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June 14, 2019

Susanne Miller, Presiding Officer Maine Department of Environmental Protection 17 State House Station Augusta, ME 04333

Everett Worcester, Chair and Presiding Officer Land Use Planning Commission 22 State House Station Augusta, Maine 04333

RE: NECEC Project: L-27625-26-A-N/ L-27625-TG-B-N/ L-27625-2C-C-N/ L-27625-VP-D-N/ L-27625-IW-E-N and Site Law Certification SLC 9

Dear Presiding Officer Miller and Presiding Officer Worcester:

Pursuant to the Thirteenth Procedural Order please find the Post-Hearing Brief of NextEra Energy Resources, LLC for filing in the above-captioned matter.

Please feel free to contact me if you have questions or concerns.

Sincerely,

Joanna B. Tourangeau

JBT/d Enclosure

cc: NECEC Service List

STATE OF MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND LAND USE PLANNING COMMISSION IN THE MATTERS OF

CENTRAL MAINE POWER COMPANY)	
NEW ENGLAND CLEAN ENERGY)	
CONNECT) A	APPLICATION FOR NATURAL
25 Municipalities, 13 Townships/Plantations,) F	RESOURCES PROTECTION ACT
7 Counties) A	AND SITE LOCATION OF DEVELOPMENT
L-27625-26- A-N) A	ACT PERMITS
L-27625-TB-B-N)	
L-27625-2C-C-N)	And
L-27625-VP-D-N)	
L-27625-IW-E-N)	
) S	SITE LAW CERTIFICATION
And)	
)	
Site Law Certification)	
SLC 9)	

POST HEARING BRIEF OF NEXTERA ENERGY RESOURCES, LLC

Pursuant to Section 23 of Chapter 3 of the Maine Department of Environmental Protection's ("Department") Rules and the Land Use Planning Commission's ("Commission") Thirteenth Procedural Order, NextEra Energy Resources, LLC ("NextEra") submits this post hearing brief to the Department and the Commission.

I. THE APPLICABLE RECORD TO DEPARTMENT AND COMMISSION REVIEW

On September 27, 2017, Central Maine Power ("CMP") filed an Application with the Department pursuant to Maine's Site Location of Development Act and Natural Resource Protection Act to construct the New England Clean Energy Connect, a 1,200 MW high voltage direct current ("HVDC") transmission line from the Quebec-Maine border to a new converter station in Lewiston and related upgrades ("NECEC"). CMP also filed an application with the

Commission seeking qualification of portions of the NECEC as a special exception within the P-RR subdistrict,

The Department and Commission record is replete with evidence that: (1) HVDC transmission lines similar to NECEC are routed underground or underwater (*i.e.*, are technically feasible); (2) undergrounding some of all of NECEC in the 53 mile greenfield corridor is a financially viable alternative; and (3) there are significant scenic and recreational concerns with routing NECEC through the 53 miles of greenfield corridor that undergrounding NECE would address.

On the first point, the record is clear that HVDC transmission lines like that proposed by CMP are routed underwater or underground.¹ In fact, HVDC transmission lines of the same length or shorter than NECEC are routed underground or underwater, with only 1 exception in the world,² which uses the HVDC line commutate converter technology,³ rather than the HVDC voltage-sourced conversion ("VSC") technology selected by CMP. Also, CMP's HVDC vendor, Siemens, indicated that, between those projects that are already in-service or planned, only 1 out of 14 HVDC VSC transmission lines of any length are aboveground in the world,⁴ and that one project involves DC and alternating current lines sharing overhead transmission towers.⁵ Further, even in New England, other proposed HVDC transmission projects incorporate significant portions of underground or underwater routing into their design when compared to NECEC:

¹ Exhibit CR-3 and CR-4.

² Exhibit CR-3.

³ Exhibit CR-4.

⁴ Id.

⁵ *Id.* and Exhibit CR-5 at 25.

