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July24, 2020

Via Electronic Mail

Debra A. Howland, Executive
Director NH Public Utilities
Commission
21 S. Fruit Street, Suite 10
Concord, NH 03301-2429

RE: IR 20-004, ELECTRIC DISTRIBUTION UTILITIES: Investigation into Rate Design Standards for Electric Vehicle Charging Stations and Electric Vehicle Time of Day Rates; Supplemental Comments of the City of Lebanon following hearing.

Dear Ms. Howland,

On behalf of the City of Lebanon I offer the following comments to supplement my remarks made at the hearing on July 14. When I was expressing the urgency to enable more cost causation based rates for Level 3 DC fast charging stations and describing the City's work with Electrify America on a site here in Lebanon, I forgot to mention just how large of an impact such a facility could have on a single circuit on the distribution grid. The facility Electrify America is planning here would be 4 charging spots, each able to draw up to 300 kW, so overall the peak demand could be 1.2 MW, a large amount of new demand for a single small footprint facility that may not have all that much overall load at first. With an option to expand to 5 charging spots, their peak demand could be 1.5 MW.

As I mentioned at the hearing, they would consider installing some amount of on-site battery storage for load shifting and smoothing if electric rates provided financial incentives for such. They should fit into the largest customer class which means they will have hourly interval metering and be assigned capacity tags after the first summer of operation based on actual demand at hour of annual system peak. However, that alone is unlikely to justify significant storage investment.

The load shape of such a charging station is unlikely to closely resemble the G1 customer

class average load shape for purposes of allocating transmission charges on a per kWh basis. A more appropriate rate and price signal would be to base their allocation of transmission charges on their share of monthly coincident peak demand, essentially passing through the wholesale level allocation of transmission charges. This can only be done after the fact, so the first month or two could be based on the G1 class kWh transmission charge, before moving to a lagging pass through allocation of actual share of transmission costs, ensuring that these costs are not shifted to other customers, which is quite possible if their coincident peak demand turns out to be large compared with total kWh consumed.

Those two rate components (energy with capacity tag and transmission pass through) alone may be enough to support an economic case for on-site storage to some degree, especially since Liberty will be publicly announcing when they forecast monthly coincident peak demand for avoidance of transmission charges as part of their battery pilot, so E.A. could use that to help manage their use of battery storage. Billing for such an approach may have to be done manually at first, but Liberty will be tracking these monthly transmission charges and how much their dispatch of battery storage in their pilot helps curtail load and costs at these monthly coincident peaks, so all the data to provide such a cost causation based transmission rate should be readily available for what is likely to be a single or very few such Level 3 DC fast charging facilities.

With regard to the ratio between peak and off-peak rates, while Liberty's summer rates have a spread of much greater than 3:1 for the summer period, that is not the case with the winter period, where the ratio would have been 2.6:1 based on their original rate proposal in DE 16-067 ($0.35569 vs. $0.12978). This is largely a function of the fact that loads and wholesale electricity prices on the margin (real time prices) do not drop off as much during the night in the winter compared with the summer months. My point is simply that while having a spread of 3 to 1 or greater between peak and off-peak periods in a TOU rate is a desirable goal, it should not be a requirement that prevails over underlying cost causation as the principal driver of such rate design.

Thank you for the opportunity to provide these supplemental comments.

Yours truly,

Clifton Below

Clifton Below,
Assistant Mayor, City of Lebanon