M E M O R A N D U M

TO: NEPOOL Markets Committee

FROM: Paul Belval, NEPOOL Counsel

DATE: March 31, 2021

RE: Generation Information System Modifications: Maine Renewable Portfolio Standard (Thermal RECs)

At its April 6, 2021 meeting, the NEPOOL Markets Committee (the "Markets Committee") will be asked to consider and vote on changes to the NEPOOL Generation Information System ("GIS") and the GIS Operating Rules (the "Rules") relating to the inclusion of a thermal renewable energy credit ("Thermal RECs") requirement in the Maine Renewable Portfolio Standard ("RPS"). The proposed changes to the Rules are included in Attachment 1. The changes were requested by the Maine Public Utilities Commission ("PUC").

Under regulations adopted in statute by the Maine Legislature and in rule by the Maine PUC, Thermal RECs will be awarded to facilities that are certified by the Maine PUC and produce heat, steam, hot water or another form of thermal energy from sunlight, biomass, biogas or liquid biofuel or as a byproduct of electricity generated by a facility that is qualified as a Class I or Class IA resource under the Maine RPS. In order to qualify for Thermal RECs under the Maine RPS, the facility must have begun operation after June 30, 2019 and the thermal energy must be delivered to an end user in Maine and generated or delivered in accordance with energy efficiency standards established by the Maine PUC. Competitive electricity suppliers in Maine must demonstrate that they have purchased a certain level of Thermal RECs each year, starting at 0.4% in 2021 and ramping up to 4% in 2030 and thereafter.

The provision for Thermal RECs was added to the Maine RPS statute in 2019, at the same time as other changes to the Maine RPS that resulted in changes to the Rules and the GIS in 2020. The implementation of the Thermal RECs provision was deferred, however, so the Markets Committee did not need to act on it at that time. The changes to the GIS and the Rules for Maine Thermal RECs are similar to those that were made when New Hampshire and Massachusetts added thermal energy to their RPSs.

The Markets Committee referred the changes to the NEPOOL GIS Operating Rules Working Group (the "Working Group") at its January 12, 2021 meeting. The changes to the Rules were circulated to the Working Group, and we asked the Working Group members to let us know whether they had any objection to the changes or felt that the Working Group should meet by teleconference to discuss the changes. No Working Group member objected to the changes or requested such a meeting.

Under Rule 1.3, the proposed changes for Maine Thermal RECs are "Regulatory Enhancements" that can be adopted by the Markets Committee without action by the NEPOOL Participants Committee. Such changes, if approved, would become effective on July 1, 2021 and would apply to Certificates created for energy generated on and after January 1, 2021.

The GIS Agreement, as amended in October 2020, provides that the GIS Administrator will perform up to 500 hours of development work for enhancements to the GIS each year without additional cost beginning on January 1, 2021. APX, Inc., the GIS Administrator, estimates that the changes to the GIS for the Maine Thermal RECs will require approximately 150 hours of development time. APX expects the other GIS changes targeted for implementation on July 1, 2021 -- relating to the change in the NEPOOL logo, improvements to Third Party Meter Reader uploads and the addition of "Clean Existing Generation" to the Massachusetts Clean Energy Standard – will require approximately 260 hours to complete. That means that, after the Maine Thermal REC changes are implemented, there will be approximately 90 hours of development time remaining for 2021.

The following resolution could be used to adopt the changes to the Rules discussed above:

> RESOLVED, that the Markets Committee adopts the changes to the NEPOOL Generation Information System and the NEPOOL Generation Information System Operating Rules proposed and discussed at this meeting, which changes relate to the inclusion of a thermal renewable energy credit requirement in the Maine Renewable Portfolio Standard [with such changes thereto as were discussed at this meeting and] with such non-material changes thereto as the Vice Chair of the Markets Committee may approve.

cc: NEPOOL GIS Operating Rules Working Group

Rule 2.1 Creation of Certificates

(a) ~~(a)~~ The GIS Administrator shall produce an (x) electronic Certificate for each MWh of Energy generated, for each MWh of Energy conserved and with respect to NH Useful Thermal Resources (defined in Rule 2.2(f)), MAPS Useful Thermal Resources (defined in Rule 2.2(d)) ~~and~~, NH Biodiesel Producers (defined in Rule 2.2(h)) and Maine Thermal Resources (defined in Rule 2.2(j)), for each MWh-equivalent of useful thermal energy produced or presumed to have been produced, or, in the case of MAPS Small Useful Thermal Resources, projected to be produced and, (y) a separate Clean Peak Energy Certificate (defined in subsection (ix) below) for Energy generated, dispatched or discharged by Clean Peak Resources (defined in subsection (ix) below) (in each case subject to subparagraph (a)(i), paragraph (c) below and Rules 2.2(b), 2.2(d) and 2.2(i) below) by:

. . .

