DE 17-136
Lost Base Revenue (LBR) Working Group
April 11, 2018
Key Takeaways

Revenues Actually Lost:

Miles Ingram presented slides on "Estimating Customer Peak kW Impacts due to Energy Efficiency Measures"; and, Staff provided a summary of its calculation of kW savings.

Utilities Calculation of kW Savings: The Utilities methodology begins with proposed gross annual kWh savings, by measure, from the 2018 filing and converts to kW savings. This conversion to kW savings is based on a maximum demand factor (MDF), which is derived from Utility actual installations from its tracking systems – i.e., kWh savings x MDF = kW savings. Utilities apply a savings degradation factor of 100 percent (i.e., no savings degradation) and an EPRI coincidence factor (CF) to determine kW demand reduction expected to occur coincident with customer peak. The final steps are to adjust kW savings to reflect:

- "Net-to-Gross Percentage",
- "% In-Service Rate",
- "% Realization Rate",
- "% Installed in Current Year", based on a half-year convention
- "Billing Adjustment to reflect revenue actually est. to be lost, incl. "ratchets"
- "Retirement Adjustment"

Staff Calculation of kW Savings: Staff uses a similar methodology, with several refinements developed over the course of our LBR Working Group meetings: Staff uses DNV-GL coincident factors for energy usage (Utilities use coincident factors for customer peak demand in conjunction with EPRI Load shapes); Staff incorporates an adjustment for "% Savings Degradation, but needs to determine appropriate value;" (Utilities provide a placeholder, but Utilities recommend no adjustment for "% Savings Degradation" at this time); Staff provides for monthly estimates (Utilities provide annual data only). These steps are used by Staff in the same sequence as the Utilities, except that Staff introduces the adjustment for "installs" and "billing adjustments" at the beginning (Utilities insert the adjustment for "installs" and "billing adjustments" in a later step).

Staff's calculation begins with proposed gross annual kWh savings, by measure, from the 2018 filing and converts to "installed" savings based on a half-year convention – i.e., by December 31, 2018, 50% of the annual kWh savings are "installed". Then, based on the DNV-GL Study, September 25, 2015, Staff applies (1) a coincidence factor (CF) for kWh energy usage to determine monthly kWh savings expected to occur (so-called "In-Use" adjustment and (2) a kWh savings degradation factor (for conservatism) based on the lower level of confidence interval as specified in the DNV-GL study). Then, Staff converts these kWh savings to kW savings based on the Utilities' proposed maximum demand factors (MDF). The kW savings are then adjusted to reflect:

- "Net-to-Gross Percentage",
- "% In-Service Rate",
- "% Realization Rate",
- "Retirement Adjustment"

See attached spreadsheet for Staff's calculations.

Savings Degradation Factor:

Utilities believe this cuts both ways – i.e., savings could be increased or decreased. Also, Utilities noted that "realization rates" are used to adjust for differences between tracking system savings and evaluation savings; therefore, it would be a double count to adjust savings further.

Staff offered its comments as follows keeping in mind conservatism:

- Various/sundry metrics, estimates, assumptions are incorporated into EM&V studies and, over time, these estimates are more uncertain.
- Various/sundry metrics, estimates, assumptions reflect professional judgment and are not a science.
- Average service lives may reflect an unintended bias, perhaps skewed toward longer average service lives than actually occur.
- In some instances, DNV-GL estimates of On-Peak and Off-Peak kWh results by end use fall outside the range of its own precision estimates; thus, consideration of an adjustment for DNV-GL estimate might address the DNV-GL result (ref. DNV-GL Study, p. 29).

