STATE OF MAINE PUBLIC UTILITIES COMMISSION

DOCKET NO. 2017-00232

CENTRAL MAINE POWER COMPANY REQUEST FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE CONSTRUCTION OF THE NEW ENGLAND CLEAN ENERGY CONNECT (NECEC) TRANSMISSION PROJECT

REBUTTAL TESTIMONY OF THORN DICKINSON, ERIC STINNEFORD AND BERNARDO ESCUDERO

On Behalf of Central Maine Power Company

July 13, 2018

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EXHIBITS

I. INTRODUCTION

Central Maine Power Company (CMP or the Company) offers the following rebuttal testimony of Thorn Dickinson, Eric Stinneford and Bernardo Escudero.[1]

Since CMP filed its initial Petition in September 2017, the New England Clean Energy Connect (NECEC or the Project) has been selected as the winning bidder in Massachusetts' Section 83D RFP solicitation and, as discussed in more detail below, the associated NECEC long-term agreements have been signed and will be submitted for regulatory approval in the next few weeks. This rebuttal testimony summarizes the NECEC agreements and details the significant progress CMP has made over the past nine months toward obtaining the required project permits and approvals and achieving commercial operation of the NECEC by December 13, 2022.

This rebuttal testimony along with the remainder of CMP's rebuttal case consisting of the rebuttal testimony of Daniel Peaco, Douglas Smith and Jeff Bower of Daymark Energy Advisors (Daymark Rebuttal) and the rebuttal testimony of Chris Malone, Scott Hodgdon and Justin Tribbet (Planning and Engineering Rebuttal) also responds to and rebuts certain points raised in the intervenor testimony submitted by NextEra Energy Resources, LLC (NextEra) and the Generator Intervenors, and the report of the Commission Staff's consultant London Economics, Inc. (LEI).

At the outset, it is important to note that all of the energy market and capacity market modeling performed concerning the NECEC, including that offered by LEI and the

[1] Mr. Dickinson is the Vice President, Business Development, of Avangrid Networks, Inc.; Mr. Stinneford is the Vice President, Controller and Treasurer of CMP; and Mr. Escudero is the Director of Business Development at Avangrid Service Company. *See* **Exhibit NECEC-1** to CMP's September 27, 2018 Petition for a Certificate of Public Convenience and Necessity (CPCN) for the New England Clean Energy Connect (NECEC) Transmission Project.

modeling of conditions in 2023 submitted by Tanya L. Bodell on behalf of the Generator Intervenors, has found that the NECEC will lower electricity supply prices for Maine customers and, if the hydropower to be transmitted by the NECEC clears the ISO-NE Forward Capacity Market, will also lower capacity costs for Maine customers. LEI also has confirmed that the NECEC will provide Maine significant macro-economic benefits in terms of increased jobs, gross domestic product and property tax revenues over the development and construction and the operations phases of the Project. [2]

In addition, no party has demonstrated that the NECEC will impose any cost to Maine customers. In fact, as discussed in more detail below, CMP has structured the NECEC so that Maine customers will not responsible for any costs related to the project over its 40-year useful life. The Generator Intervenors do allege that the NECEC will cause early retirements for Maine generators to the detriment of Maine customers. However, the Generator Intervenors have provided no evidence that Maine generators most at risk would stay operational without the NECEC nor that they will retire if NECEC goes forward, and the actual evidence, as discussed in the Daymark Rebuttal, does not demonstrate that the NECEC will cause any such early retirements. For these reasons, CMP continues to believe that the NECEC presents a very positive development for the State of Maine and its electricity customers and, therefore, respectfully urges the Commission to grant a certificate of public convenience and necessity (CPCN) for the Project.

[2] Daymark Rebuttal at § 4(A) & (B).

II. NECEC PROJECT DEVELOPMENTS SINCE THE PETITION WAS FILED

A. The Definitive Agreements between CMP, the Massachusetts Electric Distribution Companies and Hydro-Québec for the NECEC Project are Executed.

1. Overview of NECEC TSAs and PPAs

As set forth in the Petition, the NECEC Transmission Project will be paid for entirely by the ratepayers of the Massachusetts Electric Distribution Companies (Massachusetts EDCs)[3] and H.Q. Energy Services (U.S.), Inc. (HQUS), a U.S. based affiliate of Hydro-Québec, in accordance with Federal Energy Regulatory Commission (FERC)-approved transmission service agreements (TSAs), consistent with applicable Massachusetts law and applicable FERC policy, regulation and tariff.[4] As confirmed in the executed TSAs, the Massachusetts EDCs and HQUS, have agreed to purchase the full 1,200 MW of transmission capacity on the NECEC transmission line for its entire 40-year useful life. In addition, the Massachusetts EDCs have agreed to purchase 9.45 TWh annually of incremental hydroelectric power from HQUS for 20 years pursuant to long-term power purchase agreements (PPAs).[5]

CMP and Hydro Renewable Energy, Inc.'s (HRE) joint bid for the NECEC Transmission Project and the NECEC Clean Energy Generation included a proposed form of

[3] Massachusetts Request for Proposals for Long-Term Contracts for Clean Energy Projects dated March 31, 2017 (RFP) was issued by Fitchburg Gas & Electric Light Company d/b/a Unitil; Massachusetts Electric Company d/b/a National Grid; Nantucket Electric Company d/b/a National Grid; NSTAR Electric Company d/b/a Eversource; Western Massachusetts Electric Company d/b/a Eversource, as investor-owned electric distribution companies (collectively the "Massachusetts EDCs").

[4] CMP's September 27, 2018 Petition for a Certificate of Public Convenience and Necessity (CPCN) for the New England Clean Energy Connect (NECEC) Transmission Project (Petition) at 5.

[5] Exhibit H in each PPA specifies the rights and obligations of HQUS and the specific Massachusetts EDC regarding HQUS's delivery of baseline hydroelectric generation imports, in order to ensure that the deliveries under the PPAs are incremental to historical imports to New England from Hydro-Québec. Should it fail to deliver the baseline quantity of imports in any contract year, HQUS is liable for liquidated damages for such shortfall, subject to certain rights to cure.

TSA, which was submitted in support of CMP's Petition,[6] and a mark-up of the form PPA included in the 83D RFP solicitation. After the Massachusetts EDCs, in consultation with the Massachusetts Department of Energy Resources (DOER), selected the NECEC as the winning bid in the RFP in February 2018, CMP and Hydro-Québec entered into negotiations with the Massachusetts EDCs regarding the agreed-upon terms of the TSAs and the PPAs. During these negotiations, Hydro-Québec requested, and the parties agreed, to replace HRE as the Hydro-Québec contractual counterparty with HQUS.[7] The negotiations between CMP, HQUS and the Massachusetts EDCs concluded successfully with the execution of the final TSAs and PPAs on June 13, 2018.

The commercial arrangements between CMP, HQUS and the Massachusetts EDCs for the NECEC are set forth in the following ten contracts:

- Three 20-year term PPAs between HQUS and each of the Massachusetts EDCs for a total aggregate capacity of 1,090 MW;[8]

- Three 20-year term TSAs between CMP and each of the Massachusetts EDCs for firm transmission service over the NECEC for a total aggregate capacity of 1,090 MW during years 1 through 20;[9]

- Three TSAs between CMP and HQUS that mirror the capacity of the TSAs with the Massachusetts EDCs, but address transmission service during years 21 through 40 for a total aggregate capacity of 1,090 MW; and

[6] *See* Petition at Section V.D for a description of the form TSA. *See also* **Exhibit NECEC-6** (Confidential Transmission Services Agreement Summary) and IECG-001-034 Confidential Attachment 52 (Form TSA).

[7] HQUS is a U.S. corporation organized and existing under the laws of the State of Delaware.

[8] A copy of the executed PPA between HQUS and National Grid is included as an example at **Exhibit NECEC-16**. The three PPAs are for the most part identical, although the contracts include certain different provisions specifically agreed upon by one or more of the Massachusetts EDCs and HQUS regarding HQUS's potential exposure for cover damages and the calculation of incremental hydro generation. Under the terms of the three PPAs, the Massachusetts EDCs purchase 1,090 MWh per hour of hydropower energy over every hour of the 20-year contracts. *See* PPA, Exhibit B for the guaranteed clean energy to be delivered by HQUS under the contracts.

[9] In the PPAs, the EDCs assign their rights to firm transmission service under these three TSAs to HQUS to enable HQUS to fulfill its energy delivery obligations under the PPAs. *See* PPA, Section 20.

- One TSA between CMP and HQUS for the remaining 110 MW capacity of the NECEC for the entire 40-year useful life of the Project.

2. Summary of Essential Terms of the NECEC TSAs

Each of the seven NECEC TSAs are attached to this rebuttal testimony as follows:[10]

(i) The TSA between CMP and NStar Electric Company d/b/a Eversource Energy (Eversource) for 579.335 MW of transmission capacity for years 1-20, is attached as **Exhibit NECEC-17**;

(ii) The TSA between CMP and Massachusetts Electric Company and Nantucket Electric Company d/b/a National Grid (National Grid) for 498.348 MW of transmission capacity for years 1-20, is attached as **Exhibit NECEC-18**;

(iii) The TSA between CMP and Fitchburg Gas and Electric Light Company d/b/a (Unitil) for 12.317 MW of transmission capacity for years 1-20, is attached as **Exhibit NECEC-19** (the TSAs between CMP and Eversource, National Grid and Unitil referenced in items (i) through (iii) are hereinafter referred to as the EDC TSAs);

[10] CMP offers each of the TSAs and the executed PPA between HQUS and National Grid in order to clarify the record regarding the precise business arrangements between CMP, the Massachusetts EDCs and HQUS. In their pre-filed direct testimony and during technical conferences, witnesses for NextEra and the Generator Intervenors demonstrated some confusion concerning, or misstated, the terms of the agreements in various respects. *See, e.g.,* Bodell Direct Testimony at 8:15-9:2 (stating that Maine ratepayers receive a call option on energy that can be delivered through 105 MW of capacity on the line); Whitley Direct Testimony at 5:17-6:9 (stating that the HVDC transmission line will have a useful life of 40-years, but "only the prospect of market usefulness . . . for 15-20 years"); Russo Direct Testimony at 13:6-17 (same); 6/19/2018 Tech. Conf. Tr. at 13:8-14:7, 82:6-83:7 (Russo) (responding to questions of counsel for CMP and CLF regarding whether the NECEC line is fully subscribed to transmission 1,200 MW of energy from Hydro-Québec to the New England system); 6/28/2018 Tech. Conf. Tr. at 31:4-32:2 (Speyer) (claiming to have read the "public version" of the NECEC contracts). The OPA has also requested in discovery copies of the TSAs when they are filed with the FERC. *See* OPA-002-001.

(iv) The TSA between CMP and HQUS for 579.335 MW of transmission capacity for years 21-40 (which is the same amount of capacity procured by Eversource in years 1-20), is attached as **Exhibit NECEC-20**;

(v) The TSA between CMP and HQUS for 498.348 MW of transmission capacity for years 21-40 (which is the same amount of capacity procured by National Grid in years 1-20), is attached as **Exhibit NECEC-21**;

(vi) The TSA between CMP and HQUS for 12.317 MW of transmission capacity for years 21-40 (which is the same amount of capacity procured by Unitil in years 1-20), is attached as **Exhibit NECEC-22** (the TSAs between CMP and HQUS referenced in items (iv) through (vi) are hereinafter referred to as the HQUS TSAs); and

(vii) The additional TSA between CMP and HQUS for the remaining 110 MW of transmission capacity for years 1-40 (hereinafter referred to as the 110 MW TSA), is attached as **Exhibit NECEC-23**.[11]

A few of the key provisions in the TSAs relevant to this proceeding are highlighted here for ease of reference.

a. Effective Date of the TSAs

Except for certain provisions that are effective upon execution of the agreements, the EDC TSAs become effective upon final non-appealable approval of the TSAs by the Massachusetts Department of Public Utilities (MA DPU) and upon final non-appealable

[11] These seven executed TSAs and the HQUS/National Grid PPA are confidential by agreement of the contractual parties and are subject to the provisions of Protective Order No. 2 issued in this proceeding on September 26, 2017. CMP expects that the Massachusetts EDCs will file the executed TSAs and PPAs publicly as part of their filing with the Massachusetts Department of Public Utilities (MA DPU), which is expected to be submitted soon. Once the Massachusetts EDCs have made their MA DPU filing, CMP will refile the executed TSAs and PPA on a non-confidential basis in this docket.

approval of the TSAs by the FERC.[12] The Massachusetts EDCs are expected to file the executed EDC TSAs and PPAs with the MA DPU for approval in July, 2018. Except for certain provisions that are effective upon execution of the agreements, the HQUS TSAs and the 110 MW TSA become effective upon final non-appealable approval of the TSAs by the FERC.[13] CMP expects to file all seven TSAs with the FERC for approval within 30 days of the MA DPU filing. Upon FERC approval, the TSAs will constitute the rate schedule and tariff under federal law that will govern CMP's provision of transmission service to the Massachusetts EDCs and HQUS and will set forth the rates, terms and conditions for such service. The existing ISO-NE Tariff will not govern the parties' rights and obligations with respect to the NECEC, and Maine customers will have no liability for any costs associated with the NECEC under the terms of the TSAs.

b. Contract Term and Transmission Service Rate

The term of the EDC TSAs is 20 years from the commercial operation date (COD). The "Target Date" for COD is December 13, 2022. This date can be extended in certain circumstances as discussed below.[14] The term of the HQUS TSAs is 40 years from COD, but the period during which HQUS will purchase the transmission capacity under these TSAs is years 21-40.[15] The term of the 110 MW TSA is 40 years from COD.[16]

From COD through the end of the respective terms of the TSAs, CMP will provide firm transmission service over the NECEC to the Massachusetts EDCs and HQUS for the full available transmission capacity of 1,200 MW allocated as summarized above. CMP will

[12] EDC TSAs Section 3.1.

