



July 13, 2021

Lisa A. Skumatz, Ph.D.
Skumatz Economic Research Associates (SERA)
762 Eldorado Drive
Superior, CO 80027

RE: CT 1931-1 Industry Standard Practice: Boilers and Furnaces

Dear Dr. Skumatz,

Eversource Energy ("Eversource") is pleased to submit these written comments regarding the presentation for Phase 1 of CT X1931-4 Lighting and Controls (Residential & Commercial) ("Draft Presentation") submitted June 23, 2021, by DNV("Evaluator"). Eversource received the Review Draft Presentation on June 25, 2021, with a request to provide comments by July 16, 2021. Per the Energy Efficiency Board Evaluation Road Map Process, these comments are for consideration for inclusion in the Final Report.

The main objective of this study was to create entries for new residential and commercial Advanced Lighting Controls measures to be incorporated into the PSD, supported by secondary research. Phase 1 of this study focused on literature for or new residential and commercial Advanced Lighting Controls. Phase 2 will be completed in the fall of 2021, resulting in expert interviews, market actor interviews, and aggregate analysis of existing data.

General Comments on Draft Report Findings

Eversource appreciates the Evaluator's efforts to conduct a comprehensive, thorough literature review on Advanced Lighting Controls. Eversource anticipates incorporating the

new information provided in this presentation to add the proposed new measures to the CT PSD.

Comments on Methodology

Phase 1 of this study involved a literature review in developing new residential and commercial Advanced Lighting Controls. The Evaluator engaged experts to identify available literature and data sources to review. The literature review included four sources of reference in this area of new technologies, including:

- DLC and Northwest Energy Efficiency Alliance (NEEA), "Energy Savings from Networked Lighting Control (NLC) Systems with and without LLLC," Energy Solutions, Sept 24, 2020.
- Navigant. DOE Solid-State Lighting Program. Energy Savings Forecast of Solid-State Lighting in General Illumination Applications. December 2019.
- NREL, "Chapter 3: Commercial and Industrial Lighting Controls Evaluation Protocol; The Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measures". Sept 2017.
- Williams, A., B. Atkinson, K. Garesi, E. Page, and F. Rubinstein. 2012. "Lighting Controls in Commercial Buildings." The Journal of the Illuminating Engineering Society of North America 8 (3): 161-180.

Eversource finds the study methodology to be appropriate.

Comments and Questions

Eversource generally agrees with the Draft Presentation's recommendations but has the following technical comments and questions related to the PSD measures technical pages provided as an attachment to the presentation.

Residential

- The proposed 15 years of lifetime for bulbs seems high compared to the existing values existing in the 2021 PSD. (Table 4-F Nomenclature)

- Eversource requests a default value for Watt Controlled for unknown (mainly retail /midstream). (Table 4-F Nomenclature)
- The proposed ten years of lifetime for occupancy sensor doesn't align with the measure life of bulbs. (Table 4-I: Nomenclature).
- Eversource requires clarification on the units (Watts or kW) in Table 4-J: Default Wattage Assumption. Also, the value of 0.230 for Connected Unit kWh seems high for controlled lamps in one space.

Commercial

- Eversource requires clarification on how the provided measures will apply in Exterior Lighting, such as parking lot and street lighting.
- Eversource ask if the study could identify factors for fixtures with controls for CI upstream.
- The description under the lifetime item should reflect "fixtures" not "bulb." (Table 2-H: Nomenclature).
- Also, it needs to align measures life with fixture ML and with EUL and RUL study. (Table 2-H: Nomenclature; Table 3-B: Inputs).
- Eversource requires clarification on what the saving factor would be for a combination of measures. E.g., the combination of occupancy sensors with high-end trim or daylight dimming with high-end trim. (Table 2-I: Energy Savings Factor by Lighting Control Type)

Thank you for the opportunity to provide comments.

Sincerely,

David Roman-Ubeda

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