Questions for February 14, 2018 LBR Meeting

1. "Utility Model":
    - Could Eversource provide an overview to the working group of how the Utility Model calculates Summer kW savings for the C&I Programs for Year 2018? Reference DE 17-136 Discovery, Staff Data Request 1-001 (attached).

The utilities' model allows for two methods for calculating Summer kW savings (differences in black):

a) Quantity **X** Maximum Load Reduction kW "entered" values **X** ISO-NE FCM On Peak Summer Coincidence Factor **X** Net-to-Gross Ratio **X** In-Service Rate **X** Realization Rate **= Summer kW savings**

b) Quantity **X** Gross Annual Savings per Unit (kWh) X Max Demand Factor (Lookup) **X** ISO-NE FCM On Peak Summer Coincidence Factor **X** Net-to-Gross Ratio **X** In-Service Rate **X** Realization Rate **= Summer kW savings**

Maximum Load Reduction kW "entered" values are based on the best source available, such as

- evaluation results (e.g., kW is metered on-site for a sample of measures)
- tracking system (e.g., our tracking system contains kW reductions for each project, based on engineering analysis of actual equipment installed)
- other analyses (e.g., lighting delta-watts – known wattage reduction for measures such as lighting)

Max Demand Factor (Lookup) values are effectively a kW to kWh ratio. The source for these values is the Eversource load forecasting department which used the values to build load shapes for system planning.

ISO-NE FCM On Peak Summer Coincidence Factor. A coincidence factor represents the fraction of the connected load reduction expected to occur at the same time as a particular system peak period. In the case of the ISO-NE FCM On Peak **Summer Coincidence Factor** used in the model, this represents the average demand reduction in the ISO-NE Summer "On Peak" period, from 1:00-5:00 PM on non-holiday weekdays in June July, and August.

Net-to-Gross ratio is the ratio of net savings to gross savings; typically = 1 – free-ridership + spillover. In the utilities' model it is assumed to be 1.0, per the New Hampshire Energy Efficiency Working Group Report, 1999: "Although Group members agree that program designs should attempt to minimize free-riders, the Group concluded that the methodological challenges and associated costs of accurately assessing free-riders no longer justifies the effort required to net these out of cost-effectiveness analyses." The same report allowed inclusion of spillover, but to date the utilities have not measured

spillover nor have they included it in the B/C test. See https://www.puc.nh.gov/Electric/96-150%20%20NH%20Energy%20Efficiency%20Working%20Group%20Final%20Report%20(1999).pdf

In-Service rate is the portion of efficient units sold/rebated that are actually installed. This varies per measure/program, and for C&I projects it is usually 100% as they are typically inspected, and incentives only provided, and counts and savings modified, based on what was actually installed. For other measures such as retail lighting, evaluations have verified the percentage of purchased lightbulbs that customers install and therefore are in service vs those they keep in storage to be installed when other bulbs fail..

Realization rate is the ratio of evaluated savings from an impact evaluation to reported/estimated savings based on savings algorithms (e.g., TRM for deemed savings, engineering analysis for custom project savings, metered vs estimated hours use, etc.). These rates can be applied to kWh and kW. In some cases, realization rates reflect installation/in-service rates, and so the model applies only realization rates or in-service rates, but not both.

- Staff added an additional Tab 1 to Staff Data Requests 1-001 (attached). This Tab 1 summarizes the calculation of Summer kW Savings. Does Eversource believe this high-level summary, or a similar summary, might provide an improvement in transparency; and, one which Eversource might want to consider providing in the future for other C&I programs?

The calculation summary on Tab 1 re-creates calculations directly from the other tabs of the benefit/cost model. The model does not attempt to obscure or hide these calculations, but given its complexity, tracing the calculations from start to finish requires a moderate level of skill in Microsoft Excel to follow the formulas. To the extent that Staff finds this summary useful, the utilities may be able to create a report providing a similar summary for C&I programs.

