Date Filed: September 28, 2026

Witness: Jared A. Lawrence, Lavelle A. Freeman and Gerhard Walker
Request from: Office of Consumer Counsel

Question:

Refer to Exhibit CLP-AMI-2 at 8, "Figure 1 – Components of AMI Technology".

a. Please describe how the Company intends to leverage AMI to support distribution planning and operations including the following:
   i. Please describe whether the Company intends to leverage AMI to support the development of 8760 profiles at the substation, circuit and nodal level.
   ii. Please describe how the Company intends to use AMI to support real-time operations including the latency at which operational systems such as ADMS and DERMS will receive this data?

Response:

i. The Company intends to leverage AMI to substantially enhance its ongoing efforts to forecast demand at a granular, customer level. The Company has already begun developing customer-level technology adoption propensity models to project the penetration of EVs, heat pumps, and solar across its service territory. Presently, these efforts rely on third-party data and assumed load profiles in Connecticut, because the Company lacks observed data on adoption and usage for these customers. AMI would provide the Company with ground-truth data that is more reflective of the CL&P-specific customer base and service territory, thus meaningfully improving the accuracy of near-term forecasts and the Company's confidence in long-term forecasts.

AMI would improve upon two specific limitations in the Company's current forecasting capability relevant to distribution planning.

First, the Company is presently unable to determine, with a high degree of confidence, which individual customers have already adopted technologies such as EVs or heat pumps. Adoption is inferred through propensity modeling informed by third-party data sources rather than observed directly. AMI interval data would allow the Company to detect the load associated with these technologies at the individual meter, enabling adoption to be identified and validated against the Company's own aggregated system data. This present-day adoption would then be used to forecast future adoption with more accuracy than derived using present-day adoption data.

Second, while the Company has SCADA telemetry, the Company currently has limited data on how these technologies affect granular load curves at a customer level once adopted. Generic or third-party-derived profiles may not accurately reflect the climate, housing types, customer types, rate structures, and adoption patterns specific to the Company's Connecticut service territory. AMI interval data would enable the Company to derive its own localized technology-specific load shapes directly from observed customer usage, vastly improving the accuracy of the inputs used to translate adoption forecasts into load forecasts. Put simply, the Company's ability to forecast the future development of its system is inherently constrained by its limited visibility into the present state of that system, and AMI would directly address that limitation.

With regard to the development of 8760 profiles, please refer to the Company's response to OCC-575[i].

ii. Exhibit CLP-AMI-2 at 8, "Figure 1 – Components of AMI Technology" is intended to show AMI systems and their relationships. The arrows between the head end and meter data management systems and the ADMS and DERMS real time systems are intended to show potential future integrations that are not included in the Company's implementation plan. (Note that the integration with OMS is included in the implementation plan.)

As described in the response to OCC-747[ii], "[t]he Company is currently investigating the technical feasibility, costs, and benefits of an AMI-informed DMS model, including the benefits for voltage optimization. Issues of data latency will be included in this investigation."

Prior Referenced Responses:

[i] OCC-575 Question:

Refer to Exhibit CLP-TSP-2 at 21-22, "Historical System Load Analysis."

a. Please describe the temporal granularity (i.e hourly etc.) of the historical loading information used to inform the Company's load forecast and whether this varies depending on location and data availability.
b. Please describe the percentage of substations and associated feeders with available 8760 hourly profiles. If some or all of the substations and associated feeders do not have 8760 hourly profiles, please describe whether and when the Company plans to have 8760 profiles available.

OCC-575 Response:

a. To create the substation peak forecast the Company relies on the peak hour values which are determined from 15 min SCADA data by substation and at the system level.

b. Please refer to the Company's response to information request OCC-587i. The Company currently does not create 8760 load forecast profiles. Where SCADA data is available1, the Company does have historical 8760 "as measured" data. The Company currently has no plans absent approval of requested resources as presented

in the Exhibit CLP-TSP-3 at 138. Here, the Company has outlined a pathway to develop the resources needed for the full capabilities to provide 8760 data within 18 to 24 months.

[ii] OCC-747 Question:

Refer to Exhibit CLP-AMI-2 at 38, "Once the VVO control system can accept AMI voltage data directly, the Company will develop an integration between the VVO control system and the MDMS, allowing the VVO system to respond to voltage violations (below or above stated thresholds) automatically."

a. Please describe the latency at which the Company's VVO control system will receive AMI data.
b. Please describe how VVO will be coordinated with the DERMS demonstration on centralized voltage management.

OCC-747 Response:

a. As noted in CLP-AMI-2 at 38, the integration between the VVO control system and MDMS has not yet been developed. Accordingly, the latency at which the Company's VVO system will receive AMI data has not yet been determined.

   The Company's VVO control system will be an application known as load voltage management ("LVM") within its distribution management system ("DMS"). The DMS is a real-time application, using real-time telemetry from substations and field devices to provide system operators with as-operated load flow tools. As AMI represents millions of data points, integration of real-time AMI telemetry into DMS/LVM is a technical challenge that will require significant design and testing.

   The Company expects the use of AMI data to support real-time VVO operations will occur in phases. As described in CLP-AMI-2 at 38, the first phase will be operational dashboards using recent (not real-time) AMI data to support assessments of VVO operations for the purpose of improving use of the DMS/LVM for voltage optimization. Second, AMI data will be used to improve the accuracy of load profiles used to inform DMS load allocation. This will increase the accuracy of the DMS load flow, which will improve the functionality of all DMS applications, including LVM. The third step would be the use of real-time AMI telemetry to inform the DMS model. The Company is currently investigating the technical feasibility, costs, and benefits of an AMI-informed DMS model, including the benefits for voltage optimization. Issues of data latency will be included in this investigation.

b. The opportunity to include VVO in the DERMS demonstration (in coordination with the Grid Services Compensation Fund) focuses on the use of DERMS to operate advanced inverters from customer DER, including solar and battery energy storage, via the DERMS to support reactive power management. The objective would be to assess the technical feasibility, costs, and benefits of incorporating customer DER in the Company's VVO operations, using the DMS/LVM tools described above, to test the hypothesis that use of existing DER to manage voltage will result in net cost savings for customers.