

ORIGINAL	
P.U.C. Case No.	DE 09-035
Exhibit No.	#30
Witness	Panel 2

Public Service Company of New Hampshire Data Request STAFF-04

Hampshire

Docket No. DE 09-035

Dated: 10/23/2009

Q-STAFF-001

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Witness:

Stephen R. Hall, Gilbert E. Gelineau Jr

Request from:

New Hampshire Public Utilities Commission Staff

Question:

Regarding LED outdoor lighting: Currently, if a customer installs LED outdoor lighting, would that customer receive service under Rate OL or Rate EOL? Please explain. Has PSNH had any customer inquiries regarding the installation and/or billing for LED lighting? If so, please describe how PSNH responds to such inquiries. Considering the different characteristics of LED lighting, should a new rate be developed? Please explain. If a new rate should be developed, how would PSNH go about doing that? Please describe in detail. Please provide any information PSNH has regarding comparison of the characteristics of the various outdoor lighting technologies (lumens, electricity usage, application, cost, etc.) including LED.

Response:

LED outdoor lights are not currently offered under PSNH's unmetered Outdoor Lighting Rate OL or PSNH's Energy-Efficient Outdoor Lighting Rate EOL. Therefore, if a customer installs LED outdoor lights, the customer would either wire the outdoor lights to an existing electric service meter location or a new meter location would be installed to provide electric service to the lights. If a new meter location is installed, the customer would receive service under PSNH's General Delivery Service Rate G or Primary General Delivery Service Rate GV.

PSNH has received numerous customer inquiries about LED outdoor lighting. PSNH responds to these inquiries by first indicating that LED lighting is not currently offered under PSNH's unmetered Outdoor Lighting Rate OL or Energy-Efficient Outdoor Lighting Rate EOL. Therefore, if a customer installs LED lighting, the demand and usage of the lights must be metered and billed under the appropriate delivery service rate. In addition, PSNH indicates that although it is supportive of this technology, it is currently premature for PSNH to offer LED lights under its unmetered outdoor lighting rates (Rate OL and Rate EOL), because there is not currently a standardized rating system for LED outdoor lighting products which makes it impossible for utilities to identify quality products. Without a standardized rating system or quality stamp such as the US DOE / US EPA's EnergyStar, there is a much higher risk of installing inferior lighting products. In addition, PSNH informs the customer that the cost of LED lights is significantly higher than the metal halide and high pressure sodium lights currently offered by PSNH, which will limit the savings the customer may perceive will occur with LED outdoor lights. PSNH has provided rebates for a few LED lighting retrofit projects that have passed the cost-benefit test used for custom rebates under PSNH's CORE Energy Efficiency Programs. At this time, the majority of LED projects submitted for rebates have failed the cost-benefit test due to high cost or low kilowatt-hour savings or both.

In PSNH's opinion, it is currently premature to develop an LED outdoor light rate option. PSNH currently offers its customers a choice of metal halide (white light) or high pressure sodium (yellowish light) for any new outdoor lighting installations. These lights are considered long-life sources of light with average lifetime hours between 15,000 and 24,000 hours. The lifetime of LED outdoor lights has been questioned by the US DOE and the Lighting Research Center at

RPI. Initial evaluation by the US DOE stated that 21 of the first 24 LED outdoor lights tested failed to live up to the claims on their marketing materials.

Because of these initial results, additional testing is currently underway. In addition, the efficacy ratings (lumen output per wattage input or LPW) of metal halide and high pressure sodium lights are very high (80 to 130 LPW). Currently, the best LED outdoor lights have LPW ratings between 46 and 80 LPW. (See attached chart for a comparison of LPW ratings of high pressure sodium, metal halide, mercury vapor and incandescent lights.) LED luminaires are also very expensive in comparison to other lighting choices. LED roadway lights are priced in the range of \$800 to \$1,400 for the luminaire only. Metal halide and high pressure sodium luminaires are priced in the range of \$70 to \$100 (excluding the 1,000 watt size which is priced in the range of \$365 to \$448). The higher price of LED outdoor lighting coupled with the fact that there is not currently a standardized rating system or symbol of quality for LED outdoor lights, leads PSNH to believe that it is premature to offer an LED outdoor lighting rate at this time. Offering a rate at this time could lead to PSNH's customers investing in a very expensive light that may not last, which could hurt the long-term market transformation into LEDs as was the case with compact fluorescent lamps (CFL) in the early 1980s. Residential and commercial customers purchased CFL and the bulbs either didn't fit in the lamp, warmed up too slowly or the color was of poor quality. As a result, these customers did not purchase another CFL for many years. Finally, many lighting companies are producing LED luminaires in the 70 to 85 watt range. These LED luminaires would be used as replacements for either the 175 watt metal halide or 250 watt high pressure sodium lights used in many places throughout the country. However, the wattage of the majority of the street lights used by cities and towns in PSNH's service area is very efficient (50, 70 or 100 watts). Low wattage LEDs (30 to 60 watts) do not provide enough of a savings to justify the conversion cost from 50, 70 or 100 watt high pressure sodium or metal halide lights to LEDs.

PSNH expects to develop an LED outdoor lighting rate in the future when there is a standard rating system available or the manufacturers extend their warranties to meet the lifetime stated in their marketing materials, and when the technology is deemed cost-justified or competitive when compared to metal halide and high pressure sodium lights.

Light Source Efficacy (Lumen Output per Wattage Input)

