STATE OF VERMONT
PUBLIC SERVICE BOARD

Petition of Champlain VT, LLC d/b/a TDI New England for a Certificate of Public Good, pursuant to 30 V.S.A. §248, authorizing the installation and operation of a high voltage direct current (HVDC) underwater and underground electric transmission line with a capacity of 1,000 MW, a converter station, and other associated facilities, to be located in Lake Champlain and in the Counties of Grand Isle, Chittenden, Addison, Rutland, and Windsor, Vermont, and to be known as the New England Clean Power Link Project ("NECPL")	)	Docket No. _____

PREFILED DIRECT TESTIMONY OF MICHAEL BUSCHER

ON BEHALF OF CHAMPLAIN VT, LLC

December 8, 2014

Summary:

Mr. Buscher provides testimony regarding 30 V.S.A. § 248(b)(1), Orderly Development of the Region, and 30 V.S.A. § 248(b)(5) and 10 V.S.A. § 6086(a)(8), Visual Aesthetics.

List of Exhibits

Exhibit Number	Name of Exhibit
TDI-MB-1	Resume
TDI-MB-2	Aesthetic and Orderly Development Analysis Report (TJBA)

Q1. Please state your name and position relative to this Project.

A1. Response: My name is Michael J. Buscher. I am a licensed landscape architect in the State of Vermont and owner of T. J. Boyle Associates, Landscape Architects and Planning Consultants.

Q2. Please describe your qualifications and expertise.

A2. Response: I received a Bachelor's degree in Landscape Architecture from the Department of Landscape Architecture at the Pennsylvania State University in 1998. I worked as a landscape architect in the greater Washington D.C. metropolitan area for a short time before moving to Vermont in 2001 and joining T. J. Boyle Associates. In 2007, I became an owner of the firm. My resume is attached as ***Exhibit (Exh.) TDI-MB-1***.

Q3. Have you previously testified before the Public Service Board or in other judicial or administrative proceedings?

A3. Response: Yes. Within Vermont, I have testified before local development review boards and planning commissions, Act 250 district environmental commissions, the Vermont Environmental Court, and the Public Service Board. I have also provided testimony before the New York State Department of Public Service and the Department of Environmental Conservation.

Q4. What is the purpose of your testimony?

A4. Response: I testify regarding the proposed New England Clean Power Link Project's ("NECPL" or "Project") compliance with 30 V.S.A. § 248(b)(1), Orderly Development of the Region, and 30 V.S.A. § 248(b)(5) and 10 V.S.A. § 6086(a)(8), Visual Aesthetics.

Q5. Have you relied on the work of any other experts concerning this Project?

A5. Response: Yes, I have relied upon plans and details of the Project provided by other consultants. Specifically, I have been provided engineering designs and LIDAR data from TRC Engineering and Converter Station information from TRC and TDI-NE.

Q6. Have you provided project information to other experts in support of their section 248 testimony and if so, what?

A6. Response: No.

30 V.S.A. § 248(b)(1) – Orderly Development of the Region

Q7. With respect to Section 248(b)(1), please summarize your assessment of any specific land conservation, or other measures contained in the Town or Regional Plans that would pertain to the Project.

A7. Response: Overall, the intent of Municipal and Regional Plans is to guide development within the subject area and ensure orderly development. To assess the Project's potential impact on orderly development, I reviewed the town plans for the fourteen (14) municipalities and three plans from regional planning commissions in which the overland

segment of the Project will be located. A detailed discussion of my review of these plans is provided on pages 26 to 31 in the Aesthetic and Orderly Development Analysis Report, attached as ***Exh. TDI-MB-2.***

I also evaluated the plans for Vermont communities that border Lake Champlain along the proposed Project route for any potentially relevant provisions, despite the fact that the Project will not be directly located on lands regulated by these communities, but rather will be in public trust waters in the middle of Lake Champlain.

Turning first to the overland route, the Project is consistent with all of the relevant provisions of the town plans for the communities in which the Project will be located. The majority of municipal plans we reviewed include general language seeking to encourage the preservation of natural and cultural resources and many times designate resource protection and/or preservation land use categories, within which development is significantly restricted. Most of the plans generally have language which discourages sprawl development and encourage the development of renewable energy resources. The Project will be consistent with these types of general provisions as well as any limited land conservations measures which may apply to areas in which the Project is located, as summarized in detail in ***Exh. TDI-MB-2***.

