

STATE OF VERMONT
PUBLIC SERVICE BOARD

Docket No. 8632

Petition of Elizabeth Mine Solar I, LLC, for a certificate)
of public good, pursuant to 30 V.S.A. § 248, authorizing)
the installation and operation of a 4.998 MW solar)
electric generation facility on land within the Elizabeth)
Mine Superfund site in the Towns of Thetford and)
Strafford, Vermont, to be known as the “Elizabeth Mine
Solar Project”

Hearings at
Montpelier, Vermont
April 29, 2016

Order entered: 6/29/2016

PRESENT: Thomas Knauer, Hearing Officer

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I. INTRODUCTION

This docket concerns a petition filed by Elizabeth Mine Solar I, LLC (“EMS” or “Petitioner”), pursuant to 30 V.S.A. § 248 and Vermont Public Service Board (“Board” or “PSB”) Rule 5.400, requesting a Certificate of Public Good (“CPG”) authorizing the installation and operation of a 4.998 MW solar electric generation facility on land within the Elizabeth Mine Superfund site in the towns of Thetford and Strafford, Vermont, and known as the Elizabeth Mine Solar Project (the “Project”). In this proposal for decision (“PFD”), I recommend that the Board approve the Project and issue a CPG, subject to conditions.

II. PROCEDURAL HISTORY

On October 9, 2015, EMS submitted its petition to the Board requesting a CPG pursuant to 30 V.S.A. § 248 to install and operate the Project. Upon filing its petition with the Board, EMS also submitted copies of its petition to the Town of Strafford Planning Commission, the Town of Strafford Selectboard, the Town of Thetford Planning Commission, the Town of Thetford Selectboard, the Two Rivers-Ottawaquechee Regional Commission, the Vermont Agency of Natural Resources (“ANR”), the Vermont Department of Public Service (“Department”), and the Vermont Division for Historic Preservation (“DHP”). EMS also noticed the adjoining property owners to inform them that the Petition had been filed with the Board.

On December 4, 2015, EMS filed supplemental prefiled testimony and exhibits from Ron Kelly, Mark Kane, and Krista Reinhart regarding distribution system upgrades required to accommodate the Project.

On December 7, 2015, a prehearing conference was held in Montpelier, Vermont, with representatives of EMS, ANR, and the Department present.

On December 15, 2015, I issued a prehearing conference order.

On December 18, 2015, I issued an order directing EMS to file the Green Mountain Power Corporation (“GMP”) System Impact Study, as well as any Facilities Study, with the Board as soon as they became available.

On January 4, 2016, I conducted a site visit and public hearing in Strafford, Vermont.

On January 5, 2016, the Board received a public comment from Marie Ricketts, a resident of Tyson Road, recommending that the Board require flaggers to be present at both ends of Tyson Road during construction of the Project.

On January 11, 2016, the Town of Strafford (“Strafford”) and DHP filed motions to intervene in the proceeding.

On January 22, 2016, EMS filed the System Impact Study for the Project.

On January 28, 2016, I issued an order granting the Strafford and DHP motions to intervene.

On March 7, 2016, the Town of Strafford filed prefiled testimony of John Freitag and Steven Campbell.

On March 21, 2016, I issued an order granting DHP leave to late file testimony.

On March 22, 2016, DHP filed prefiled testimony from Scott Dillon.

On March 25, 2016, EMS filed a stipulation between EMS and the Town of Strafford (“Strafford MOU”). Under the provisions of the Strafford MOU, EMS and Strafford each waived their right to comment on the PFD pursuant to 3 V.S.A. § 811.

On April 28, 2016, EMS filed second supplemental prefiled testimony and exhibits of Mark Kane, and stipulations between EMS and ANR (“ANR MOU”) and between EMS and DHP (“DHP MOU”). Under the provisions of the ANR MOU and the DHP MOU the signatories each waived their right to comment on the PFD pursuant to 3 V.S.A. § 811.

On April 29, 2016, a technical hearing was held at the Public Service Board. The same day, the Department filed a letter with the Board with its determination that the Project is consistent with 30 V.S.A. § 202(f), and DHP filed an affidavit of R. Scott Dillon to support the admission of his prefiled testimony into the record.

On May 16, 2016, EMS filed proposed findings of fact, and waived its opportunity to comment on the PFD pursuant to 3 V.S.A. § 811.

On May 17, 2016, the Department filed a letter stating that EMS's proposed findings meet the Department's approval. The Department waived its opportunity to comment on the PFD pursuant to 3 V.S.A. § 811.

On May 18, 2016, ANR and DHP each filed a letter waiving their right to comment on the PFD pursuant to 3 V.S.A. § 811, provided that the PFD is materially consistent with EMS's draft.

Summary of Public Hearing Comments

There were many people present at the public hearing, and approximately 11 people provided public comment. The members of the Town of Strafford Selectboard expressed "profound" disappointment that the Town would need to engage in a legal process to become an official party and to present evidence. The members were also disappointed about the Section 248 process and "how little it gives to local communities." Because the Town of Strafford later became a party to the case, the remainder of the Selectboard public comments are not summarized here.

Several speakers opined that there was "obfuscation" about the Project, and uncertainty about whether the Project's RECs would be retired or sold out-of-state. Several people believed that the Project would not be beneficial without retirement of the Project's RECs in Vermont.

One person stated that there was not adequate notice of the public hearing.

One person supported the Project, noting that Elizabeth Mine was an "excellent site" and that the Project's adverse effects would be minor, while the Project's benefits would be "huge."

III. FINDINGS

Based on the petition and the associated prefiled testimony and exhibits, the evidence presented at the technical hearing, and the absence of any factual disputes, I have determined that this matter is ready for decision. Based on the substantial evidence of record and the testimony presented at the hearing, I hereby report the following findings to the Board in accordance with 30 V.S.A. § 8(c).

Description of the Project

1. EMS is a partnership consisting of Brightfields Development, which has offices at 40 Walnut Street, Suite 301, Wellesley, Massachusetts, and Wolfe Energy LLC, which has offices at 4 Kibling Hill Road, Strafford, Vermont. The two firms are working together to develop the Project. Ronald Kelly, EMS (“Kelly”) pf. at 1.

The Project Site

2. The Project is a 4.998 MW AC solar electric generation facility located at 169 Mine Road, on land in both Strafford and Thetford, Vermont, currently owned by two separate landowners. Kelly pf. at 4.

3. The Project will be sited within 28 acres of restricted land on the Elizabeth Mine site known as “Tailings Pile 1 and Pile 2,” which are part of the larger 120.2 acre Elizabeth Mine site. The Elizabeth Mine site is a Superfund site that has undergone remediation by the U.S. Environmental Protection Agency (“EPA”) in coordination with ANR. Tailings Pile 1 and Pile 2 are two sections of the Elizabeth Mine site that have been remediated to contain and clean up contamination associated with former copper mining activities. Kelly pf. at 4-5; exhs. EMS-RK-2, RK-3, RK-4, RK-5.

4. The remediation action on the site consisted of stabilizing the old tailings piles on the site, and then “capping” those materials under an impermeable geosynthetic membrane, which was then covered with soil. Specifically, the cap consists of a 60 MIL¹ geomembrane, drainage geocomposite, +/- 18" of vegetative support soil, and +/- 6" of topsoil. The cap includes associated stormwater controls. The cap is currently fully covered with well-established grass vegetation. The cap system prevents surface water from infiltrating into contaminated soils, and allows for the separate treatment, over time, of water leaching out of the isolated contaminated materials. ANR is responsible for maintaining the remediation measures and monitoring the site and areas around the site for any evidence of contamination migration into groundwater, surface waters, or soil. Kelly pf. at 5-6; exhs. EMS-RK-2, RK-3.

1. A “MIL” is a manufacturing specification; 1 MIL = 0.001 inch.

5. Because of the remediation activities and the need for ongoing site management and monitoring, the Project area is subject to restrictive covenants in the form of land-use easements that were developed by the EPA and ANR. These easements require ANR approval for certain activities on the parcel, and such approval would be required for the Project. EMS is engaged in discussions with ANR to secure its independent approval under the terms of these easements. Kelly pf. at 7; exhs. EMS-RK-3, RK-4, RK-5.

6. The site is owned by two separate landowners. One portion of the site is owned by the Cook family and a separate portion is owned by the Zagaeski family. The Cook family owns 15.15 acres of the site that straddles both Strafford and Thetford. The Zagaeski family owns 14.53 acres located entirely within Thetford. EMS has executed letters of intent (“LOIs”) with these landowners to lease (with potential option to purchase) the land for the duration of the Project. Kelly pf. at 6.

7. In 2011, as the remediation work was underway by the EPA, the Strafford Energy Committee was encouraged by the Strafford Selectboard to study the possibility of installing a solar array on the tailings piles and retained a student intern from Dartmouth Thayer School for that purpose. When EPA staff learned of the interest in a solar project on the site, it agreed to have the cap engineered to accommodate the future addition of solar panels. As a result, the cap was built with less than a 5-degree tilt to the southwest. The site is large and relatively flat, and has excellent solar exposure and very few neighbors. Kelly pf. at 7.

8. The overall parcel is bordered by deciduous forest on all sides. There is a Class IV road bordering the eastern side of the property, with Mine Road bordering the southeastern edge and New Boston Road bordering the south side of the site. Kelly pf. at 4; exh. EMS-RK-2.

9. The Project’s narrowest setback is from Mine Road at approximately 250 feet. There are seven residential dwellings within 1,000 feet of the edge of the Project, all located to the west or northwest of the Project. The nearest residence is approximately 550 feet from the facility. Kelly pf. at 4; exh. EMS-RK-2.

Project Description

10. The nameplate capacity for the Project is 4.998 MW AC. The Project will use approximately 22,590 individual 310 watt solar panels at a fixed tilt of 30 degrees to maximize solar radiance collection. Final panel selection will be made at the time of construction and final numbers may vary slightly. Kelly pf. at 9-10.

11. The solar array is divided into three sections that each include a 1,666 kW inverter and 12.47kV AC transformer. The solar array consists of 1,255 groups of eighteen (18) 310 watt solar panels known as strings. Each string is wired in series to produce 655 volts DC and 8.52 amps at standard design conditions. Up to 23 strings are then parallel wired to fused combiner boxes that aggregate multiple strings into a “subarray.” Nineteen subarray DC circuits are then wired above ground to an inverter. Within the inverter enclosures, individual subarray circuits are connected to disconnect breakers (which provide overcurrent protection) and finally to the DC input side of the inverters. Kelly pf. at 14-15; exh. EMS-RK-2.

12. The solar panels will be mounted on poured-in-place ballasted racks of 18 panels each (two rows of nine panels mounted in portrait mode), covering approximately 28 acres of open field, which is the cap for remediated Tailings Piles 1 and 2. The poured-in-place ballasts do not require any earth disturbance, but will sit on top of the existing soil, thus protecting the engineered tailings pile cap. The power from the panels will be wired above grade to three 1,666 kW inverters and three transformers located along the western edge of the field. From there, the power will run in conduit above grade to the lower access road, at which point it will run underground north up the access road to the switchgear located at the northwest corner of the restricted property. The power from the switchgear will then be interconnected to GMP utility poles. Kelly pf. at 10.

13. The transformers will use a non-toxic, biodegradable cooling oil. In addition, the transformers will be equipped with a secondary oil containment pan. Kelly pf. at 13.

14. The Project will include new and improved gates at the upper and lower access roads. For National Electrical Code (“NEC”) compliance, because the Project is operating at 1,000 volts DC, all the exposed wiring at the back of the solar panels will be enclosed with a scrim fabric, and all accessible equipment within the array, including string combiner boxes, will be locked.