[13] HQUS TSAs & 110 MW TSA Section 3.1.

[14] EDC, HQUS and 110 MW TSAs Sections 3.2 & 4.1.

[15] *Id.*

[16] *Id.*

charge the Massachusetts EDCs and HQUS fixed stated rates, which escalate annually, for the 1,200 MW of firm transmission service provided under the EDC TSAs and the 110 MW TSA, during years 1 through 20 after COD, and CMP will charge HQUS a fixed stated rate for the 1,200 MW of firm transmission service provided under the HQUS TSAs and the 110 MW TSA during years 21 through 40 after COD.[17]

The fixed stated rates set in the TSAs are based on the cost-of-service model previously produced in this proceeding, [18] and will be reviewed by the FERC as part of its approval of the TSAs.

Because the Massachusetts EDCs and HQUS have agreed to pay CMP for all of the transmission capacity available on the NECEC for its useful life based on cost-of-service pricing, the NECEC constitutes an incumbent, cost-based, participant funded transmission project under applicable FERC-precedent.[19]

The parties to the TSAs have agreed that the agreements shall not be subject to amendment or other modification absent written agreement of the parties and neither party to each TSA shall be permitted to make a filing with the FERC that seeks to amend or otherwise modify any provision of the agreement at any time during its terms.[20] In addition, the parties agreed that to the extent any third party, or the FERC acting *sua sponte*, seeks to amend or otherwise modify any provision of the TSAs, the *Mobile-Sierra* "public interest" standard of review will apply.[21]

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[17] EDC TSAs Section 8.1 & Attachment J; HQUS & 110 MW TSAs Section 8.1 & Attachment K.

[18] ODR-003-007 & Attachment 1 thereto.

[19] *See* Final Policy Statement, 142 FERC ¶ 61,038 (Jan. 17, 2013); *Northeast Utilities Service Company et al,* Order Granting Petition for Declaratory Order, 127 FERC ¶ 61,179 (May 22, 2009).

[20] EDC, HQUS & 110 MW TSAs Section 19.1.

[21] *Id.*

The parties also made expressly clear their intent that CMP's recovery of the investment in and return on the NECEC Facilities and the applicable TSA counterparty's (*i.e.*, the particular Massachusetts EDC or HQUS) obligation to pay for the NECEC shall solely be governed by the TSA and agreed that the parties "each shall refrain from taking steps to include all or part of the NECEC Facilities in ISO-NE regional transmission rates" during the 40-year useful life of the NECEC.[22]

These provisions ensure that Maine customers will not be responsible for any costs of the NECEC through transmission rates under the existing ISO-NE Tariff, or otherwise.

c. CMP Responsibility for All Network Upgrades Necessary for the NECEC to Receive ISO-NE I.3.9 Approval and to Satisfy the Capacity Capability Interconnection Standard

Under the TSAs, CMP is responsible for completing all network upgrades necessary for the NECEC to receive ISO-NE I.3.9 approval and to satisfy the Capacity Capability Interconnection Standard (CCIS) under the ISO-NE Tariff (respectively defined in the TSAs as the "AC Upgrades" and the "CCIS Capacity Upgrades"). CMP's completion of the AC Upgrades and the CCIS Capacity Upgrades is a necessary condition precedent to COD.[23] The cost-of-service model upon which the TSA rates were set included CMP's estimate of the costs for the AC Upgrades and the CCIS Upgrades. Because the TSA rates are fixed for the entire term and CMP waived its right to seek to modify the rates at the FERC, CMP bears the risk that ISO-NE ultimately determines that additional system upgrades are required to obtain I.3.9 approval and to satisfy the CCIS. In that event, CMP will be responsible for any additional costs and will not pass these costs along to Massachusetts or Maine customers.[24]

[22] EDC TSAs Section 8.2; HQUS & 110 MW TSAs Section 8.3.

[23] EDC, HQUS & 110 MW TSAs Section 4.3(c).

[24] EDC, HQUS & 110 MW TSAs Recitals (8th Whereas Clause), Sections 4.1, 4.4.3(c), 8.2 & Attachment A.

d. Pre-Commercial Operation Period and Commercial Operation Date

The TSAs include the following critical milestones during the pre-commercial operation period of the NECEC, which is the period prior to COD:[25]

	Critical Milestone	Due Date
1.	Closing of any required financing or other demonstration of the financial capability of CMP to construct the NECEC	March 7, 2019
2.	Execution of the EPC contract for the NECEC converter station and payment of at least 5% of the contract price	July 30, 2019
3.	Execution of an agreement for engineering, procurement or construction of the Québec Line converter station	July 30, 2019
4.	Receipt of all "Owner Approvals" (i.e., the NECEC federal and state permits)	December 14, 2019
5.	Receipt of all "Canadian Approvals" (i.e., the Québec Line permits)	March 11, 2021
6.	Receipt of all the "Municipal Owner Approvals (i.e., the NECEC municipal permits	March 31, 2022
7.	Commercial Operation Date (COD)	December 13, 2022

These due dates will be extended for each day the MA DPU approval of the TSAs is delayed beyond January 25, 2019. In addition, these due dates can be extended by CMP or HQUS by up to four six-month periods (subject to an off-set in the case of extension due to MA DPU approval delay) by posting additional credit support ($5.45 million per each six-month extension).[26] If the requested extension is related to the Québec transmission

[25] EDC, HQUS & 110 MW TSAs Section 4.1.

[26] *Id.*

facilities, which are the responsibility of Hydro-Québec, the additional credit support will be posted by CMP, but will be provided by HQUS.[27]

If either CMP or Hydro-Québec,[28] as applicable, fails to obtain the required permits before the due date (as extended), the TSAs will automatically terminate and the Massachusetts EDCs will be entitled to an amount equal to the security and the additional credit support posted by CMP and HQUS under the TSAs and, as applicable, under the PPAs.[29] If the Québec line permits are those that are not obtained, HQUS shall reimburse CMP for the amounts that CMP pays to the EDCs. There shall be no further liability between CMP and HQUS for termination as a result of this event.[30]

If the NECEC does not achieve COD by the due date (as extended), CMP shall pay delay liquidated damages to the EDCs and HQUS for up to 12 months.[31] Similarly, delays in the Québec Line shall trigger delay liquidated damages payable by HQUS to the EDCs and CMP.[32] In the event the NECEC does not achieve COD by the due date, the EDCs and HQUS also have the right to terminate the TSAs.[33] If TSAs and in turn the PPAs are terminated in this circumstance, the Massachusetts EDCs will be entitled to an amount equal to the security and the additional credit support posted by CMP and HQUS under the TSAs and the PPAs.[34]

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[27] EDC, HQUS & 110 MW TSAs Section 4.1.

[28] Hydro-Québec will construct the transmission facilities located in Québec (Québec Line) through its Hydro-Québec Équipment division and will operate these facilities through its Hydro-Québec TransÉnergie division.

[29] EDC TSAs Sections 3.3.3, 14.4 & definition of "Owner Termination Payment".

[30] HQUS TSAs Section 3.3.3.

[31] EDC, HQUS & 110 MW TSAs Section 4.4.

[32] *Id.*

[33] EDCs TSAs Sections 4.1, 14.2 & 14.4; HQUS & 110 MW TSAs Sections 4.1, 14.3 &14.6.

[34] *Id.* & definition of "Owner Termination Payment."

B. The NECEC Approval Process is Moving Forward and the NECEC is on Schedule to Achieve Its December 13, 2022 Commercial Operation Date.

1. The NECEC State and Federal Regulatory Approval Process Is Progressing Consistent With CMP's Project Schedule and the Requirements of the Massachusetts 83D RFP

As discussed above, the Massachusetts EDCs' obligations to purchase Clean Energy Generation from HQUS under the PPAs and transmission services from CMP under the TSAs are conditioned upon MA DPU approval of the agreements. CMP understands that the Massachusetts EDCs are preparing their MA DPU filings to request approval of and cost recovery for the TSAs and the PPAs and expect to make these filings by mid-July, 2018. The Massachusetts EDCs expect a MA DPU order regarding these filings by January 2019.

Additionally, CMP must obtain FERC approval of the TSAs before they will become effective as a FERC-approved rate schedule and tariff. Under the terms of the TSAs, CMP is obligated to make the necessary FERC filings within 30-days of the EDCs' MA DPU filing of the agreements. CMP is in the process of preparing the FERC filing and anticipates making it by early to mid-August, 2018. CMP expects the FERC to act on this filing by year-end 2018.

CMP is also making progress on its required permitting and approval processes before the Maine Department of Environmental Protection, the Maine Land Use Planning, the U.S. Army Corps of Engineers and the U.S. Department of Energy (US DOE) and is on track to obtain the required state and federal approvals discussed in Section III.B of the Petition within the Q2 2019 timeframe contained in the original NECEC project schedule,

with the exception of the US DOE Presidential Permit and the ISO-NE I.3.9 approval which is expected to be obtained by Q4 2019 as discussed below.[35]

2. The ISO-NE System Impact Study for the NECEC Will Begin This Summer

As discussed above, under the terms of the TSAs and in accordance with the applicable provisions of ISO-NE's Tariff, CMP must obtain Section I.3.9 Approval from ISO-NE to interconnect the NECEC Transmission Project to the ISO-NE administered New England Transmission System as an Elective Transmission Upgrade (ETU).[36]

As discussed in the direct testimony of Generator Intervenors' witness William Fowler, ISO-NE has begun its first Cluster System Impact Study to determine the system upgrades needed to interconnect up to 1,200 MW of new generation in western Maine at the Larrabee Road Substation in Lewiston (Cluster Study).[37]

The deadline for election to participate in the Cluster Study process was April 11, 2018. The NECEC transmission project was one of the projects eligible to participate in this Cluster Study, and CMP elected to participate in a timely fashion.

On April 12, 2018, CMP was informed by ISO-NE that certain generation projects, which are ahead of the NECEC in the interconnection queue and which CMP understands also bid in the Section 83D RFP but were not selected as winners, also elected to participate

[35] The NECEC Project Schedule was submitted in the Petition as Exhibit NECEC-2. Obtaining all necessary municipal approvals is expected to continue until early 2022, due to the particular requirements and short effective periods for some of the approvals needed from the more than 20 municipalities through which the NECEC runs.

[36] Petition at § III.B.1.

[37] Fowler Direct Testimony at 17-18. Although the section of Mr. Fowler's testimony discussing the Cluster Study is confidential, the general description of the Cluster Study referenced in this rebuttal testimony is based on general information that is publicly available and thus does not need to be protected as confidential.

in the Cluster Study process.[38] As a result of their election, the inclusion of the NECEC would cause the Cluster Study, which contemplates the interconnection of 1,200 MW of new supply resources at the Larrabee Road Substation, to be oversubscribed. As such, ISO-NE decided to exclude the NECEC from the initial Cluster Study in accordance with the applicable Tariff provisions.

ISO-NE has instead determined that it will conduct a system impact study for the NECEC on a serial, standalone basis as the next project in the interconnection queue seeking to interconnect in western Maine. As shown in **Exhibit NECEC-24**, ISO-NE has informed CMP that it anticipates the NECEC system impact study will commence by September 1, 2018, with an estimated completion date in second quarter 2019. This system impact study will evaluate the interconnection of the NECEC in addition to the generation included in the Cluster Study. Under the terms of the ISO-NE Tariff and at CMP's direction, ISO-NE will also conduct a separate study that evaluates the interconnection of the NECEC assuming this additional generation does not move forward and achieve actual interconnection at Larrabee Road Substation. ISO-NE estimates completion of this additional study by August 2019. ISO-NE is then expected to issue the required approval of the interconnection of the NECEC under Section I.3.9 of the ISO-NE Tariff by October 2019.

