

**STATE OF VERMONT
PUBLIC SERVICE BOARD**

Petition of the City of South Burlington)
Pursuant to 30 V.S.A. § 248(j) for a Certificate)
of Public Good authorizing the installation)
and operation of a 1.55 MW solar group)
net-metered electric generation facility located)
on the closed landfill in South Burlington, VT) PSB Docket No. _____

**PREFILED TESTIMONY OF DEREK MORETZ
ON BEHALF OF
THE CITY OF SOUTH BURLINGTON**

Summary of Testimony

Mr. Moretz’s testimony provides an overview of the City of South Burlington’s (the “City”) plans to install and operate a 1.55 MW AC solar electric generation facility on a capped and closed landfill owned by the City and located at 1009 Airport Parkway in South Burlington, Vermont. It also addresses the proposed Project’s compliance with Public Service Board Rule 5.105 relating to group net metering system requirements; orderly development of the region (30 V.S.A. § 248(b)(1)); system stability and reliability (30 V.S.A § 248(b)(3)); economic benefit (§ 248(b)(4)); transportation systems (10 V.S.A. § 6086(a)(5)); aesthetics and acoustics (§248(b)(5)); historic sites (10 V.S.A. § 6086(a)(8)); public health and safety (§248(b)(5)); greenhouse gas impacts (§248(b)(5)); waste disposal (Section 248(b)(5) and 10 VSA § 6086(a)(1)(B)); public investments (10 V.S.A. § 6086(a)(9)(K));

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1 **I. Introduction**

2 Q1. Please state your name, current employer, business address, and position.

3 A1. My name is Derek Moretz, and I am currently the Vice President of Development at
4 Encore Renewable Energy (“Encore”). My business address is 110 Main Street, Suite
5 2E, Burlington, Vermont. Encore is a leading integrated clean energy project
6 development company with a focus on commercial, industrial, and community-scale solar
7 PV systems for Vermont towns, schools, businesses and landowners. We also assist a
8 variety of clients in navigating complex technical, financial and regulatory matters
9 through various stages of development.

10

11 Q2. What is the connection between Encore and the applicant, the City of South Burlington?

12 A2. Encore was retained by the City of South Burlington (the “City”) to provide development
13 and project management services for the Project. Encore has worked collaboratively with
14 the City and Project contractors to manage various aspects of development including site
15 selection, engineering and design, environmental investigations, aesthetic impact

1 analysis, historic site identification, regulatory and public affairs, financial modeling and
2 construction management.

3
4 Q3. Please describe your educational background and work experience.

5 A3. I obtained two Bachelor of Science degrees in construction management and appropriate
6 technology from Appalachian State University in 2004 and a Masters in Business
7 Administration from North Carolina State University in 2008. I have been developing
8 renewable energy projects since 2004 in various regions including Alaska, Central
9 America, and in the Pacific Northwest where I led development of utility scale wind
10 projects for a global developer, owner and operator of renewable energy projects. I have
11 been working with Encore Redevelopment in multiple capacities since 2011 where I
12 currently manage all aspects of development for community scale solar projects ranging
13 from 50 kW to 5 MW in Vermont. My resume is attached as SB-DM-1.

14
15 Q4. Have you testified previously before the Public Service Board?

16 A4. Yes. I have provided testimony for the following projects: Middle Road Ventures, LLC,
17 Docket No. 8060; ERWR Whitcomb Farm Solar, LLC, Docket No. 8076; National Life
18 Insurance Co., Docket No. 8110; Burlington Electric Department, Docket No. 8625;
19 HVT Solar, LLC, Docket No. NMP-6300; Stowe Electric Department, Docket No. 8611;
20 and Hyde Park Electric Department, Docket No. 8614.

21
22 Q5. What is the purpose of your testimony?