Routing HVDC Underground or Underwater							
Project Name/ State	Length in US (miles)	Underwater Cable (miles)	Buried Cable (miles)	Overhead (miles)	Totals (columns 3+4)		
NECEC (Maine)	145	0	~1	144	~1		
TDI (Vermont)	154	97	57	0	154 ⁶		
Green Line (New York and Vermont)	60	40	20	0	60 ⁷		
Northern Pass (New Hampshire)	192	0	60	132	608		

A CMP affiliate also proposed a HVDC transmission line project in New York that was 244 miles long and routed completely underground.⁹

⁶ Exhibit CR-7 at 241 (TDI Mass. 83 D RFP bid). "The 154 mile transmission line will utilize high voltage direct current (HVDC) technology, capable of transmitting 1,000 megawatts (MW) of electricity. The underwater portions of the transmission line, approximately 97 miles in length, will be buried in the bed of Lake Champlain, except at water depths of greater than 150 feet where the cables will be placed on the bottom. The overland (terrestrial) portions of the transmission line, approximately 57 miles in length, will be buried underground within existing public road and railroad rights-of-way ('ROWs'), or on private land under TDI-NE ownership or control." *See also* Exhibit CR-8 at 1 (CMP Slide Deck).

⁷ Exhibit CR-9 at 14 (Vt. Clean Line bid into Conn. Zero Carbon Energy RFP). "Approximately 40 miles of HVDC underwater cable bundled with a fiber optic cable ('Underwater Cable') to be buried along the lakebed of Lake Champlain with landfall at Pointe Au Roche Park, New York and Kingsland Bay State Park in Vermont. Approximately 4.8 miles are located within waters regulated by New York and 35.4 miles are located within waters of Vermont. Two segments of HVDC underground cable with associated fiber optic cable ('HVDC Land Cable') linking the Underwater Cable to the Converter Stations, one segment in New York and one in Vermont. The New York HVDC Land Cable segment length is approximately 6.7 miles and the Vermont HVDC Land Cable segment is approximately 13.3 miles."

⁸ Exhibit CR-10 at 6-3, 6-5, and 7-20 (Northern Pass Mass. 83 D RFP bid). Proposing approximately 8 miles of undergrounding in the towns of Pittsburg, Clarksville and Stewartstown and approximately 52 miles of underground line within Bethlehem, sugar Hill, Franconia, Easton, Woodstock, Thornton, Campton, and Plymouth and Bridgewater. "NPT now proposes to build nearly one-third of the project underground, in public highways, to avoid or minimize potential visual impacts to the most sensitive scenic resources in the state, including areas in and around the White Mountain National Forest, Appalachian Trail, and Franconia Notch area."

⁹ Exhibit CR-11.

On the second point, CMP has the funds to route under all or certain segments of the 53-mile greenfield corridor that are within the P-RR subdistrict. Specifically, CMP committed to route NECEC under the Kennebec River, which will cost \$42 million, approximately four percent of the project's capital cost. The incremental cost increases for undergrounding the specific areas within the P-RR subdistrict for the 53 miles of greenfield corridor range from \$13, 28, and 30 million, which is approximately one, three, and three percent increases in the capital costs for the project. The total associated cost attributable to routing under the Kennebec River and specific areas in the 53 miles greenfield corridor, therefore, sum to only 11 percent of NECEC's total costs. CMP conceded that its budget includes a contingency of 15 percent of the total project cost. Accordingly, undergrounding specific areas within the P-RR subdistrict for the 53 mile of greenfield corridor is well within CMP's anticipated contingency funds for the NECEC.

On the third point, numerous parties¹³ and stakeholders¹⁴ oppose the NECEC's use of the 53-mile greenfield forested land due to the negative impact on natural resources, scenic, and recreational values.¹⁵ Indeed, the testimony of parties and stakeholders show that there are

¹⁰ Tr. 394: 10-25, 395: 1-4 (May 9, 2019).

¹¹ Tr. 395: 5-10 (May 9, 2019).

¹² Tr. 389: 1-2, 15-18 (May 9, 2019).

¹³ See, e.g., Tr. 41:22 through 42:3; 50:8-20; 51:19-25 (April 1, 2019).

¹⁴ Exhibit CR-6 (Excerpts from PUC Public Hearing Transcript University of Maine - Farmington 9/14/18 at 12-13, 24, 31-32, 41-43, 45-48, 67-70; and 75-76; Public Hearing Transcript The Forks 9/14/18 at 30-31, 45-46, 62; 73, 78, 89, and 121 and Public Hearing Transcript 10/17/18 at 43, 57, 64, 67-68, 81-82, 114, 130, 141).