(viii) those generating units (without regard to nameplate capacity) which (w) do not provide separately metered data to the MSS for all or a portion of their capacity, (x) register as Account Holders in accordance with Rule 2.2, (y) either (1) provide the GIS Administrator with meter data meeting the requirements of ISO New England Operating Procedure No. 18 or any successor thereto or the Small Generator Metering Protocol, which meter data is verified to the GIS Administrator by an Energy Regulatory Agency listed in Appendix 5.3 or (2) cause a Third Party Meter Reader to provide the GIS Administrator with meter data meeting the requirements of Rule 2.5, and (z) are (1) NEPOOL Participants that are eligible to receive "Renewable Certificates" as defined in Rule 3.5, or (2) qualified as a NH Useful Thermal Resource, or (3) qualified as APS Alternative Generation Units under the MAPS, or (4) qualified as a NH Biodiesel Producer, or (5) qualified as a Maine Thermal Resource (resources described in clause (vii) and this clause (viii) are referred to herein as "BMG Resources") ; and

Rule 2.2 Account Holder Registration

(j) A GIS Generator that began operation after June 30, 2019, as certified by the Maine Public Utilities Commission, that directly produces thermal energy using sunlight, biomass, biogas, or liquid biofuel or produced as a byproduct of electricity generated by a Maine Class I or Class IA resource, delivered to an end user in Maine in a manner that can be verified by metering or other means certified by the Maine Public Utilities Commission where such thermal energy is used for heating, cooling, humidity control, process use or other end use to meet an end user need that would otherwise be met using another energy source, and

where such thermal energy is delivered in accordance with any efficiency performance standards established by the Maine Public Utilities Commission (a "Maine Thermal Resource") shall create an account for all Certificates reflecting the thermal energy by such Maine Thermal Resource pursuant to Rule 2.5(j) (such certificates referred to as "Maine Thermal Certificates").

Rule 2.5 Sources of Generation Data

(j) …

In addition, for purposes of the MAPS, Third Party Meter Readers will calculate and provide to the GIS Administrator (i) the appropriate portions of the electrical output and of the Useful Thermal Energy output converted into MWh for purposes of Certificate creation in the GIS for MAPS CHP Resources, (ii) the appropriate portion of the MWh discharged from a Flywheel Storage Unit, in each case consistent with the regulations issued from time to time by the Massachusetts Department of Energy Resources, and (iii) the appropriate amounts of useful thermal energy produced or projected to be produced, as provided in these Rules, in each case converted into MWh pursuant to Mass. Gen. Laws ch. 25A, § 11F1/2 for purposes of Certificate creation in the GIS for MAPS Useful Thermal Resources other than MAPS Small Useful Thermal Resources. All MAPS CHP Resources, Flywheel Storage Units and MAPS Useful Thermal Resources receiving MAPS-eligible Certificates will only permit generation data to be reported into the GIS through a Third Party Meter Reader. For purposes of NH Class I Thermal Certificates, Third Party Meter Readers will calculate and provide to the GIS Administrator the appropriate amounts of Useful Thermal Energy output converted into MWh for purposes of creating NH Class I Thermal Certificates under the NH RPS. In addition, Third Party Meter Readers will calculate and provide the GIS Administrator with the number of Certificates to be created in the GIS for each NH Biodiesel Producer. For purposes of Maine Thermal Certificates, either the applicable Maine Thermal Resource or a Third Party Meter Reader approved by the Maine Public Utilities Commission will provide to the GIS Administrator the appropriate amounts of useful thermal energy output, converted into MWh, for purposes of creating Maine Thermal Certificates under the Maine RPS. Any Third Party Meter Readers will comply with all data entry and security procedures and protocols established by the GIS Administrator from time to time. Each Certificate that is created based on data provided by a Third Party Meter Reader will identify the Third Party Meter Reader providing that data.