The inverter/transformer pads will be locked and secured. The final selection of equipment will be made after all permitting is complete and the Petitioner selects a solar installer and equipment manufacturers. Kelly pf. at 13; exh. EMS-RK-2.

15. Project configuration was designed to accomplish several objectives: (1) to preserve the remediation work that the EPA and ANR have completed to date, (2) to avoid interfering with ongoing remediation and monitoring efforts, (3) to avoid impacts on environmental resources, and (4) to minimize any visual intrusiveness on the surrounding land uses while maximizing solar gain. Kelly pf. at 10.

16. The site will be accessed from Mine Road and equipment will be delivered to the site utilizing the existing access roads. A construction lay-down area will be designated with ANR's approval prior to the start of construction. EMS may need to temporarily augment and reinforce small segments of the existing gravel access roads to complete construction and delivery. Kelly pf. at 17; exh. EMS-RK-2.

17. To protect the cap, the equipment will be off-loaded from tractor-trailers onto low-ground-pressure vehicles to be transported from the access roads onto the cap. Construction equipment for installing the solar array will include a light duty crane or similar equipment to lift ballasts, racking systems, and panels into place. Heavy construction equipment such as cement trucks for the delivery of concrete for the ballasts and foundations under the switchgear pad will stay off the cap. Kelly pf. at 18.

18. Construction of the Project is expected to take approximately 16 weeks following receipt of the necessary approvals. Kelly pf. at 18.

19. The operation of the Project is totally automatic and requires no on-site personnel. The Project will be continually monitored via the internet to confirm proper operation and performance. The site will be monitored by infrared imaging. Energy metering will also be accomplished by remote telemetry. Kelly pf. at 19.

20. On-site maintenance activities will include periodic vegetative management, snow removal in winter to provide access to the inverter enclosures, and annual equipment and wiring inspections. In addition, EMS will assume the obligation for certain operation and maintenance requirements for those portions of the site that are within the solar project areas. Although EMS

is still in discussions with ANR over the exact scope of these obligations, EMS expects to monitor and control any vegetative growth on the site to protect the underlying cap, and to repair any erosion and settlement within the limits of the solar array. Additionally, EMS will complete EPA or ANR inspections and reporting requirements relating to the Project as ultimately agreed to with ANR. Kelly pf. at 19-20.

Distribution System Upgrades

21. The Project will interconnect with GMP's distribution system on the Strafford side of the Project, located just off Mine Road. The area around the Project is rural and has a limited capacity for distribution and connectivity. As a result, GMP identified upgrades that are necessary in order to accommodate the Project's power output capacity, and to ensure system stability and reliability for the rest of GMP's distribution network. Kelly supp. pf. at 4; exhs. EMS-RK-2, KR-4.

22. These upgrades are therefore related to the Project, but not part of the Project itself, as EMS will not actually construct, control, or maintain these resources once they are constructed. Once constructed, the upgrades will be available to address any future electric demand growth in the area, or may be used by other distributed generation projects proposed in the area in the future. Although the upgrades will be fully independent of the Project, they are being undertaken and partially financed by EMS because they are necessary to facilitate interconnection of the Project. Kelly supp. pf. at 4-5.

23. GMP will undertake the actual construction of the upgrades in conjunction with Phases 1-4 of the distribution system upgrade along Route 132, which is independently being undertaken by GMP for reliability purposes. Kelly supp pf. at 2, 5; exh. EMS-RK-14.

24. Three areas of upgrades between the Project's proposed interconnection point and the Sharon substation located on River River will require distribution upgrades to interconnect the Project: (1) a (+/-) two-mile stretch from the Project site into Strafford along Mine Road (referred to as "Phase 5" of GMP's upgrades in this area); (2) a (+/-) two-mile stretch in Sharon from Route 14 to the Sharon substation (referred to as "Phase 6"); and (3) an upgrade to the Sharon substation itself, including replacing the existing 3.75 MVA transformer with an approximately

7.5/10 MVA transformer. Kelly pf. at 9; Kelly supp. pf. at 2; tr. of 4/29/16 at 7 (Kelly); exh. EMS-RK-16.

25. Phase 5 is an approximately two-mile-long stretch of road, starting at the interconnection point of the Project and continuing down Mine Road to the intersection of Mine Road and Vermont Route 132 through the village of South Strafford to the intersection with Justin Morrill Memorial Highway. The upgrades along this stretch will consist of replacing approximately 35 existing power poles, removing 28 existing poles, and adding 35 new poles in order to reduce span length and tension on the lines. Replacement poles will be installed at the same location as the existing poles, and all old poles will be completely removed from the ground and properly disposed of. Two existing poles will be left unchanged, so that after the upgrades are completed there will be a total of 72 poles along these sections. In addition to the poles, the existing line through the village and along Mine Road will be upgraded to a 3-phase line. Kelly supp. pf. at 3; exh. EMS-KR-4.

26. Phase 6 is approximately two miles long and begins at the intersection of Route 132 and Route 14 in Sharon. The upgrades will continue down Route 14 and under the Interstate 89 overpass until the line crosses the White River, and then continues on the other side of the river along River Road up to the Sharon substation. Upgrades along this portion will increase the existing 3-phase wire size to accommodate 4.998 MW of solar power, including the replacement of 28 existing poles. These poles will be installed at the same location as the existing poles, and the old poles will be completely removed from the ground and properly disposed of. In addition to the replaced poles, six new poles will be added to reduce span length and tension on the lines. Fifteen existing poles will be left unchanged, so that after the upgrades are completed there will be a total of 49 poles along these sections. Kelly supp. pf. at 3-4; exh. EMS-KR-4.

27. Project-related upgrades will also be undertaken at the Sharon substation, where an existing 3.75 MVA transformer will be replaced with an approximately 7.5/10 MVA transformer in order to increase the substation's energy capacity to accommodate the Elizabeth Mine solar power. However, the planned upgrades to the Sharon substation are not solely related to the Project. GMP will submit a separate Section 248 petition to cover approval of all of the changes to the substation. Kelly supp. pf. at 4; tr. of 4/29/16 at 7 (Kelly); exh. EMS-KR-4.

28. EMS will be responsible for the costs of the Project-related upgrades, to the extent that the upgrades are needed to support the Project power. With respect to the Sharon substation, GMP is planning to undertake some additional work that is not related to upgrades for the Project. EMS will contribute its prorated share of costs of the substation upgrade to the extent that it is needed to accommodate the Project's capacity. Kelly supp. pf. at 5.

Review of Project Under the Section 248 Criteria

Orderly Development of the Region

[30 V.S.A. § 248(b)(1)]

29. The Project will not unduly interfere with the orderly development of the region, with due consideration having been given to the recommendations of the municipal and regional planning commissions, the recommendations of municipal legislative bodies, and the land conservation measures contained in the plan of any municipalities. This finding is supported by the findings 30 through 38, below.

30. The Petitioner has received letters of support for the Project from the Strafford and Thetford Selectboards, the Thetford and Strafford Energy Committees, and the Strafford Historical Society and Conservation Committee. Exh. EMS-RK-8.

31. The Petitioner has entered into a stipulation with the Town of Strafford. Exh. EMS-Strafford-1.

32. The Project is consistent with the Strafford and Thetford Town Plans. Mark Kane, EMS ("Kane") pf. at 6-11; exhs. EMS-MK-2, MK-3.

33. The Strafford Town Plan does not identify any specific considerations or guidelines for development of the Elizabeth Mine site, but it does state that "the site is a unique historic, cultural and scenic resource for the Town of Strafford" and identifies it as an "important open space area." Kane pf. at 5; exhs. EMS-MK-2, MK-3.

34. While the Elizabeth Mine area is identified in the Strafford Town Plan as "Important Open Space," no specific land conservation measures are provided for the area. The Project aligns with the goals and objectives outlined for the Elizabeth Mine area in the Strafford Town Plan and the 2004 Reuse Plan for Elizabeth Mine. Visibility of the Project from off-site

locations will be limited. Therefore, the Project will not significantly diminish the scenic value of the site. Kane pf. at 6; exhs. EMS-MK-2, MK-3.

35. The lands encompassing the Project site have not been identified for specific land-conservation measures or indicated as conservation lands in the Thetford Town Plan. These lands are indicated as “Rural” in future land use and on current zoning maps. While the Thetford Town Plan addresses natural resource conservation issues such as wetlands on a more general basis, the Project has avoided impacts on these resources in its design. Kane pf. at 10-11; exhs. EMS-MK-2, MK-3.

36. The Project is consistent with the Two Rivers-Ottauquechee Regional Plan (“Regional Plan”). Kane pf. at 12; exhs. EMS-MK-2, MK-4.

37. The Regional Plan does not specifically identify the Project area as an important visual resource and does not provide specific standards to evaluate the Project’s potential impacts. The Project site does not sit prominently in the landscape and is visually isolated except for areas immediately adjacent to it. The area is not of particularly high scenic quality and has been impacted by its former mining use. The elements of the Project do not interfere with long-range views and are not a dominant focal point in the regional landscape. Kane pf. at 11-12; exhs. EMS-MK-2; MK-4.

38. While the town and regional plans identify the need for sensitivity to scenic resources in the development of land, these documents do not provide specific clear, written community standards that are designed to preserve the aesthetics or scenic beauty of the area in which the Project will be built. The design of the Project has met the intent of these recommendations, goals, and objectives – namely, to ensure that facilities like the one proposed are sited with considerable regard to the scenic qualities of the area. Kane pf. at 12; exhs. EMS-MK-2, MK-3, MK-4.

Municipal Screening Requirements

[30 V.S.A. § 248(b)(1)(B)]

34. No party submitted evidence that the Town of Strafford or the Town of Thetford has adopted screening requirements for ground-mounted solar electric generation facilities pursuant

to either 24 V.S.A. § 4414(15) or 24 V.S.A. § 2291(28) with which the Project would have to comply.

Need for Present and Future Demand for Service

[30 V.S.A. § 248(b)(2)]

39. The Project is required to meet the need for present and future demand for service which could not otherwise be provided in a more cost-effective manner through energy conservation programs and measures and energy-efficiency and load management measures, including those developed pursuant to the provisions of subsection 209(d), section 218c, and subsection 218(b) of this title. This finding is supported by findings 40 through 43, below.

40. The Project has a non-binding LOI with GMP that would allow GMP to purchase all of the energy, capacity, and renewable energy credits (“RECs”) from the Project. Kelly pf. at 25.

41. As a result, the Project may provide a new source of in-state distributed generation that will assist GMP in meeting obligations under Vermont's new Renewable Energy Standard (“RES”). The Project will meet the Tier II definition of in-state distributed generation, as it is less than 5 MW AC. Kelly pf. at 25.

42. Once built, the Project may help satisfy GMP’s need for additional renewable power under the RES program, and will contribute toward meeting the power needs of GMP’s customers. Kelly pf. at 25.

43. GMP has agreed to retire the Project RECs toward its Tier II compliance obligation under the RES. Specifically, GMP has committed to begin retiring RECs from the Project starting in year 7 of the Project’s operation, and retiring all RECs from the Project at the 10-year operation mark. This timing is due to GMP’s current Tier II pipeline, which is projected to exceed the initial compliance obligations based on net metering generation and Standard Offer projects. Kelly supp. pf at 7; exh. EMS-RK-13.

Discussion

The Strafford MOU includes a proposed CPG condition that would require EMS to work in good faith with Strafford and GMP to seek implementation of GMP’s agreement to retire RECs generated by the Project consistent with GMP’s proposal as outlined above. I recommend that the Board include a condition in any CPG that is consistent with this section of the MOU.

System Stability and Reliability

[30 V.S.A. § 248(b)(3)]

44. The Project will not adversely affect system stability and reliability. This finding is supported by findings 45 through 50, below.

