Thank you for submitting feedback regarding the On-Island Capacity for Security of Supply Project ("Project") application ("Application"). Maritime Electric appreciates your input and generally agrees with much of the information provided. Below are clarifications on some items included in your submission.

BESS Capacity, Demand Side Management and Vehicle to Grid Clarifications

The feedback regarding additional battery energy storage system ("BESS") capacity, controllable demand-side management ("DSM") and vehicle-to-grid ("V2G") integration all pertain to load shifting. These issues are addressed collectively, as follows.

Load Shifting Overview

Load shifting involves moving customer load from peak periods to off-peak periods using energy storage or customer incentives. A BESS can store energy during off-peak periods and discharge during peak periods, effectively shifting load. Controllable DSM initiatives, such as thermal energy storage water heaters, can heat water during off-peak periods and use the stored hot water during peak periods. V2G can charge electric vehicles ("EV") during off-peak periods and halt charging or discharge to the grid during peak periods, similar to BESS. These are three examples of load shifting, and all can be used to reduce Maritime Electric's system peak; however, the total load shifting potential is constrained by Maritime Electric's load profile.

Load Profile Analysis

FIGURE 29
System Peak Load Curve
February 4, 2023

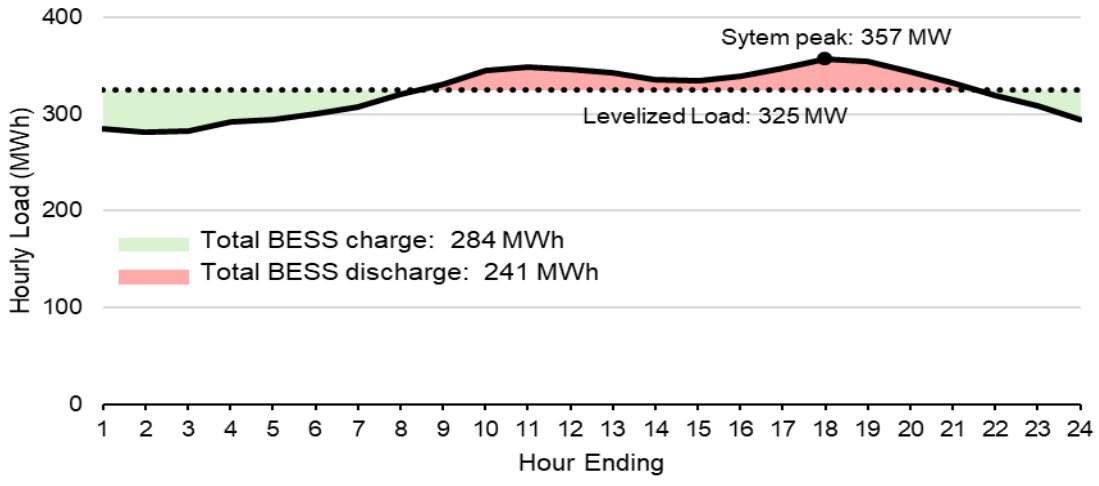

Figure 29 in Section 8.3 of the Application (shown above) depicts Maritime Electric's customer load profile for the system peak that occurred on February 4, 2023. Figure 29 also shows a levelized load of 325 megawatts ("MW") for that day, representing the load that would be achieved if sufficient load was shifted to create a flat (i.e., levelized) profile. In this scenario, the levelized

load is 32 MW less than the actual peak of 357 MW, indicating the maximum peak reduction achievable through load shifting on that day.

Since BESS, controllable DSM and V2G are all types of load shifting, the combined amount of peak reduction that can be achieved by these initiatives is limited by the load profile (32 MW in the example above). The 10 MW/40 megawatt-hour ("MWh") BESS proposed by Maritime Electric and the controllable DSM included in load forecasts presented in the Application will provide 10 MW and up to 20 MW, respectively (i.e., up to 30 MW total), of potential peak reduction capability.[1] A peak reduction of 30 MW is approaching the limits (based on a 32 MW maximum in example above) of what can be achieved from load shifting with Maritime Electric's current load profile. As such, relying on a larger BESS or possible future V2G initiatives at the current time is not prudent.