1 A5. My testimony supports the Petition by the City for a Certificate of Public Good pursuant
2 to 30 V.S.A § 248 and § 248(j), Board Order Section 8007(b), and Board Rules 5.100 and
3 5.400 with respect to the proposed installation and operation of a 1.55 MW group net-
4 metered solar electric generation project (the “Project”) on a capped and closed landfill
5 owned by the City at 1009 Airport Parkway in South Burlington, Vermont. I provide a
6 project overview and also specifically address the following Section 248 criteria not
7 conditionally waived by the Board’s Section 8007(b) Order: Public Service Board Rule
8 5.105 relating to group net metering system requirements; orderly development of the
9 region (30 V.S.A. § 248(b)(1)); system stability and reliability (30 V.S.A § 248(b)(3));
10 economic benefit (§248(b)(4)); transportation systems (10 V.S.A. § 6086(a)(5));
11 aesthetics and acoustics (§248(b)(5)); historic sites (10 V.S.A. § 6086(a)(8)); public
12 health and safety (§248(b)(5)); greenhouse gas impacts (§248(b)(5)); waste disposal
13 (Section 248(b)(5) and 10 VSA § 6086(a)(1)(B)); and public investments (10 V.S.A. §
14 6086(a)(9)(K)). Witness Krista Reinhart will address outstanding resource waters (10
15 V.S.A. § 1424a(d)), floodways (10 V.S.A. § 6086(a)(1)(D)), shorelines (10 V.S.A. §
16 6086 (a)(1)(F)), streams (10 V.S.A. § 6086(a)(1)(E)), wetlands (10 V.S.A. §
17 6086(a)(1)(G)), and threatened and endangered species; rare and irreplaceable natural
18 areas and necessary wildlife habitat (10 V.S.A. § 6086(a)(8) and (8)(a)). Witness Brian
19 Beaudoin will address the proposed Project’s compliance with soil erosion under 10
20 V.S.A. § 6086(a)(4) and compliance with stormwater and cap closure permit
21 requirements.

22

1 Q6. Why has the City filed this Petition under subsection (j) of Section 248?

2 A6. The Project is limited in size and scope, it raises no significant issues with respect to the
3 substantive criteria of Section 248, and the City believes that the public interest is
4 satisfied by the procedures authorized under Section 248(j). More specifically, there are
5 no impacts on the so-called “Act 250” environmental and land use criteria. The Project is
6 located on a closed landfill located in an industrial district. Additionally, this Project falls
7 under the revised 30 V.S.A. § 219a (m)(2), which permits a net-metering system of 5
8 MW or less to be installed on a closed landfill, demonstrating the Legislature’s intent for
9 the Board to apply a more simplified procedure process for such projects. The facility
10 will be in a net-metering group with net-metering credits flowing to accounts associated
11 with the City and the South Burlington School District. Given the avoidance of impacts
12 to applicable criteria, a petition under Section 248(j) is appropriate.

13

14 **Project Description and Overview**

15 Q7. Please generally describe the proposed Project.

16 A7. The City proposes to install and operate a fixed-tilt ballasted solar array occupying
17 approximately 8 acres across the City’s capped and closed landfill at 1009 Airport
18 Parkway. The Project’s nameplate capacity is 1.55 MW AC, which is expected to
19 produce approximately 2,650,000 kWh per year.

20

21 Q8. How will the City use the energy?

1 A8. The City will utilize net metering credits generated by the array to offset electrical costs
2 from its largest accounts located throughout South Burlington, as well as allocate a
3 portion of the production to the South Burlington School District.
4

5 Q9. Please describe the land on which the City proposes to install the Project.

6 A9. The Project will consist of approximately 8 acres of an open field, which currently exists
7 as the cap of the closed landfill owned by the City. The landfill was closed in 1992 and
8 capped with approximately 3 feet of clay material to minimize infiltration of stormwater
9 to the waste material. Due to the property being a closed landfill, the Project area is not
10 used today and has limited potential for other forms of development. The Project site is
11 surrounded by: the City's wastewater treatment facility to the north, the Burlington
12 International Airport to the east, the Chittenden County waste transfer station and bus
13 depot, along with the City's public works facilities to the south, and Interstate 89 to the
14 west. The closest residence is located to the west on Valley Ridge Road, which is
15 approximately 600 feet from the array and located across Interstate 89 from the Project.
16 The City owns the Project parcel over which the proposed Project would be located.
17

18 The Project includes the following minimum setbacks (distance from array) as shown on
19 the Site Plan:

- 20 -at least 100 feet from the measured edge of Airport Parkway;
- 21 -approximately 325 feet from Interstate 89; and
- 22 -at least 50 feet from the other property boundary lines.

1 Q10. Please generally describe the site plan.

2 A10. As shown in the Site Plan (Exhibit SB-DM-2), the array consists of approximately 6,768
3 solar modules mounted on fixed-tilt racking systems with concrete ballast blocks. Rows
4 of panels run east-west and are oriented due south and fixed at around 20 degrees.
5 Racking systems will be roughly 3 feet on the low side and 8 feet on the high side.