¹⁵ 06-096 C.M.R. Ch. 315 § 6 (hereinafter "Ch. 315") ("An applicant is required to demonstrate that the proposed activity will not unreasonably interfere with existing scenic and aesthetic uses of a scenic resource listed in Section 10"); Ch. 315 § 9 ("It is the responsibility of the applicant to demonstrate that the proposed design does not unreasonably interfere with existing scenic and aesthetic uses, and thereby diminish the public enjoyment and appreciation of the qualities of a scenic resource, and that any potential impacts have been minimized"); *see also* Ch. 315 § 8.

significant environmental impacts associated with the aboveground routing of the NECEC¹⁶ that would be mitigated if some or all of NECEC is routed underground.

II. THE DEPARTMENT'S ALTERNATIVES ANALYSIS

A. <u>CMP's Application Does Not Comply with the Natural Resource Protection Act because CMP Failed to Consider Practicable Alternatives that Would Not Defeat the Project Purpose.</u>

Pursuant to the Natural Resource Protection Act ("NRPA"), CMP's Application must demonstrate there is no "practicable alternative to the activity that would be less damaging to the environment." The NRPA further requires that "[t]he applicant . . . provide an analysis of alternatives . . . in order to demonstrate that a practicable alternative does not exist." The NRPA defines practicable as the "[a]vailable and feasible [consideration of] cost, existing technology and logistics based on the overall purpose of the project." Therefore, a project will not be permitted by the Department if there are practicable alternatives that would meet the project purpose and have less environmental impact. CMP has failed to comply with these fundamental and straightforward requirements of the NRPA on the consideration of alternative routes and undergrounding. Therefore, its Application should be denied.

i. Undergrounding Meets the Project Purpose

The NECEC's Project Purpose "is to deliver up to 1,200 MW of Clean Energy Generation from Québec to the New England Control Area1 via a High Voltage Direct Current

¹⁶ Supra, notes 13 and 14.

¹⁷ 06-096 C.M.R. Ch. 310 § 5(A) (hereinafter "Ch. 310"); 38 M.R.S. §§ 480-A *et seq.*; *see also* CMP Application at 2-1 acknowledging that CMP has this burden of proof.

¹⁸ Ch. 310 § 5(A)

¹⁹ Ch. 310 § 3(R).

²⁰ CMP Application at 2-1.

(HVDC) transmission line, at the lowest cost to ratepayers."²¹ The purpose of NECEC is to transport energy from Canada. That purpose can be accomplished with some or all of NECEC routed underground. It can also be accomplished with no additional costs to ratepayers, as CMP testified that ratepayers will not bear any of the costs of the NECEC.²²

ii. CMP Failed to Conduct an Alternatives Analysis

CMP's Application failed to comply with Chapter 310 of the NRPA because its Application did not include an alternative analysis for undergrounding the 53-miles of the greenfield, new transmission corridor from the Forks to the Canadian border. In fact, the Application is devoid of any competent evidence regarding undergrounding the NECEC for the 53-miles of greenfield corridor or any individual section therein.²³

In response to NextEra identifying the deficiency in CMP's Application,²⁴ CMP submitted testimony attempting to rebut the use of undergrounding for the 53-miles of greenfield corridor.²⁵ CMP's rebuttal, however, does not amount to an alternatives analysis.

First, any alternatives analysis on undergrounding during the first 53-miles of NECEC needed to be conducted during the selection of the proposed routes, well before the filing of the Application. By failing to conduct an alternatives analysis at the time the routes were selected.²⁶

²¹ *Id*.

²² Tr. 270: 17-22 (April 1, 2019).

²³ See e.g., Tr. 393:2-17 (May 9, 2019).

²⁴ Pre-filed Testimony of NextEra witness Christopher Russo (February 15, 2019).

²⁵ See Rebuttal Testimony of Thorn Dickinson (March 25, 2019); Rebuttal Testimony of Justin Tribbet (March 25, 2019); Rebuttal Testimony of Justin Bardwell (March 25, 2019); Supplemental Testimony of Justin Bardwell (May 1, 2019).