45. Per the requirements of Board Rule 5.500, a complete Application for Interconnection was submitted to GMP on June 5, 2015. A System Impact Study was issued on December 3, 2015. Exhs. EMS-BB-2, RK-16.

46. A pre-feasibility study was completed by Encore Redevelopment in November, 2012. As part of this study, various interconnection options were explored. In September of 2014, GMP was contacted to provide a pre-screening and budget cost estimate for the Project. GMP identified the most appropriate means of interconnection as an upgrade to the existing Sharon substation, and the reconductoring and extension of the three-phase distribution line from the Sharon substation to the Project site. This will require the installation of a portable transformer at the substation in order to allow for the replacement of the existing 3.75 MVA substation transformer with a new 7.5/10 MVA substation transformer. In addition to the new substation transformer, required substation upgrades will include new relay settings and a direct transfer trip communication system. The existing overhead distribution feeder from the substation will need to be rebuilt using 477 kcmil cable for each phase. The existing two-phase and single-phase feeders that exist between the substation and the Project site will be upgraded to three-phase with 477 kcmil cable per phase. These line upgrades will require the replacement of existing poles and new poles as needed to accommodate the three-phase construction. In addition to the upgraded distribution feeder, GMP will also need to install new line regulators and electronic line reclosers along the distribution feeder. Brian Browning, EMS (“Browning”) pf. at 5-6.

47. For the Project to interconnect to the newly rebuilt distribution feeder, GMP will need to install: (1) a new load break switch for visual isolation of the Project from the distribution feeder, (2) a Project recloser with protective relaying to allow for the Project to be disconnected immediately from the utility, and (3) the primary metering for the Project. Browning pf. at 6.

48. GMP has indicated that if the substation and line upgrades are completed as outlined above and as determined in greater detail via the system impact and facilities study process, the Project can be interconnected to GMP’s facilities without having an adverse effect on system

stability and reliability. GMP will own and install the electrical system upgrades necessary for interconnection, and EMS will be responsible for the costs associated with these necessary upgrades. Browning pf. at 6.

49. EMS will be responsible for the costs of the Project-related upgrades, to the extent that the upgrades are needed to support the Project power. With respect to the Sharon substation, GMP is planning to undertake some additional work that is not related to upgrades for the Project. EMS will contribute its pro-rated share of costs of the substation upgrade to the extent that it is needed to accommodate the Project's capacity. Kelly supp. pf. at 5; Browning pf. at 6.

50. According to the system impact study, the cost estimate for EMS's portion of the distribution upgrades is \$2,253,700. Exh. EMS-RK-16.

Economic Benefit to the State

[30 V.S.A. § 248(b)(4)]

51. The Project will result in an economic benefit to the State and its residents. This finding is supported by findings 52 through 55, below.

52. The Project represents one of the only feasible, economically beneficial reuses of the Elizabeth Mine site. The institutional controls for the Elizabeth Mine Superfund site severely restrict the potential future uses for this site in order to maintain the integrity of the remedial measures installed on site. These restrictions run with the land in perpetuity and limit options for reuse of the site. The proposed Project will not affect these existing remedial measures and will return the site to productive use, providing the state with a renewable energy-generating asset that produces tax revenues for the state and local municipalities, while helping to defray the costs of maintaining the Superfund site. Kelly pf. at 26-27.

53. The Project is expected to provide substantial tax benefits. With a current estimated nameplate capacity of 4.998 MW AC, the Project is expected to generate an annual property tax payment of \$20,000 to the State of Vermont, or \$600,000 over the expected 30-year life of the Project. Dependent on the outcome of the property valuation, the Project is expected to pay \$10,000-\$30,000 per year in aggregate local property tax to the Towns of Stafford and Thetford, or \$300,000-\$900,000 over the 30-year life of the Project. There are no other identified uses for this brownfield site that would help contribute this range of tax benefit to the State or the local

community. Kelly pf. at 27.

54. The Project will help cover costs for operation and maintenance of the site. The State of Vermont is currently obligated to pay for a range of operation and maintenance activities at the site on an ongoing basis. These include vegetative management activities, maintenance and repair of existing stormwater controls, monitoring of groundwater and surface water, road maintenance, and repair of any damage to the cap and its associated infrastructure. Together with active and passive contamination treatment, these maintenance activities at the site will likely cost the State several hundred thousand dollars per year going forward. As a part of this project, EMS will take over responsibility for aspects of this operation and maintenance within the solar project area, thereby reducing the State's costs. While negotiations over the scope of these obligations are ongoing with ANR, EMS expects that the operation and maintenance work it will either perform directly, or contribute to financially, will result in savings to the State of more than \$25,000 annually for the 30-year term of the Project. Kelly pf. at 27-28.

55. The Project will also provide other direct and indirect economic benefits. During the development and construction phases, EMS will retain (directly or through contractors) dozens of individuals to work on engineering, environmental, aesthetic, legal/permitting, and construction-related tasks. During the operations phase, Vermont contractors will be involved in operating and maintaining the Project. If GMP purchases the equivalent power out of state, these economic benefits will not be available. Kelly pf. at 28.

**Aesthetics, Historic Sites, Air and Water Purity,
the Natural Environment, and Public Health and Safety**

[30 V.S.A. § 248(b)(5)]

56. The Project will not have an undue adverse effect on aesthetics, historic sites, air and water purity, the use of natural resources, the natural environment, or public health and safety, with due consideration having been given to the criteria specified in 10 V.S.A. § 1424a(d) and § 6086(a)(1) through (8) and 9(K), and greenhouse gas impacts. This finding is supported by findings 57 through 153, below, under the appropriate subheadings, and by findings 168 and 169 under Outstanding Resource Waters.

Water Pollution

[10 V.S.A. § 6086(a)(1)]

57. The Project will not result in undue water pollution. This finding is supported by finding 58, below, and by the specific findings under the criteria of 10 V.S.A. §§ 6086(a)(1)(A) through (G).

58. The transformer will be installed with a secondary containment structure so that the surrounding land and water resources will be protected in the unlikely event that any transformer fluid leaks from the transformers. Additionally, the transformer oil will be non-petroleum-based oil. Browning pf. at 8; Kelly pf. at 31.

Air Pollution and Greenhouse Gas Emissions

[10 V.S.A. § 6086(a)(1)]

59. The Project will not result in undue air pollution or greenhouse gas emissions. This finding is supported by findings 60 through 69, below.

60. The Project will produce no direct air emissions. Kelly pf. at 34.

61. There are six principal sources of sound associated with Project operations: three power inverters (which convert the DC power from the solar cells to AC power for electrical transmission) and three step-up transformers (which raise the AC voltage to the appropriate level for long-distance power transmission). Karl Washburn, EMS (“Washburn”) pf. at 3.

62. The estimated increase in sound level at the nearest residence to the Project, which is located across Mine Road, is estimated to be 27 dBA during the daytime and 19 dBA at night. At the adjacent residences, sound levels are estimated to range from 24 to 26 dBA during the day and from 17 to 19 dBA at night. Washburn pf. at 4; exh. EMS-KW-2.

63. The Project’s estimated sound levels during both daytime and nighttime are likely to be at or below general background levels in the area. As a result, the Project will not create an adverse impact on air quality with regard to sound, nor will it create an undue adverse impact on aesthetics with regard to sound during normal operations. Washburn pf. at 5.

64. As a “load reducer” the Project will lower the amount of electricity that must be supplied by fossil-fuel generating plants in the region. In general, this will translate to less production being required from the least efficient and highest-cost marginal generating units that

generally have the highest emissions of air pollutants. In New England, the marginal generating units during most hours burn natural gas; the other primary marginal sources are oil-fired and coal-fired units, and imports. These are the sources that will be displaced in the short-term. Kelly pf. at 34.

65. The Project will contribute to reductions of fossil fuel consumption by electric generators (particularly natural gas-fired ones), and to lowering the region's overall air emission profile associated with electric generation. Kelly pf. at 34.

66. EMS represents that the Project-related distribution upgrades do not include any facilities that will generate air emissions such that they will be subject to an air control permit under the ANR Air Pollution Control Regulations (10 V.S.A. § 556) administered by the Air Quality and Climate Division. During construction, temporary construction-related vehicle emissions that are typical of this type of upgrade work are anticipated. As excavation and temporary access road construction is not required for the required distribution upgrades, the generation of dust is not anticipated. Therefore, these upgrade activities will not result in undue air pollution. Joshua Sky, EMS ("Sky")² supp. pf. at 4-5.

67. The Project's solar panels will annually produce an estimated 9,212,000 kilowatt-hours of electricity without creating any greenhouse gas ("GHG") emissions. Kelly pf. at 32.

68. The Project will reduce GHG emissions and produce emission-free electricity during times of peak summer demand, thereby reducing the need for plants using fossil fuels. Kelly pf. at 32.

69. In order to assist ANR with compiling and analyzing GHG impacts, EMS will provide ANR with Project as-built information within 60 days of Project commissioning and, if requested, will also provide ANR with annual reports concerning Project operations. Exh. EMS-ANR-1.

2. The prefiled testimony, supplemental prefiled testimony, and related exhibits addressing outstanding resource waters and several other environmental criteria were originally submitted by Krista Reinhart. However, Ms. Reinhart was not present at the technical hearing, and all of her testimony and exhibits were adopted by Mr. Sky. Accordingly, all citations to this material refer to the testimony of Mr. Sky. The related exhibits are still marked with Ms. Reinhart's initials, so citations to these exhibits contain a "KR."

Discussion

As part of the ANR MOU, EMS has agreed to provide ANR with certain as-built information regarding Project equipment and materials, as well as certain information regarding Project operations, if requested by ANR. I recommend that the Board adopt CPG conditions consistent with the Greenhouse Gas Reporting section of the ANR MOU.

EMS did not propose any restrictions on the hours of construction for the Project. The Board as a matter of practice restricts construction activities for Section 248 projects to the hours between 7:00 A.M. and 7:00 P.M. Monday through Friday and between 8:00 A.M. and 5:00 P.M. on Saturdays, with no construction allowed on state or federal holidays or Sundays. Consistent with this past Board practice, I recommend that the Board adopt these restrictions on the hours of construction for the Project. Accordingly, I recommend that the following condition be included in any CPG for the Project:

The Petitioner shall restrict construction activities and related deliveries for the Project to the hours between 7:00 A.M. and 7:00 P.M. Monday through Friday and between 8:00 A.M. and 5:00 P.M. on Saturdays. No construction work or deliveries shall take place on Sundays, state holidays, or federal holidays.

Headwaters

[10 V.S.A. § 6086(a)(1)(A)]

70. The Project will not result in undue adverse impacts on headwaters. This finding is supported by findings 71 through 75, below.

71. The Project area does not contain both steep slopes and shallow soils. Elevations on the site are not above 1,500 feet above sea level. The Project area is not within a watershed of public water supplies designated by ANR, and it does not supply significant amounts of recharge waters to aquifers. However, the Project area is located within the watershed of Copperas Brook, which has a drainage area of approximately 0.5 square miles. Therefore the “drainage area of 20 square miles or less” sub-criterion for a headwater is met. Sky pf. at 4; exh. EMS-KR-2.

72. Although the Project area meets the sub-criterion for a headwaters area of a small watershed, due to the in-place Elizabeth Mine remediation measures that manage surface and groundwater within the Elizabeth Mine site, this area does not function as a headwater. Sky pf. at 4; exh. EMS-KR-2.

73. Additionally, the Project has been designed to protect the integrity of the engineered remediation measures and to comply with all applicable health and Department of Environmental Conservation (“DEC”) regulations in order to protect the quality of ground and surface water. As such, the Project will not have an undue adverse effect on headwaters. Sky pf. at 4; exh. EMS-KR-2.