Rule 3.4 Retirement of Certificates; Residual Mix

(a) At the end of each Trading Period, (i) all trading of Certificates for that Trading Period shall cease, (ii) all Certificates issued for that Trading Period that are not (n) Maine Thermal Certificates, (o) Clean Peak Energy Certificates, (p) associated with Zero Emissions Generators, (q) NH Biodiesel Producer

Certificates, (r) held in the MA SREC Clearinghouse Accounts, (s) S-REC Auction Certificates or SREC-II Auction Certificates, (t) APS Certificates, (u) NH Class I Thermal Certificates, (v) Reserved Certificates (as described in Rule 3.5 below), (w) associated with C&LM Resources, DR Resources or Class III Cogeneration Resources (collectively, "Conservation Certificates"), (x) held in the subaccount of a NEPOOL Participant that is a retail load-serving entity (a "Retail LSE"), which subaccount has a Certificates Obligation (defined below) identified with it (a "Retail Subaccount"), (y) associated with an export transaction, or (z) held in a Banked Certificate Subaccount (defined below) shall be retired (such retired Certificates, other than Reserved Certificates, are collectively referred to herein as "Unsettled Certificates"), and (iii) the GIS Administrator shall issue the quarterly reports contemplated by Part 5 of these GIS Operating Rules. As Conservation Certificates, APS Certificates, NH Class I Thermal Certificates, NH Biodiesel Producer Certificates, Maine Thermal Certificates and Clean Peak Energy Certificates are retired, such Conservation Certificates, APS Certificates, NH Class I Thermal Certificates, NH Biodiesel Producer Certificates, Maine Thermal Certificates and Clean Peak Energy Certificates shall not be included in (1) the definition of Unsettled Certificates or (2) the creation of Residual Mix Certificates, and such Conservation Certificates, APS Certificates and Clean Peak Energy Certificates shall not be included in the emissions data reported under Rule 5.3(b) (xi), (xii), (xiii), (xxi), (xxii) and (xxiv). The retirement date for a S-REC Auction Certificate and SREC-II Auction Certificates will be dictated by the Massachusetts Department of Energy Resources' regulations, and that S-REC Auction Certificate or SREC-II Auction Certificate shall be included in the Unsettled Certificates for the Trading Period in which that retirement occurs. Once a Certificate is retired, it shall cease to exist for purposes of the GIS.

Rule 4.3 Calculation of Certificates Obligation

(a) The GIS Administrator shall calculate on each Creation Date the Certificates Obligation of each Retail LSE for that Trading Period with MSS data for electrical load in the applicable calendar quarter obtained from the ISO, adjusted (subject to the last sentence of this Rule 4.3(a)) to account for any MMAs occurring prior to that Creation Date. The GIS Administrator shall determine a Retail LSE's Certificates Obligation by subtracting from such electrical load applicable to such Retail LSE that Retail LSE's entitlement or ownership share of Energy used for pumping at a pumped storage facility owned by that Retail LSE or in which that Retail LSE has an Ownership Share during that calendar quarter (or the comparable figures for the transferor of that Retail LSE's Certificates Obligation), which shall be provided by the applicable Retail LSE at least five calendar days before the applicable Creation Date. Without limiting the generality of the foregoing, Forward Certificates will not satisfy a Certificate Obligation for any Trading Period prior to their Creation Date, APS Certificates and Clean Peak Energy Certificates will not satisfy a Certificates Obligation at any time, ~~and~~ NH Class I Thermal Certificates and NH Biodiesel

Producer Certificates will only satisfy a Certificates Obligation for a Retail LSE's New Hampshire Retail Subaccount, and Maine Thermal Certificates will only satisfy a Certificates Obligation for a Retail LSE's Maine Retail Subaccount. ISO's RBA data shall be available to Account Holders through their accounts, but such data shall not be used in the creation of Certificates Obligations.

(b) Certificates Obligations for load serving obligations during a calendar quarter may only be satisfied (i) with Certificates, other than APS Certificates and Clean Peak Energy Certificates, associated with Energy generated during such calendar quarter or (ii) with Certificates, other than APS Certificates and Clean Peak Energy Certificates, that became Banked Certificates that are associated with Energy generated during the same calendar year. Notwithstanding the foregoing, (i) NH Class I Thermal Certificates and NH Biodiesel Producer Certificates may satisfy a Certificates Obligation for Retail LSE's New Hampshire Retail Subaccount, ~~and~~ (ii) Maine Thermal Certificates may satisfy a Certificates Obligation for Retail LSE's Maine Retail Subaccount, and (iii) Certificates Obligations in any Default Subaccount for any calendar quarter may only be satisfied with Residual Mix Certificates for the same calendar quarter.