That said, the benefit/cost model is primarily a planning tool, and as such it reflects the utilities' best estimate of the measures that we will incent and customers will install. The actual measure mix installed, and therefore the actual kW savings we report, could differ from the planning model based on the types of customers that install them, their hours using the energy efficiency measures, and the mix of measures actually installed.

2. "Maximum Load Reduction kW": Could Eversource explain to the working group how the Model converts 2018 annual MWh savings (ref. C&I Large Business Energy Solutions Program, 35,375.7 Annual MWh) to 2018 Summer kW Savings 3,702.7 kW (Filing, Bates 217). It would be helpful if you could explain how the following factors/percentages are used in the Model:

   - Maximum Demand Factor (Lookup) – See answer above.
   - Maximum Load Reduction kW (entered values) – See answer above.

- ISO-NE FCM On Peak Summer Coincident Percentage – See answer above.
- Net to Gross Percentage – See answer above.
- In-Service Rate – See answer above.
- kW summer Realization Rate – See answer above.
- Explain how "expired" kW demand savings are removed from the LBR calculation – Eversource removes savings once the end of a measure's life is reached. Per Bates 237, the shortest measure life in the Large Business Energy Solutions portfolio is Retrofit Occupancy Sensors, with a 9 year measure life. Therefore, retirement adjustments for retrofit occupancy sensors installed in 2018 would not occur until 2027. Measure lives are based on evaluation results, manufacturer specifications, and program experience.

3. "kW Savings for LBR": Could Eversource explain to the working group how the Summer kW demand savings, calculated by the Model, is included in the calculation of LBR.

   kW savings are not included in in the utilities' calculation of LBR for 2018. Consistent with the settlement agreements approved in DE 14-216, DE 15-137, and DE 17-136, the 2018 LBR is calculated using kWh savings multiplied by the average distribution rate. The average distribution rate is calculated by taking the kWh and kW revenues and dividing by kWh sales. These average Distribution Rates are then multiplied by kWh savings to arrive at the LBR.

4. Eversource C&I customers pay a kW demand charge as well as a per kWh energy charge; thus, Eversource could be losing revenue attributable to EE programs because of both kW and kWh reductions. With respect to Eversource kW demand reductions, what portion or percentage of these kW demand reductions results in lost revenue? How are these values determined?

   The installation of energy efficiency measures results in reductions in both maximum demand and total energy consumed during a billing cycle. Commercial and industrial customers who install energy efficiency measures do so with a desire to reduce their overall energy consumption and their maximum demand as this would result in both lower demand charges and lower energy charges. Effectively all kW demand reduction associated with the energy efficiency measures installed would result in lost revenue. Please refer to the response to 2 above for how the KW savings values are determined.

5. Average Distribution Rates":
   a. Could Eversource explain how average distribution rates for kW demand charges are calculated?

      The average distribution demand charge revenue is calculated by multiplying the annual billing demand for each rate schedule by the applicable demand charges for each rate schedule. This revenue is included in the calculation of the average distribution rate as

described in the response to question 3. Eversource NH's Summary of Rates can be found here (https://www.eversource.com/content/docs/default-source/rates-tariffs/nh-electric-rates.pdf)

b. Could Eversource provide a calculation of average distribution rates? Please explain any adjustments – i.e., such as the adjustment to exclude Eversource Rate B from the calculation.

Attached is the calculation of the average distribution rates included in the calculation of LBR for 2018, adjusted to remove the demand and kilowatt-hour quantities associated with customers served under Eversource's Backup Service Rate B at the 115-kV level. These are customers connected to the transmission system. Since Eversource does not provide distribution service, both quantities should be removed from the calculation of lost distribution revenue.


Eversource Avg Dist Rate - Update for W

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c. Could Eversource explain the derivation of billing determinants used for purposes of calculating average distribution rates? The filing at page 288 simply indicates "company forecast".

Per Bates page 250 of the filing in DE 17-136, Eversource utilized billing determinants for the twelve-month period ending December 2015 to calculate the average distribution rates. Page 288 is a reference to a Liberty Utilities attachment. It appears that Liberty Utilities also utilized billing determinants for the twelve-month period ending December 2015.