74. The Project-related distribution upgrade area intersects two groundwater source protection areas, as designated by ANR. However, proposed upgrade activities are not anticipated to adversely effect groundwater or surface water quality, and the Project will meet applicable health and DEC regulations regarding the quality of groundwater and surface waters. Sky supp. pf. at 5-6; exh. EMS-KR-4.

75. In particular, the Project-related upgrades will not: (a) create any new impervious surfaces that will require operational-phase stormwater management (or associated permits), (b) generate sufficient soil disturbance to warrant coverage under the DEC construction stormwater discharge permit, or (c) produce wastewater or other pollutants. Sky supp. pf. at 6; exh. EMS-KR-4.

Waste Disposal

[10 V.S.A. § 6086(a)(1)(B)]

76. The Project will meet applicable health and DEC regulations regarding the disposal of wastes, and will not involve the injection of waste materials or any harmful or toxic substances into groundwater or wells. This finding is supported by findings 77 through 79, below.

77. Project construction will generate minor amounts of scrap and waste material during installation, and this waste will be disposed of or recycled at an approved disposal facility. There will be no tree clearing on the Project site, and therefore disposal of woody debris will not be necessary. The Project transformers will utilize non-petroleum oil, which biodegrades in the environment in the event of an accidental spill. As an extra measure of precaution, and based on ANR’s recommendations for other solar projects, the Project will include construction of secondary oil containment designed to contain 150% of the transformer oil capacity. Benjamin Green, EMS (“Green”) pf. at 12-13; exh. EMS-RK-6.

78. The operation of the Project will not generate any significant amount of solid wastes,

will not involve the injection of waste materials into groundwater or wells, and will not generate sanitary waste. Green pf. at 12.

79. The Project-related distribution system upgrades do not involve any on-site waste disposal or the injection of waste materials or any harmful or toxic substance into groundwater or wells. Waste material to be generated by the upgrade activities include: tree and woody debris cuttings, minimal construction debris, and removed poles that have been replaced. All brush cutting will occur in compliance with the GMP Transmission Right-of-Way Management Plan, and woody debris will be chipped and disposed of on-site within upland areas and outside of resources and/or resource buffers. Any conductors or other materials that are removed during the upgrade activities for replacement will be recycled where possible or disposed of at an approved facility. Poles to be removed will be handled per GMP protocols. Sky supp. pf at 6; exh. EMS-KR-4.

Water Conservation

[10 V.S.A. § 6086(a)(1)(C)]

80. The Project will involve only temporary and very limited water usage, and does not involve the expansion or development of any additional water supplies. The limited water used for dust control will be brought on-site. Therefore, there will be no adverse impacts on water supply. Sky pf. at 8; exh. EMS-KR-2.

81. The Project-related distribution system upgrades will not use water for operational purposes, will not require an on-site water supply, and will not involve expansion or redevelopment of existing water supplies. Sky supp. pf. at 14.

Floodways

10 V.S.A. § 6086(a)(1)(D)

82. The Project will not cause any undue adverse effects on floodways. This finding is supported by findings 83 through 86, below.

83. There are no surface water features within the Project area that are subject to periodic flooding. Sky pf. at 4; exh. EMS-KR-2.

84. The Project-related distribution upgrade area does not intersect a designated floodway,

but portions do occur within a floodway fringe. Within the Phase 5 corridor, one existing pole will be replaced within the floodway fringe of an unnamed tributary to the West Branch of the Ompompanoosuc River. Within the Phase 6 corridor, two existing poles will be replaced within the floodway fringe of the White River. With the absence of any changes in ground surface elevation, no new impacts on the floodway or floodway fringe will result from Project-related upgrade activities. Sky supp. pf. at 7; exh. EMS-KR-4.

85. Following discussions with DEC regarding pole locations of the Project-related upgrades, the Project is in conformance with the Flood Hazard Area and River Corridor Protection Procedure. Sky supp. pf. at 8; exh. EMS-KR-4; tr. of 4/29/16 at 45-46 (Sky).

86. Although limited aspects of the Project-related distribution upgrade activities are located within areas mapped as floodplain and River Corridor, these activities will consist largely of the replacement of existing infrastructure already in the River Corridor, and will not restrict or divert the flow of flood waters (floodway or floodway fringe), or endanger the health, safety, and welfare of the public, riparian, or downstream landowners during flooding or from potential erosion. Sky supp. pf. at 8; exh. EMS-KR-4.

Streams

[10 V.S.A. § 6086(a)(1)(E)]

87. The Project will not result in an undue adverse effect on streams. This finding is supported by findings 88 through 91, below.

88. There are no streams within the Project area. All surface water drainages within the Project area were constructed to convey surface water off of the Elizabeth Mine cap. Sky pf. at 5; exh. EMS-KR-2.

89. There are several streams within the vicinity of Project-related distribution upgrades, including: the White River, the West Branch of the Ompompanoosuc River, Fay Brook, and unnamed tributaries. Sky supp. pf. at 9; exh. EMS-KR-4.

90. The distribution upgrade activities will not involve any temporary or permanent direct impacts on these streams, nor is it anticipated that these streams will need to be crossed during construction, as nearly all of the overhead line work will be completed from the roadside. Sky supp. pf. at 9; exh. EMS-KR-4.

91. Temporary indirect impacts will involve tree clearing within one stream riparian area in the Phase 5 corridor in order to expand the existing right-of-way to a 50-foot corridor that meets GMP standards for maintaining a minimum clearing for distribution reliability. In total, construction of the distribution line upgrades will require clearing of approximately 0.01 acres of forested riparian buffer. Vegetation management within these areas will be conducted in accordance with the GMP Vegetation Management Plan, which includes provisions for maintaining select vegetation within riparian areas. These riparian areas are considered to be degraded under existing conditions. In addition, appropriate erosion prevention and sediment control (“EPSC”) measures will be installed as needed, per the DEC Low Risk Handbook for Erosion Prevention and Sediment Control (2006) to further minimize potential impacts on these areas. As a result, clearing within these areas will not result in adverse impacts on the existing conditions of the stream channel or endanger the health, safety, or welfare of the public or adjoining landowners. Sky supp. pf. at 9-10; exh. EMS-KR-4.

Shorelines

[10 V.S.A. § 6086(a)(1)(F)]

92. The Project area does not include any lands adjacent to lakes, ponds, reservoirs, or rivers; therefore there will be no undue adverse impacts on shorelines because of the Project. Sky pf. at 5; exh. EMS-RK-2.

93. The activities associated with the Project-related upgrade of the Phase 6 distribution line will involve: (1) replacement of four poles that are located within close proximity to the White River shoreline, and (2) installation of two new poles, with one on either side of the White River line crossing. Because this is an existing distribution line corridor, there will be no tree clearing within these areas and any earth disturbance will be addressed by the installation of EPSC measures. The Project-related upgrade activities will not affect current shoreline conditions, recreational uses, riparian vegetation, or bank stability, and will therefore not have any undue adverse effects on any shorelines. Sky supp. pf. at 10; exh. EMS-KR-4.

Wetlands

[10 V.S.A. § 6086(a)(1)(G)]

94. The Project will not have an undue adverse effect upon wetlands. This finding is supported by findings 95 through 98, below.

95. There are no Class I or Class II wetlands or wetland buffers located within or adjacent to the Project area. Sky pf. at 5.

96. There is one small Class III wetland within the Project Study Area, with limited function. No Project activities that will affect this wetland. Sky pf. at 6; exh. EMS-KR-2.

97. Absent separate approval by ANR and the Board, EMS will not cut, remove, or otherwise alter or disturb any vegetation in the wetland restoration areas adjacent to the Project site, either as a part of Project development or to decrease potential shading of solar panels during Project operation. Exh. EMS-ANR-1.

98. The Project-related distribution upgrades avoid activity in wetlands and wetland buffers to the greatest extent possible, with the majority of the poles to be accessed from the adjacent roadways. All poles will be accessed through upland locations and also by conducting construction activities using low-ground-pressure, tracked equipment as necessary. The Project-related distribution upgrades expected to occur within wetlands and wetland buffers are limited to installation of a new pole #46 within the herbaceous buffer of a proposed Class II wetland within the existing right-of-way. Per the Vermont Wetland Rules, this activity is considered an “Allowed Use” under Allowed Use 6.08 (activities involving routine repair and maintenance of utility pole lines and corridors) and Allowed Use 6.22 (installation of a new overhead utility line and three poles or fewer in the wetland or buffer zone). EMS represents, therefore, that the Project-related upgrades will not require permit authorization from DEC for wetland or wetland buffer impacts, nor will the Project-related upgrades result in impacts on Class III wetlands as regulated by the U.S. Army Corps of Engineers. Sky supp. pf. at 11; exh. EMS-KR-4.

Sufficiency of Water, Burden on Existing Water Supply

[10 V.S.A. § 6086(a)(2), (3)]

99. There will be sufficient water available for the reasonably foreseeable needs of the

Project, and the Project will not cause an unreasonable burden on an existing water supply. This finding is supported by findings 80 and 81, above, addressing water conservation.

Soil Erosion

[10 V.S.A. § 6086(a)(4)]

100. The Project will not cause soil erosion or a reduction in capacity of the land to hold or discharge water such that a dangerous or unhealthy condition may result. This finding is supported by findings 101 through 104, below.

101. No changes to the existing engineered cap/cover system, the stormwater flow regime, or site topography are proposed. The existing ground surface at the site is vegetated with a thick stand of grass that provides erosion protection from stormwater flows. As part of the Project design, the existing vegetation will not be disturbed. The ballast systems will be placed directly on the existing grass surface and low-ground-pressure equipment will be used during installation. Therefore, soil erosion from construction will be minimal and will not result in dangerous or unhealthy conditions. To be sure that Project construction results in the least amount of disturbance possible, EMS will apply for a construction stormwater permit from ANR. Green pf. at 13; exh. EMS-BG-2.

102. Stormwater modeling for the Project shows that a minimal stormwater flow increase may result from operation of the Project, due to the creation of approximately 1.6 acres of new impervious surface due to the ballasts. Because the Project's impervious surface is over 1 acre, EMS will apply for an operational stormwater permit, which will demonstrate Project compliance with ANR standards for stormwater runoff and prevention of soil erosion. Green pf. at 14; exh. EMS-BG-2.

103. Based on the Project's lack of soil disturbance during construction and the stormwater permits that will be obtained for both construction and operation to ensure stormwater impacts are minimal and compliant with ANR standards, the Project will not result in unreasonable soil erosion. Green pf. at 14; exh. EMS-BG-2.

104. Minor soil disturbance associated with the Project-related distribution upgrades will be conducted in accordance with the DEC Standards and Specifications for Erosion Prevention and Sediment Control (2006, Amended 2008) and, as such, will not result in a significant or

measurable reduction of the land's capacity to hold water as the nature of these activities will not result in a change in land form or cover. Furthermore, there will be no dangerous or unhealthy conditions associated with soil erosion as a result of the Project-related upgrades. Sky supp. pf. at 12.

Transportation Systems

[10 V.S.A. § 6086(a)(5)]

105. The Project will not cause unreasonable congestion or unsafe conditions with respect to transportation systems. This finding is supported by findings 106 through 114, below.

106. Transportation routes for site access and equipment delivery to the Project will generally include: Interstate 89 and/or 91, State Routes 132 and 5, local roads Mine Road and Tyson Road, and existing Elizabeth Mine access roads. Given the potential routes that may be used to access the Project site, a transportation assessment was conducted that included an evaluation of the following four intersections: (1) State Route 132/Justin Morrill Memorial Highway, (2) State Route 132/Mine Road, (3) Mine Road/Tyson Road, and (4) State Route 132/Tyson Road. David Saladino, EMS ("Saladino") pf. at 2; exh. EMS-DS-2.