Rule 4.4 Allocation of Residual Mix Certificates

After the close of each Trading Period, the GIS Administrator shall assign Residual Mix Certificates to each MWh of Certificates Obligations in each Retail Subaccount and as well as in the Conservation Subaccount that does not have a Certificate. This assigning of Residual Mix Certificates by the GIS Administrator shall not include any APS Certificates, nor any NH Class I Thermal Certificates or NH Biodiesel Producer Certificates that correspond to any Retail Subaccount that is not a New Hampshire Retail Subaccount, nor any Maine Thermal Certificates that correspond to any Retail Subaccount that is not a Maine Retail Subaccount.

Rule 5.3 Reports for Regulatory Agencies and ISO

(b) Each report provided to the Regulators and the ISO shall include the following information:

(vi) Total number of Certificates created during the reporting period (with APS Certificates, NH Class I Thermal Certificates, NH Biodiesel Producer Certificates, Maine Thermal Certificates and Conservation Certificates accounted for separately);

(vii) Allocation of Certificates among retail load in each state during the reporting period, categorized by fuel source (with APS Certificates, NH Class I Thermal Certificates, NH Biodiesel Producer Certificates, Maine Thermal Certificates and Conservation Certificates accounted for separately);

(ix) Total number of Banked Certificates at the end of the reporting period (with APS Certificates, NH Class I Thermal Certificates, NH Biodiesel Producer Certificates, Maine Thermal Certificates and Conservation Certificates accounted for separately);

Rule 5.4 Publicly Available Reports

(e) The publicly available reports posted on the GIS Administrator's website shall include an aggregation and/or average, as appropriate, of the Certificate fields for all Certificates created during the quarterly or annual reporting period. Such reports shall aggregate data separately for NEPOOL Generators, Importing Account Holders, Non-NEPOOL Generators, Included Generators, C&LM Resources, BMG Resources, Class III Cogeneration Resources, DR Resources, MAPS CHP Resources, MAPS Useful Thermal Resources, NH Useful Thermal Resources, NH Biodiesel Producers, Maine Thermal Resources, Clean Peak Resources and Non-NEPOOL Generator Representatives and shall also include data aggregated for all GIS Generators and Importing Account Holders and data aggregated by originating control area (if other than ISO New England) and RPS or APS eligibility for all Imported Unit Energy. Those reports shall include the aggregate and/or average, as appropriate, of the Certificate fields for all Residual Mix Certificates, all Reserved Certificates, all Certificates assigned to state-specific subaccounts and all Certificates associated with Energy exported from the New England for the quarterly or annual reporting period as well. Those reports shall also include a listing of all Third Party Meter Readers for the time period covered by each such report. In addition, those reports shall be capable of being sorted by the state of origination and settlement, by eligibility for RPS and APS programs, and by fuel type for all such Certificates for the time period covered by each such report.

Appendix 2.4
GIS Certificate Fields

Part 2

Maine
Class I - New Renewable Energy Resource (yes/no)
Class IA – New Renewable Energy Resource (yes/no)
Percentage of generation that is a Class IA renewable energy source: %
(percentages to be provided to the GIS Administrator by the Maine Public Utilities Commission)
If qualified hydroelectric output (in MWh) qualifying as a new renewable capacity resource that on January 1, 2019 had a total nameplate capacity of at least twenty-five megawatts, is located outside of the historic freshwater range of the Gulf of Maine distinct population segment of Atlantic salmon as defined by the National Oceanic and Atmospheric Administration, National Marine Fisheries Service, and is interconnected to an electric distribution system located in the State: percentage of generation that is a

Class I or Class IA renewable energy source:%; and percentage of generation that is a Class II renewable energy source: % (percentages to be provided to the GIS Administrator by the Maine Public Utilities Commission)

Class II - Eligible Resource (yes/no)

Community-Based Renewable Energy (yes/no)

Eligible for CO2 netting (yes/no)

Thermal Energy Renewable Resource (yes/no)