²⁶ CMP repeatedly admitted it did not conduct such an analysis *See*, *e.g.*, Pre-filed testimony of Chris Russo Exhibit CR-1 (hereinafter "Exhibit CR") at 37, lines 1-9; Tr. at 335:15-336:24 (April 1, 2019); Tr. 47:1-5; 172:2-9 (April 2, 2019).

CMP's analysis is fatally flawed because it did not consider undergrounding in light of all practicable routes. Therefore, as the record stands, there is no ability for CMP to meet its burden under Chapter 310, because the undergrounding of NECEC has only been reviewed in the context of the two proposed CMP routes in its Application, and not all practicable alternative routes that would meet the project purpose and have less environmental impact were reviewed.

Second, CMP's rebuttal testimony fails to comply with the Department's requirements for an acceptable alternatives analysis, because it did not include site-specific and field information on its proposed routes. CMP's failure to provide this information for the alternative of the undergrounding of NECEC for the first 53 miles of greenfield corridor is in stark contrast to the technical, site-specific alternative analysis it conducted for routing NECEC under the Kennebec River.²⁷ Due to CMP's failure to conduct an alternatives analysis for the first 53 miles of greenfield corridor, there is only speculation on which route the Department should consider for approval and what part of the approved route should be undergrounded to reduce environmental impacts. Accordingly, CMP failed to conduct the necessary studies to meet its burden under Chapter 310, and, therefore the Department cannot approve any route for NECEC.

Consequently, CMP's failure to conduct an alternatives analysis requires the Department to deny its Application. Without a proper alternatives analysis CMP cannot prove that no practicable alternatives exist that would be less damaging to the environment.

²⁷ See CMP's Natural Resource Protection Act Application Amendment for the Kennebec River Horizontal Directional Drill (October 19, 2018) and CMP's Site Location of Development Application Amendment for the Kennebec River Horizontal Directional Drill (October 19, 2018).

iii. <u>Undergrounding is Financially Viable</u>

The record shows that a CMP affiliate proposed a completely underground 244 mile HVDC transmission line in New York, and that the all but one HVDC lines of similar length to NECEC are routed underground or underwater.²⁸

In the face of this evidence, CMP argues that undergrounding all, or any additional section of the NECEC beyond the Kennebec River, is cost prohibitive.²⁹ However, CMP has a 15 percent cost contingency for NECEC.³⁰ The incremental costs of undergrounding the three locations in the P-RR subdistrict range in the 53 the miles of greenfield corridor, as requested by certain parties, range from one to three percent of the project's capital cost.³¹ Adding these costs to routing under the Kennebec River, which is approximately four percent of the project's capital cost,³² is well within the 15 percent contingency for NECEC.³³ Therefore, CMP's assertion that it is cost prohibitive to underground some of the NECEC in the 53 mile greenfield corridor is without merit.

iv. Undergrounding is Logistically and Technically Feasible

It is telling that every HDVC line of similar length to NECEC, except one, is routed underground or underwater. Clearly, the technology exists and is available to underground transmission lines such as NECEC. CMP, by its own Application Amendment, established that

²⁹ Tr. 169: 20-25, 170: 1-11 (April 2, 2019).

³² *Id.* at 394: 10-25, 395: 1-4.

²⁸ See Notes 1-9 supra.

³⁰ Tr. 389: 1-2, 15-18 (May 9, 2019).

³¹ Id. at 395: 5-10.

³³ Tr. 389: 1-2, 15-18 (May 9, 2019).

undergrounding is logistically and technically feasible within the NECEC.³⁴ CMP is undergrounding the transmission line under the Kennebec River. CMP failed to show any evidence differentiating the Kennebec River and the other areas of significance noted by intervening parties and the Department that would make undergrounding logistically and technically feasible for the Kennebec River, but not logistically and technically feasible for any other area within the NECEC. In fact, CMP cannot make this showing because, as CMP repeatedly admitted, it did not assess the site-specific features of undergrounding (such as depth to and competency of bedrock, soils testing, etc.) for the greenfield corridor.³⁵

The record is clear that undergrounding meets the project purpose and is technically and logistically feasible. It also shows that cost to CMP is not prohibitive nor do the costs defeat NECEC's purpose. For all of these reasons, the Department must deny CMP's application as unsupported by substantial evidence.