107. Approximately 426 truck trips will be required over an approximately 16-week period. Kelly pf. at 17.

108. The solar panels and components of the racks will be shipped on pallets, typically delivered by standard tractor-trailer truck. The inverter and transformer stations will be delivered assembled on standard-width flatbed tractor trailers. Other Project equipment (e.g., wire, cable, conduit, and construction materials) will also be transported on standard-width trucks. No oversized loads will be required. Kelly pf. at 17-18.

109. Truck traffic generated as part of the Project during the four-month construction phase is anticipated to be approximately 10 trips per day (a trip being defined as a trip to or from the site). Following the construction phase, the Project is projected to generate little to no daily traffic. The typical threshold applied in Vermont for more detailed traffic congestion analyses is the generation of 75 or more peak hour trips. With only 10 trips generated during a full day (and for only four months) this Project falls well below the threshold for a more detailed traffic investigation. Saladino pf. at 3.

110. The anticipated four-month construction-related truck traffic will increase traffic by approximately 1% on Vermont Route 132 and approximately 3% on Mine Road. Saladino pf. at 3.

111. EMS will ensure that flaggers are present at both ends of Tyson Road on days when ten or more Project deliveries by large commercial vehicles are scheduled. Exh. EMS-Strafford-1

112. There are no specific concerns related to Project impacts on adjacent transportation systems. However, in response to concerns expressed by the Town of Strafford, EMS agreed to inspect Mine Road, Tyson Road, and the Tyson Road Bridge before and after use by the Project to determine whether any significant deterioration or damage has been caused by trucks serving the Project. In the event significant damage or deterioration is observed that is attributable to EMS truck use, EMS will work with the Town of Strafford to identify appropriate mitigating actions. Saladino pf. at 4; exh. EMS-Strafford-1.

113. In addition to the low number of truck trips that will be generated as a result of the Project's construction, there are no High Crash Locations identified on the adjacent road network. In addition, the four intersections in Strafford that will be used by site-related truck traffic were all observed to have acceptable sight distances and geometric conditions to permit truck access and turning maneuverability. Based on this, and the monitoring/mitigation measures that will be implemented by Petitioner during construction of the Project, the Project will not cause unreasonable congestion or unsafe conditions with respect to transportation systems. Saladino pf. at 4.

114. To minimize potential impacts on school bus pick-up and drop-off in Strafford, EMS has agreed to ensure that no Project deliveries are scheduled during the morning and afternoon school busing periods, which shall include 7 A.M. - 8 A.M. (Monday -Friday), 3 P.M. - 4 P.M. (Monday-Thursday), and 12:30 P.M. - 1:30 P.M. (Friday) for the duration of the construction period. Exh. EMS-Strafford-1.

Discussion

Pursuant to the EMS-Strafford MOU, EMS has agreed to certain transportation-related CPG conditions. I recommend that the Board include conditions in any CPG that reflect these transportation-related requirements in order to ensure that construction of the Project will not

result in adverse impacts on transportation systems.

Educational Services

[10 V.S.A. § 6086(a)(6)]

115. The Project will not create any full-time permanent jobs nor any new residential dwellings, and thus no new school-aged children will enter the school system. The Towns of Strafford and Thetford have both confirmed that the Project will not have an impact on educational services. Kelly pf. at 28; exh. EMS-RK-12.

Municipal Services

[10 V.S.A. § 6086(a)(7)]

116. The Project will not cause an unreasonable burden on the Towns of Thetford or Strafford to provide municipal services. The Project will not require any municipal water or sewer, nor any unique fire, police, or rescue services, and will be installed to conform to all applicable electrical and fire codes. Kelly pf. at 29.

117. EMS met with the town Selectboards to discuss the Project and to describe the Project's potential effects on municipal services. As part of these discussions, EMS agreed to provide training to local fire departments on how to disconnect the facility in the event of a fire and agreed to certain conditions related to avoiding impacts on local roads. Kelly pf. at 29; exhs. EMS-RK-11.

Aesthetics, Historic Sites, and Rare and Irreplaceable Natural Areas

[10 V.S.A. § 6086(a)(8)]

118. The Project will not have an undue adverse impact on the scenic or natural beauty of the area, aesthetics, historic sites, or rare and irreplaceable natural areas. This finding is supported by findings 119 through 137, below.

Aesthetics

119. The Project site is visually isolated from its surroundings. It sits in a depression of land that, for the most part, has dense vegetation along its periphery. As a result, views of the Project from surrounding areas will be limited. Kane pf. at 13; exh. EMS-MK-2.

120. The Strafford, Thetford, and regional plans do not contain clear, written community standards that the Project will violate, and the Project will not shock or offend the average person. Its scale, mass, and form are not so out of character that they are offensive, nor do they diminish or distract from the scenic qualities of the area. The Project is set on a site that requires no clearing and will not permanently degrade or diminish areas with scenic qualities. Kane pf. at 16.

121. The primary views of the Project will be limited to filtered views of short duration along Mine Road. Impacts on adjacent residential properties will be minimized by the retention of existing vegetation. The change in use from a mine and reclamation site to a solar project, while certainly a different visual effect, will not alter the scenic qualities of the area in a dramatic way. Kane pf. at 16; exh. EMS-MK-2.

122. Given the nature of the Project site as a former mine and its limited visibility, the Project will not have an undue adverse effect on aesthetics or the scenic or natural beauty of the area. Kane pf. at 16; exh. EMS-MK-2.

123. The Project-related distribution line upgrades associated with Phase 5 along Mine Road will require tree clearing, and will expand the area within which visual impacts from the upgrades might occur. Therefore, these impacts are considered adverse. However, the Project-related distribution upgrades are unlikely to shock or offend the average viewer because distribution lines of a similar form and character are common within the landscape, including presently along Mine Road. In addition, EMS has taken reasonably mitigating steps for the Project-related distribution upgrades along Mine Road by proposing a form of distribution line that is consistent with what is presently seen in the area. The poles used for the Mine Road upgrades will be taller, but of a similar form and material as existing poles. Kane supp. pf. at 5-6; exh. EMS-MK-5.

124. The area along Mine Road is not identified by the regional plan or by the Strafford town plan as a scenic resource. The extent of clearing will be limited to areas near the roadway, which will minimize broader disruption of regional landscape patterns. Where views from the traveled way currently exist, the distribution line upgrades will not significantly impede or obstruct those views. For these reasons, the Project-related upgrades will not create an undue adverse effect on

the aesthetics of the area. Kane supp. pf. at 6; Kane second supp. pf. at 2-3; exhs. EMS-MK-5, MK-6.

125. EMS, the Department, and the Town of Strafford agree that an informal post-construction site visit will be conducted with representatives of the Department, and the Town of Strafford if it wishes to attend, to determine whether there is a need for aesthetic mitigation, not to exceed a cost of \$20,000 to the Petitioner, along Mine Road within the vicinity of 1,000 linear feet of the Project entrance. Tr. of 4/29/16 at 18-22 (Kane).

126. The area of potential mitigation would begin 200 or 300 feet north of the Project entrance and then extend 700 linear feet to the south along Mine Road, for a total of 1,000 feet. Tr. of 4/29/16 at 21-22 (Kane).

127. EMS, the Department, and the Town of Strafford agree that if additional mitigation is needed and they agree on what that mitigation should be, they will make a joint filing with the Board proposing that such mitigation be included as part of the Project. Should only the Department or the Town, and not the Petitioner, believe that additional mitigation is necessary, the Department or the Town may file with the Board a recommendation for additional mitigation as they believe necessary to ensure that any aesthetic impacts are sufficiently mitigated. EMS may respond to the Department's or the Town's request, and the Board shall have final authority to determine what, if any, additional mitigation may be necessary. However, if the parties jointly conclude that no mitigation is needed, then no further Board process would be required. Tr. of 4/29/16 at 18-22 (Kane).

Discussion

EMS, the Department, and the Town of Strafford agree to a CPG condition that, if adopted, is intended to ensure that clearing associated with the Project-related distribution upgrades along Mine Road will not result in unduly adverse aesthetic effects. I recommend that the Board include such a condition in any CPG.

Historic Sites

128. The Elizabeth Mine is reported to be the oldest large-scale mining operation in the United States, and probably constituted the first large mine-side smelting of copper in the

country. The mine was established in the early nineteenth century and operated until the mid-twentieth century. The DHP has determined that the Elizabeth Mine is eligible for listing as a National Register Historic District. Kaitlin O'Shea, EMS ("O'Shea") pf. at 2-3; exh. EMS-KO-2.

129. The 1898 Change House, the 1898 Adit, and the Assay Laboratory are all contributing features to the Elizabeth Mine Historic District. Within the boundaries of the Elizabeth Mine, no historic buildings are directly affected by the Project. The Project is not a significant intrusion into the historical district because the district has already been altered due to the EPA Superfund cleanup. The Project will not isolate a historic resource from its historic setting or introduce incompatible new uses because it will be at a low height over an already altered mine feature. Therefore, the Project will not cause indirect impacts on above-ground historic resources inside the boundaries of the Elizabeth Mine. O'Shea pf. at 6-7; exh. EMS-KO-2.

130. Outside the boundaries of the Elizabeth Mine, the South Strafford Historic District is located approximately two miles to the west. There are individual properties on roads near the Elizabeth Mine, such as the Tyson Homestead on Mine Road in Strafford, and historic resources on New Boston Road and Gore Hill Road in Thetford, based on listings in the State Register of Historic Places. However, the Project location is not visible from any of these historic properties. Thus, the Project will not cause indirect effects on above-ground historic resources outside the boundaries of the Elizabeth Mine. O'Shea pf. at 6-7; exh. EMS-KO-2.

131. The Project will not have any effects on known or potential archaeological sites within the Elizabeth Mine Site. The solar panel array foundations will be contained within the existing capped area of Tailings Pile 1 and Tailings Pile 2, and no excavations are proposed that could extend into sensitive archaeological strata. The below-ground section of proposed power interconnector line is not in a previously identified archaeologically sensitive area of the mine site. Suzanne Cherau, EMS ("Cherau") pf. at 8-9.

132. The Project will not have an undue adverse effect on known or potential archaeological sites because there will be no below-ground disturbances in archaeological site areas or sensitive areas. Cherau at 9; exh. EMS-RK-9.

133. For the Project-related distribution upgrades, EMS has agreed to retain a qualified

archaeological consultant to conduct a preliminary review of all sites where new poles are proposed to be placed. If EMS's archaeological consultant determines that any of the proposed sites are archaeologically sensitive based on the Environmental Model for Predicting the Locations of Pre-Contact Archeological Sites and for Determining Archeological Sensitivity of Land, EMS's consultant will submit a proposed scope of work to DHP for review and approval before commencing the work. Exh. EMS-DHP-1.

134. EMS has further agreed that all archaeological studies will follow the DHP Guidelines for Conducting Archaeological Studies in Vermont and will be performed by a qualified archaeological consultant. The archaeological studies will be conducted before any Project-related construction activity is undertaken and scheduled so that any necessary mitigation measures can be satisfactorily planned and accomplished prior to construction. Exh. EMS-DHP-1.

Discussion

Pursuant to the DHP MOU, EMS and DHP have agreed to CPG conditions that, if adopted, are intended to ensure that the Project, and the Project-related distribution upgrades in particular, will not have an undue adverse effect on historic sites. I recommend that the Board include such conditions in any CPG.

Rare and Irreplaceable Natural Areas (RINA)

135. There are no known significant natural communities mapped within one mile of the Project site. Sky pf. at 6; exh. EMS-KR-2.

