

IR-TMMC-12

INTERROGATORY

Ref: Energy+ response to TMMC April 10, 2018 Question 10, Sub-Questions 1 and III

Issue: Standby Charge Proposal; Dedicated Assets

Preamble: In its response to Question 10, Sub-Question III, Energy+ lays out the following as a “consideration” in requesting a standby charge:

“Contracted capacity is ‘reserved’ for customer with load displacement [generation] whereby the customer wishes to ensure that the Energy+ infrastructure is in place at all times to provide the contracted peak load at any time.”

In response to Question 10, Sub-Question I, Energy+ notes the following:

“Energy+ is not proposing the Standby/Capacity Charge to protect its revenue stream from stranded assets...

“There are relatively few assets used exclusively for TMMC since almost all the poles are multi-circuit (two of three 27.6kV circuits with one circuit used to supply TMMC and the other circuit(2) used to supply other customer). The only poles exclusive to TMMC are located at the Preston TS.”

1. If, as noted in the response to Sub-Question I, there are relatively few TMMC-dedicated assets, why is it necessary to “reserve” contracted capacity for TMMC?

RESPONSE

Please refer to Response to Interrogatory IR-TMMC-1.

IR-TMMC-12

INTERROGATORY

Ref: Energy+ response to TMMC April 10, 2018 Question 10, Sub-Questions 1 and III

2. What specific capacity is being reserved on behalf of TMMC?

RESPONSE

Energy+ has reserved 9.2MW of capacity at Preston TS to provide back-up supply to TMMC in the event the behind-the-meter Combined Heat and Power (CHP) generation goes offline.

IR-TMMC-12

INTERROGATORY

Ref: Energy+ response to TMMC April 10, 2018 Question 10, Sub-Questions 1 and III

3. On which specific assets is this capacity being reserved?

RESPONSE

Energy+ is reserving this capacity at Preston TS on the 230kV-27.6kV transformers. The transformers supply multiple distribution feeders including two dedicated for TMMC. Energy+ is also reserving capacity on the 21M24 and 21M30 overhead distribution feeders from Preston TS to the TMMC plant.

IR-TMMC-12

INTERROGATORY

Ref: Energy+ response to TMMC April 10, 2018 Question 10, Sub-Questions 1 and III

4. What is the net book value and the annual depreciation expense of the specific assets on which capacity is being reserved on behalf of TMMC? If the specific asset value and annual depreciation expense cannot be identified because of the use of group accounting methods, please provide an estimate of these values based on group asset characteristics and values.

RESPONSE

Energy+ has utilized the OEB's Cost Allocation Model to apportion the assets and expenses using cost-causality principles approved by the OEB and included in the OEB's Cost Allocation Model. Energy+ submits that this approach is an appropriate methodology when assets and expenses are shared by more than one customer class.

Energy+ is not able to identify the specific asset values and annual depreciation expense amounts for the assets that are being reserved as the assets are categorized on a pooled asset basis and therefore the asset values, net book value, and annual depreciation is not specifically available.

IR-TMMC-12

INTERROGATORY

Ref: Energy+ response to TMMC April 10, 2018 Question 10, Sub-Questions 1 and III

5. Has Energy+ been able to defer any new asset additions or upgrades as a result of the installation of load displacement generation at TMMC? If so, what are the additions or upgrades that have been deferred or avoided, and what are the cost savings associated with these deferrals or avoidances?

RESPONSE

No, Energy+ has not deferred or avoided any new asset additions or upgrades as a result of the installation of the load displacement generation at TMMC. From an operating perspective, Energy+ must assume that TMMC's load-displacement generation may drop offline at anytime, and as a result instantaneously add 9.2 MW of load to Preston TS. Therefore, 9.2 MW of transformer capacity must be kept at Preston TS.

IR-TMMC-12

INTERROGATORY

Ref: Energy+ response to TMMC April 10, 2018 Question 10, Sub-Questions 1 and III

6. Does the reduction in load as a result of TMMC load displacement generation assist in increasing the longevity of equipment at Energy+?

RESPONSE

No, the reduction in load as a result of TMMC's load displacement generation does not assist in increasing the longevity of equipment owned by Energy+.

IR-TMMC-12

INTERROGATORY

Ref: Energy+ response to TMMC April 10, 2018 Question 10, Sub-Questions 1 and III

7. If the answer to question 6 is “yes”, has Energy+ done an analysis of the financial benefit associated with reduced loading as a result of TMMC generation? Are these benefits taken into account in the Energy+ Standby Rate proposal?

RESPONSE

Not applicable as the answer to IR_TMMC_12 (6) is No.

IR-TMMC-13

INTERROGATORY

Ref: Energy+ Application, Exhibit 2, Appendix 2-1 Distribution System Plan

Issue: Standby Charge Proposal; Customer Peaks vs. System Peaks

Preamble: In designing distribution systems and planning for maximum loads, it is general utility practice to take into account load diversity and the fact that not all customers will need to be served at their maximum potential load or their historical peak load at the time of a utility's own system peak. Instead, coincidence factors and probabilistic analyses are used to take into account the fact that individual customers will not all reach their maximum load at the exact same time.