B. The Site Law Requires Rejection of CMP's Alternatives Analysis

Pursuant to the Site Law, the Department has independent authority to consider, and, in fact, must consider, alternatives: "[T]he department...shall consider whether any proposed alternatives to the proposed location and character of the transmission line or pipeline may lessen its impact on the environment or the risks it would engender to the public health or safety, without unreasonably increasing its cost." In this context, "The department may approve or disapprove all or portions of the proposed transmission line or pipeline and shall make such

³⁴ See CMP's Natural Resource Protection Act Application Amendment for the Kennebec River Horizontal Directional Drill (October 19, 2018) and CMP's Site Location of Development Application Amendment for the Kennebec River Horizontal Directional Drill (October 19, 2018).

³⁵ See, e.g., Exhibit CR-1 at 37, lines 1-9; Tr. at 335:15-25, 336: 1-24 (April 1, 2019); Tr. 47:1-5; 172:2-9 (April 2, 2019); Tr. 392: 3-8; 393: 2-17 (May 9, 2019).

³⁶ 38 M.R.S. § 487-A(4).

orders regarding its location, character, width and appearance as will lessen its impact on the environment, having regard for any increased costs to the applicant."

The record shows there are undergrounding alternatives that will lessen the NECEC's impact on the environment. In fact, CMP's testimony established that the environmental impacts associated with undergrounding are primarily temporary construction impacts and that undergrounding specific sections of the NECEC is within its cost contingency.³⁷ As already established, the record is also clear that undergrounding is an alternative which will lessen environmental impacts and will not unreasonably increase NECEC's costs. Accordingly, CMP's assertions that the Department should approve CMP's Application without an alternative analysis that addresses the need to underground some or all of NECEC for the 53 mile greenfield corridor is baseless, and contrary to the Site Law. Therefore, CMP's Application should be denied.

III. NECEC'S ALTERNATIVES ANALYSIS IS LEGALLY INADEQUATE

Under Commission Rules, for the NECEC to qualify as a special exception within the P-RR subdistrict, CMP must establish "by substantial evidence" that "there is no alternative site which is both suitable to the proposed use and reasonably available to the applicant". ³⁸ Even then, the Commission has discretion whether or not to allow the use as a special exception. ³⁹

³⁷ Tr. 393: 18-23; 394: 10-25, 395: 1-4; Tr. 395: 5-10; Tr. 389: 1-2, 15-18 (May 9, 2019).

³⁸ 01-672 C.M.R. Ch. 10 § 23(I)(3)(d) (hereinafter "Ch. 10").

³⁹ See Ch. 10 § 23(I)(3)(d) ("The following uses...may be allowed within the P-RR subdistrict as special exceptions...provided that the applicant shows by substantial evidence that (a) there is no alternative site which is both suitable to the proposed use and reasonably available to the applicant; (b) the use can be buffered from those other uses and resources within the subdistrict with which it is incompatible; and (c) such other conditions are met that the Commission may reasonably impose in accordance with the policies of the Comprehensive Land Use Plan..."). (emphasis added).

A. CMP Failed to Prove Undergrounding within the P-RR Subdistrict is Not an Alternative which is Suitable to the Proposed Use and Reasonably Available to the Applicant.

CMP failed to meets its burden under Chapter 10,⁴⁰ because it did not provide nor evaluate site-specific information within the P-RR subdistrict. Therefore, CMP cannot prove "by substantial evidence" that undergrounding is not suitable. Indeed, except for the Kennebec River Application Amendment,⁴¹ CMP's Application and subsequent testimony⁴² are devoid of any site-specific and field information on any area within the P-RR Subdistrict.⁴³ Thus, CMP's Application should be denied as it failed to meet its burden of proof under Chapter 10.

i. <u>Undergrounding within the P-RR Subdistrict is Suitable and Reasonably</u> Available

It is telling that every HDVC line of similar length, except one, is underground or underwater. Clearly, the technology exists and is available to underground transmission lines like the NECEC. CMP, by its own Application Amendment to route under the Kennebec River, established that undergrounding is reasonably available and suitable within the NECEC.⁴⁴ Further, CMP failed to show any evidence or analysis differentiating the Kennebec River and the areas within the P-RR subdistrict that would make undergrounding reasonably available and

⁴⁰ Ch. 10 § 23(I)(3)(d).