This update has no impact on the Commercial Operation Date of the NECEC project, which remains December 13, 2022. However, the above timeline represents a modest departure from the permitting schedule for the NECEC transmission project as set forth in Exhibit NECEC-2 of CMP's Petition. Because of the delay in ISO-NE's expected issuance of

[38] The projects included in the western Maine Cluster Study hold the following queue positions: QP 571, QP 573, QP 574, QP 576, QP 577 and QP 578. The publicly available information concerning these projects is available at https://irtt.iso-ne.com/reports/external.

the I.3.9 approval from late March 2019 until October, the US DOE's issuance of the Presidential Permit for the NECEC is now expected in December 2019. A delay in the issuance of the Presidential Permit until December 2019 will not cause a delay in the December 13, 2022 Commercial Operation Date for the NECEC transmission project. An updated project schedule for the NECEC reflecting the adjustment to the timeline for receipt of the I.3.9 approval and the Presidential Permit is attached as Attachment E to the TSAs discussed above and submitted as exhibits to this rebuttal testimony.

C. CMP Has Entered into a Binding Agreement With Western Mountains & Rivers Corporation That Will Provide Benefits to the Somerset County Region.

As discussed in CMP's Petition, consistent with CMP's commitment to communicate early, understand issues and try to reasonably mitigate impacts, CMP began discussions in the spring of 2017 with rafting companies and recreation and economic development groups to discuss the Project's river crossing at the Kennebec River Gorge and Moxie Stream.[39] Since that time, CMP has worked collaboratively with these groups to come to an agreement.

On May 30, 2018, CMP executed a binding Memorandum of Understanding (MOU) with the Western Mountains & Rivers Corporation (WM&RC), a non-profit public benefit corporation formed for the purpose of expanding conservation of the Kennebec, Dead, Sandy, Moose, Sebasticook and Carrabasset rivers, developing recreation projects, developing education programs about the history, ecology and uses of Maine's rivers and expanding economic development opportunities to Somerset County. The MOU, a copy of which is attached to this rebuttal testimony as **Exhibit NECEC-25**, establishes a framework

[39] Petition at 89.

to mitigate the environmental, natural resource, and community impacts of the NECEC, and to provide additional economic development opportunities to Somerset County.

Under the terms of the MOU, CMP provided a $250,000 initial donation, and will provide additional annual grants of $50,000 to WM&RC for five years, all to support WM&RC's charitable mission, including, in particular, the promotion of outdoor activities in Central and Northern Somerset County and the improvement of the current trail and track network. To ensure that the NECEC Project does not unreasonably interfere with or adversely affect existing scenic, aesthetic, recreational or navigational uses, CMP will also consult with WM&RC on the design, construction and ongoing maintenance plan for the NECEC in the vicinity of the Kennebec Gorge.

CMP has also agreed to certain measures regarding relevant, CMP-owned land in the project area, including but not limited to negotiating in good faith with businesses operating on land leased from CMP regarding options to purchase such land, to consider making available for purchase land that is not essential for CMP's current or anticipated future needs, and to cooperate in good faith in facilitating access to the NECEC Project corridor for recreational uses, consistent with applicable law.

Further, CMP has agreed to additional mitigation measures, the precise scope of which will vary based on whether the NECEC crosses the Kennebec Gorge above or below ground, including the establishment and funding of a charitable trust supporting tourism and outdoor recreation in Somerset County. In the event that the NECEC crosses the Kennebec Gorge above ground, CMP will, among other things, contribute $16 million to the trust to support and enhance tourism and outdoor recreation in Central and Northern Somerset County and contribute an additional $6 million to fund maintenance costs

associated with such tourism infrastructure. In the event that the NECEC crosses the Kennebec Gorge underground, CMP agrees to contribute $5 million to $10 million to the trust.

CMP's and WM&RC's performance of certain of the obligations set forth in the MOU are subject to the NECEC's receipt of all final and non-appealable required permits, licenses, and approvals including issuance of the CPCN by the Commission, as well as the final and non-appealable approval of the PPAs and TSAs associated with the NECEC.

III. REBUTTAL POINTS

A. Contrary To NextEra's Witness Russo, the NECEC Meets Maine's Public Need Requirement by Increasing Use of Renewable Generation and Reducing Greenhouse Gas Emissions.

As discussed at length in its Petition, CMP believes that a "public need" exists for the NECEC as the Project supports, at no cost to Maine customers, numerous Maine state policies, including those that promote the increased use of renewable generation and the reduction in greenhouse gas (GHG) emissions, and the similar policies of Massachusetts which drove the Massachusetts EDCs to select the NECEC as the winner of the 83D RFP.

NextEra witness Christopher Russo does not view CMP's "citation to Maine's RPS as supportive of" the NECEC.[40] Mr. Russo's primary contention is that generation resources using the NECEC will be ineligible for certification as renewable portfolio standard (RPS) eligible resources due to their large nameplate capacity. As such, Mr. Russo argues that the NECEC fails to "address the development and consumption of renewable energy in Maine."[41]

[40] Russo Direct Testimony at 5:22 – 6:2.

[41] *Id*. at 5:20 – 21.

Mr. Russo misstates CMP's discussion of Maine's RPS statute, 35-A M.R.S. § 3210, in the Petition. The Petition did not assert that the NECEC or the hydropower generation resources associated with the NECEC will qualify as new renewable capacity resources (Class I) under the RPS statute. CMP makes no such claim in this rebuttal testimony. Notably, however, the NECEC may enable competitive electricity providers (CEPs) that serve Maine ratepayers to fulfill their obligation to procure no less than thirty percent (30%) of supply from Class II eligible resources.[42] As set forth above, HQUS has agreed to purchase the rights to the 110 MW of transmission capacity that will remain as "headroom" on the NECEC after delivery of the 1,090 MW of clean hydropower generation purchased by Massachusetts EDCs through the NECEC PPAs. While it is not clear at this time who will purchase any hydroelectric generation that is transported by HQUS under this TSA, it is possible that the Standard Offer provider or CEPs serving load in Maine may be able to contract for energy from Class II resources delivered by the NECEC using such transmission capacity rights to satisfy a portion of their obligations under the RPS statute.

Even if no NECEC-delivered resource qualifies as RPS-eligible, however, CMP reiterates that the NECEC will further the policies underlying Maine's statutes, including the RPS statute, that encourage development of reliable, renewable energy resources. While NECEC-associated generation resources may not meet all criteria required of Maine RPS-eligible resources, the NECEC's delivery of clean hydropower generation to Maine furthers the stated policy imperatives of the RPS statute by providing renewable generation from an efficient and reliable resource:

[42] 35-A M.R.S. § 3210(3).

> In order to ensure an adequate and reliable supply of electricity for Maine residents and to encourage the use of renewable, efficient and indigenous resources, it is the policy of this State to encourage the generation of electricity from renewable and efficient sources and to diversify electricity production on which residents of this State rely.[43]

Furthermore, as CMP has previously explained, the NECEC will likely reduce REC prices, which should also reduce the cost of compliance with Maine's RPS.[44]

The NECEC will also facilitate Maine's established policy of reducing GHG emissions. As set forth in the report of Daymark, provided as **Exhibit NECEC-5** to CMP's Petition, and discussed further in the Daymark Rebuttal, the NECEC will provide clean energy that will displace the generation of GHG-emitting resources in the ISO-NE system, resulting in annual carbon dioxide (CO_2) emissions reductions of approximately 3.1 million metric tons across New England and the net emissions from the portion of regional generation serving Maine load is reduced by approximately 264,000 metric tons per year.[45] The modeling performed by LEI and James Speyer on behalf of Generator Intervenors confirms these GHG reductions.

The NECEC's reduction of GHG emissions levels is wholly consistent with Maine's existing policies of mitigating the effects of climate change by reducing GHG emissions levels within the State and thus meets Maine's public need.

B. The NECEC Supports the Goals of Massachusetts' Global Warming Solutions Act.

CMP also disagrees with Mr. Russo's testimony that the NECEC's in-service date of 2022 somehow renders the project incapable of assisting Massachusetts in meeting

[43] 35-A M.R.S. § 3210(1).

[44] *See* CMP's response to IECG-001-011, incorporated herein by reference.

[45] Daymark Energy Advisors, *NECEC Transmission Project: Benefits To Maine Ratepayers: Quantitative & Qualitative Benefits* at iii (Sept. 27, 2017) (**Exhibit NECEC-5**).

statutory requirements under the Commonwealth's Global Warming Solutions Act (GWSA)[46] to reduce GHG emissions. Mr. Russo's position reflects an incorrect reading of the plain text of the GWSA, including the requirement that Massachusetts achieve measurable GHG emissions reductions through the year 2050, and fails to acknowledge that the Section 83D RFP solicited proposals that would permit Massachusetts to best achieve such long-term GHG emissions reduction goals.

In his pre-filed testimony, Mr. Russo opines that the NECEC's commercial in-service date of 2022 provides for "no ability for CMP and HRE to commit to deliveries over the [NECEC] prior to the end of 2020, which is required to maximize the Commonwealth's ability to meet its GHG/GWSA goals."[47] At the June 19, 2018 technical conference, Mr. Russo stated that his position reflects a "simple reading of the statute."[48] Given the GWSA's substantial emissions reduction mandates for the years after 2020, including the requirement that Massachusetts reduce greenhouse gas emissions by eighty percent (80%) below 1990 levels by 2050, counsel for CMP questioned Mr. Russo as to whether he had "any understanding as to Massachusetts requirements after 2020 with respect to the Global Warming Solutions Act?"[49] Mr. Russo stated that he was unable to "recall the terms of the policy or statute specifically off the top of [his] head."[50]

In fact, there is no *requirement* that a project selected in the 83D RFP contribute to Massachusetts's achievement of GHG emissions reductions required for the year 2020. As CMP articulated in its Petition, the GWSA also includes GHG emissions reduction

[46] 2008 MASS. ACTS Ch. 298.

[47] Russo Testimony at 9:23 – 10:4 (Ap. 20, 2018).

[48] 6/19/2018 Tech. Conf. Tr. at 27:19.

[49] *Id*. at 28: 9 – 11.

[50] *Id*. at 28: 12 – 13.

requirements for the years after 2020, culminating in Massachusetts achieving its greatest GHG reductions by 2050:

> [T]he GWSA, which amended the General Laws of Massachusetts to include the chapter entitled the Climate Protection and Green Economy Act, instituted GHG emissions reduction targets that require Massachusetts to achieve reductions of between 18 and 25 percent below statewide 1990 GHG emission levels by 2020; and 80 percent below statewide Massachusetts 1990 GHG emissions levels by 2050.[51]

Enacted in 2016, Section 83D authorizes the Massachusetts EDCs to enter into long-term contracts for clean energy generation and associated transmission to fulfill the goals of the GWSA. The RFP reflects this focus on achievement of long-term GHG emissions reductions goals, not only the requirements for 2020.

The Energy Diversity Act, which includes the Section 83D procurement, recognizes the necessity of the Commonwealth achieving the goals established pursuant to the GWSA. The GWSA requires the Commonwealth to establish goals and meet targets for the reduction of greenhouse gas emissions by 2020, 2030, 2040, and 2050. The goals established by the Commonwealth specifically require a reduction of 25 percent below 1990 levels by 2020 and a reduction of 80 percent below 1990 levels by 2050.[52]

The "fundamental purpose of the RFP is to satisfy the policy directives encompassed within Section 83D and to assist the Commonwealth with meeting [GWSA] goals."[53] Such policy directives include the achievement of GHG emissions reduction requirements for the years following 2020, culminating in the final, year 2050 objective. Presumably, the Massachusetts EDCs were aware of these directives when they, in consultation with DOER,

[51] Petition at 9.

[52] RFP at Section 1.2.

[53] RFP at Section 1.1.

selected the NECEC as the winner of the 83D RFP. As the authors of the 83D RFP, the Massachusetts EDCs undoubtedly understood that the RFP's preference for deliveries prior to 2020 did not preclude the selection of the NECEC despite its December 2022 COD. Rather, they recognized, as Mr. Russo has failed to do, that the NECEC will contribute to achievement of Massachusetts's post-2020 GHG emissions reduction goals by providing at least 1,090 MW of clean hydropower to New England during the 20-year term of the PPAs between HQUS and the Massachusetts EDCs, thereby producing the significant annual GHG reductions from thermal generators in New England found in the modeling of Daymark, LEI and Mr. Speyer. And, these reductions should continue over the remaining 20 years of 40-year term of the HQUS TSAs and 110 MW TSA when HQUS is expected to continue to export clean hydropower to the region on a merchant basis using the transmission rights it acquires in those agreements.

C. Contrary to NextEra's Witnesses Russo and Whitley, There will be No Benefit Cliff at the End of the 20-Year PPAs With the Massachusetts EDCs.