136. The site consists of the herbaceous vegetation covering the capped mine, existing access infrastructure, and infrastructure and equipment remaining from the former mining activities. There are no natural communities within the Project area that could be considered RINA; therefore there will be no adverse effect on RINA as a result of the Project. Sky pf. at 6; exh. EMS-KR-2.

137. The majority of the Project-related distribution upgrades are located within an existing overhead distribution line corridor or along roadways, where previous degradation of land has occurred. As such, there are no significant natural communities or RINAs within these areas.

Sky supp. pf. at 12; exh. EMS-KR-4.

Necessary Wildlife Habitat & Rare, Threatened, or Endangered Species

[10 V.S.A. § 6086(a)(8)(A)]

138. The Project will not have an undue adverse impact on necessary wildlife habitat or rare, threatened, or endangered species. This finding is supported by findings 139 through 147, below.

139. A search of the ANR database by EMS's consultants showed that the Project site does not support necessary wildlife habitat ("NWH"). Sky pf. at 6-7; exh. EMS-KR-2.

140. At the request of Vermont Department of Fish and Wildlife biologist John Buck, EMS's consultants conducted a survey for the presence of grassland bird species — bobolink (*Dolichonyx oryzivourus*) and eastern whip-poor-will (*Antrostomus vociferus*) — within the Project area. Neither target species was found within the Project area. However, EMS's consultants have made recommendations for both the construction and operation phases of the Project in order to reduce the potential for interfering with grassland bird breeding, if it is determined to occur on site. Sky pf. at 7; exhs. EMS-KR-2, KR-3.

141. EMS's consultants identified one Natural Heritage Inventory ("NHI") mapped rare, threatened, or endangered ("RTE") species whose "element occurrence" intersects the Project study area: the eastern small-footed bat (*Myotis leibii*). Although potential habitat does occur near the Project area, Project activities will not occur there. Because there is no tree clearing proposed for the Project site, no habitat of the protected bat species northern long-eared bat (*Myotis septentrionalis*) will be affected there. Therefore, there will be no undue adverse effects on RTE as a result of the Project itself. Sky pf. at 7; exh. EMS-KR-2.

142. For the Project-related distribution upgrades, the majority of construction activities will be conducted in an existing right-of-way and along the edge of the roadway. Based on a review of the U.S. Fish and Wildlife Service database, these upgrades will occur in the known summer range for the northern long-eared bat and may involve trees that could be considered viable habitat. The maximum amount of tree clearing within the 50-foot right-of-way is approximately 0.94 acres. Sky supp. pf. at 13; exh. EMS-KR-4.

143. EMS agrees with ANR that tree trimming, cutting, and clearing associated with the construction of the Project and Project-related distribution upgrades within one mile of the

Elizabeth Mine site shall be limited to the period of November 1 to April 14 in order to protect potential habitat for the northern long-eared bat. Tree trimming, cutting, and clearing may occur during the period of April 15 to October 31 only with prior approval of ANR, only after a survey is first conducted to identify potential roost trees for the northern long-eared bat, and only if it is documented that the trees that will be trimmed, cut, or removed during this period do not provide potential habitat. Exh. EMS-ANR-1.

144. Any survey for potential bat habitat will be conducted by a certified wildlife biologist and will include an assessment of all trees proposed for trimming, cutting, or clearing that are greater than 4" in diameter at breast height. The survey will be conducted during seasonably appropriate times and utilize appropriate methodology and protocols, which shall be subject to prior approval by ANR. If survey results indicate that potential roosting trees are present, those trees will only be cut during the period of November 1 to April 14. Exh. EMS-ANR-1.

145. All tree clearing for the Project will be done in accordance with applicable state and federal guidance on bat habitat protection, resulting in no impact on the habitat of the protected bat species. Therefore, there will be no impact on any necessary wildlife habitat or the habitat of any rare, threatened, or endangered species. Sky supp. pf. at 13-14; exh. EMS-KR-4.

146. For the Project-related distribution upgrades, EMS agrees to conduct an RTE plant survey prior to commencement of site preparation or construction for all areas where disturbance is likely to occur. The RTE plant survey methodology will be subject to prior approval by ANR, will be conducted during the appropriate field season, and will include a field investigation for all potential RTE plant species. Exh. EMS-ANR-1.

147. If RTE plants are encountered during the survey, ANR and EMS have agreed that Project-related distribution upgrades may proceed on the condition that the disturbance associated with such work avoids impacts on identified RTE plant species. If the areas where RTE plants are present cannot be entirely avoided, EMS will take steps to minimize impacts, and will propose and implement mitigation for all remaining impacts, subject to the ANR's approval, prior to any site preparation or construction activities. Exh. EMS-ANR-1.

Discussion

Pursuant to the ANR MOU, EMS and ANR have agreed to CPG conditions that, if

adopted, are intended to ensure that the Project, and the Project-related distribution upgrades in particular, will not have an undue adverse effect on rare, threatened, or endangered species. I recommend that the Board include such conditions in any CPG.

Development Affecting Public Investments

[10 V.S.A. § 6086(a)(9)(K)]

148. The Project will not unnecessarily or unreasonably endanger any public or quasi-public investments in governmental or public utility facilities, service, or lands, or materially jeopardize or interfere with the function, efficiency, or safety of, or the public use or enjoyment of or access to such facilities, service, or lands. This finding is supported by findings 149 through 153, below.

149. To the extent that the Elizabeth Mine site is a public investment, the Project will not harm any investments already made by public agencies in the remediation of the site. The Project will have no measureable or significant effects on the cap, the stormwater system, or the site in general. Project installation will be performed using low-ground-pressure vehicles under the supervision of a state-licensed engineer and will employ additional protective measures to ensure that the existing ground surface will not be disturbed. The solar panels placed on the cap will be supported on low-contact-pressure, cast-in-place ballast systems that will not exceed the loading requirements of the cap or cause excessive settlement. The Project will not cause any changes to the existing stormwater flow regime, and the minor predicted increases in flow due to the development can readily be handled by the existing stormwater system. Green pf. at 11-12.

150. The Project will not affect the existing trails at the site. Exh. EMS-RK-8.

151. The Project will not limit any potential future public use of the property, should such use be allowed. The Elizabeth Mine Site Re-Use Plan, created by EPA during the remedial action, suggests that portions of the unremediated, historically significant area could be opened to recreational use, such as trails, should the private landowners concur. The Project encompasses approximately 28 acres of the total 120.2 acres of restricted property. There are additional historical and natural points of interest to the west and south of Mine Road that are not restricted and could be incorporated into a future trail system. Additionally, EMS will work with the Strafford Historical Society to develop the interpretive overlook at the bus turnaround in order to

enhance public understanding of the site. Kelly pf. at 30.

152. The Project will not unnecessarily or unreasonably endanger the public or quasi-public investment in adjacent transportation systems, or materially jeopardize or interfere with the public's use and enjoyment of these systems. The Project will generate a relatively small number of truck trips (approximately 10 per day) during a relatively limited four-month construction window. The Project is anticipated to generate little to no traffic during the operational phase. Saladino pf. at 6.

153. In response to concerns expressed by the Town of Strafford, EMS has agreed to conduct or depend upon a recent study of road conditions before Project construction begins, and will conduct a road study after the Project is completed. EMS has further agreed to be responsible for correcting any damage beyond normal wear and tear to Tyson Road and the portion of Mine Road between Tyson Road and the Project that is solely and demonstrably the result of Project truck traffic. Saladino pf. at 6; exh. EMS-Strafford-1.

Discussion

Pursuant to the Strafford MOU, EMS and Strafford have agreed to certain CPG conditions that, if adopted, will ensure that the Project will not adversely affect public investments, in particular local roads and bridges. I recommend that the Board include such conditions in any CPG.

Public Health and Safety

[30 V.S.A. § 248(b)(5)]

154. The Project will not have an undue adverse effect on the health, safety, or welfare of the public and will not unnecessarily or unreasonably endanger the public or adjoining landowners. This finding is supported by findings 155 through 165, below.

155. The Project is not anticipated to have any effect on the cap or other existing remediation measures on the site, and therefore the development of the Project does not measurably increase any public health and safety risk. Green pf. at 11.

156. Pursuant to the ANR MOU, prior to site preparation for or construction of the Project, EMS will enter into a License Agreement with ANR documenting ANR's approval of the Project pursuant to ANR's independent authority under the terms of the land-use easements applicable to

the Project site. Exh. EMS-ANR-1.

157. All switchgear will be inside a locked, Underwriters Laboratories-listed, code-approved electrical enclosure. Kelly pf. at 31.

158. The electric lines that connect the inverters to the transformers, the transformers to the switchgear, and the switchgear to the GMP 12.47 kV distribution system will be located in conduit. In addition, the electricity will be transmitted from the Project to the existing GMP 12.47 kV distribution system in a manner that does not pose undue risks related to electromagnetic fields. Kelly pf. at 31.

159. The main gates into the Project will be improved and will be locked so only authorized personnel will have entry into the site through those gates. A perimeter fence will not be installed around the entire Project array. In lieu of a perimeter fence, all of the exposed electrical wiring and components will be made non-accessible by the following methods:

- i. Screening will be installed on the back of the modules in order to make all of the exposed DC wiring from the modules to the string combiners inaccessible;
- ii. The doors of the DC string combiners will be padlocked;
- iii. All accessible doors on the PV inverters will be padlocked; and
- iv. The accessible doors on the step-up transformer will be padlocked.

Browning pf. at 8.

160. The solar panels are designed to absorb rather than reflect the sun's energy, which will prevent undue glare. Browning pf. at 8; Kelly pf. at 31.

161. The Project system will be designed to meet the applicable requirements set forth in the NEC, the Institute of Electrical and Electronic Engineers, and Underwriters Laboratories as they relate to electrical compliance and safety, power quality, and interconnection. Browning pf. at 5.

162. Although the Project will not comply with some portions of the National Electrical Safety Code ("NESC"), and in particular the fencing requirement in that code, it does comply with the NEC, which is more applicable in this instance. Browning pf. at 9.

163. The absence of a perimeter fence does not create an undue adverse hazard to public health and safety because the Project will take necessary measures to ensure that the electrical

components of the Project are not accessible, and therefore will conform to the NEC requirements. Browning pf. at 9.

164. Based on the location and nature of this Project, and the Project's compliance with the NEC, good cause exists for waiving the requirements of Board Rule 3.500 for compliance with the NESC in this particular instance. Browning pf. at 9-10.

165. Due to the relatively limited traffic that will be generated as a result of the Project and the safety measures that will be implemented when any larger number of trucks will be accessing the Project area, there will be no adverse impacts on public health and safety as a result of truck traffic to and from the Project. Saladino pf. at 5; exh. EMS-Strafford-1.

Discussion

Board Rule 3.500 states that “[a]ll construction and maintenance of electric, telephone, telegraph and cable television systems and facilities in all locations within Vermont shall conform to the standards contained in the 1981 edition of the National Electrical Safety Code or in any subsequent or revised edition thereof.”

Pursuant to Board Rule 1.200, except where prohibited by statute or by the terms of the rule itself, the Board may for good cause grant exceptions in particular cases to any provision of its rules. Because the Project will comply with the NEC, I find that EMS has demonstrated good cause for the Board to grant an exception to the requirements of Board Rule 3.500. EMS specifically noted that the Project will not conform to the standards of the NESC because the Project will not have a perimeter fence. Therefore, I recommend that the Board grant a narrow exception to the requirements of Board Rule 3.500 by not requiring the Project to conform to the perimeter fence standards of the NESC.

Least Cost Integrated Plan

[30 V.S.A. § 248(b)(6)]

166. Petitioner is not a regulated electric or gas utility required to have a least cost integrated plan under 30 V.S.A. § 218c. Therefore, this criterion does not apply.