6

7 Electricity will be transmitted along each string of panels and run in protective conduit to
8 the inverters dispersed throughout the array, which convert the electricity from direct
9 current (DC) to alternating current (AC). The AC current then runs to a proposed pad-
10 mount transformer located at the Project's northwest corner, which will step-up the
11 voltage from 480V to 12,470V. The transformer will be integrated into a secondary
12 containment system, sized to hold 110% of total volume of fluid plus 5 inches of
13 freeboard, to prevent the unlikely spill from any fluids spilling into nearby water
14 resources. GMP will extend its existing 3-phase distribution service from Airport
15 Parkway to the proposed GMP-owned transformer via three new riser poles to
16 accommodate the interconnection facilities including a disconnect and recloser for grid
17 protection.

18

19 The Project will be accessed from an existing paved driveway off Airport Parkway,
20 which provides secure access to the wastewater treatment facility. The City will need to
21 expand an existing paved curb cut off the driveway for the Project entrance. The City
22 will use a construction staging area located on the Project site as shown in Exhibit SB-

1 DM-2 for delivery and short-term storage of components. The staging area will consist
2 of crushed stone for stability and will also provide long term access to the Project as well
3 as a staging area for future construction activities at the City's wastewater treatment
4 plant. See Mr. Beaudoin's testimony for additional information related to access,
5 stormwater treatment design, earth disturbance and erosion control measures related to
6 construction.

7
8 Q11. Does the City propose to install a fence? If so, please describe.

9 A11. Yes. The Petitioner proposes to install a 7-8 ft chain link fence that would surround the
10 array and staging area for public safety considerations and Project security. The fence
11 will meet applicable electric code requirements.

12
13 Q12. Please explain the proposed construction process and schedule.

14 A12. The City would like to have the Project in service by the end of 2016 in order to take
15 advantage of applicable net metering benefits, and to avoid construction during winter
16 conditions. In order to meet this date, procurement would need to begin by August 1st,
17 2016 so construction could begin by October 1st.

18
19 Project construction is estimated to take 10-12 weeks depending on weather and other
20 logistical constraints. Materials will be delivered in various phases and will utilize the
21 staging area. Material including ballast blocks, racking and panels will be transported via
22 tracked machines across the site and set into place. GMP will be responsible for the
23 installation of the 3-pole line extension, transformer, recloser and other protection

1 schemes. Most tasks will be carried out in parallel with the racking installation taking the
2 most time. The City will perform construction Monday-Friday, 7:00 A.M. to 6:00 P.M.,
3 Saturdays, 8:00 A.M. to 5:00 P.M. with no construction on Sundays or holidays.
4

5 Q13. What are the operation and maintenance activities for the Project?

6 A13. Once the project is fully commissioned, operations and maintenance activities will be
7 minimal. Routine maintenance will be performed one or two times per year and
8 vegetative management, primarily mowing between panel rows, will be performed 2-3
9 times per year. Additionally, annual inspections will ensure compliance of the
10 operational stormwater permit and cap closure permit referenced in Mr. Beaudoin's
11 testimony.
12

13 Q14. Will the Project require any tree clearing, grading or blasting?

14 A14. No. The Project will not require any tree clearing, grading or blasting.
15

16 Q15. Who will retain ownership of the environmental attributes?

17 A15. The Petitioner will retain ownership of the environmental attributes.
18

19 Q16. Has the interconnecting utility agreed under 30 V.S.A. § 219a(m)(2) to support the
20 Project?

21 A16. Yes, 30 V.S.A. § 219a(m)(2) states in relevant part as follows:

22 If the interconnecting electric company agrees, a solar facility or
23 group of solar facilities for the generation of electricity, to be

1 installed by or on behalf of one or more municipalities on a closed
2 landfill, shall be considered a net metering system for purposes of
3 this section if the facility or group of facilities has a total capacity
4 of 5 MW or less and meets the provisions of subdivisions
5 (a)(6)(B)-(D) of this section.

6 Please see the attached communication from GMP agreeing to this Project as a net-
7 metering facility, Exhibit SB-DM-12.

8
9 **Group Net-Metering Requirements**
10 **[Board Rule 5.105]**

11 Q17. Please describe the meters proposed to be included in the group system?

12 A17. The meters which will be members of the new net metering group are: (1) a new
13 proposed meter located at the array for measuring production, and (2) existing meter
14 owned by the City (Meter #: E15113895; Account #: 72761000008; Meter Address: 1015
15 Airport Parkway, South Burlington, Vermont.