As found on page 230 of 1497 in Exhibit 2, the Distribution System Plan indicates that the Energy+ local load forecast projection takes into account, among other things, "10 MW required on standby for an industrial customer". We assume that the reference to 10 MW required on standby for an industrial customer is a reference to TMMC's 9.2 MW of load displacement generation.

1. Confirm that the reference to 10 MW of load displacement generation is a reference to TMMC's existing on-site generation unit with 9.2 MW nameplate capacity.

RESPONSE

Energy+ confirms that the reference to 10 MW of load displacement generation is a reference to TMMC's existing on-site generation unit with 9.2 MW nameplate capacity. The output of the generation sometimes exceeds the 9.2 MW nameplate capacity.

IR-TMMC-13

INTERROGATORY

Ref: Energy+ Application, Exhibit 2, Appendix 2-1 Distribution System Plan

2. Does the Energy+ local load forecast projection assume that the 10 MW required on standby for TMMC adds to its system load forecast on a one-to-one basis or, in other words, with no allowance for diversity or the fact that TMMC requests for standby service are not likely to occur at the time of Energy+'s system peak load?

RESPONSE

The 2019 load forecast for the Large Use class has the demand units adjusted by 30,433 kW to account for the proposed standby service on contracted capacity basis for 26.2MW. The calculation of 30,433 kW is shown in Response to Interrogatories IR-TMMC-4(4).

IR-TMMC-13

INTERROGATORY

Ref: Energy+ Application, Exhibit 2, Appendix 2-1 Distribution System Plan

3. For the load forecast projection used in Energy+'s Distribution System Plan, what is the base amount of load (before allowance for the 10 MW required on standby) used in the load forecast to represent TMMC's contribution to Energy+'s 2018 to 2023 Peak Demand Forecast Scenarios, as shown in Figure 4-3 of the Distribution System Plan? Please provide assumed base load data for each of the relevant years 2018 through 2023.

RESPONSE

For the load forecast projection used in Energy+'s Distribution System Plan, the base amount (before allowance for the 10 MW required on standby) of load used in the load forecast was 23.7 MW to represent TMMC's contribution to Energy+'s 2018 to 2023 Peak Demand Forecast Scenarios.

Energy+'s peak load forecast for 2018 to 2023 takes into account the load on the system as a whole and forecasts the trend based on growth rates, energy conservation activities, embedded generation, and wholesale market participants. TMMC's base load was kept constant at 23.7 MW for each year from 2018 to 2023.

IR-TMMC-13

INTERROGATORY

Ref: Energy+ Application, Exhibit 2, Appendix 2-1 Distribution System Plan

4. Does Energy+ design its distribution system to meet, simultaneously, the maximum non-coincident demand that has been observed to date at each of its customers individually? If the answer differs for different parts of the Energy+ system, please differentiate among these different parts, as required.

RESPONSE

No, Energy+ does not design its distribution system to meet, simultaneously, the maximum non-coincident demand that has been observed to date at each of its customers individually.

IR-TMMC-13

INTERROGATORY

Ref: Energy+ Application, Exhibit 2, Appendix 2-1 Distribution System Plan

5. In the event that the answer to Question 4 above is that Energy+ designs its distribution system to meet, simultaneously, the maximum non-coincident demand that has been observed to date at each of its individual customers, please explain how this design approach is efficient and produces an optimally sized distribution system.

RESPONSE

Not applicable as the answer to IR-TMMC-13 (4) is “no”.

IR-TMMC-13

INTERROGATORY

Ref: Energy+ Application, Exhibit 2, Appendix 2-1 Distribution System Plan

6. In the event that the answer to Question 4 above is that Energy+ does not design its distribution system to meet, simultaneously, the maximum non-coincident demand that has been observed to date at each of its individual customers, please explain how it is reasonable for Energy+ to assume that its system will need to be sized to meet TMMC's historical maximum net load plus the nameplate capacity of its load displacement generation, at the same time that load from its remaining customers also reaches its peak.

RESPONSE

It is reasonable for Energy+ to assume that its system will need to be sized to meet TMMC's historical maximum net load plus the nameplate capacity of its load displacement generation (LDG) at the same time that load from its remaining customers also reaches its peak because:

- a) The LDG can and has dropped off-line or reduced output with Preston TS and the 21M24 and 21M30 27.6kV feeders instantaneously picking up the full load of the TMMC plant. The timing of these events can not be predicted, therefore, Energy+ must, from an operating perspective, always reserve sufficient capacity at Preston TS including at peak load periods to ensure that the transformers at Preston TS are not overloaded in the event that the LDG either drops offline or reduces output.
- b) The size of the LDG generation at TMMC is a factor. An instantaneous loss of 9.2 MW of generation is much larger than the variation in either load or generation of any other customer on Energy+'s distribution system. It has a material impact.
- c) There are only two units rated at 4.6 MW each. Load variations at each of Energy+'s individual customers occurs across a base of 65,000 total customers. The probability of all 65,000 customers running at maximum non-coincident demand is very low as compared to two generation units dropping off-line.