HQUS's agreement in the HQUS TSAs and 110 MW TSA to purchase the full 1,200 MW of transmission rights for years 21 through 40 of the 40-year terms of these agreements (and its significant investment in the Québec transmission facilities necessary to permit deliveries across the NECEC) also refute the claim of NextEra witnesses Stephen Whitley and Christopher Russo that there will be a "benefit cliff" at the conclusion of the PPAs between HQUS and the Massachusetts EDCs.[54] Without knowing the precise terms of the business arrangements between CMP, HQUS and the Massachusetts EDCs, both Mr. Russo and Mr. Whitley claim that the benefits that the NECEC promises could cease upon

[54] Whitley Direct Testimony at 6, 11; Russo Direct Testimony at 13.

the expiration of the PPAs in 15-20 years should Hydro-Québec choose not to offer its power over the line.[55]

As stated above, under the terms of the TSAs, the full transmission capacity on the NECEC line has been purchased for the entire 40-year life of the line. Pursuant to the terms of the PPAs, HQUS has committed to deliver up to 1,090 MW of energy to the Massachusetts EDCs in every hour of each day for the first twenty years of the NECEC.[56] To make these deliveries, Hydro-Québec must invest hundreds of millions of dollars completing the transmission facilities on the Québec side of the border. Given this investment, the fact that HQUS has purchased the full transmission capacity of the NECEC for years 21-40 at significant annual expense, and the stringent clean energy and GHG reduction targets that are expected to remain in effect across New England at the time, Hydro-Québec has every incentive to continue to use the NECEC to export significant quantities of clean hydropower to the region even after the PPAs with the Massachusetts EDCs expire. Thus, it is not reasonable to conclude that Hydro-Québec will simply stop making use of the NECEC for the delivery of significant quantities of clean hydropower to New England in year 21 after the Project's COD.

In any case, in the event that the Massachusetts EDCs (in years 1-20) and HQUS (in years 1-40) are unable to use the full amount of the transmission capacity of the NECEC that they have contracted for under the TSAs, the terms of the TSAs and FERC regulations

[55] Russo Direct Testimony at 13:6-17.

[56] Section 4.1 and Exhibit B to the PPAs.

require that any available transmission capacity on the NECEC transmission line be made available to third parties.[57]

D. Contrary to Generator Intervenors' Witness Speyer, the NECEC Project Will Deliver Hydro-Québec Hydropower Generation into New England that will be Incremental to Historical Energy Exports to New England and Surrounding Regions.

Generator Intervenor witness James M. Speyer asserts that Hydro-Québec will not increase its energy exports in order to deliver the hydropower called for under the NECEC PPAs and as a result the NECEC impacts on carbon emissions are negligible and, under certain conditions, could actually increase. CMP disputes Mr. Speyer's claims for the following reasons.

The NECEC PPAs call for HQUS to deliver 9.45 TWh of hydropower to the Massachusetts EDCs for the 20-year term of the contracts, starting upon the commercial operation date currently expected on December 13, 2022. The NECEC PPAs specifically include provisions mandating that these deliveries be "incremental" over historical deliveries to New England and exposing HQUS to potential liability for liquidated damages should its total deliveries to New England fall below certain levels on an annual basis.[58] One hundred percent of HQUS's energy deliveries under the PPAs will be generated from the existing Hydro-Québec hydropower system in Québec as that system is expanded over time. These deliveries will be tracked through the NEPOOL GIS system. Today, the Hydro-Québec hydropower system consists of 63 generating stations with a total generating capacity of over 37,767 MW. More than 99% of Hydro-Québec's power output is clean and renewable from run-of-river and reservoir hydropower generation facilities.

[57] EDC, HQUS & 110 MW TSAs Article X.

[58] *See, e.g.*, HQUS/National Grid PPA, **Exhibit NECEC-16**, Attachment D.

1. CMP Believes that Hydropower Imports from Québec are an Important Part of the Northeast's Efforts to Achieve Carbon Emission Reductions.

An important driver for Massachusetts' 83D RFP which led to the selection of the NECEC is the Commonwealth's stringent mandates to reduce greenhouse gas emissions set forth in the GWSA.[59] Massachusetts' GHG reduction mandates in the GWSA are but one of the several climate change and clean energy policies across the northeast United States and Canada aimed at decarbonizing the energy sector in this region. Figure 1 below provides a simplified summary of these policies.

Figure 1 – Summary of State and Regional GHG and Clean Energy Policies

Electric Markets	Greenhouse Gas Policies	Clean Energy Policies
New England states	• 75% to 95% reductions by 2050 • RGGI cap and trade program	• Most states 10% to 35% RPS by 2040 • VT 75% RPS by 2040
New York	• 80% reductions by 2050 • RGGI cap and trade program	• 50% RPS by 2030
Quebec	• 80% to 95% by 2050 • Cap and trade program (w/ CA)	• Current system is ~ 100% hydro & wind
Ontario	• Program extends through 2030 • Cap and trade program (w/ CA)	• 20 GW (~50%) by 2025
New Brunswick	• none	• 40% RPS by 2020
Canada	• Target: 30% reduction by 2030	

Based on its understanding of the available technologies, the operational and carbon footprints of such technologies and market fundamentals, CMP believes that to decarbonize the energy sector to meet greenhouse gas reduction targets of the states in northeastern United States and the provinces in northeastern Canada, hydropower will have to play a

[59] 2008 MASS. ACTS Ch. 298.

key role.[60] Given the intermittent nature of wind (whether on-shore or off-shore) and solar generation resources and the cost and limitations in battery storage capabilities, it will be very difficult and costly to achieve full decarbonization in an efficient and cost effective manner without the continued and expanded use of hydropower. In addition, to decarbonize, the New England states will continue to need generation resources able to provide firm base load power and balancing for intermittent resources. Currently those options are nuclear, natural gas and hydropower. Of these, hydropower is the only constructible generation that is both renewable and firm.

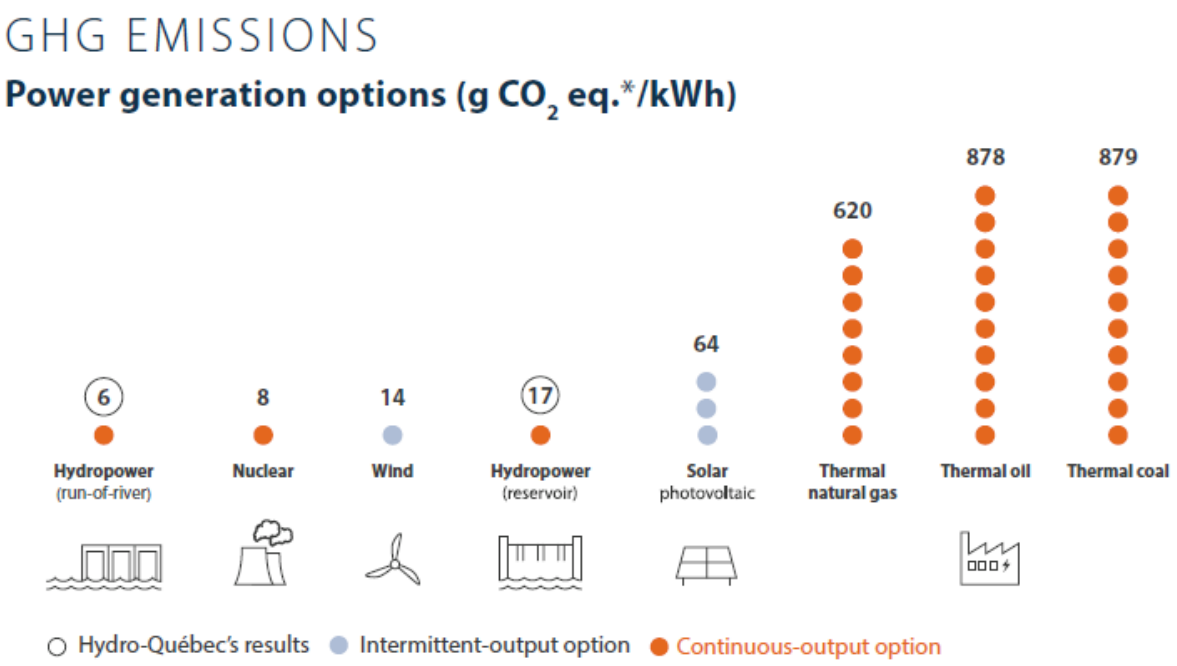
Because of the important role that hydropower can and should play in assisting the New England states' achieve their greenhouse gas reduction targets, CMP was pleased to propose the NECEC as a pathway to deliver Hydro-Québec hydropower to New England as part of the 83D RFP. Hydro-Québec's hydropower resources are a low-carbon source of baseload and load following energy that can be relied upon to replace fossil-fuel fired generation in New England.

Hydro-Québec has conducted a detailed lifecycle analysis of the carbon footprint of available generation technologies. This study demonstrates that Hydro-Québec's hydropower generation facilities have very low carbon footprints per kWh generated over their productive lives. In fact, Hydro-Québec's run-of-the river hydropower generators have the lowest carbon footprint of available technologies and Hydro-Québec's reservoir hydropower generators have carbon footprints comparable to wind generation and less

[60] For support for this view, please see Williams, J.H., Jones, R., Kwok, G., and B. Haley, (2018). *Deep Decarbonization in the Northeastern United States and Expanded Coordination with Hydro-Québec*. A report of the Sustainable Development Solutions Network in cooperation with Evolved Energy Research and Hydro-Québec. April 8, 2018.

than solar photovoltaic generation, as reflected in Figure 2 below drawn from the report of Hydro-Québec's study. [61]

Figure 2 – GHQ Emissions by Fuel Source[62]



The hydropower related results are based on data from actual Hydro-Québec hydropower facilities.

The carbon emissions from Hydro-Québec hydropower reservoirs are low for several reasons. Hydro-Québec's hydropower reservoirs are for the most part located in northern Québec.[63] In these locations, the surrounding environments generally are

[61] *See Understanding Québec Hydropower*: *Among the Lowest Greenhouse Gas Emissions of all Electricity Generation Options*, available at http://www.hydroquebec.com/data/developpement-durable/pdf/ghg-emissions.pdf. A copy of this report is attached as **Exhibit NECEC-26**.

[62] *Id.*

[63] The location of the Hydro-Québec hydropower facilities in northern Québec undermines the suggestion by NextEra witness Stephen Whitley of the possible electrical benefits of directly interconnecting an Hydro-Québec generation facility into a HVAC alternative of the NECEC. There are no HQ hydropower facilities anywhere near the Maine border or the Hydro-Québec TransEnergie substation in southern Québec, which is the planned interconnection point for the northern end of the line in Québec.

sparsely vegetated, mainly with shrubs. As a result, the reservoirs tend to contain less vegetation to decay over time.[64] In addition, the reservoirs are far from agriculture or urban areas so that run-off that reaches them is low in organic matter and nutrients.[65] The reservoirs also often tend to encompass peat bogs and other wetlands, which naturally generate significant methane emissions, such that flooding may actually reduce methane emissions. Moreover, given their far northerly locations, the reservoir water temperatures tend to be low. This colder water contains more dissolved oxygen than warm water, leading to the formation of less methane as matter decomposes.[66]

2. Hydro-Québec Hydro Generation Development Plan

CMP understands that over the last 20 years, Hydro-Québec has significantly expanded its hydropower generation system, with approximately 5,000 MW of capacity added since 2003. Hydro-Québec expanded its system both to meet its modest domestic load growth and to allow for increased exports to the adjacent control areas including New England. Since just 2013, Hydro-Québec has added 1,455 MW of additional hydropower capacity with an additional 245 MW expected in 2020.

CMP understands that Hydro-Québec's buildout was in recognition of the decarbonization objectives in northeastern United States and Canada. Hydro-Québec recognized the increasing demand for low carbon energy resources, particularly in New England and New York as reflected in the greenhouse gas reduction and clean energy policies summarized above, including most recently the requirements in Section 83D of the

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[64] *See* **Exhibit NECEC-26**.