16
17 Q18. Will the meters included in the group system be located within the same electric service
18 territory?

19 A18. Yes. All meters will be located with Green Mountain Power's service territory.

20
21 Q19. Please describe the proposed method for adding and removing meters from the group net
22 metering system?

23 A19. The City will add or remove meters at its sole discretion and pursuant to applicable rules.
24

1 Q20. Whom will the City designate to be responsible for all communications from the group
2 system to the serving electric company, for receiving and paying aggregate bills for any
3 service provide by the serving company for the group system, and for receiving any other
4 communications regarding the group system?

5 A20. The group administrator will be Ilona Blanchard.

6

7 Q21. Please describe the City's binding process for the resolution of any disputes within the
8 group system relating to net metering that does not rely on the serving electric company,
9 the Board or the Department?

10 A21. All disputes between group members will be settled by the group administrator, in its sole
11 discretion. In no event will the City require the Public Service Board, the Public Service
12 Department, or Green Mountain Power to resolve a dispute within the group net metering
13 system.

14

15 **Orderly Development of the Region**
16 **[Section 248(b)(1)]**

17 Q22. Will the Project interfere with the orderly development of the region, giving due
18 consideration to recommendations from municipal and regional planning commissions
19 and municipal legislative bodies?

20 A22. No. The Project will not interfere with the orderly development of the region. Instead, it
21 will promote the use of solar energy without adverse impacts to the scenic or natural
22 beauty of the area. Specifically, the proposed Project is consistent with the 2016 South
23 Burlington Comprehensive Plan ("City Plan") both with regard to land use/planning and

1 energy use/procurement and the City Plan does not contain any applicable land
2 conservation measures or binding standards.

3
4 In regards to land use, the Project area is located in the “Northeast Quadrant” of South
5 Burlington, an area the City Plan deems an industrially and commercially zoned area. See
6 Map 11 of City Plan. The Northeast Quadrant consists of a variety of land uses, however,
7 the City Plan designates the area around the proposed Project site as “Very Low Intensity
8 – Principally Open Space” in Map 11 of the City Plan as shown in Exhibit SB-DM-7.

9 The City Plan describes this area as follows:

10 These lands emphasize conservation, water quality, and wildlife
11 protection. While development is not inherently prohibited, these areas
12 reflect the lowest building densities in the City. Uses other than open
13 space and agriculture should have restrictive regulations and minimize
14 their footprint. Primary and secondary natural resources are given priority
15 and disturbance is to be carefully avoided or minimized. Land
16 development regulations should provide ease of approval for open spaces,
17 including agricultural land and related uses. Roadways and other breaks
18 should be minimized and carefully planned to avoid negative impacts to
19 wildlife corridors. City Plan pg. 3-6; Exhibit SB-DM-7.

20
21 The proposed Project site is a capped and closed landfill, a characteristic that prohibits
22 agricultural or related uses. However, the proposed Project would use the land in a way
23 that benefits the residents of South Burlington without increasing demands on traffic and
24 parking or utility services, developing land that could be used for open spaces or
25 agricultural, or impacting natural resources and green areas.

26
27 Further, the City Plan requires that “particularly in the case of solar arrays” such
28 development “consider the impacts of such structures on open spaces and wildlife

1 corridors.” City Plan pg. 3-41 in Exhibit SB-DM-7. The proposed Project is not located
2 in an area that the City Plan has designated for open space or wildlife corridor protection
3 and the Project would have no undue adverse impact on wildlife as the prefiled testimony
4 of Krista Reinhart explains.

5
6 The City Plan sets forth two Energy Objectives:

7 Objective 23. Achieve a reduction of 20% in carbon dioxide-equivalent
8 emissions from 2009 levels by 2020 through an increase in renewable
9 energy production and reductions in energy use in the following sectors:
10 transportation, commercial/industrial, residential, municipal/school.

11
12 Objective 24. Facilitate and encourage community-based renewable
13 energy production in locations that do not contradict or interfere with the
14 City’s open space and resource conservation objectives, specifically as
15 identified in Section 3.2D of this plan. City Plan pg. 2-80, Exhibit SB-
16 DM-7.

17
18 The City Plan also aims to incorporate two Energy Strategies:

19 Strategy 59. Encourage installations of photovoltaic electric and solar hot
20 water heating for residential and commercial buildings, and the
21 development of medium-scale photovoltaic electric generating facilities
22 within the City.