IR-TMMC-13

INTERROGATORY

Ref: Energy+ Application, Exhibit 2, Appendix 2-1 Distribution System Plan

7. Has Energy+ done any analysis of the frequency and timing of outages by TMMC load displacement generation and the coincidence of these outages with Energy+'s own system peaks?

RESPONSE

No, Energy+ has not done any analysis of the frequency and timing of outages by TMMC load displacement generation and the coincidence of these outages with Energy+'s own system peaks.

IR-TMMC-13

INTERROGATORY

Ref: Energy+ Application, Exhibit 2, Appendix 2-1 Distribution System Plan

8. If the answer to Question 7 is “yes”, provide the results of this analysis.

RESPONSE

Not Applicable, as the answer for IR_TMMC-13 (7) is “no”.

IR-TMMC-13

INTERROGATORY

Ref: Energy+ Application, Exhibit 2, Appendix 2-1 Distribution System Plan

9. If the answer to Question 7 is “no”, explain why has Energy+ not done an analysis of the timing of outages by TMMC load displacement generation and the coincidence of these outages with Energy’s own system peaks.

RESPONSE

Energy+ has not completed an analysis of the timing of outages by TMMC load displacement generation and the coincidence of these outages with Energy+’s own system peaks because the load displacement generation can drop out at any time. It is not based on a schedule. From an operating perspective, Energy+ must always consider that 9.2MW of power on an instantaneous basis may be added to the load at Preston TS if the generation drops offline.

IR-TMMC-14

INTERROGATORY

Ref: Energy+ Application, Exhibit 2, Appendix 2-1 Distribution System Plan

Issue: Standby Charge Proposal; Peak Loads

Preamble: Understanding the coincidence between TMMC's requirements for back-up support for its load displacement generation and the system peak for the Energy+ system is important for understanding the true costs of providing standby power. This is particularly true for those common assets that are shared amongst various Energy+ customers and that can and do serve multiple customers.

1. Provide actual hourly load data for Energy+'s Cambridge system for each of the years 2016, 2017, and 2018 (YTD) in EXCEL format.

RESPONSE

Please find the excel file attached title "IR-TMMC-14 Hourly Data_Response 1 2 5_2018_08_30" –and refer to Tab titled 'Response 1'.

IR-TMMC-14

INTERROGATORY

Ref: Energy+ Application, Exhibit 2, Appendix 2-1 Distribution System Plan

2. Provide a schedule listing the hourly peak load on Energy+'s Cambridge system, and the date and time (i.e. hour) during which this peak load occurred, for each month of the years 2016, 2017, and 2018 (YTD).

RESPONSE

Please find the excel file attached title "IR-TMMC-14 Hourly Data_Response 1 2 5_2018_08_30

- refer to Tab titled Response 2.

IR-TMMC-14

INTERROGATORY

Ref: Energy+ Application, Exhibit 2, Appendix 2-1 Distribution System Plan

3. Provide the same information as requested in Question 2 for Energy+'s primary distribution system.

RESPONSE

Please refer to the data provided for question 1. Energy+ does not have a complete data set separated for the primary distribution system.

IR-TMMC-14

INTERROGATORY

Ref: Energy+ Application, Exhibit 2, Appendix 2-1 Distribution System Plan

4. Provide the same information as requested in Question 2 for Energy+'s secondary distribution system.

RESPONSE

Please refer to the data provided for question 2. Energy+ does not have a complete data set separated for the secondary distribution system.

IR-TMMC-14

INTERROGATORY

Ref: Energy+ Application, Exhibit 2, Appendix 2-1 Distribution System Plan

5. Provide the energy deliveries by Hydro One to Energy+'s Cambridge system for each of the following hours: (Note: these are the peak hours for TMMC net load.)

Date	Hour Ending
07-Jan-16	13:00
03-Feb-16	11:00
02-Mar-16	2:00
22-Apr-16	12:00
16-May-16	10:00
20-Jun-16	12:00
07-Jul-16	23:00
05-Aug-16	10:00
08-Sep-16	14:00
06-Oct-16	14:00
02-Nov-16	12:00
15-Dec-16	15:00
26-Jan-17	21:00
22-Feb-17	21:00
27-Mar-17	18:00
21-Apr-17	10:00
25-May-17	14:00
12-Jun-17	12:00
12-Jul-17	18:00
22-Aug-17	10:00
26-Sep-17	14:00
23-Oct-17	7:00

Date	Hour Ending
08-Nov-17	8:00
05-Dec-17	8:00
04-Jan-18	12:00
27-Feb-18	13:00
01-Mar-18	11:00
25-Apr-18	10:00
31-May-18	12:00
27-Jun-18	18:00

RESPONSE

Please find the excel file attached title "IR-TMMC-14 Hourly Data_Response 1 2 5_2018_08_30
– refer to Tab titled 'Response 5.