Comprehensive Energy Plan

[30 V.S.A. § 248(b)(7)]

167. The Project is in compliance with the electric energy plan approved by the Department under 30 V.S.A. § 202. The Project will help to meet the goals of the energy plan, which calls for meeting Vermont's energy needs largely with renewable resources. The Project will be consistent with other thematic goals (e.g., in-state generation, diversity of supply, zero emissions) outlined in the plan. Kelly pf. at 33.

Discussion

The Department has reviewed EMS's petition and finds the petition consistent with the Vermont Electric Plan.³ Based on the evidence and the Department's letter, I recommend that the Board conclude that the Project complies with the electric energy plan approved by the Department under 30 V.S.A. § 202.

Outstanding Resource Waters

[30 V.S.A. § 248(b)(8) and 10 V.S.A. § 1424a(d)]

168. There are no Outstanding Resource Waters in the Project area. Therefore, the Project will not have any impact on Outstanding Resource Waters. Sky pf. at 3; exh. EMS-KR-2.

169. There are no Outstanding Resource Waters in the vicinity of the required distribution upgrades. The proposed upgrade of the Phase 6 distribution line will include an aerial crossing of the White River, which is listed as a prospective Outstanding Resource Water, but no work is to be conducted within the waterbody. Therefore, the distribution upgrades for the Project will not have any impact on Outstanding Resource Waters. Sky supp. pf. at 4; exh. EMS-KR-4.

Waste-to-Energy Facility

[30 V.S.A. § 248(b)(9)]

170. The Project is not a waste-to-energy facility. Therefore, this criterion does not apply.

3. Page 1 of Attachment to Letter from Angela Valentinetti, to Judith Whitney, Clerk of the Board, dated April 29, 2016.

Transmission Facilities

[30 V.S.A. § 248(b)(10)]

171. The Project can be served economically by existing or planned transmission facilities without an undue adverse effect on Vermont utilities or customers. This finding is supported by findings 172 and 173, below.

172. EMS will be responsible for the cost of the distribution system upgrades required to interconnect the Project. Therefore the Project will not have an adverse effect on Vermont utilities or customers. Browning pf. at 7.

173. Although EMS is financing the distribution system upgrades that are necessary to accommodate the transmission of the Project's power, the upgraded distribution lines will be wholly owned, operated, and controlled by GMP and regulated as part of its distribution system network. Kelly supp. pf. at 6.

Woody Biomass Facilities

[30 V.S.A. § 248(b)(11)]

174. The Project does not produce electric energy using woody biomass. Therefore, this criterion does not apply.

Setbacks

[30 V.S.A. § 248(s)]

175. The Project will comply with the setback requirements of 30 V.S.A. § 248(s). This finding is supported by findings 176 and 177, below.

176. The Project is set back more than 100 feet from the nearest road. Kelly pf. at 4, 12; exh. EMS-RK-2

177. The Project is set back more than 50 feet from the nearest property line. Kelly pf. at 12; exh. EMS-RK-2.

Decommissioning

178. At the end of the Project's useful life, it will be decommissioned. The decommissioning and site restoration plan will include dismantling and removing all panels and supporting

equipment, including transformers, overhead cables, and equipment pad foundations. The roads and module sites will be restored to essentially the same physical condition that existed immediately before construction of the Project. The solar panels will be sold for reuse or returned to the manufacturer for recycling. Kelly pf. at 23; exh. EMS-RK-10.

179. Prior to commencing site preparation or construction of the Project, the Petitioner will submit the final Decommissioning Plan to the Board for review and approval. The Decommissioning Plan will be subject to approval by ANR, as part of the License Agreement, prior to its submission to the Board. Other parties will have two weeks to review and comment on the Decommissioning Plan after its submission to the Board. The Decommissioning Plan will establish a Decommissioning Fund, in an amount approved by ANR and the Board, which will be funded by an appropriate, bankruptcy-remote financial assurance mechanism, to be issued by an A-rated institution solely for the benefit of the Board. Exh. EMS-ANR-1.

180. Under the terms of the ANR MOU, in the event ANR determines, in its sole discretion, that the Project is causing a material failure of the cap or is causing or contributing to a material failure in the performance of the erosion control and stormwater management features of the cover system, when compared against the expected future performance of those features without the Project, ANR will promptly notify the Petitioner of such determination, and identify the specific issue(s) that must be corrected. ANR's notice will provide EMS a reasonable opportunity to cure the identified issue(s) and will set out the specific timeframe for addressing the issue(s). ANR and the Petitioner will work in good faith to resolve any disputes regarding the proper approach and proper timeframe for addressing the identified issue(s). If after good-faith efforts to resolve any disputes, the Petitioner fails to promptly take all appropriate measures to cure the identified issue(s) to the satisfaction of ANR within the identified timeframe, ANR, at its sole option, may notify the Board that decommissioning of the Project must occur. Upon receipt of such notice the Board will order decommissioning in accordance with the Project's approved Decommissioning Plan. In ordering decommissioning, the Board will also authorize drawdown of the Decommissioning Fund. Exh. EMS-ANR-1.

Discussion

Pursuant to Board Rule 5.402(C)(2), non-utility petitioners who propose generation

projects with capacities greater than one MW must include a plan for decommissioning the project at the end of its useful life. EMS proposes to file a final Decommissioning Plan, which will include a Decommissioning Fund, that will be subject to Board review and approval prior to commencing site preparation or construction of the Project. Pursuant to the terms of the ANR MOU, the Decommissioning Fund must be in an amount approved by ANR and the Board, must be funded by an appropriate, bankruptcy-remote financial assurance mechanism, and must be issued by an A-rated institution solely for the benefit of the Board. I recommend that the Board adopt this term of the ANR MOU as a condition to any CPG. Further, I recommend the Board clarify that the bankruptcy-remote financial assurance mechanism shall be in the form of a final executed letter of credit (“LC”) that shall be an irrevocable standby LC that: (i) is bankruptcy remote, (ii) includes an auto-extension provision (i.e., “evergreen clause”), and (iii) is issued solely for the benefit of the Board. No other entity, including EMS or ANR, shall have the ability to demand payment under the LC without the consent of the Board. The amount of the LC shall represent the full estimated costs of decommissioning without netting out any estimated salvage value for Project infrastructure.

Further, I recommend that the Board require that the estimated cost of decommissioning the Project be adjusted annually for inflation, based upon the current Consumer Price Index (“CPI”) as maintained by the Bureau of Labor Statistics. EMS shall file an annual report with the Board and the Department on the status of the Decommissioning Fund after each annual adjustment. The report shall include an annual inflation adjustment to determine a revised estimated cost of decommissioning. If the revised estimated cost of decommissioning exceeds the then-value of the LC, EMS shall cause a new or amended LC to be issued to reflect the revised estimated cost of decommissioning. In the event the CPI has a negative value at the time the annual adjustment is calculated, the value of the LC shall not be reduced.

I recommend that the Board accept the terms of the ANR MOU as they relate to decommissioning the Project, with two clarifications. I recommend the Board make clear that it will accept ANR’s notification that decommissioning of the Project must occur under the limited circumstances described in the MOU. Beyond those limited circumstances, the Board will retain sole discretion in making determinations as to when decommissioning of the Project must occur.

IV. CONCLUSION

The Petitioner has provided sufficient evidence to demonstrate that the Project, subject to the conditions discussed above, complies with all applicable Section 248 criteria. Based upon the evidence in the record, I conclude that the Project, subject to the conditions set forth in the Proposed Order and CPG below:

- (a) will not unduly interfere with the orderly development of the region with due consideration having been given to the recommendations of the municipal and regional planning commissions and the recommendations of the municipal legislative bodies;
- (b) is required to meet the need for present and future demand for service which could not otherwise be provided in a more cost-effective manner through energy conservation programs, energy-efficiency, and load management measures;
- (c) will not adversely affect system stability and reliability;
- (d) will result in an economic benefit to the State and its residents;
- (e) will not have an undue adverse effect on aesthetics, historic sites, air and water purity, the natural environment, the use of natural resources, and the public health and safety, with due consideration having been given to the criteria specified in 10 V.S.A. §§ 1424a(d) and 6086(a)(1) through (8) and (9)(K) and greenhouse gas impacts;
- (f) will be owned and operated as a merchant plant;
- (g) is in compliance with the electric energy plan approved by the Department under section 202 of this title;
- (h) does not involve a facility affecting or located on any segment of the waters of the State that has been designated as outstanding resource waters by the Secretary of Natural Resources;
- (i) can be served economically by existing or planned transmission facilities without undue adverse effect on Vermont utilities or customers; and
- (j) is not a waste-to-energy facility or an in-state generation facility that produces electric energy using woody biomass under §§ 248(b)(9) or 248(b)(11).

I recommend that the Board approve the Project and issue a CPG for construction of the Project with the conditions set forth in the proposed Order and CPG, below.

The parties have each waived their rights under 3 V.S.A. § 811 to file written comments and exceptions or present oral argument with respect to this proposal for decision. Therefore, I am not circulating this proposal for decision to the parties for their review and comment.

Dated at Montpelier, Vermont, this 29th day of June, 2016.

s/Thomas Knauer

Thomas Knauer
Hearing Officer

V. ORDER

IT IS HEREBY ORDERED, ADJUDGED, AND DECREED by the Public Service Board of the State of Vermont that:

1. The findings and recommendations of the Hearing Officer are adopted.
2. In accordance with the evidence and plans submitted in this proceeding, the construction and operation of a solar electric generation facility with plant capacity of 4.998 MW AC (the “Project”) by Elizabeth Mine Solar I, LLC (“EMS” or “Petitioner”) within the Elizabeth Mine Superfund site in the Towns of Strafford and Thetford, Vermont, will promote the general good of the State of Vermont in accordance with 30 V.S.A. § 248, and a certificate of public good (“CPG”) to that effect shall be issued.
3. Construction, operation, and maintenance of the Project shall be in accordance with the plans and evidence as submitted in this proceeding. Any material deviation from these plans or substantial change to the Project must be approved in advance by the Board. Failure to obtain advance approval from the Board for a material deviation from the approved plans or substantial change to the Project may result in the assessment of a penalty pursuant to 30 V.S.A. §§ 30 and 247.
4. The Project shall have a system-rated capacity of no more than 4.998 MW AC.
5. Prior to commencing construction or site preparation, the Petitioner shall obtain all necessary permits and approvals. Construction, operation, and maintenance of the Project shall be in accordance with such permits and approvals, and with all other applicable regulations.
6. Prior to site preparation for or construction of the Project, the Petitioner shall enter into a License Agreement with the Vermont Agency of Natural Resources (“ANR”) documenting ANR’s approval of the Project pursuant to ANR’s independent authority under the terms of the land-use easements applicable to the Project site. The License Agreement shall be filed with the Board prior to site preparation or construction. Adherence to the terms and conditions of the License Agreement shall be a requirement of the CPG.
7. Absent separate approval by ANR and the Board, the Petitioner shall not cut, remove, or otherwise alter or disturb any vegetation in the wetland restoration areas adjacent to the Project site, as shown on the Wetland Restoration Overview Plan dated February 2014 and

provided to EMS by ANR, either as a part of Project development or to decrease potential shading of solar panels during Project operation.