23
24 Strategy 60. Seek opportunities to develop photovoltaic electric
25 production on City and school grounds and building rooftops, where not in
26 conflict with other goals of this plan. City Plan pg. 2-81, Exhibit SB-DM-
27 7.

28
29 While the Energy objectives and strategies do not constitute binding land conservation
30 measures, the Project has given due consideration to these goals. The proposed Project is
31 a medium sized photovoltaic electric facility that would be built on City grounds.

32 Moreover, as discussed above, the Project will not be in conflict with other goals of the
33 City Plan.

1 The City also examined the 2013 Chittenden County Regional Plan (“Regional Plan”) to
2 evaluate potential impacts to orderly development. Similar to the City Plan, the Regional
3 Plan establishes several general policies related to land use and energy. The Regional
4 Plan, at Section 2.5.5, identifies the following relevant goals and issues in the Energy
5 Section:

- 6 ● Energy Goal: Reduce Chittenden County’s consumption of
7 energy and reliance on non-renewable, energy. Improve the cost-
8 effectiveness, efficiency and reliability of the energy production,
9 transmission, and distribution.
- 10 ● The cost of electricity is related to the distance it travels. When
11 electricity is transmitted over long distances, a significant amount
12 of electricity is lost. Improving line efficiency or encouraging
13 distributed generation (such as locally sited small scale renewable
14 projects) reduces losses and could result in more cost effective
15 rates.
- 16 ● Chittenden County has many non-fossil fuel based, renewable
17 energy production sites owned by utilities, private parties, and
18 municipalities. Reliable, cost effective, and environmentally
19 sustainable energy availability is critical to support the economy
20 and natural resources of Chittenden County. Regional Plan pg. 69,
21 Exhibit SB-DM-7.
22

23 The relevant land use sections in the Regional Plan “Encourage future growth in the
24 Center, Metro, Enterprise... Areas to maintain Vermont’s historic settlement pattern and
25 respect working and natural landscapes.” Regional Plan pg. 57, Exhibit SB-DM-7. The
26 Project complies with the land use and planning guidelines of the Regional Plan because
27 it is located within an “Enterprise” area and utilizes previously developed land,
28 promoting the conservation of large agricultural, recreational and historic places. The
29 Regional Plan does not contain any binding or applicable land conservation measures.
30 The applicable sections of the Regional Plan are attached as Exhibit SB-DM-7. As a

1 result, the Project does not violate any applicable land use measures contained in the
2 Regional Plan.

3
4 Encore provided the CCRPC, the City of South Burlington City Council, the South
5 Burlington Planning Commission, and adjoining landowners with 45-day advance notice
6 packages under Rule 5.402(A). No comments were received.

7
8 **System Stability and Reliability**
9 **[Section 248(b)(3)]**

10 Q23. Will the Project adversely affect system stability and reliability?

11 A23. No, the Project will not adversely affect system stability and reliability. Last year, the
12 City filed an Application for Interconnection pursuant to PSB Rule 5.500 with GMP.
13 GMP confirmed net metering eligibility, and accepted the complete application and
14 performed the Fast Track Analysis as shown in Exhibit SB-DM-6. The Project failed
15 Fast Track criterion 3, 5, and 10 (Criterion 3 requires that the aggregated generation on
16 the circuit not exceed 15% of the line section annual peak load; Criterion 5 determines if
17 protection upgrades are needed; and Criterion 10 determines whether a Facilities Study is
18 needed).

19
20 GMP, however, did not require a System Impact Study but instead performed a Facilities
21 Study to determine the design and cost of network upgrades necessary to ensure system
22 reliability. The Facility Study, shown as Exhibit SB-DM-6 included the need for the
23 following upgrades, which the City will pay for and implement: (1) electronic recloser to

1 be installed on a riser pole at the Project site; (2) three cut-out mounted sectionalizers to
2 be located at Taglet 105091; (3) an electronic recloser to be installed at Taglet 54844; (4)
3 modify settings to existing recloser at Taglet 54829 and substation transformer; and (5)
4 disconnect switches to be installed at second riser pole at the Project; and (6) necessary
5 communications to allow for remote control of the protection devices.. The Project will
6 comply with all GMP requirements, including inverter settings, which will be set forth in
7 the Generator Interconnection Agreement that the City and GMP will execute prior to
8 commissioning, as well as applicable code requirements, including National Electric
9 Code (“NEC”) and National Electric Safety Code (“NESC”). As a result, the Project will
10 not adversely impact system stability and reliability.