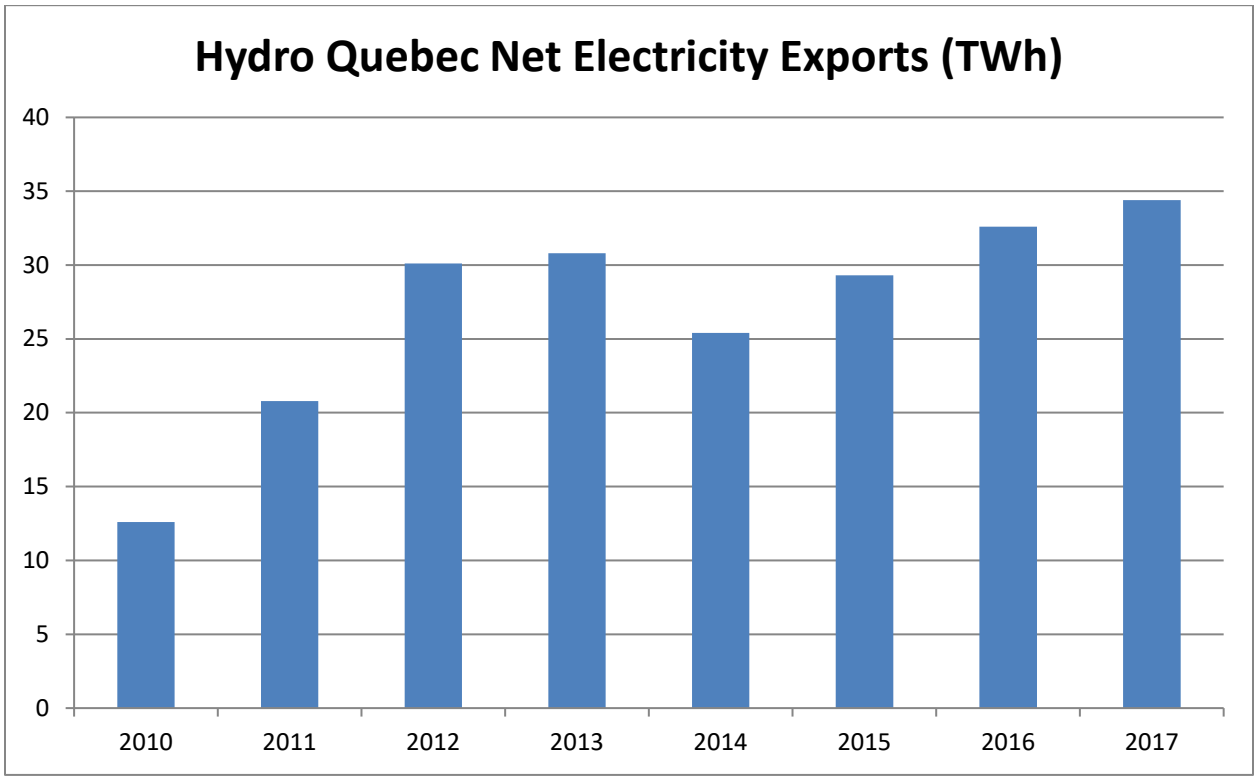
[65] *Id.*

[66] *See id.; see also* Teoduro, C.R. et al. (2012), The net carbon footprint of a newly created boreal hydroelectric reservoir, Global Biohem. Cycles, 26, GB2016, doi:10.1029/2011GB004187, at 12 (copy used in questioning James M. Speyer during June 28, 2018 technical conference).

Energy Diversity Act,[67] and implemented a buildout plan starting in 1997 to increase its hydropower capacity to meet this increasing demand for clean energy.

As a result of the increased demand and Hydro-Québec's ensuing buildout, Hydro-Québec has increased its exports to adjacent control areas steadily and significantly for several years as depicted in the following Figure 3.

Figure 3 –Hydro-Québec Net Electricity Exports (TWh) (2010-2013)



Because they were made in response to the market signals for more clean energy (and not made only to serve Hydro-Québec's domestic load growth), CMP believes these increased energy exports should be viewed as incremental.

Because it generally takes Hydro-Québec 10-15 years to plan, design, permit and construct additional hydropower resources, it is not possible for Hydro-Québec to add

[67] An Act to Promote Energy Diversity (the Energy Diversity Act), 2008 MASS. ACTS Ch. 169, § 83D.

incremental hydropower generation in response to any particular solicitation. Thus, for example, it was not possible for Hydro-Québec to build additional new hydropower resources to meet the timeline for the 83D RFP. It is for this reason that Hydro-Québec indicated as part of the NECEC bid that the offered hydropower supply would come from Hydro-Québec's existing facilities. This, however, does not mean that Hydro-Québec's deliveries under the NECEC will not be incremental to its historic exports to New England (and regionally). Hydro-Québec has pursued an incremental and on-going development program to add capacity based on its expectations of increasing demand for clean energy across the northeast U.S. and Canada and in order to permit it to participate in solicitations like the Massachusetts 83D RFP. CMP understands that Hydro-Québec's selection to provide Massachusetts the 9.45 TWh of incremental hydropower under the NECEC PPAs is an important next step for Hydro-Québec as a prominent source of clean energy for the region. It justifies Hydro-Québec's on-going capacity expansion efforts which Hydro-Québec expects to complete in 2025 and provides a basis for Hydro-Québec to begin work on the next round of capacity expansions to meet the northeast region's increasing demand for clean energy.[68]

3. Nearly All Hydro-Québec Deliveries Under The NECEC PPAs Will Be Incremental To Its Historical Energy Exports To Surrounding Regions.

CMP understands, based on publicly available information, that upon the commencement of deliveries under the NECEC PPA Hydro-Québec will be able to increase its total energy exports to ensure that all, or at least the vast majority, of the 9.45 TWh

[68] *See* Hydro-Québec, *Strategic Plan 2016-2020 Stetting new sights with our clean energy* (Hydro-Québec 2016-2020 Strategic Plan), at 7, available at http://www.hydroquebec.com/data/documents-donnees/pdf/strategic-plan.pdf.

delivered to the Massachusetts EDCs will be incremental over Hydro-Québec's recent export levels. To measure the incremental nature of Hydro-Québec's future increased exports it is important to set a baseline based on Hydro-Québec historical exports. Using a historical average over the last five years is appropriate given variances that may occur in any particular year in terms of rainfall, weather, market and other conditions. Hydro-Québec's average annual level of exports over the most recent five year period of 2013-2017 is 30.5 TWh.

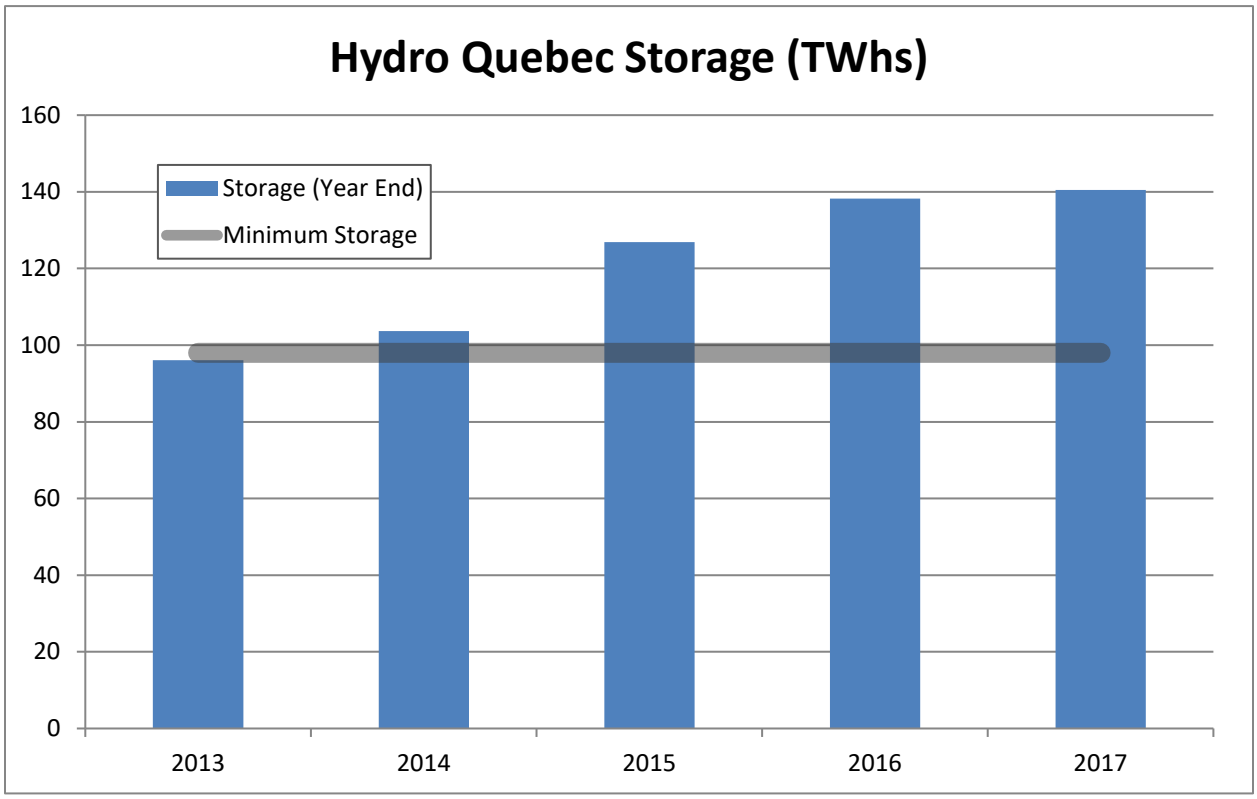
Starting with a 30.5 TWh export baseline, CMP has assessed, using publicly available information, whether Hydro-Québec will be able to increase its exports to adjoining control areas, including New England, to 40.5 TWh (including a gross up for line losses) per year starting in 2023. This level will ensure Hydro-Québec maintains historical exports to adjoining control areas while adding the 9.45 TWh of exports to New England called for in NECEC PPAs.

CMP understands that Hydro-Québec plans to achieve this increased export level by using its existing hydropower capacity, including the Romaine 3 unit (395 MW) added in 2017, plus certain capacity additions that are expected by 2025. These capacity additions are made up of new hydropower generation facilities, Romaine 4 unit (245 MW expected in service in 2020), and capacity upgrades at existing hydro facilities (such as the replacement of aging turbines with more efficient, new equipment) (500 MW by 2025).

In addition, to achieve the necessary energy output, CMP believes that Hydro-Québec will use the energy it has stored in its hydropower reservoirs. In recent years,

Hydro-Québec has been increasing the energy stored in reservoirs, as reflected in the following Figure 4.[69]

Figure 4 – Hydro-Québec Annual Energy Storage (TWh)



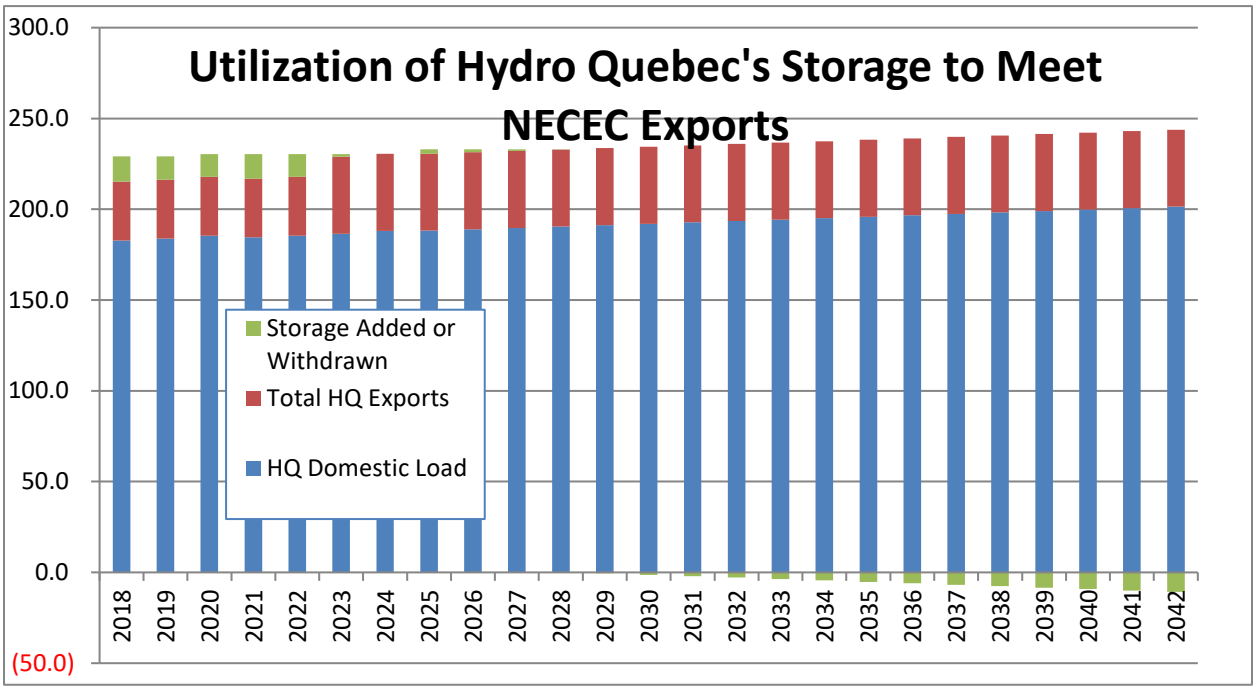
As of year-end 2017, Hydro-Québec had 140.4 TWh in storage, 42.4 TWh above the minimum storage level of 98 TWh Hydro-Québec strives to maintain for reliability purposes. CMP believes that between year-end 2017 and year-end 2022, Hydro-Québec will increase its stored energy to a maximum of 176 TWh.

