

UIL Holdings Corporation
157 Church Street
P.O. Box 1564
New Haven, CT 06506



VIA ELECTRONIC MAIL AND FedEx

May 15, 2017

Mr. Robert Stein
Chairman
The Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: **Docket No. F-2016/2017** – Connecticut Siting Council Review of the Ten Year Forecast
of Connecticut Electric Loads and Resources

Dear Chairman Stein:

The United Illuminating Company (the “Company”) respectfully submits to the Connecticut Siting Council (“Council”) an original and 20 copies of the Company’s response to the Council’s First Set of Interrogatories in the above captioned proceeding.

Please do not hesitate to contact me at 203.499.2864 if you have any questions regarding this filing.

Sincerely,

J. Morrissey

James R. Morrissey
Attorney
UIL Holdings Corporation
Counsel for The United Illuminating Company

CSC-001

Company: The United Illuminating Company

**Witness: Mark Colca
Robin Lyons**

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CSC-001 Q: Provide the predicted (not actual) 50/50 forecast loads for 2007 through 2016 from The United Illuminating Company's (UI) 2007 Forecast of Loads and Resources (2007 UI Forecast).

CSC-001 A: The weather adjusted annual energy sales and 50/50 forecast loads for 2007 through 2016 from UI's 2007 forecast report are as follows:

Year	Sales (Gwh)	Load (MW)
2007	6,036	1,384
2008	6,112	1,421
2009	6,157	1,443
2010	6,219	1,463
2011	6,281	1,475
2012	6,359	1,480
2013	6,406	1,485
2014	6,471	1,490
2015	6,536	1,495
2016	6,617	1,501

CSC-002

Company: The United Illuminating Company

Witness: Robin Lyons

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Date Submitted: May 15, 2017

CSC-002 Q: Explain the methodology of how historical actual peak load data are converted to weather-normalized historical peak load data.

CSC-002 A: The historic peak loads are normalized using regression models that relate daily MW System Peak Loads to the respective daily 12-hour average (prior to the peak hour) temperature humidity index (THI) for the period June 1 through September 30. THI is an index to determine the effect of summer conditions on human comfort combining temperature and humidity. Only THI observations greater than 72 are used in each year's normalization equation.

The peak normalization develops a "90/10" System Peak Load normalized value, as well as a "most likely" or "50/50" value. Hourly system peak data are analyzed to determine the hours of the day that the UI system most frequently reached its peak load. The analysis showed that UI's system peaks typically occurred between 3:00 pm and 5:00 pm during the past ten-years. Therefore, the 3:00 pm through 5:00 pm daily peak observations are typically used to calculate the "50/50" and "90/10" 12-hour average THI weather normal value.

In 2016, the normalization of weekday system peak loads with corresponding 12-hour average THI's greater than 72 THI were normalized by regressing the 12-hour average THI for the period from June 1 - September 30. The system peak normalization methodology requires the normalization of all peak producing weekdays, excluding holidays (i.e., all non-holiday weekdays with 12 hour average THI's greater than 72 THI). The 2016 summer peaks yielded a normalized peak of 1,449 MW at the 4:00 PM design THI of 82.2 on August 12, 2016.

The models developed for the respective year and hour are used to weather normalize the historic actual peak load values to a "most likely" and "extreme" weather condition.

CSC-003

Company: The United Illuminating Company

**Witness: Alfred Mascola
Jane Lano**

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Date Submitted: May 15, 2017

CSC-003 Q: Provide a break-down of the projected number of megawatts (MW) of load reduction for UI's territory due to conservation, load response/load management, and distributed generation (if applicable) for each year from 2017 through 2026. If possible, also include a similar estimated break-down by megawatt-hours or gigawatt-hours.

CSC-003 A: The breakdowns are shown in the following table.

	Load Reduction (MW)				Annual Sales Reductions (Gwhrs)	
	Annual Incremental CLM	Annual Incremental DG	Annual Cumulative CLM*	Annual Cumulative DG*	Annual Incremental CLM	Annual Incremental DG
2017	8.2	18.1	8.4	18.6	77	37
2018	9.3	2.4	18.0	21.2	90	26
2019	8.9	0.6	27.2	21.7	87	18
2020	8.5		36.0	21.7	83	
2021	8.4		44.6	21.7	82	
2022	8.3		53.1	21.7	80	
2023	8.2		61.5	21.7	79	
2024	8.1		69.8	21.7	78	
2025	8.0		78.1	21.7	77	
2026	7.9		86.2	21.7	77	

*"grossed up" 2.83% for line losses

CSC-004

Company: The United Illuminating Company

Witness: Robin Lyons

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Date Submitted: May 15, 2017

CSC-004 Q: Provide any underlying assumptions associated with the distributed generation (DG) included in the 2017 UI Forecast.

CSC-004 A: As in previous years, the 2017 UI forecast includes distributed generation (DG) units that were on-line and part of the historical data set used to develop UI's forecast for sales and peak load. DG units collectively reduce energy and peak demand forecasts.

In order to incorporate the new DG resources in its forecasting, UI regularly monitors the distributed generation resources that are planned for the UI service territory. These DG units vary from small solar panels on residences to multi-megawatt combined heat and power generators installed at commercial and industrial facilities. UI becomes aware of any new DG units expecting to come on-line through the interconnection application process or through the public policy programs; e.g. Low & Zero Emission Renewable Energy Credit (LREC/ZREC) and the Connecticut Green Bank (CGB) programs. The cumulative reduction in the system peak load forecast due to DG is projected to be 18.6 MW in 2017 and 21.7 MW by 2019 (based on projects totaling 21.1 MW grossed-up to account for distribution losses). An enhancement was made to the DG forecast in 2015 to account for differences in capacity factors for various technologies. For example, new DG associated with solar was adjusted for an assumed capacity factor at the time of the peak load.

With regard to the sales forecast, DG associated with public policy programs is included in the sales forecasts. Estimates of the impact to sales were developed from the specifications provided by the bidders of the rounds 1-5 LREC/ZREC winning bids, and rounds 1- 4 small ZREC tariff awards. As a result, the development of the sales forecast includes reduction in sales by 37, 26 and 18 GWhr of energy in 2017, 2018 and 2019, respectively, due to the impact of incremental DG.