11
12 Q24. Will new distribution lines be necessary?

13 A24. No. There will be no new distribution lines, however the existing three phase overhead
14 distribution line along Airport Parkway will be extended onto the Project site via three
15 proposed poles which will include support wires and recloser. GMP will install and own
16 these three poles and associated wires.

17
18 **Economic Benefit**
19 **[§248(b)(4)]**

20 Q25. Will the Project result in an economic benefit to the State and its Residents?

21 A25. Yes. Please see response to A8 above. Further, the Legislature identified the need for
22 solar in Vermont through its net-metering legislation and specifically permitted this type

1 of Project. See 30 V.S.A. § 219a(m)(2). Thus, the Petitioner relies on the Legislature's
2 policy choice for supporting the Project's economic benefit.

3
4 In addition, during the development and construction phases, the Petitioner and its
5 subcontractors have hired many individuals in Vermont to work on environmental,
6 aesthetics, legal, and permitting. Additional workers will be needed during construction,
7 as well as during the ongoing maintenance and operation of the solar facility. Project
8 installation is also likely to result in local economic activity from lodging, meals, and
9 other ancillary purchases by contractors.

10
11 **Transportation Systems**
12 **[10 V.S.A. § 6086(a)(5)]**

13 Q26. Will there be any undue impacts on traffic resulting from the Project?

14 A26. No. Deliveries during Project construction will use existing roads, such as Interstate 89,
15 Williston Road and Airport Parkway, with vehicles that are commonly used on public
16 roads. All deliveries will be in accordance with applicable permits and requirements.
17 There will not be any long-term impacts on traffic from the Project, and only short-term
18 periodic traffic impacts due to deliveries of Project equipment to the site during
19 construction.

20
21 **Aesthetics and Acoustics**
22 **[30 V.S.A. § 248(b)(5), 10 V.S.A. § 6086(a)(8)]**

23
24 Q27. Will this Project have an undue adverse effect on aesthetics?

1 A27. No. The City retained the services of T.J. Boyle Associates, LCC, to perform an analysis
2 of the Project's aesthetic impact. This analysis concluded that the Project will have
3 limited visibility. Within views that will be most prominent, the Project will be seen
4 within the context of surrounding industrial development. The Project form, colors and
5 materials will fit within the surrounding context and thus the Project will not result in
6 adverse impacts to the aesthetics or scenic or natural beauty of the area. However, if the
7 Project were found to create an adverse impact, the aesthetic report addressed the three
8 criteria for the second prong of the Quechee test and concluded that the Project impacts
9 would not be undue. For more information on aesthetics, please see TJ Boyle's aesthetic
10 report shown in Exhibit SB-DM-8.

11
12 Q28. Please explain any potential noise impacts from the Project.

13 A28. The primary noise generating equipment proposed for the Project are (a) inverters and (b)
14 pad-mount transformer. Krebs & Lansing performed an acoustic analysis of the Project
15 based on the proposed design. The sound analysis, along with specifications of proposed
16 inverters and transformer, is attached as Exhibit SB-DM-9. This analysis demonstrates
17 that the highest sound levels at the nearest residence, identified as Building N, will be 27
18 dBa at the exterior of the house. Sound levels on nearest property lines and other
19 residences are included in the exhibit. It is important to note that use of string inverters
20 reduces the sound levels as compared to larger, centralized inverters, and that both the
21 inverters and transformers generate the highest sound levels during hours of peak solar
22 production, and greatly diminished during nighttime hours.

1 Q29. Will the sound produced by the Project create an undue adverse effect?

2 A29. No, the sound levels calculated at the nearest residence will be below the maximum
3 limits of 45 dBA (LEQ)(1) (exterior) and 30 dBa (LEQ)(2) (interior) at the nearest
4 residence as required by the Public Service Board.

5

6 **Historical and archeological sites**
7 **[30 V.S.A. § 248(b)(5) 10 V.S.A. § 6086(a)(8)]**

8 Q30. Will this Project have an undue adverse effect on historic sites?

9 A30. No. There are no registered historic sites within or adjacent to the Project. Additionally,
10 the potential for impacts to archaeological resources is extremely low due to the Project
11 being sited on a capped landfill, which has been previously disturbed.