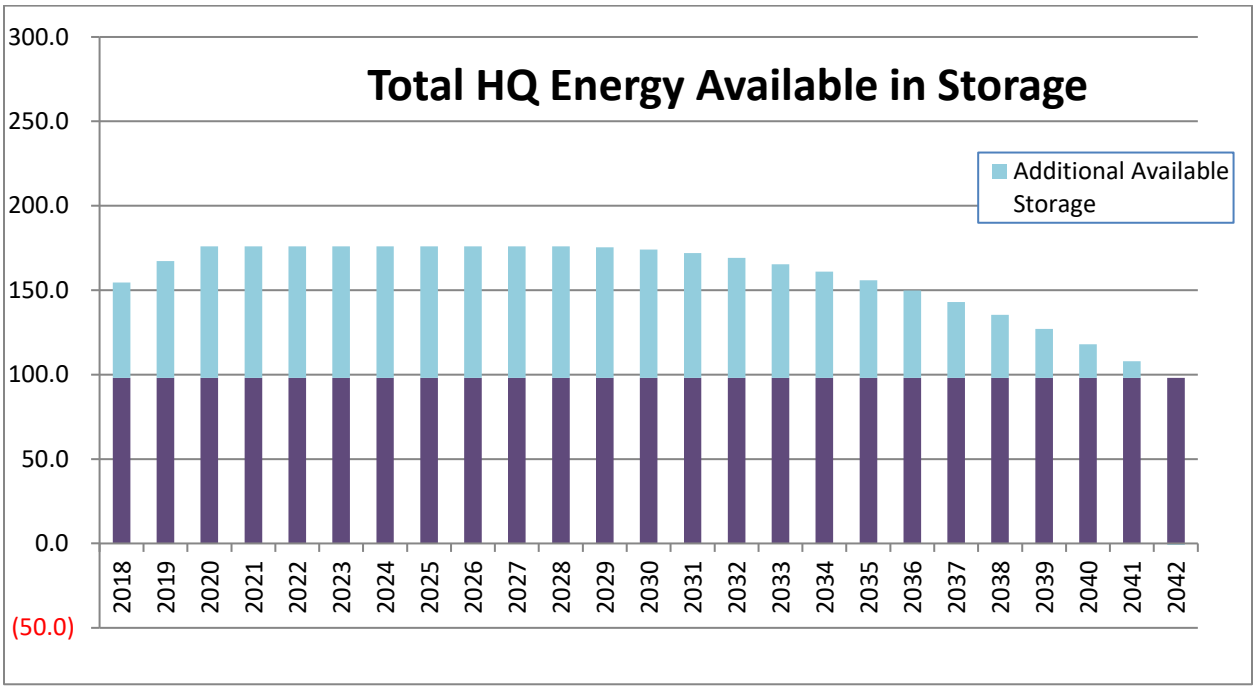
CMP believes that between 2023 and 2042 Hydro-Québec will then, when necessary, use this stored energy by drawing down its reservoirs to supplement its annual energy production (as expanded by the capacity additions referenced above) to meet its

[69] *See* HQ Annual Reports for 2013, 2014, 2015, 2016 and 2017 available at http://www.hydroquebec.com/about/financial-results/annual-report.html.

domestic load (which Hydro-Québec expects to grow at approximately 0.4% annually) and annual exports of 40.5 TWh, as illustrated in the following Figure 5.

Figure 5 – Hydro-Québec Export and Supply Relative to Baseline





As reflected in this Figure, CMP forecasts that Hydro-Québec has the ability to export 40.5 TWh annually for almost the entire 20-year term of the NECEC PPAs. As such, CMP believes that the concerns raised that the NECEC will not actually (i) result in incremental clean energy deliveries and (ii) produce region wide greenhouse gas emission reductions are unfounded.

Based on the forecasts summarized in the above Figure, Hydro-Québec may have to reduce its exports below the 40.5 TWh level in the last year of the 20-year NECEC PPAs by 0.8 TWh in order to ensure that its reservoir levels maintain minimum reliability levels. Such reductions in year 2042, however, will not necessarily result in increases in carbon emissions across the northeast for several reasons. In 2020, CMP understands that Hydro-Québec intends to decide what its next major hydropower projects will be.[70] Based on its historical track record and the increasing demand for low carbon generation resources, it is likely that Hydro-Québec will increase its hydropower capacity before the end of the 20-year PPA terms. In addition, each of the control areas adjoining Hydro-Québec have increasingly aggressive targets for carbon reductions and clean energy usage, such as New York's Clean Energy Standard (CES),[71] which will almost certainly result in the development of other renewable resources in the ensuing years, thereby providing low carbon alternative generation sources to make up any modest reduction in exports that Hydro-Québec may have to make to maintain its reservoirs.

[70] *See* Hydro-Québec 2016-2020 Strategic Plan at 7.

[71] New York's CES, in fact, mandates that 50% of the electricity consumed in New York by 2030 must come from renewable sources. *State of New York Public Service Commission, Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard,* Case Nos. 15-E-0302 and 16-E-0270, Order Adopting a Clean Energy Standard at 12 (Aug. 1, 2016).

Finally, CMP understands that Hydro-Québec decides where to sell its discretionary excess energy based on the value it can receive through spot market sales, as it has done in the past. The export market generally with the lowest prices for Hydro-Québec exports is Ontario. Should Hydro-Québec need to reduce its exports to make the NECEC deliveries, Hydro-Québec will likely focus the reductions in the Ontario market. However, as Julia Frayer of LEI aptly described,[72] the Ontario market is often long on zero emission generation (hydro, nuclear and wind). Thus, any reduction in Hydro-Québec exports into Ontario will likely be replaced by alternative clean resources, whereas Hydro-Québec exports over the NECEC are expected to displace higher emitting fossil fuel generation, resulting in a net benefit of carbon reduction for the broader region.

E. The AC Alternative Proposed by NextEra's Witnesses Whitley and Russo Will Not Facilitate the Interconnection of New Renewable Generation In Western Maine Without Significant Additional Costs That CMP Would Not Be Able To Recover.

NextEra witnesses Mr. Whitley and Mr. Russo assert that the public need does not support the construction of the NECEC as an HVDC line, but would support the conversion of the NECEC into a HVAC line at least from the Maine-Québec border. According to Mr. Whitley and Mr. Russo, an HVDC NECEC would effectively preclude any renewable generator in western Maine from interconnecting to the line due to the high cost for the necessary AC to DC conversion facilities and therefore necessarily compel the renewable generators to build "duplicative" transmission facilities to interconnect to the ISO-NE system. These assertions both ignore the fact that the transmission capacity on NECEC is fully subscribed for the entire 40-year useful life of the Project and suggest wrongly that

[72] *See* 6/14/18 Tech. Conf. Tr. at 64:11-65:12 (LEI).

the NECEC should be redesigned to relieve western Maine renewable generators of bearing at least some of the costs of necessary interconnection facilities and system upgrades.

As discussed above, under the terms of the TSAs, the Massachusetts EDCs and HQUS have agreed to purchase the 1,200 MW of transmission capacity available on the NECEC for all 40 years of the useful life of the Project. As explained in the Planning and Engineering Rebuttal, the line cannot be constructed to transmit more electricity because doing so would exceed ISO-NE's 1,200 MW limit for a single loss of source contingency.[73] Accordingly, the NECEC will not be able to interconnect additional renewable generation in western Maine, whether it is constructed as an HVDC line as proposed by CMP, or an HVAC line as proposed by Mr. Whitley. This fact was acknowledged by Mr. Russo, who in response to a "hypothetical" regarding an AC line from the Québec Border to Lewiston on which a participant purchases 1,200 MW of capacity for years 1 through 40 of the 40 year life of the line, agreed that line would not be able to accommodate other resources to be constructed or developed in western Maine.[74]

As such, as discussed in the Planning and Engineering Rebuttal, in order to connect renewable generation in western Maine to the ISO-NE system, a second 345 kV line would have to be constructed, as well as additional interconnection facilities and required upgrades, in order to permit the interconnection of the proposed western Maine renewable generation in any case.[75] Thus, although Mr. Russo laments in his testimony that CMP's HVDC proposal will require new renewable generators to construct a duplicative

[73] Planning and Engineering Rebuttal at Section II(B).

[74] 6/19/18 Tech. Conf. Tr. at 13:9-14:7 (Russo).

[75] Planning and Engineering Rebuttal at Section II(B).

transmission line to interconnect to the ISO-NE grid,[76] NextEra's alternative proposal to convert the NECEC into an HVAC line will not relieve the renewable generators of this burden. Furthermore, as shown in the Planning and Engineering Rebuttal, not even considering the costs for the necessary second 345 kV line, converting the NECEC into an HVAC solution would significantly increase the cost of the NECEC as proposed by CMP.[77]

Moreover, in the event that CMP were to redesign the NECEC to include a 345 kV AC line from the Maine-Québec border to transmit the hydropower HQUS has agreed to sell to the Massachusetts EDCs and another 345 kV line to facilitate the development of additional renewable generation in western Maine, it is not clear from either Mr. Whitley's or Mr. Russo's testimony, who would pay for these significant additional costs. However, under the ISO-NE Tariff, the renewable generation developers are responsible in all scenarios for the costs of interconnecting their generation projects to the ISO-NE system. For example, in a scenario where the NECEC is not constructed, each individual developer of a renewable generation project seeking to interconnect in western Maine would be responsible for all of the upgrades required to interconnect its project to the existing New England transmission system.[78]

ISO-NE's new Cluster Study interconnection process does not change this result. In fact, in a scenario where renewable energy generation projects participating in the western Maine Cluster Study are developed before the NECEC is constructed, then those projects must agree to pay for the "Cluster Enabling Transmission Upgrades" (CETUs) identified by

[76] Russo Direct Testimony at 6.

[77] Planning and Engineering Rebuttal, **Exhibit NECEC-28** (cost spreadsheet).

[78] *See* 6/14/18 Tech. Conf. Tr. at 131:13-132:1 (Whitley); 6/19/18 Tech. Conf. Tr. at 14:9-15:4 (Russo).

ISO-NE as necessary to interconnect to the ISO-NE System.[79] To date, these generators have had to post deposits to participate in the Cluster Study, which represent five percent of the cost of the CETUs. These deposits increase to 20 percent should the projects elect to proceed to the required facilities study and ultimately the generators must commit to pay for the entire cost of the CETUs as part of the definitive interconnection agreement among ISO-NE, the interconnecting generators and CMP, as the transmission owner to which the generators' facilities will interconnect.[80]

Likewise, in the scenario where the NECEC is constructed as an HVDC line as proposed by CMP, the developers of the renewable generation projects in western Maine will similarly be responsible for the costs of the transmission upgrades required to allow the generation to connect into the ISO-NE system.[81]

There is nothing unique with respect to the NECEC project constructed as an HVAC line that would relieve the interconnecting new renewable generators of the obligation of paying for all interconnection costs, and neither Mr. Whitley nor Mr. Russo have proffered a rationale for such an outcome. If the NECEC is constructed as an HVAC line with capability to interconnect additional renewable energy generation as proposed by Mr. Whitley, the renewable generation developers will be responsible for the incremental costs associated with interconnecting the renewable energy generation over and above the costs of the NECEC Project itself. Thus, Mr. Whitley's AC proposal will not reduce the costs of interconnecting renewable generation in western Maine, unless those additional costs are

[79] Planning and Engineering Rebuttal at Section II.A.

[80] ISO-NE Tariff Schedule 25, Elective Transmission Upgrade Interconnection Procedures at §§ 4.2.4.4 and 11.3.1.2, available at https://www.iso-ne.com/static-assets/documents/2015/02/sch_25.pdf.

[81] *See* 6/14/18 Tech. Conf. Tr. at 133:5-11 (Whitley); 6/19/18 Tech. Conf. Tr. at 68:23-69:9 (Russo).

somehow folded into the costs of the NECEC Project as a subsidy to the western Maine renewable generators.

In fact, Mr. Russo suggested in his testimony that the incremental cost of interconnecting renewable energy generation in western Maine could be borne by Massachusetts' ratepayers.[82] However, there is no basis to require Massachusetts ratepayers to pay for the incremental costs associated with interconnecting this additional renewable energy generation as that generation was not selected as part of Massachusetts' Section 83D RFP process.

