))

A10. No. AE concludes that the Project has been sited and designed to avoid undue adverse impacts to the following environmental resources: shorelines, outstanding resource waters,

1 streams, floodways, wetlands, rare, threatened and endangered species and necessary wildlife
2 habitat. There are no streams, shorelines, floodways, outstanding resource waters, wetlands,
3 necessary wildlife habitat, or rare or irreplaceable natural areas in the Project area. Thus, there will
4 be no impact on these resources. A population of a rare plant species was documented within the
5 Project area. The Petitioner worked with Vermont Agency of Natural Resources to mitigate
6 impacts to this resource. This mitigation plan (Exhibit CS-DB-3)) has resulted in the Project
7 having no undue adverse impacts to this species. For these reasons, we conclude that the Project
8 will not have an undue adverse effect on the use of the natural environment.

9
10 **Q11. Does the Project involve a facility affecting or located on any segment of the waters**
11 **of the State that have been designated as outstanding resource waters? (30 V.S.A. §**
12 **248(b)(8) and 10 V.S.A. § 1424a(d))**

13 A11. No. The Project site is not located on any segment of waters of the State that have been
14 designated as outstanding resource waters. There are no outstanding resource waters on or near
15 the Project area.

16
17 **Q12. Does the Project have an undue adverse effect on headwaters? (10 V.S.A. §**
18 **6086(a)(1)(A))**

19 A12. No. While the Project property is located within a headwater as defined by 10 V.S.A. §
20 6086(a)(1)(A), it is not characterized by steep slopes or shallow soils, it is not above 1,500 feet in
21 elevation, it is not in a watershed of a public water supply, it is not in an area supplying significant
22 amounts of recharge water to aquifers, and it is in a drainage area of less than 20 square miles.

1 Please see the accompanying Prefiled Testimony of Ian Jewkes in this docket for a detailed
2 description of how stormwater runoff will be controlled at the Project property, but I would also
3 note that any runoff from the site would discharge to an existing Vermont Agency of
4 Transportation (“VTRANS”) storm system network at the U.S. Route 7 & 279 interchange which
5 eventually flows into Furnace Brook roughly a quarter mile away from the Project. Furnace Brook
6 then flows into the Walloomsac River. The headwater sub-watershed is less than 1 square mile at
7 the point where any Project runoff would discharge to the VTrans storm system network.

8
9 **Q13. Does the Project have an undue adverse effect on floodways? (10 V.S.A. §**
10 **6086(a)(1)(D))**

11 A13. No. The Project is not located in a floodway or floodway fringe. The closest FEMA flood
12 hazard zone and ANR river corridor is approximately 1800’ to the south of the Project and
13 associated with a tributary to the Walloomsac River.

14
15 **Q14. Does the Project have an undue adverse effect on streams? (10 V.S.A. §**
16 **6086(a)(1)(E))**

17 A14. No. There are no streams in the Project area. The closest stream is an unnamed tributary
18 to the Walloomsac River, located approximately 230’ to the south of the Project area. The Project
19 will result in no clearing on the banks of this stream. This stream is not included on either the
20 303(d) List of Impaired streams and rivers or the Priority Waters List for streams and rivers.

21

1 **Q15. Does the Project have an undue adverse effect on shorelines? (10 V.S.A. §**
2 **6086(a)(1)(F))**

3 A15. No. The site of the proposed Project is not located near a shoreline of a river, pond or lake.
4 The closest shoreline is that of the Walloomsac River, approximately 0.8 miles to the west of the
5 Project area. The Project will not result in any clearing of forest vegetation along the shores of the
6 Walloomsac River.

7
8 **Q16. Does the Project have an undue adverse effect on wetlands? (10 V.S.A. §**
9 **6086(a)(1)(G))**

10 A16. No. AE identified and delineated a wetland approximately 180' to the south of the Project
11 and for the purposes of this Project presumes that wetland to be Class 2. The Project as proposed
12 will have no impact on the identified wetland resource or associated 50' buffer zone.