⁴¹ See CMP's Natural Resource Protection Act Application Amendment for the Kennebec River Horizontal Directional Drill (October 19, 2018) and CMP's Site Location of Development Application Amendment for the Kennebec River Horizontal Directional Drill (October 19, 2018).

⁴² *See* Rebuttal Testimony of Thorn Dickinson (March 25, 2019); Rebuttal Testimony of Justin Tribbet (March 25, 2019); Rebuttal Testimony of Justin Bardwell (March 25, 2019); Supplemental Testimony of Justin Bardwell (May 1, 2019).

⁴³ See, e.g., Exhibit CR-1 at 37, lines 1-9; Tr. at 335:15-25, 336: 1-24 (April 1, 2019); Tr. 47:1-5; 172:2-9 (April 2, 2019); Tr. 392: 3-8, 393: 2-17 (May 9, 2019).

⁴⁴ See CMP's Natural Resource Protection Act Application Amendment for the Kennebec River Horizontal Directional Drill (October 19, 2018) and CMP's Site Location of Development Application Amendment for the Kennebec River Horizontal Directional Drill (October 19, 2018).

suitable for the Kennebec River, but not available or suitable to any other area within the P-RR subdistrict. In fact, CMP cannot make this showing because, as CMP admitted repeatedly, it did not analyze site-specific features to undergrounding all or a portion of the greenfield corridor.⁴⁵

The record is clear that undergrounding is an alternative which is both suitable to the proposed use and reasonable available to CMP. There is no evidence in the record to the contrary. Consequently, the Commission must deny CMP's application.

ii. Undergrounding is Financially Viable

Although costs are not a Commission consideration, ⁴⁶ CMP's sole ground for objection to undergrounding all, or any additional section, of the NECEC beyond the Kennebec River is the assertion that the costs are prohibitive. ⁴⁷ However, the record evidence establishes that undergrounding is not cost prohibitive. Not only did a CMP affiliate propose a completely undergrounded HVDC transmission line in New York, all but one HVDC lines of similar length are underground or underwater. ⁴⁸ Further, CMP's failure to do any site-specific testing or analysis makes any cost argument baseless, as that information is needed to provide a reasonable cost estimate for undergrounding in the P-RR subdistrict.

CMP's estimated costs of undergrounding the three locations in the P-RR subdistrict only constitute seven percent of the project's capital cost.⁴⁹ Including the cost to underground the Kennebec River and CMP's other incremental costs relative to overhead improvements only

⁴⁵ See, e.g., Exhibit CR-1 at 37, lines 1-9; Tr. at 335:15-336:24 (April 1, 2019); Tr. 47:1-5; 172:2-9 (April 2, 2019).

⁴⁶ Tr. 269: 18-20 (April 2, 2019).

⁴⁷ *Id.* at 169: 20-25, 170: 1-11.

⁴⁸ See Notes 1-9 supra.

⁴⁹ Tr. 395: 5-10 (May 9, 2019).

results in approximately four percent of the project's capital cost.⁵⁰ CMP conceded that it included approximately a 15 percent project cost contingency.⁵¹ Even assuming the Commission could properly consider costs in determining suitability, undergrounding specific areas within the P-RR subdistrict is well within the capital costs CMP anticipated for the NECEC.

IV. <u>CONCLUSION - APPLICABLE TO DEPARTMENT AND COMMISSION REVIEW</u>

CMP's Application fails to meet the Department's requirements under both NRPA and the Site Law, and, also, fails to meet the Commission's requirements to qualify as a special exception within the P-RR subdistrict. Accordingly, NextEra respectfully requests that the Department and the Commission deny CMP's Application for the NECEC.

Date: June 14, 2019

Joanna B. Tourangeau, Me. Bar No. 9125 Attorney for NextEra Energy Resources, LLC

⁵⁰ *Id.* at 394: 10-25, 395: 1-4.

⁵¹ *Id.* at 389: 1-2, 15-18.