Moreover, Mr. Russo's cost allocation solution would require CMP to go back to the Massachusetts EDCs and HQUS to attempt to increase the amounts those entities will have to pay for transmission service, notwithstanding that the price for transmission service was included in CMP's binding NECEC bid. Given that the NECEC Project was selected by the Massachusetts EDCs in large part based on the low costs of the Project and the fact that the bid price is now set in the executed TSAs, which were the product of a complex four-month negotiation, CMP is confident that asking Massachusetts ratepayers to pay significantly more for transmission service on the NECEC in order to facilitate the possible interconnection of renewable generation in western Maine at some future date will be a non-starter with the Massachusetts EDCs and the DOER. This is particularly true where several renewable generation projects in western Maine also submitted bids which were not selected in the Massachusetts 83D RFP process.

[82] 6/19/18 Tech. Conf. Tr. at 51:8-52:1; 54:17-55:2; 55:21-56:20 (speculating that perhaps the Commonwealth "would look at some of the benefits associated with greater diversity of supply along that line and the avoidance of potential contract expiration as set forth in [Russo's] testimony and decide perhaps it's worth it.") (Russo).

Mr. Russo also suggested under a variety of hypothetical scenarios posed to him during the technical conference that any additional construction costs to interconnect renewable generation in western Maine could be recovered from customers through a PPA.[83] However, in such a scenario, the generation developer would first have to agree to pay CMP for the additional interconnection costs and then seek to recover those additional costs through a PPA between the generator and energy off-taker.

As a preliminary matter, none of the developers of the renewable projects in western Maine (including two that are intervenors in this proceeding (NextEra and Calpine))[84] are offering to pay for the incremental costs associated with constructing the NECEC Project as an HVAC solution to facilitate additional renewable generation in western Maine. Moreover, none of the expert witnesses testifying in this proceeding about the interconnection of additional renewable energy generation in western Maine have any knowledge of whether these projects have executed PPAs in place to pay for any additional interconnection costs and to the best of CMP's knowledge none of these projects have executed PPAS in place.[85] Furthermore, several of these projects submitted bids in the Massachusetts 83D RFP and the prior Tri-State Clean Energy RFP and none were selected to negotiate definitive PPAs.[86] Finally, the likelihood of these projects receiving a PPA from

[83] 6/19/18 Tech. Conf. Tr. at 14:8-15:4; 21:12-22:4; 23:16-24:1; 52:20-53:12 (Russo).

[84] *See* Russo Direct Testimony, Exhibit CR-2 (showing renewable energy development in western Maine) as updated in CMP-002-001. Renewable energy projects under development include numerous wind and solar generation owned by NextEra, as well as the Long Mountain Wind Project that is owned by Calpine Wind Holdings, LLC, an affiliate of Generator Intervenors Calpine Corporation.

[85] 6/14/18 Tech. Conf. Tr. at 146:6-11 (Whitley); 6/19/18 Tech. Conf. Tr. at 61:22-24 (Russo); 6/20/18 Tech. Conf. Tr. at 32:17-33:21 (Bodell) (testifying that nearly all of the renewable energy projects in Maine that are in the queue are being developed without a PPA, but acknowledging that none of those projects have achieved financial closing).

[86] Western Maine generation projects submitted as part of unsuccessful bids in the 83D RFP included Bryant Mountain Wind Farm (EverPower Wind Holdings, Inc.), Long Mountain Wind Project (Calpine Wind Holdings, LLC), Farmington Solar (NextEra Energy Resources, LLC), Somerset Wind (NRG Renew LLC), Timberline

the State of Maine in the near term is small given that Maine law permits the Commission to direct Maine's investor-owned utilities to enter into long-term contracts for energy associated with capacity resources only where the contracts reduce electricity costs for Maine's electricity customers.[87]

Accordingly, NextEra's proposal to redesign the NECEC to facilitate the interconnection of additional renewable generation in western Maine is nothing more than a thinly veiled attempt to either defeat the NECEC for competitive reasons or leverage the CPCN process to improperly subsidize the western Maine renewable generation by reducing their interconnection costs. As such, this proposal should be rejected.

(footnote continued)
Wind Project (EDF), Penobscot Wind, LLC and Moose Wind, LLC (both NextEra), and Three Corners Solar Project (Longroad Development Company, LLC). Entities also submitted unsuccessful bids for generation from the following projects in the prior, New England Clean Energy RFP ("Tri-State RFP"), conducted in 2015 and 2016: Somerset Wind, Penobscot Wind, LLC and Moose Wind, LLC (all referenced above), and Canton Mountain Wind (Patriot Renewables LLC). Following review of submitted bids in the Tri-State RFP, the soliciting parties selected certain, limited solar projects to enter into contract negotiations for long-term power purchase agreements, including projects bid by Ranger Solar, LLC (subsequently acquired by NextEra). Also as part of one or more of the 83D and Tri-State RFPs, entities submitted unsuccessful bids for renewable generation from the following generation projects located in northern Maine: County Line Wind (NRG), Downeast Wind, LLC (Apex Clean Energy), Nine Kings Wind Farm, LLC (Pattern Energy and EDP), Blueberry Hills Wind Farm (EverPower Wind Holdings, Inc.), and King Pine Wind (SunEdison). CMP notes that where the soliciting parties in the Tri-State RFP selected a generation bid including renewable generation located in northern or western Maine, no such project either contemplates interconnection at the Larrabee Road Substation or benefits from an AC version of the NECEC for interconnection. *See* 83D RFP bids at https://macleanenergy.com/83d/83d-bids/ and selection of winning bid at https://macleanenergy.com/83d/; *see also* 2016 New England (Tri-State) Clean Energy RFP bids at https://cleanenergyrfp.com/bids/ and selection of winning bids at https://cleanenergyrfp.com/.

[87] 35-A M.R.S. § 3210-C(3) authorizes the Commission to direct Maine's investor-owned T&D utilities to enter into long-term contracts for energy associated with capacity resources provides to the extent that either the resource is needed to increase the share of new renewable capacity resources as a percentage of the total capacity resources in Maine on December 31, 2007 10% by 2017 (which is no longer applicable because 2017 has passed) or if the Commission determines that the long-term contract is appropriate for purposes of supplying or lowering the cost of standard-offer service or otherwise lowering the cost of electricity for the ratepayers in the Maine.

F. Contrary to Generator Intervenors' Witness Bodell and NextEra's Witness Russo, the NECEC will Not Deter the Future Development of Viable and Economic Renewable Generation Projects in Maine.

Generator Intervenor witness Ms. Bodell and NextEra witness Mr. Russo also claim the NECEC will adversely impact the future development of renewable generation in Maine and thus the Commission should not approve the NECEC in part due to the "opportunity cost" that the NECEC allegedly creates.

For example, in her direct testimony Ms. Bodell states that of the 5,165 MW of new generation in Maine that is in the ISO-NE interconnection queue (of which 97% are renewable resources with planned operation dates by 2020) some of them will not come to fruition because of the NECEC's purported impacts on market prices and congestion. Ms. Bodell, however, did not look at specific projects, nor did she analyze which projects were less likely to be built.[88] Ms. Bodell goes on to present the results of a 2013 report from the University of Maine School of Economics quantifying the economic benefits of the 500 MW Aqua Ventus Phase II off-shore wind project in support of the proposition that the development of in-state Maine renewables would create much greater benefits for Maine than the NECEC.[89]

Similarly, Mr. Russo testified that if the NECEC is built as an HVDC line as proposed by CMP, it would result in lost property tax revenue of between $5 million and $10 million per year based on Mr. Russo's estimate that if the NECEC were built as an HVAC line, it could accommodate between 500 and 1,000 MW of new renewable energy generation in Maine that presumably would not be developed if an HVDC line moves forward.[90]

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[88] Bodell Direct Testimony at 20; 6/20/18 Tech. Conf. Tr. at 135:9-23 (Bodell).

[89] Bodell Direct Testimony at 38-39.

[90] Russo Direct Testimony at 14-15.

As a starting point, it is important to recognize that any new renewable generation that is ahead of the NECEC in the ISO-NE interconnection queue, including in particular those renewable generation projects in western Maine that are included in the Cluster Study, will not be impacted by the NECEC.[91] If these projects are permittable and economic, factoring in all of the costs to develop such projects, including the costs to interconnect to the ISO-NE grid, then presumably they will find a buyer willing to enter a PPA with a price sufficient to cover these costs. The NECEC will not increase the interconnection costs of these projects for the reasons discussed above and also because the Cluster Study to determine the networks upgrades needed to permit the cumulative interconnection of their output at Larrabee Road Substation will be completed without consideration of the NECEC. If these projects move forward, CMP will be responsible for the costs of any additional network upgrades needed to permit the interconnection of the NECEC on top of this renewable generation, and, as discussed above, CMP has taken the risk in the TSAs that it will have to absorb the cost for such additional upgrades.

Of course, if these projects are unable to obtain all necessary permits (due to local opposition which is strong in western Maine, on-going governmental opposition, such as Governor LePage's current wind power moratorium discussed below, or for some other reason) or are not economic and, therefore, are unable to find a willing buyer through future solicitations or in direct negotiations with potential off-takers, then the Commission's approval of a CPCN for the NECEC cannot be blamed for their failure to achieve commercial operation.

[91] 6/20/18 Tech. Conf. Tr. at 136:21-25 (Fowler) ("So if the renewables are built before NECEC, the western cluster goes ahead with their study and they get built, they're obviously not going to face the adverse consequences to the extent they're operational before NECEC is built.")

Thus, Ms. Bodell's and Mr. Russo's opportunity cost arguments must relate to the purported impacts of the NECEC on proposed renewable generation projects that are either behind the NECEC in the interconnection queue, or the renewable generation projects currently participating in the Cluster Study that later decide, of their own volition, to decline to pay for the "Cluster Enabling Transmission Upgrades" (CETUs) identified by ISO-NE as necessary to interconnect all of the projects included in the Cluster Study and then drop behind the NECEC Project in the interconnection queue.

The majority of the renewable generation capacity referenced by Ms. Bodell fall into the first category. In fact, as of today, ISO-NE has already studied several of the generation projects located in Maine that are ahead of the NECEC in the interconnection queue, and several other projects with queue numbers that precede the NECEC's are participating in the Cluster Study.[92] Together these projects represent approximately 1,457 MW of generation capacity. The rest of renewable generation capacity in the ISO-NE region is below NECEC in the queue, including over 1,871 MW of wind capacity in western and northern Maine that elected not to participate in the Cluster Study.[93] In fact, in northern Maine, where more than 2,800 MW of the proposed new renewable generation is located, the cluster collapsed because there were "insufficient entities willing to post the necessary

[92] The generation projects participating in the Cluster Study account for approximately 691 MW of total net generation capacity, and hold queue positions QP573, QP574, QP576, QP577, and QP578. (Also as part of the Cluster Study, ISO-NE will review the elective transmission upgrade that holds queue position QP571.). Other than projects included in the Cluster Study, and setting aside withdrawn interconnection requests and those interconnection requests associated with generation projects that have already achieved commercial operation, the combined, total net megawatt generation capacity of projects holding a higher (less than QP639) queue position than NECEC is approximately 765.5 MW, of which 250 MW is located in York County (QP583, QP623), in southern Maine. Of the megawatt amount located in northern or western Maine, approximately 515 MW (QP417, QP420, QP555, QP557, and QP620), ISO-NE has completed system impact studies for the projects holding QP417 and QP420, constituting approximately 322 MW of generating capacity. *See* ISO-NE IRTT System, available at *https://irtt.iso-ne.com/reports/external.*

[93] Such proposed generation capacity is associated with projects holding the following queue positions: QP729, QP730, QP731, QP732, QP733, QP734, QP735, and QP744. *See id*

deposits to participate in the cluster system impact study process," which is a fundamental step required to move toward commercial operation.[94]

Ms. Bodell and Mr. Russo's assertion of the NECEC's adverse impact on these proposed renewable generation projects is premised on an assumption that a significant quantity of these projects, including those that recently dropped to the bottom of the interconnection queue, would be developed in the absence of the NECEC (because if these projects would not be developed in the base case (without the NECEC) and still would not be developed in the NECEC case, then there is no harm). This assumption that these renewable generation projects will be developed in the absence of the NECEC, however, is highly speculative and has no support in the record.

No witness in this case has provided any analysis indicating which of the proposed renewable projects in the queue are likely to move forward to commercial operation. Without offering details about the viability of any of these projects, Ms. Bodell simply asserts that because these projects are in the interconnection queue, they are being developed.[95] While certainly a project's presence in the queue is an initial indication that a developer is contemplating a project in a particular location, the fact that it has a queue position is by no means a basis to conclude that that project will actually make it to commercial operation. In fact, many of the projects in the queue have been there for years and have not moved forward.

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[94] Fowler Direct Testimony at 17-18. The referenced generation capacity comes from the projects holding the following queue positions, all but one of which is below NECEC in the interconnection queue: QP417, QP649, QP670, QP672, QP729 – QP733, QP733 – QP735, and QP739. The sole project now ahead of NECEC in the queue is EDPR's Number Nine Wind Farm, which was forced to terminate the PPA it originally received from Connecticut because of the costs of the significant transmission facilities determined necessary to interconnect this facility to the ISO-NE grid. This project and the other identified northern Maine projects bid unsuccessfully in both the Tri-State and 83D RFPs.