As part of this analysis, it is important to note that TDI-NE proposes to bury the Project entirely underground within existing road and railroad ROWs (with the exception of two bridge crossings in Ludlow where the cable is proposed to be attached to the side of a bridge in a steel pipe). The proposed layout and configuration therefore provides little opportunity for the Project to interfere with orderly development along the route as these ROWs are already established features within these communities. Many of the

ROWs already contain existing above and below ground utility infrastructure. The buried configuration of the line results in minimal encumbrances. The Project has a single connection point with the bulk New England electric grid in Cavendish, and will not establish new local connection points that could affect development patterns. In addition, as noted below, the Project will have limited visual impacts, and where impacts may occur to existing vegetation along the Project route, TDI-NE has proposed appropriate plantings and supplemental screening to address those impacts.

Turning to the Regional Plans, the Project will also generally comply with the aspirational goals and recommendations of those plans. Regional Plans frequently only encourage constituent towns to review their own needs and goals, and there are rarely any specific guidelines or standards provided. One of the three regional plans applicable to the overland route—Plan for the Northwest Region—does provide specific policies for utility ROWs, with which the Project complies. ***See Exh. TDI-MB-2 (Appendix D, Northwest Regional Plan excerpt, p. 6.10)***. In particular, the Northwest Regional Plan includes design principles for transmission lines as follows:

1. Rights-of-way shall not divide land uses, particularly agricultural lands and large contiguous forest parcels.
2. Geographic features should be used to minimize the visual impacts of corridors. Corridors, lines and towers should not be placed on prominent geographic features such as ridge lines and hilltops.
3. Placement and maintenance of utility lines should minimize the removal of vegetation and the disruption of views from public highways, trails and waters.

(Northwest Regional Plan at 6.10)

The Project will comply with these standards. The Project will be buried overland for only one-half mile and will then be located beneath Lake Champlain for the remainder of the line within the northwest region. Where the Project is located overland, the cable will be buried beneath or alongside of Bay Road within an existing road ROW. Although the Project does cross agricultural lands to connect with the lake, the underground configuration will not divide use of this land. The Project therefore satisfies these specific utility line provisions. The Project similarly complies with the general provisions of the other two regional plans relevant to the overland route (Rutland and Southern Windsor County Regional Plan). ***See Exh. TDI-MB-2.***

With respect to the aquatic portion of the route, the transmission line will be located entirely within public trust waters. Nonetheless, I have reviewed those plans for the towns which have lakeshores along the route of the Project, and conclude that the Project is in conformance with these town plans.

Chittenden County and Addison County each have boundaries that extend to the New York border in Lake Champlain (as do Grand Isle and Rutland Counties). As discussed above, the aquatic portion of the NECPL will not be overland in these counties. Similar to the lakeshore towns, I have reviewed the regional plans for these counties and conclude that the Project will comply will all relevant and applicable provisions of the regional plans.

Q8. Will the Project unduly interfere with the orderly development of the region?

A8. Response: No, based on the evaluation described above, and as outlined in ***Exh. TDI-MB-2***, it is my conclusion that the Project will not unduly interfere with the orderly development of the region.

Q9. Does the Project comply with the land conservation measures contained in the plans of any affected municipality?

A9. Response: Yes, as discussed further in my Report, ***Exh. TDI-MB-2***, the Project will comply with all of the relevant land conservation measures in the towns along the overland route. I did not find any land conservation measures in the lake-route towns that would apply to a project located in or on the lake bed of Lake Champlain.

Q10. Is the Project consistent with the relevant Regional Plans?

A10. Response: Yes, the Project is consistent with the relevant provisions of the regional plans I reviewed.

Q11. Are there aspects of the Project that will have a positive impact on the development of the region?

A11. Response: Yes. Most of the municipal and regional plans specifically recognize the detrimental impact of continued reliance on non-renewable energy sources and encourage the development of renewable energy resources. The Project supports this goal by supporting the use of renewable energy.

30 V.S.A. § 248(b)(5) and 10 V.S.A. § 6086(a)(8) – Aesthetics (Visual)

Q12. Please summarize your assessment of the Project's aesthetic (visual) impacts.

A12. Response: For the review of potential impacts to aesthetics, my assessment focused on two main components of the Project. First, we reviewed potential impacts for the overland portion of the HVDC line that will be buried along existing road ROWs and a short stretch of railroad ROW. The second component is the Converter Station in Ludlow which is an above ground feature. Visual impacts from the portion of the Project buried or laid at the bottom of Lake Champlain were not evaluated, because no visual impacts are expected. My assessment of the Project's aesthetic (visual) impacts is detailed in the Aesthetic and Orderly Development Analysis Report, attached as *Exh. TDI-MB-2, pp. 2-25*.