Energy Storage Capacity Requirements
The feedback provided indicates that there may be a flaw in Table 21 (page 115) of the Application. The suggestion that a 20 MW/80 MWh BESS "could easily have met the 66 MWh of required energy to reduce the peak" would be true for meeting the average energy requirement for a 20 MW peak reduction; however, a 20 MW/80 MWh BESS would not have been sufficient on February 4, 2023, when 102 MWh was required. Maritime Electric must ensure sufficient energy storage to last through all peaks. The selected 10 MW/40 MWh BESS provides consistent capacity across all analyzed scenarios, whereas the suggested 20 MW/80 MWh BESS would only meet the intended capacity for four out of the five peaks shown in Table 21.

Operational Certainty
With respect to the statement that "Maritime Electric would not know in advance when to switch from charge to discharge" and that "the estimates being made by Maritime Electric would likely be sufficient for most loads, most of the time," Maritime Electric acknowledges that system operators can forecast charge-to-discharge transitions most of the time. However, from an electric utility perspective, being "likely sufficient for most loads, most of the time" is not an acceptable level of certainty for a capacity resource that is relied upon to supply customers during peak loads, which typically occur on the coldest days of the year.

System Peak
"Solar can be included in handling the system peak when including BESS."
Maritime Electric agrees that the BESS can be charged with solar energy during the day prior to the peak. However, when reviewing available capacity resources, solar has no capacity value because Maritime Electric's peak occurs after sunset in the winter. The BESS provides the capacity value as it can be discharged during peak periods, regardless of the energy source that was used to charge it.

For example, if Maritime Electric had a 20 MW solar farm and a 10 MW/40 MWh BESS, the total amount that can be counted as a capacity resource is 10 MW (i.e., not 20 MW or 30 MW). The

[1] In the Application, 20 MW of controllable DSM by 2032 was included as a reduction to the "Forecast Capacity Requirement (from Table 9)" row in Table 10 and the "Forecast Capacity Requirement" line in Figure 16, which can provide up to 20 MW of this peak reduction capability. Please refer to Table 9 of the Application for more details.

amount that can be counted as a capacity resource is dependent on the size and properties of the BESS.

Biomass Plant

"If a biomass plant is used as a form of backup power generation, the lack of significant wood supply should not be an issue."

Biomass plants have high upfront capital costs. In Section 5.2.6 of the Sargent & Lundy LLC ("S&L") Capacity Resource Study provided as Appendix C of the Application, the upfront capital costs of a biomass plant are estimated to be more than twice the cost of the proposed solutions. To justify the high upfront capital costs, biomass plants are typically used as baseload generators (i.e., not peaking generators); therefore, the lack of significant wood supply is relevant.

Additionally, biomass plants are slow to start and ramp; therefore, they do not serve well as peaking generators. Biomass plants cannot start or ramp fast enough to meet Maritime Electric's requirements.

Controllable DSM Suggestion: Water Heaters

"Thermal TES is the most direct way of attempting to solve the issue of space heating timing."

A request for proposal ("RFP") for DSM initiatives was recently issued by efficiencyPEI as part of the PEI Energy Corporation's Energy Efficiency and Conservation ("EE&C") Plan. The RFP included thermal energy storage through water heaters. The estimated peak reduction impacts of the EE&C Plan are included in Maritime Electric's peak and capacity requirements forecast provided in the Application.

Responses to Questions

Responses to the six questions that were included in bold and provided with context, follow.

1. **Is providing a more-correctly-scheduled power of value to NB Power?**

   Yes, providing more-correctly-scheduled power is of value to NB Power. Currently, Maritime Electric is obligated to purchase three separate ancillary services to cover fluctuations in energy supply: (i) Automatic Generation Control ("AGC") which provides instantaneous response to load and generation;[2] (ii) Load Following which provides response to moderately sized or slower variations;[3] and (iii) Spinning Reserve which covers instantaneous and unplanned generation outages.[4] All three ancillary services

[2] AGC is defined in the NB Power OATT as "the provision of generation and load response capability, including capacity, energy and maneuverability, that responds often and rapidly to automatic control signals issued by the Control Area operator". AGC is very fast or instantaneous responses to variations in load and/or generation to maintain system frequency.

[3] Load Following is defined in the NB Power OATT as "the provision of generation and load response capability, including capacity, energy and maneuverability, that is dispatched within the scheduling period by the Control Area operator at frequencies and rates that are lower and slower than AGC".