[95] 6/20/18 Tech. Conf. Tr. at 33:16-25 (Bodell).

Moreover, as Ms. Bodell has testified, none of these projects in development in Maine appear to have a PPA.[96] Nor have any of them been selected as a winning bidder in any of the recent New England state-sponsored clean energy solicitations even though several of them bid into those RFP processes.[97] Although Ms. Bodell argues that these projects are currently being developed without PPAs, she acknowledged at the technical conference that historically over the last five years, renewable generation in New England has not been built without a PPA and going forward, under the base case market assumptions used by Ms. Bodell for 2023 and even in the early years of the base case market assumptions posited by LEI, the renewable generators would require an above-market PPA in order to be built.[98]

The speculative nature of the assumption that new renewable generation will be built in Maine in the absence of the NECEC is underscored by the fact that 84.25% of the Maine based renewable generation in the queue as of March 2018 was wind,[99] and there is significant opposition to wind power in Maine, both from impacted residents, particularly in western Maine, and from within the LePage administration. For example, on January 24, 2018, Governor LePage issued an Executive Order which established a moratorium on

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[96] 6/20/18 Tech. Conf. Tr. at 32:17-33:21 (Bodell) (testifying that nearly all of the renewable energy projects in Maine that are in the queue are being developed without a PPA, but acknowledging that none of those projects have achieved financial closing).

[97] *See, e.g.* 2017-18 Massachusetts Clean Energy RFP bids at https://macleanenergy.com/83d/83d-bids/ and selection of winning bid at https://macleanenergy.com/83d/; *see also* 2016 New England (Tri-State) Clean Energy RFP bids at https://cleanenergyrfp.com/bids/ and selection of winning bids at https://cleanenergyrfp.com/. EDP Renewables' Number Nine Wind Farm in Aroostook County was awarded a PPA in an earlier Connecticut RFP. However, that PPA was ultimately terminated because ISO-NE determined after a lengthy system impact study that project could not be interconnected without significant additional transmission facilities beyond those that the developer proposed. The Number Nine project, however, remains in the interconnection queue ahead of the NECEC.

[98] 6/20/18 Tech. Conf. Tr. at 155:3-156:19 (Bodell).

[99] Bodell Direct Testimony, Figure 7, at 21.

permits for wind power located in certain "Areas" of the State defined as "the scenic vistas and pristine waters of Western Maine, our coast and coastal islands, and our significant avian migratory pathways" until the newly-formed, 11-15 member Maine Wind Energy Commission (1) studies the economic impact of potential Wind turbines in those Areas, (2) assesses the economic impact of expedited wind rules and procedures, and (3) assesses and develops recommendations in a written report.[100]

Furthermore, even the 500 MW Phase II Maine Aqua Ventus off-shore wind project that Ms. Bodell touts as a measure of the potential economic benefits of renewable generation sited in Maine is figuratively on the rocks, as the Commission declined to approve an above-market PPA for Phase I of the Project (the 12 MW Pilot Project) based upon a previously approved term sheet and deferred its consideration of the PPA until after receiving comments on whether the Commission should reconsider the term-sheet based on a variety of factors including updated energy market pricing information.[101] After receiving and analyzing the submitted comments, the Commission voted at its June 11, 2018 deliberations to reopen and reconsider the term sheet for the Maine Aqua Ventus PPA in light of current conditions.[102]

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[100] January 24, 2018 Governor LePage Executive Order Establishing the Maine Wind Energy Advisory Commission, located at http://www.maine.gov/tools/whatsnew/index.php?topic=Gov_Executive_Orders&id=776746&v=article2018.

[101] *Public Utilities Commission Ocean Energy Long-Term Contracting,* Docket No. 2010-00235, Order Requesting Comment (Jan. 24, 2018). Other factors included, but were not limited to, updated market pricing information, consideration of technological advancements since the term sheet was originally approved, additional consideration of tangible economic benefits and other factors. *Id.*

[102] The agenda for the June 12, 2018 Deliberations Session is included at this link: http://www.maine.gov/tools/whatsnew/index.php?topic=puc-deliberations&id=798510&v=Article08. The order reflecting the Commission's decision to reopen the term sheet has not yet been issued. However, please see the Energy Insider article located at the following link summarizing the decision: https://dailyenergyinsider.com/news/13040-maine-puc-to-review-draft-terms-sheet-for-maine-aqua-ventus-offshore-wind-project/.

There is an old adage that says a bird in the hand is worth two in the bush. In this case, the bird in the hand is the NECEC Project. The Commission should not reject the NECEC Project, a project which:

- Will bring significant hydropower to New England for 40 years, including the 9.45 TWh of such power that the Massachusetts EDCs have committed to purchase for the first 20 years of the NECEC's useful life;
- Will bring lower energy prices, more jobs and increased tax revenue to Maine;
- Has executed PPAs and TSAs;
- Is on track to be completed by December 2022 (subject to permitting approvals); and
- Will be constructed and operated for the next 40 years **at no cost** to Maine customers;

on the unsupported basis that the NECEC project will make it harder for uncertain renewable energy projects to be developed in the future. If these renewable energy projects are viable and economic, they will be successfully completed. If they are not viable and economic, the NECEC should not be blamed, but should instead be allowed to proceed so that the Project can provide Maine (and Massachusetts, which along with HQUS, will be paying for the Project) the very real benefits it will provide.

G. CMP's Estimation of Local Expenditures Is Based On CMP's Prior Experience and Is Not Overestimated.

Ryan Wallace of the Maine Center for Business and Economics Research (MCBER), on behalf of CMP, estimates that local expenditures for the NECEC will account for 60.4% of the NECEC's total NECEC Project costs.[103] At Section 5.2.1 of the LEI Report, LEI states that

[103] ODR-003-012. *See also,* CMP's data response to ODR-003-011 and attachments containing updated project costs, incorporated herein by reference.

CMP's original and updated estimates of the percentage of NECEC's total project cost consisting of local expenditures "appears to be on the high end," and the Company's description of the macroeconomic benefits is "inflated."[104] LEI however, did not provide any evidence to support a different assumption regarding the level of local expenditures as a percentage of total project costs.

CMP disagrees that its estimate of local project costs is overstated. In fact, Mr. Wallace's estimate of the NECEC's local expenditures as a percentage of total project cost is comparable to actual local expenditures that CMP incurred in its successful and recent construction of the $1.4 billion Maine Power Reliability Program (MPRP), subject to reasonable variations that reflect qualitative differences between the NECEC and MPRP.

For the MPRP, a project focused on upgrading existing transmission infrastructure throughout much of Maine, CMP incurred total labor and materials costs of $1.405 billion during the project planning and construction period, with local expenditures constituting approximately $947 million (67%) of this total. For such in-state costs, CMP spent approximately $818 million on labor, and $129.5 million on materials. As with the MPRP, CMP anticipates that the majority of NECEC's costs (approximately 60.4%) will be local expenditures. However, the NECEC also calls for the installation of new HVDC infrastructure and network upgrades and expansions that will require CMP in some instances to obtain equipment and skilled labor from outside of Maine. Mr. Wallace made this distinction clear at the April 5, 2018 technical conference in this matter.[105] The somewhat reduced estimate of percent local expenditures for the NECEC (60%) compared

[104] London Economics International, LLC, *Independent Analysis of Electricity Market and Macroeconomic Benefits of the New England Clean Energy Connect Project* at 55 (May 21, 2018) ("LEI Report").

[105] 4/05/2018 Tech. Conf. Tr. at 98 – 99.

to the percent of local expenditures for the MPRP (67%) reflects the unique, HVDC characteristics of the NECEC. Accordingly, CMP's estimation of the NECEC expenditures local to Maine is reasonable and there is no basis in the record to conclude otherwise.

H. Maine Customers Will Not Pay Any Costs for the NECEC Project if it Moves Forward.

In his direct testimony, Generator Intervenors witness William Fowler asserted that CMP may be required to build more or different upgrades than are contained in the Petition to satisfy ISO-NE's capacity deliverability standard, which may affect project scope, costs and timing.[106] As discussed above in Section II.B.2 of this rebuttal testimony, the ISO-NE System Impact Study will begin this summer and will ultimately determine the extent and the costs of upgrades associated with the NECEC. However, even if the cost of the project changes due to a modification of the needed upgrades, as CMP has explained throughout this proceeding, if the NECEC Project moves forward, Maine customers will have no liability for any costs associated with NECEC Project.

First, CMP has kept and will continue to keep detailed accounting records necessary to segregate the costs and expenses of the NECEC Project from the Company's other activities.[107] As the Commission is aware, CMP recovers its transmission costs pursuant to Attachment F and Schedule 21-CMP of the ISO-NE OATT.[108] CMP will separately identify all rate base, revenue and operating expenses related to the NECEC Project and exclude such items from its Attachment F and Schedule 21 formula rate calculations. CMP will also identify in its FERC Form 1 all direct and allocated NECEC cost of service items and include

[106] Fowler Direct Testimony at 5.

[107] *See* CMP's response to EXM-001-020, incorporated herein by reference.

[108] These cost-of-service formula rates establish CMP's annual transmission revenue requirement ("ATRR") for regional (Attachment F) and local (Schedule 21 CMP) facilities.

additional worksheets in both the regional informational filing and in its local informational filing that documents the exclusion of these items from the Attachment F and Schedule 21 CMP calculations. This comprehensive segregation of direct and allocated costs will apply to all aspects of the NECEC Project, including the HVDC facilities as well as all required AC Upgrades and CCIS Upgrades.

Second, as discussed above in Section II.A.2 of this rebuttal testimony, under the terms of the TSAs, CMP's recovery of the investment in and return on the NECEC Facilities and the applicable TSA counterparty's obligation to pay for the NECEC will be solely governed by the TSAs, which are structured to allow CMP to recover the full revenue requirements of the NECEC Project. Further, under the terms of the TSAs, the parties must "refrain from taking steps to include all or part of the NECEC Facilities in ISO-NE regional transmission rates." Taken together, this means that Maine customers will not be liable for the costs of the NECEC Project under the TSAs and the NECEC Project costs will not be "socialized" or paid for by Maine transmission customers under the ISO-NE transmission tariff.

Third, as CMP has previously explained, CMP will not seek recovery of the development costs associated with the NECEC prior to the in-service date of the Project, with the following exception: Costs associated with the acquisition of land that may be used for the NECEC Project are properly recorded in FERC Account 105 (Electric Plant Held for Future Use) and are currently included in CMP's transmission rate base under the ISO-NE Tariff formula rate. If the NECEC proceeds to construction, these costs will be removed from Account 105 and recorded and transferred to a NECEC Project account for cost

recovery through the TSA.[109] Additionally, in the EDC TSAs, CMP reserves the right to seek recovery of costs from the Massachusetts EDCs in the event that the NECEC Project is terminated due to actions of the EDCs or changes in Massachusetts laws, regulations or MA DPU Orders.[110] In the event that the NECEC Project otherwise does not proceed to construction, the costs of the NECEC would either be expensed (but not recovered in rates) or they would remain in the designated NECEC accounts pending the development of an alternative project to which they are applicable.[111] CMP confirms it will not seek recovery from Maine customers of any financial consequences due to delayed operation of the NECEC Project.[112]

Finally, to confirm these commitments protecting Maine customers, CMP agrees that any CPCN for the NECEC issued in this proceeding should be conditioned on Maine customers not being legally or financially responsible for any portion of CMP's revenue requirement for the NECEC Transmission Project during the first 40 years of the useful life of the Project. CMP also agrees that it will not take or support any action to modify the cost recovery mechanism applicable to the NECEC Transmission Project that would result in Maine customers being legally or financially responsible for any portion of CMP's revenue requirement for the NECEC Transmission Project during the first 40 years of the useful life of the Project, without first obtaining Commission approval for such a change.

Accordingly, Maine customers will not be responsible for the costs of the NECEC Project over its 40-year useful life, yet will receive tangible benefits from the Project in the

[109] *See* CMP's responses to EXM-001-021, EXM-001-023, and IECG-001-038, which are incorporated herein by reference.

[110] *See* CMP's response to IECG-002-008, incorporated herein by reference.

[111] *See* CMP's response to EXM-001-020, incorporated herein by reference.

[112] *See* CMP's response to IECG-001-023, incorporated herein by reference.

form of lower electricity supply prices, reduced greenhouse gas emissions in Maine and New England, and increased jobs, gross domestic product and property tax revenues.

Accordingly, CMP believes that on balance, the NECEC Project satisfies the public need standard set forth in 35-A M.R.S. § 3132 and should be granted a CPCN certificate.