Overall, the Project is designed to minimize visual impacts. The transmission line will be buried entirely along existing road and railroad ROWs and the layout of the cable route minimizes tree clearing to the extent possible. Horizontal Direction Drilling will be used at over twenty locations extending nearly 5 miles of the overland route, which will results in minimal to no disturbance above the drilled route. Landscape mitigation plantings are proposed at the limited locations where clearing may occur that would create adverse impacts. Additionally, the selected location and design of the Converter Station allows surrounding vegetation to screen almost all views of the converter.

Q13. As part of your aesthetic analysis, have you evaluated the Project under the *Quechee Test*?

A13. Response: Yes, I applied the *Quechee* analysis in this case following the methodology the Vermont Public Service Board uses in Section 248 proceedings, which has been described by the Board as follows:

> In order to reach a determination as to whether the project will have undue adverse effect on the aesthetics of the area, the Board employs the two-part test first outlined by the Vermont Environmental Board in Quechee, and further defined in numerous other decisions.
>
> Pursuant to this procedure, first a determination must be made as to whether a project will have an adverse impact on aesthetics and the scenic and natural beauty. In order to find that it will have an adverse impact, a project must be out of character with its surroundings. Specific factors used in making this evaluation include the nature of the project's surroundings, the compatibility of the project's design with those surroundings, the suitability of the project's colors and materials with the immediate environment, the visibility of the project, and the impact of the project on open space.
>
> The next step in the two part test, once a conclusion as to the adverse effect of the project has been reached, is to determine whether the adverse effect of the project is "undue." The adverse effect is considered undue when a positive finding is reached regarding any one of the following factors:
>
> 1. Does the project violate a clear, written community standard intended to preserve the aesthetics or scenic beauty of the area?
> 2. Have the applicants failed to take generally available mitigating steps which a reasonable person would take to improve the harmony of the project with its surroundings?
> 3. Does the project offend the sensibilities of the average person? Is it offensive or shocking because it is out of character with its surroundings or significantly diminishes the scenic qualities of the area?
>
> Our analysis, however, does not end with the results of the Quechee test. Instead, our assessment of whether a particular project will have an "undue" adverse effect on aesthetics and scenic or natural beauty is "significantly informed by overall societal benefits of the project."

Petitions of the Vermont Electric Power Company, Inc. (VELCO), Vermont Transco, Docket No. 6860, Vt. Pub. Serv. Bd. (Jan. 28, 2005) at 79 (footnotes omitted).

Q14. Under the *Quechee Test* will the Project have an adverse effect on aesthetics or the scenic or natural beauty of the area?

A14. Response: Yes, I determined that the Project has the potential to cause an adverse aesthetic effect. We have identified thirteen (13) specific locations at which adverse impacts can occur as a result of vegetation removal for the construction and maintenance of the HVDC line. ***See Exh.TDI-MB-2 (Section C, Evaluation of Impacts)***. At these locations, depending on the exact location of the line at the time of construction, the line could require clearing that may result in removal of vegetation that provides screening and landscape value. This generally includes landscape plantings between the road and adjacent development. At six (6) of these locations, TDI-NE has informed me that it will make additional efforts to avoid clearing, which would avoid adverse impacts. At all locations that may be impacted TDI-NE has proposed, or will design, mitigation measures to supplement or replace any screening impacted by the Project.

A second type of impact from the HVDC line will be clearing that removes an established edge to existing wooded areas. In some locations along the route up to 50 feet of clearing will be required and the new edge of woods will have a different character. The edge of existing wooded areas that have long been established include trees that have limbs along the entire height of the tree and include edge and understory plantings. Where clearing creates a new edge along roads that the Project follows, the new edge include trees with branching confined to the very tops of the trees and little

understory plantings. This creates a 'raw' edge that will be more pronounced during 'leaf-on' times of the year, or times when deciduous vegetation is in foliage. This is a temporary impact and will be naturally mitigated overtime as new understory plantings and foliage is generated along the newly create edge. Therefore, I don't believe these impacts are adverse.

We also evaluated potential visual impacts associated with the Proposed Converter Station, and determined that views of this facility will be extremely minimal. To the extent there are any adverse impacts, they are limited to the *potential* view of the Converter Station from the roadway near where the facility access road joins Nelson Road. However, these views will be very limited. More specifically, some minimal views of the Converter Station are possible for less than 100 feet along Nelson Road, where the access road will be located. These views from Nelson Road will be at a distance of approximately 500 feet from the Converter Station equipment. Landscape mitigation plantings are proposed to narrow the width of the clearing, and to screen and soften views of the Station from these limited views. The proposed landscape mitigation plan for the Converter Station is included in ***Exh. TDI-MB-2 (Appendix B, Sheet L-11)***.