[4] Spinning Reserve Service (also referred to as Contingency Reserve – Spinning) is defined in the NB Power OATT as "Spinning Reserve is needed to serve load immediately in the event of a system contingency. Spinning Reserve Service may be provided by generating units that are on-line and loaded at less than maximum output and by non-generation resources capable of providing this service. Spinning reserve is meant to cover shortfalls in energy supply immediately in the event that a source of energy supply is lost without warning.

cover variations in Maritime Electric load and generation and as per Section 6.1 of the Application, Maritime Electric is planning to use the BESS to provide the listed ancillary services for nine months of the year (i.e., when it is not serving as a capacity resource), therefore providing year-round value for customers.

Also, as per Section 7.3 of the Application, Maritime Electric must schedule its forecasted energy supply requirements for every hour of the day. This energy supply requirement is calculated to be the forecasted load less the on-Island generation expected for that hour. If Maritime Electric, or contracted renewable generation, is "off-schedule," NB Power typically has sufficient excess energy to supply Maritime Electric. This is due to NB Power's electrical load being approximately 10 times the size of Maritime Electric's. Currently, if NB Power does not have sufficient excess energy to supply Maritime Electric when it is "off-schedule," Maritime Electric must generate the difference using its existing combustion turbines (known as a hold-to-schedule). When possible, Maritime Electric intends to use the BESS during these situations to cover small shortfalls in import requirements relative to scheduled import instead of or as a complement to fossil-fueled generation, depending on the magnitude of the hold-to-schedule. The energy supplied from the BESS during such events will be significantly less expensive than energy supplied from fossil-fueled generation, therefore providing additional value to customers.

2. Why not set up a contract to sell renewable energy to NB Power?

Currently, if there is excess renewable energy on PEI, exports off-Island are sold into the market at a final hourly marginal price. Given PEI's close geographical proximity to New Brunswick, when it is windy or sunny on PEI, it is typically also windy or sunny in New Brunswick and Nova Scotia. This results in low hourly marginal market prices during periods of high wind and solar energy, which negatively impacts the economics of exporting renewable energy off-Island.

Although the economics of selling excess renewable energy to NB Power during windy or sunny periods is not generally attractive, Maritime Electric will continue to sell this excess energy to NB Power at the final hourly marginal price, as required. However, as more renewable energy generation is added on- and off-Island, there may be times when the final hourly marginal price of energy drops to zero or less (i.e., the excess renewable energy has no value).[5]

3. Alternate Chemistries?

As per Section 4.1.3 of the S&L Capacity Resource Study, alternate chemistries were considered but lithium ion is the recommended BESS technology because it is "predominantly utilized in the energy industry." Other energy storage technologies, such as flow batteries and compressed air energy storage ("CAES"), are "not widely adopted for use in the energy industry" or "there are only a handful of CAES systems in service

[5] Negative final hourly marginal prices mean that prospective buyers must be paid to take excess energy. This can result when all controllable generation sources have reduced as low as possible and the utility is faced with either not accepting renewable generation or turning base-load generation such as Nuclear off, which can cause operational difficulties.

today," respectively. Sargent & Lundy did not recommend these other technologies for Maritime Electric at this time due to the "significant risk associated with being an early adopter."[6]

4. Why not propose ten times the amount of battery capacity for the Maritime Electric grid that has already been installed by the Summerside utility?

Maritime Electric has determined that 10 MW/40 MWh is the appropriate size for a BESS serving as a capacity resource based on the Company's current load profile.

5. Why not focus more on providing inertia to the grid with a flywheel as well?

Both synchronous condensers and flywheels have unique advantages, and the choice between them depends on the specific needs of the power system. Synchronous condensers are particularly valuable for providing continuous inertia and continuous reactive power support, which makes them ideal for strengthening grids and providing voltage stability. Flywheels, which are less common and less reliable than synchronous condensers, offer fast response times and energy storage capabilities beneficial for applications that require rapid frequency response and short-term power support; however, since they rely on stored energy, they cannot operate continuously. Synchronous condensers are also relatively inexpensive when included on a new combustion turbine; therefore, its cost is significantly less than a stand-alone flywheel.

6. What would the cost of carbon tax be on energy production in the future?

Maritime Electric generally agrees with the cost estimates provided in the feedback. While the future of carbon taxes in Canada is currently uncertain, the purpose of peaking generators is to provide capacity, with the amount of time that they operate kept to a minimum. As such, the risk of carbon tax is not expected to materially impact the economics of the proposed project.

[6] Quoted text is referenced from page 45 of the S&L Capacity Resource Study.