8. In the event ANR determines, in its sole discretion, that the Project is causing a material failure of the cap or is causing or contributing to a material failure in the performance of the erosion control and stormwater management features of the cover system, when compared against the expected future performance of those features without the Project, ANR shall promptly notify the Petitioner of such determination, and shall identify the specific issue(s) that must be corrected. ANR's notice under this provision shall provide the Petitioner a reasonable opportunity to cure the identified issue(s) and shall set out the specific timeframe for addressing the issue(s). ANR and the Petitioner will work in good faith to resolve any disputes regarding the proper approach and proper timeframe for addressing the identified issue(s). If after good-faith efforts to resolve any disputes, the Petitioner fails to promptly take all appropriate measures to cure the identified issue(s) to the satisfaction of ANR within the identified timeframe, ANR, at its sole option, may notify the Board that decommissioning of the Project must occur. Upon receipt of such notice the Board shall order decommissioning in accordance with the Project's approved Decommissioning Plan. In ordering decommissioning, the Board shall also authorize drawdown of the Decommissioning Fund.

9. Prior to commencing site preparation or construction of the Project, the Petitioner shall submit the final Decommissioning Plan to the Board for review and approval. The Decommissioning Plan shall be subject to approval by ANR as part of the License Agreement prior to its submission to the Board. Other parties shall have two weeks to review and comment on the Decommissioning Plan after its submission to the Board. The Decommissioning Plan shall establish a Decommissioning Fund, in an amount approved by ANR and the Board, which will be funded by an appropriate, bankruptcy-remote financial assurance mechanism, to be issued by an A-rated institution solely for the benefit of the Board. The bankruptcy-remote financial assurance mechanism shall be in the form of a final executed letter of credit ("LC") that shall be an irrevocable standby LC that: (i) is bankruptcy remote, (ii) includes an auto-extension provision (i.e., "evergreen clause"), and (iii) is issued solely for the benefit of the Board. No other entity, including EMS or ANR, shall have the ability to demand payment under the LC

without the consent of the Board. The amount of the LC shall represent the full estimated costs of decommissioning without netting out any estimated salvage value for Project infrastructure.

10. The estimated cost of decommissioning the Project shall be adjusted annually for inflation, based upon the current Consumer Price Index (“CPI”) as maintained by the Bureau of Labor Statistics. EMS shall file an annual report with the Board and the Department on the status of the Decommissioning Fund after each annual adjustment. The report shall include an annual inflation adjustment to determine a revised estimated cost of decommissioning. If the revised estimated cost of decommissioning exceeds the then-value of the LC, EMS shall cause a new or amended LC to be issued to reflect the revised estimated cost of decommissioning. In the event the CPI has a negative value at the time the annual adjustment is calculated, the value of the LC shall not be reduced.

11. Greenhouse Gas Reporting:

a. The Petitioner shall provide ANR with the following Project “as-built” information within 60 days of the commissioning date of the Project to assist the Agency with compiling and analyzing greenhouse gas impacts:

- i. Solar panel manufacturer and model;
- ii. Solar panel cell technology (e.g., mono-Si, multi-Si, CdTe, etc.);
- iii. Rated solar panel output (in watts);
- iv. Number of solar panels installed;
- v. Array mounting type (fixed, 1-axis tracking, 2-axis tracking, ground, roof, other);
- vi. For fixed or 1-axis tracking, panel orientation and mounting angle;
- vii. Rack system manufacturer and model;
- viii. Rack system components, including the number of aluminum rails, steel mounting posts, etc.;
- ix. Number and type of any other mounting components (e.g., concrete ballasts and foundation blocks);
- x. Manufacturer, model, and number of inverters;
- xi. Manufacturer, model, and number of transformers;

- xii. Percent of Portland cement composition of concrete;
- xiii. Description, quantity, and source of any recycled materials used (e.g., recycled content concrete, recycled aluminum racking, etc.);
- xiv. Amount (length) and gauge of wiring used for project;
- xv. Components for connection to grid (circuit boxes, circuit breaker panels, metering equipment, etc.);
- xvi. Distance (e.g., truck miles traveled) for transport of system components to site; and
- xvii. Distance to grid connection.

b. By January 30 of each year, ANR may request that the Petitioner provide ANR an annual report for the previous calendar year of operations. The annual report shall contain the information set out below, which will be used to assist ANR with compiling and analyzing greenhouse gas impacts. The Petitioner will have 60 days from the date of ANR's request to supply the information. Should ANR not request the information set out below by January 30, the Petitioner shall not have any obligation to provide an annual report from the previous year of operations. The information to be provided includes the following:

- i. Electric generation in kWh for the prior year, broken down by month; and
- ii. Any information about the replacement of PV panels, inverters, transformers, or a complete racking system. In instances of failure and replacement of equipment (e.g., PV panels, inverters, etc.), the Petitioner shall provide descriptions of both the failed and replacement components at the same level of detail as required by the "as-built" reporting requirements of condition (10)(a) above. This provision does not require the Petitioner to provide information about *de minimis* replacement of system components (e.g., replacement of racking system hardware), or information regarding regular maintenance activities.

Should ANR not request the information set out in this paragraph (10)(b) in any two consecutive

years after Project commissioning, the Petitioner's reporting obligations for all subsequent years shall automatically cease. ANR and the Petitioner, by mutual agreement, may cancel the Petitioner's reporting obligations set out in this paragraph (10)(b) at any time.

12. Distribution Upgrade Conditions: the Petitioner shall ensure, through contract or otherwise, that the following conditions will be satisfied prior to site preparation for or construction of the portion of distribution upgrades that are necessary solely for the purpose of interconnecting the Project. These distribution upgrade conditions shall only apply to the specific site preparation and construction activities that are necessary for purposes of interconnecting the Project, and shall terminate upon completion of construction of such Project-specific upgrades in accordance with their terms. These distribution conditions shall not apply in any way to any independent utility construction activities that are not necessitated by the Project and over which the Petitioner has no direct or indirect control, or to any of Green Mountain Power Corporation's ("GMP") current operations and maintenance activities along the existing distribution route, or to any future operations, maintenance, or construction activities associated with the utility's distribution facilities.

a. Bat Habitat: Tree trimming, cutting, and clearing associated with the construction of the Project and Project-related distribution upgrades within one (1) mile of the Elizabeth Mine site shall be limited to the period of November 1 to April 14, except as provided in section (11)(a)(i), below, in order to protect potential habitat for the northern long-eared bat.

i. Tree trimming, cutting, or clearing may occur during the period of April 15 to October 31 only with prior approval of ANR, only after a survey is first conducted to identify potential roost trees that may be utilized by said bat species, and only if it is documented that the trees that will be trimmed, cut, or removed during this period do not provide potential habitat for the bat. Any survey for potential habitat shall be conducted by a certified wildlife biologist and shall include an assessment of all trees proposed for trimming, cutting, or clearing that are greater than 4" in diameter at breast height. The survey shall be conducted during seasonably appropriate times and utilize appropriate

methodology and protocols, which shall all be subject to prior approval by ANR. If a survey is conducted and results indicate that potential roosting trees are present, those potential roosting trees shall only be cut during the period of November 1 to April 14.

b. Rare, Threatened, or Endangered (“RTE”) Plants: Prior to commencement of site preparation or construction for the distribution upgrades, an RTE plant survey shall be conducted for all areas where disturbance is likely to occur for Project-related distribution upgrades. The RTE plant survey methodology shall be subject to prior approval by ANR, shall be conducted during the appropriate field season, and shall include a field investigation for all potential RTE plant species. If RTE plants are encountered during the survey, Project-related distribution upgrades may proceed provided that the disturbance associated with such work avoids impacts on identified RTE plant species. If the areas where RTE plants are present cannot be entirely avoided, the Petitioner shall take steps to minimize impacts, and shall propose and implement mitigation for all remaining impacts, subject to ANR’s approval, prior to any site preparation or construction activities.

13. EMS shall retain a qualified archaeological consultant to conduct a preliminary review of all sites in which new poles are proposed to be placed as a result of the Project-related distribution upgrades. If EMS’s archaeological consultant determines that any of the proposed sites are archaeologically sensitive based on the Environmental Model for Predicting the Locations of Pre-Contact Archeological Sites and for Determining Archeological Sensitivity of Land, the consultant shall submit a proposed scope of work to the Vermont Division for Historic Preservation (“DHP”) for review and approval before commencing the work.

14. All archaeological studies must follow the DHP Guidelines for Conducting Archaeological Studies in Vermont and be performed by a qualified archaeological consultant. The archaeological studies shall be conducted before any Project-related construction activity is undertaken, and scheduled so that mitigation measures that may be necessary can be satisfactorily planned and accomplished prior to construction.

15. The Petitioner shall conduct studies before and after Project construction to assess

what damage, if any, has been done to Tyson Road, Tyson Bridge, and/or Mine Road between Tyson Road and the Project as a result of the Project. At its election, the Petitioner may rely on a recently conducted road condition study, so long as it was completed prior to commencement of construction. The Petitioner shall be responsible for correcting any damage beyond normal wear and tear to these limited road sections that is solely and demonstrably caused by Project-related traffic.

16. The Petitioner shall restrict construction activities and related deliveries for the Project to the hours between 7:00 A.M. and 7:00 P.M. Monday through Friday and between 8:00 A.M. and 5:00 P.M. on Saturdays. No construction work or deliveries shall take place on Sundays, state holidays, or federal holidays.

17. The Petitioner shall ensure that truck deliveries are not scheduled between 7:00 A.M. and 8:00 A.M. Monday through Friday, between 3:00 P.M. and 4:00 P.M. Monday through Thursday, and between 12:30 P.M. and 1:30 P.M. on Fridays for the duration of the construction period in order to avoid the regularly scheduled school bus pick-up and drop-off periods. The Petitioner shall also ensure that flaggers are present at both ends of Tyson Road during days when ten or more Project deliveries by large commercial vehicles are scheduled.

18. The Petitioner shall work in good faith with the Town of Strafford and GMP to seek implementation of GMP's agreement to retire Project renewable energy certificates ("RECs") consistent with GMP's proposal outlined in GMP's letter to Vermont Department of Public Service ("Department") Commissioner Recchia, dated December 4, 2015, Exhibit EMS-RK-15.

19. The Petitioner agrees to conduct an informal post-construction site visit with representatives of the Department (and the Town of Strafford if it wishes to attend) to determine whether there is a need to propose aesthetic mitigation, not to exceed a cost of \$20,000 to the Petitioner, along Mine Road within approximately 1,000 linear feet of the Project entrance to address the visual impacts of the Project in that location. If the Petitioner, the Department, and the Town of Strafford agree that additional mitigation is needed and they agree on what that mitigation should be, they shall make a joint filing with the Board proposing that such mitigation be included as part of the Project. Should only the Department or the Town, and not the Petitioner, believe that additional mitigation is necessary, the Department or the Town may

recommend to the Board additional mitigation as they believe necessary to ensure that any aesthetic impacts are sufficiently mitigated. EMS may respond to the Department's or the Town's recommendation, and the Board shall have final authority to determine what, if any, additional mitigation may be necessary. However, if the parties jointly conclude that no mitigation is needed, then no further Board process would be required.

Dated at Montpelier, Vermont, this 29th day of June, 2016.

<u>s/James Volz</u>)	
)	PUBLIC SERVICE
)	
<u>s/Margaret Cheney</u>)	BOARD
)	
)	OF VERMONT
<u>s/Sarah Hofmann</u>)	

OFFICE OF THE CLERK

FILED: June 29, 2016

ATTEST: s/Judith C. Whitney
Clerk of the Board

NOTICE TO READERS: This decision is subject to revision of technical errors. Readers are requested to notify the Clerk of the Board (by e-mail, telephone, or in writing) of any apparent errors, in order that any necessary corrections may be made. (E-mail address: psb.clerk@vermont.gov)

Appeal of this decision to the Supreme Court of Vermont must be filed with the Clerk of the Board within thirty days. Appeal will not stay the effect of this Order, absent further order by this Board or appropriate action by the Supreme Court of Vermont. Motions for reconsideration or stay, if any, must be filed with the Clerk of the Board within ten days of the date of this decision and Order.