Q15. Assuming the aesthetic impact is adverse, is it unduly adverse under the second step of the *Quechee* analysis?

A15. Response: No, while the Project's impacts may be adverse, I do not believe they rise to the level of unduly adverse. As described further in my Report, ***Exh. TDI-MB-2***, the Project's overall visual impacts will be extremely limited. The majority of the

infrastructure is buried and will not be visible, and where some visual impacts may occur, TDI-NE has taken appropriate steps to minimize and mitigate those impacts.

Q16. Did you consider whether the Project will offend the sensibilities of the average person?

A16. Response: Yes we considered the issue, and it is my conclusion that the Project as proposed will not offend the sensibilities of the average person for the following reasons:

- Most Project components will be installed underground. Adversity is largely based on the contrast of a proposed project's components to the existing conditions of the surroundings where they are located. Since the Project will generally not result in visible infrastructure, there is little contrast to existing conditions.
- Most impacts are a result of vegetation removal. All vegetation removal is temporary and will be allowed to re-establish with the exception of an approximately 12-foot area around the cables which will need to be kept free of deep-rooted trees. Additional proposed mitigation, including landscape plantings and tree protection measures will in time reverse any impacts.
- The proposed Converter Station is not expected to have any significant visibility. The Converter Station site is also adjacent to a major high voltage transmission corridor with two major overhead transmission lines. It is also located in close proximity to the VELCO Coolidge Substation.

Q17. Did you consider whether the Project would violate a clear, written community standard intended to preserve the aesthetics or scenic beauty of the area?

A17. Response: Yes, we evaluated relevant plans, and it is my conclusion that the Project will not violate any clear written community standard intended to preserve the aesthetic or scenic beauty of the areas in which the Project is proposed. All relevant town and regional plans were reviewed for the Project and only 2 plans contained standards applicable to the NECPL. The Northwest Regional Plan and Shrewsbury Town Plan both include specific standards regarding energy transmission facilities. By burying the cable within existing road and railroad ROWs and avoiding significant tree and vegetation clearing, the Project is consistent with standards within these plans. Further detail regarding my assessment of clear written community standards can be found in *Exh. TDI-MB-2* on page 22. I have provided a selection of pages from all planning documents we reviewed, with relevant sections relating to clear written community standards highlighted. *See Exh. TDI-MB-2 (Appendix C)*.

Q18. Did you consider whether TDI-NE has taken generally available mitigating steps to improve the harmony of the Project with its surroundings?

A18. Response: Yes. The Project has employed generally available mitigating steps, which include but are not limited to the following:

- Most importantly, the entire length of the high voltage transmission line will be installed either underwater or underground, with the exception of the two bridge crossings. When compared to aerial high voltage transmission lines, this

significantly reduces and avoids visual impacts to the areas in which the Project will be located.

- For portions of the Project where the HVDC line is located overland, with the exception of where the line transitions between land and Lake Champlain (which is located on property controlled by TDI-NE), the Project will entirely utilize existing road and railroad ROWs. No new ROWs are being proposed.
- Through careful design, the Project route significantly avoids removing sensitive vegetation that could otherwise result in a greater change to the visual landscape of the Project area.
- The Project utilizes HDD installation at more than 20 locations totaling approximately 5 miles that will not result in ground disturbance from the length of the drill paths.
- In certain areas, where mature trees or vegetation serving as a buffer cannot be avoided, landscape mitigation plantings are proposed to screen and soften views and to re-establish vegetation proposed to be removed. Landscape mitigation plans are provided in Appendix B of ***Exh. TDI-MB-2***.
- Early scoping efforts for the design and location of the Converter Station in Ludlow resulted in a final site selection and design that significantly avoids visibility of the facility. Vegetation surrounding the site will be retained, and will screen most if not all public views to the Converter Station.
- Additional landscape mitigation plantings are proposed for the Converter Station to help screen views that are created from a single location along Nelson Road.

Q19. Based on your analysis under the *Quechee* test, what is your conclusion regarding the Project's potential aesthetic impact?

A19. Response: It is my opinion that the Project will not have an undue adverse impact on the aesthetics of the areas in which it is proposed.

Q20. Have you considered any potential societal benefits of the Project in reaching your conclusion concerning the Project?

A20. Response: No. My opinion is based solely on the aesthetic analysis of the Project, and does not take into account any public benefits which may be realized through development of the Project. T hose benefits are described by other TDI-NE witnesses, and may be considered by the Board as part of its analysis, but I have not taken them into account in my analysis.

Q21. Does this conclude your testimony at this time?

A21. Response: Yes