13
14 **Q16. Does the Project have an undue adverse effect on necessary wildlife habitat? (10**
15 **V.S.A. § 6086(a)(8)(A))**

16 A16. No. The Project site does not contain necessary wildlife habitat, and it is not in close
17 proximity to any necessary wildlife habitat.

18
19 **Q17. Does the Project have an undue adverse effect on rare and irreplaceable natural**
20 **areas? (10 V.S.A. § 6086(a)(8)(A))**

21 A17. No. AE conducted a Rare and Irreplaceable Natural Area assessment on January 17, 2014
22 and August 14, 2014 and identified an area of Mesic-Maple-Ash-Hickory-Oak forest within the

1 northeastern Project area. While there are a few mature trees at this site, the undisturbed
2 community on this property is less than 3 acres in size, is in moderate-poor condition and sits
3 within a largely fragmented landscape. Given its size and condition, it is our opinion that this forest
4 would not qualify as a significant natural community or a Rare and Irreplaceable Natural Area.

5
6 **Q18. Does the Project have an undue adverse effect on endangered species? (10 V.S.A. §**
7 **6086(a)(8)(A))**

8 A18. No. Arrowwood Environmental conducted an RTE plant survey of the Project area on
9 August 14, 2014 and a follow up survey on October 12, 2017. An RTE plant species was
10 discovered in the Project area. Mitigation measures have been developed to avoid undue adverse
11 impacts to this species including: establishing a Conservation Area on the Project site and
12 transplanting any impacted plants into this area. Given these mitigation measures, this Project
13 would not have an undue adverse impact on this rare species. AE conducted an analysis of the
14 Project clearing as related to potential impacts on the Northern Long-eared Bat (a federally listed
15 endangered species). The proposed Project will result in clearing of approximately 9.64 acres
16 constituting 0.78% of the available forestland within 1 square mile of the Project. According to
17 VT Fish and Wildlife Department standards, the proposed clearing is minimal in nature and
18 acoustic bat surveys and restrictions on time of year of tree cutting are not necessary. The proposed
19 Project will have no undue adverse impact on endangered plant or animal species.

1 **Q19. How are the criteria described above potentially affected by the proposed Green**
2 **Mountain Power (“GMP”) electric circuit upgrade along Willow Road and Hewitt Drive?**

3 A19. The proposed GMP upgrade along Willow Road and Hewitt Drive is described in detail
4 in the accompanying Prefiled Testimony of Brad Wilson and Mark Kane in this docket. The
5 entirety of the route for the proposed upgrade was surveyed for natural resources, including
6 wetlands and RTE species, by AE during the spring and summer of 2015. The proposed
7 placement results in three poles in areas of road shoulder that are classified as wetland buffer
8 zones of three wetlands. The Vermont Wetland Rules (Section 6.22) allow for the installation of
9 a new overhead utility line that only involves minimal tree clearing, with three poles or fewer in
10 the wetland or buffer zone. The Project has been designed to avoid direct wetland impacts. The
11 poles are to be installed within the existing road fill slope resulting in minimal disturbance to the
12 three wetland buffer areas. The proposed interconnection route will result in minimal clearing of
13 trees along Hewitt and Willow Roads. Poles are to be installed within the existing road fill slope
14 resulting in minimal clearing in stream riparian zones. An RTE plant species was identified and
15 mapped along the route in 5 locations. To avoid impacts to RTE plant species during installation
16 of the interconnection, AE flagged the location of the plant populations and was present during
17 the stake-out of pole locations in October 2015. AE also developed a list of recommendations
18 (see **Exhibit CS-DB-4**) for Project clearing to avoid adverse impacts to the RTE plant
19 populations. With these implementation of these recommendations, we conclude that the Project
20 will have no undue adverse impact on RTE species. The proposed GMP circuit upgrade will not
21 create an undue adverse effect on air and water purity, the natural environment, outstanding

1 resource waters, the use of natural resources, headwaters, floodways, streams, shorelines,
2 wetlands, necessary wildlife habitat, rare and irreplaceable natural areas, or endangered species.

3

4 **Q20. Does this conclude your testimony?**

5 A20. Yes, it does.