12

13 **Public Health and Safety**
14 **[30 V.S.A. § 248(b)(5)]**

15 Q31. Will the Project have any adverse effects on the health, safety, or welfare of the public or
16 adjoining landowners?

17 A31. No. The City and its experts considered a range of potential impacts on public health and
18 safety that could result from the proposed Project and concluded that the Project will not
19 adversely impact the public health and safety for the following reasons: (1) the Project
20 design minimizes disturbance to the landfill cap that could pose a risk to human health;
21 (2) the Petitioner will perform all work in accordance with the National Electric Safety
22 Code and National Electric Code; (3) the Petitioner has mitigated safety and reliability
23 impacts to the electrical grid through various system upgrades as discussed in herein; (4)

1 the Project will use non-reflective panels to reduce the potential for glare; and (5) a
2 proposed perimeter fence around the site will ensure security with appropriate electrical
3 warning signs. Furthermore, as supported by my testimony and that of other witnesses,
4 the lack of impacts under the other Section 248 criteria (air pollution, water pollution,
5 waste disposal, soil erosion, etc.) supports the conclusion that the proposed Project will
6 not have an adverse impact on public health and safety.

7
8 **Greenhouse Gas Impacts**
9 **[§248(b)(5)]**

10 Q32. Will the Project have an undue adverse effect on the use of natural resources or
11 greenhouse gas impacts?

12 A32. No, it will not. The only greenhouse gas emissions related to the Project will occur
13 during construction activities and these activities will be minimal (equipment deliveries,
14 moving equipment from staging/laydown areas to racking areas). It is anticipated that a
15 total of less than 40 truck trips will be required for equipment delivery. On-site
16 construction efforts will include site preparation, transport of the ballasts blocks, racking
17 and modules from the staging area across the site with small excavators and/or forklifts,
18 placement of the panels on the racks, installation of the transformer pads and secondary
19 containment system, and installation of a perimeter fence. Maintenance activities will be
20 minimal and will include an annual system inspection and as-needed maintenance such as
21 trimming of bushes and trees to prevent shading over time.

1 Further, the City will provide the Agency of Natural Resources (“ANR”) with the
2 following Project “as-built” information within 60 days of the commissioning date of the
3 Project to assist ANR with compiling and analyzing greenhouse gas impacts:

- 4 a. Solar panel manufacturer and model;
- 5 b. Solar panel cell technology (e.g., mono-Si, multi-Si, CdTe, etc.);
- 6 c. Rated solar panel output (in watts);
- 7 d. Number of solar panels installed;
- 8 e. Array mounting type (fixed, 1-axis tracking, 2-axis tracking, ground, roof,
9 other);
- 10 f. For fixed or 1-axis tracking, panel orientation, and mounting angle;
- 11 g. Rack system manufacturer and model;
- 12 h. Rack system components, including the number of aluminum rails, steel
13 mounting posts, etc;
- 14 i. Number and type of any other mounting components (e.g., concrete ballasts and
15 foundation blocks);
- 16 j. Manufacturer, model, and number of inverters;
- 17 k. Manufacturer, model, and number of transformers;
- 18 l. Mass of concrete used (for ballasts, foundations, mounting pads, etc.);
- 19 m. Percent of Portland cement composition of concrete;
- 20 n. Description, quantity, and source of any recycled materials used (e.g., recycled
21 content concrete, recycled aluminum racking, etc.);
- 22 o. Amount (length) and gauge of wiring used for project;

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2 p. Components for connection to grid (circuit boxes, circuit breaker panels,
3 metering equipment, etc.);

4 q. Distance (e.g., truck miles traveled) for transport of system components to site;
5 and

6 r. Distance to grid connection.

7
8 By January 30 of each year, ANR may request from the Petitioner an annual report for
9 the previous calendar year of operations which shall contain the information set out
10 below and will be used to assist ANR with compiling and analyzing greenhouse gas
11 impacts. The Petitioner will have 60 days from ANR's request to supply the information,
12 excepting the Renewable Energy Credit information, which may be submitted by July 31
13 of each year. Should ANR not request the information set out below by January 30, the
14 Petitioner will not have any obligation to provide an annual report from the previous year
15 of operations. The information to be provided includes the following:

16 a. Electric generation in kWh for the prior year, broken down by month and the
17 sale of any Renewable Energy Credits associated with that generation; and

18 b. Any information about the replacement of PV panels, inverters, transformers,
19 or a complete racking system. In instances of failure and replacement of
20 equipment e.g., PV panels, inverters, etc.), the Petitioner shall provide
21 descriptions of both the failed and replacement components at the same level of
22 detail as required by the "as-built" reporting requirements in paragraph 8 above.