Average Service Life:

It appears that the recent Large C&I Evaluation by DNV-GL (September 25, 2015) did not include a review of average service lives (Ref. Utilities Homework Assignment). Staff noted that it might be appropriate to update average service lives periodically in order to ensure that measures are properly retired. Staff noted it might not be appropriate to continue with <u>existing</u> average service lives for measures <u>already installed</u> since it might result in extending the future life of measures (and savings) for purposes of LBR. To illustrate, the measure life for LEDs was reduced from 25 years life to 15 year life; and, had the original 25-year life been included in the instant case, it would continue to be included in the calculation of LBR for the duration of the 25-year period. The Utilities explained that the Settlement Agreement in DE 15-137 (EERS Docket) provided for this arrangement; and, absent a rate case, the Utilities believe it is appropriate to continue with it. Based on the above, Staff is concerned about the soundness and accuracy of average service life for purposes of calculating retirements and, in turn, LBR.

Average Distribution Rates (ADR):

We discussed the issue of accuracy with respect to the calculation of the average distribution rate (ADR). Staff noted that, upon reflection, the Settlement Agreement in DE 15-137 indicated that the "overall" average (rather than average by rate class) was the agreed-upon methodology. Therefore, Staff believes it is appropriate to use it for the current triennium. However, Staff noted that it would support the Utilities adoption of more accurate average distribution rates by rate class; and, that Staff plans to pursue using class specific rates in the next triennium.

Ratchets:

Unitil provided an anaylsis that concludes that ratchets have very minor or immaterial impact with respect to reducing LBR. Eversource agreed to provide additional historical points relative to its "Illustration #4, Calculation of Rate LG Billing Demand." Staff will propose a specific request to Liberty to allow analysis of its rachets. Staff will review the information.

Calculation of LBR:

Staff asked for clarification about the final calculation of LBR dollars. Unitil (Deb Jarvis) will provide clarification, including a schedule showing the calculation of the LBR dollars.

Supporting documentation for kW forecasts:

We didn't discuss this due to time constraints, but Staff believes that we need a description and related documentation from each of the Utilities to support the derivation of maximum demand factors (MDFs). In addition to providing this response to this homework assignment, Staff suggests that this documentation be provided in the LBR Report, in the Appendix, along with the Glossary of Terms.

Homework Assignment for the 5/16/2018 Working Group Meeting:

- Modification to Report Format: The Utilities prepare an updated LBR Report incorporating changes discussed at the 4/11/ meeting and any other changes it suggests. Utilities circulate a copy of the updated report a day or two before the next meeting.

- Ratchets: Eversource provides additional historical points relative to its "Illustration #4, Calculation of Rate LG Billing Demand." Also, Liberty provides its ratchet analysis. Staff requests that Liberty's analysis be similar to Unitil's or Eversource's.

- Supporting documentation for Maximum Demand Factors (MDF): The Utilities will provide a brief description and related supporting documentation that shows how maximum demand factors (MDFs) are derived.

- Staff's kW Savings Calculation: Staff provides a recap of its calculation of kW savings, including a comparison of Staff versus Utility calculations.

- LBR Calculation: Unitil clarifies calculation of LBR dollars – i.e., Unitil will review Utility Template for any additional adjustments to kW savings and provide a calculation of LBR based on overall average distribution rates.

- Additional question: Although not requested at the 4-11 2018 LBR Working Group meeting, Staff requests the calculation of the overall LBR dollars, based on the separate methodology approved by the Commission – i.e., LBR for the kWh component and LBR for the kW component.

Glossary of Terms

The Utilities provided an extensive and informative glossary of terms. Staff is still reviewing it, and given the complexity of the subject, Staff finds this glossary to be very informative. Staff suggests that it be incorporated in the Appendix to the LBR Report.

Posting to Commission Website:

Staff will update the Commission's LBR website for the following:

- Key Takeaways
- Q&A Responses from the Utilities
- Miles Ingrams' Slides
- Unitil Ratchet Analysis presented by Karen Asbury, Deb Jarvis
- Utilities' "Comments on Degradation Factors and "Confidence and Precision"
- Eversource's Updated Template
- Derivation of Staff's kW Savings Calculation
- Preliminary LBR Report 4-11-2018, including Glossary of Terms
- Agenda for the 5-16-2018 LBR Working Group Meeting