1 This provision does not require the Petitioner to provide information about de
2 minimis replacement of system components (e.g., replacement of racking system
3 hardware), or information regarding regular maintenance activities.

4
5 **Waste Disposal**
6 **[10 V.S.A. § 6086(a)(1)(B)]**

7 Q33. Will the Project have an undue adverse effect on waste disposal?

8 A33. No. Waste disposal practices will meet applicable health and Environmental
9 Conservation Department regulations regarding the disposal of wastes. The Project is not
10 anticipated to generate any wastes during operation. The Project does not involve
11 disposal of wastes or injection of any material into groundwater or wells. On the
12 contrary, as described in Mr. Beaudoin's testimony, the City has proposed sufficient
13 stormwater treatment design to prevent runoff from infiltrating or disturbing the landfill
14 cap. The Petitioner will install the padmount transformer on a secondary containment
15 system which will hold 110% of total volume of fluid, plus 5 inches of freeboard, to
16 prevent any unlikely spills from reaching nearby water resources. There will be no
17 buildings associated with the Project, and the Project does not involve any domestic
18 waste or potable water supply needs; therefore, the Project does not require a state Water
19 Supply and Wastewater Disposal Permit. Any solid wastes generated during construction
20 will be processed and/or recycled in accordance with Vermont solid waste management
21 rules.

1 Q34. Will the Project be decommissioned at the end of its useful life, with various system
2 components disposed of?

3 A34. Yes. At the end of the Project's useful life, the Petitioner will assess whether: (1) it is
4 financially viable to continue to operate the Project as is; or (2) any changes could be
5 made to the Project to allow its continued operation, and appropriate amendment to its
6 CPG be sought; or (3) the Project should be decommissioned. The Petitioner has
7 developed a Decommissioning Plan that would apply when the Petitioner decommissions
8 the Project. Please see Exhibit SB-DM-11 for a decommission plan.

9
10 Q35. Has the Petitioner proposed a decommission fund?

11 A35. Yes, the Petitioner has proposed a funding mechanism based upon an estimate of the
12 Project's decommissioning costs. The Petitioner relied on the expertise of Encore
13 Renewable Energy ("Encore") in general construction management and more specifically
14 in regards to the general contractor management of solar project construction, which
15 relates to both the decommissioning of the array itself as well as the deconstruction and
16 hauling of materials (including steel, wiring, concrete, etc.) from the Project site. The
17 decommissioning fund will be in place at the time construction begins and will be funded
18 by an irrevocable standby letter of credit that includes an automatic renewal provision
19 ("evergreen clause"). Please Exhibit SB-DM-11 for a proposed decommission fund and
20 supporting documents and a draft letter of credit.

21

22

1 A37. The Project will not have any significant impacts related to the use of natural resources.
2 The Project will use passive solar energy to produce electricity that local consumers will
3 utilize to power their homes and businesses.

4

5 **Can Be Served Economically by Existing or Planned Transmission Facilities**
6 [30 V.S.A. § 248(b)(10)]

7 Q38. Can the Project be served economically by existing or planned transmission facilities
8 without undue adverse effect on Vermont utilities or customers?

9 A38. Yes. The Project will have no adverse impact on Vermont utilities or customers. As
10 demonstrated by the Fast Track Analysis and GMP Facility Study discussed above, the
11 proposed Project will not require any upgrades to the transmission system.

12

13 Q39. Does this conclude your testimony?

14 A39. Yes.

EXHIBIT LIST

Exhibit SB-DM-1	Resume
Exhibit SB-DM-2	Site Plan and Elevation Drawings
Exhibit SB-DM-3	Equipment Specifications
Exhibit SB-DM-4	45-Day Notice Package
Exhibit SB-DM-5	Electrical One-Line Diagram
Exhibit SB-DM-6	GMP Fast Track Analysis and Facilities Report
Exhibit SB-DM-7	Orderly Development, Regional and Town Plan Excerpts
Exhibit SB-DM-8	Aesthetics Report
Exhibit SB-DM-9	Acoustic Report
Exhibit SB-DM-10	Federal Aviation Administration Non Hazard Determination
Exhibit SB-DM-11	Decommissioning Plan
Exhibit SB-DM-12	GMP Approval to Bill as Net Metering Project