

May 15, 2017

Ms. Melanie Bachman  
Acting Executive Director  
Connecticut Siting Council  
Ten Franklin Square  
New Britain, CT 06051

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

Dear Ms. Bachman:

This letter provides the response to requests for the information listed below.

Response to CSC-01 Interrogatories dated 04/10/2017  
CSC-001, 002, 003, 004, 005, 006

Very truly yours,

Christopher R. Bernard  
Manager  
Regulatory Policy & Strategy, CT  
As Agent for CL&P  
dba EversourceEnergy

cc: Service List

**Witness:** Frances R. Berger  
**Request from:** Connecticut Siting Council

**Question:**

Provide the predicted (not actual) 50/50 forecast loads for 2007 through 2016 from The Connecticut Light and Power Company (CL&P) d/b/a Eversource Energy's (Eversource) 2007 Forecast of Loads and Resources. Also provide Eversource's weather-normalized historical peak loads for 2007 through 2011.

**Response:**

The table below shows the predicted 50/50 forecast loads and the weather normalized history.

Predicted and Weather Normalized Annual Peak  
Historical Loads  
CL&P d/b/a Eversource Energy

Year	Predicted (MW)	Normal (MW)
2007	5,258	5,209
2008	4,923	5,184
2009	4,934	4,935
2010	5,362	4,994
2011	5,610	5,279
2012	5,532	5,039
2013	5,358	5,202
2014	4,727	5,002
2015	4,903	5,034
2016	5,070	4,953

**Witness:** Frances R. Berger  
**Request from:** Connecticut Siting Council

**Question:**

Explain the methodology of how historical actual peak load data is converted to weather-normalized historical peak load data.

**Response:**

Historical actual peak load data is converted to weather-normalized peaks by multiplying weather factors (developed from an historical analysis of MW load per degree day), times the difference between actual and normal temperatures, and adding or subtracting this product to or from the historic peak to yield the estimated normalized peak load.

Temperature differences from normal are calculated for three weather variables: mean daily temperature for the peak day, mean daily temperature for the day before the peak day and a THI (Temperature Humidity Index).

Normal weather is defined as the 30-year period from 1986-2015.

An example of the calculation for 2016 is below:

Actual Peak	4,948 MW	Weather Variables	Weather Factor
		Temperature (Normal - Actual)	MW/Degree * Factor
Peak Day	+46 MW	=(83-82)	* 46.0
Day Before	+51 MW	=(82-80)	* 25.4
THI	-92 MW	=(83-85)	* 45.5
Normalized	4,953 MW		

**CL&P dba Eversource Energy**  
**Docket No. F-2016/2017**

**Data Request CSC-01**  
**Dated: 04/10/2017**  
**Q-CSC-003**  
**Page 1 of 1**

**Witness: Frances R. Berger**  
**Request from: Connecticut Siting Council**

**Question:**

On page 8 of the 2017 Eversource Forecast, Eversource notes that, "This forecast includes explicit additions to the electrical energy output requirements due to electric vehicles (EVs). It does not include any additions to the peak forecast since it assumed that the majority of the charging will be done off-peak." Provide any assumptions made regarding electrical energy consumption by electric vehicles (EV). Include the numbers and types of EVs assumed, projected number of vehicles in use, power and energy consumption per vehicle associated with charging, etc.

**Response:**

The table below shows the forecasted number of new incremental electric vehicles, forecasted annual energy consumption, and the average use per electric vehicle for all plug-in electric vehicles (PEV).

## 2017 Forecast Electric Vehicle Assumptions

CL&P d/b/a Eversource Energy

Year	Incremental Plug-in Electric Vehicles (PEV)	Incremental PEV Load Additions	Average Load per vehicle
	# of Vehicles	MWH	MWH
2017	1,736	5,940	3.4
2018	2,591	8,611	3.3
2019	3,354	11,003	3.3
2020	3,981	13,365	3.4
2021	4,727	15,090	3.2
2022	5,530	16,730	3.0
2023	6,227	17,620	2.8
2024	6,969	19,352	2.8
2025	7,833	21,441	2.7
2026	8,797	23,443	2.7

**CL&P dba Eversource Energy**  
**Docket No. F-2016/2017**

**Data Request CSC-01**  
**Dated: 04/10/2017**  
**Q-CSC-004**  
**Page 1 of 1**

**Witness: Frances R. Berger**  
**Request from: Connecticut Siting Council**

**Question:**

Is it correct to say that there are no gigawatt-hours (GWh) reported from the ISO-NE's Load Response Program (ISOLRP) because the limited number of hours that the ISOLRP is in use results in a negligible energy savings?

**Response:**

Correct. In the forecast, CL&P d/b/a Eversource Energy assumed that Commercial and Industrial customers who are in the ISOLRP will only be called to curtail load a few times each year so the impact on energy output is minimal.

**CL&P dba Eversource Energy**  
**Docket No. F-2016/2017**

**Data Request CSC-01**  
**Dated: 04/10/2017**  
**Q-CSC-005**  
**Page 1 of 1**

**Witness: Frances R. Berger**  
**Request from: Connecticut Siting Council**

**Question:**

Provide any underlying assumptions associated with distributed generation (DG) implicitly included in Table 2-2 of the 2017 Eversource Forecast. Is solar photovoltaic (solar PV) the only type of DG considered in Eversource's 2017 Forecast? Explain.

**Response:**

The distributed generation (DG) provided in Table 2-2 includes explicit reductions to the CL&P electrical energy output requirements due to solar installations stemming from the Low Emission Renewable Energy Credits ("LREC") / Zero Emission Renewable Energy Credits ("ZREC") program and the Connecticut Green Bank residential program. Other types of DG are implicitly included in the forecast to the extent they are captured in the historical data utilized by the econometric forecasting models.

**Witness:** Allen W. Scarfone  
**Request from:** Connecticut Siting Council

**Question:**

For Tables 4-1 (Transmission Projects) and 4-2 (Substation Projects), define the terms "under construction," "concept," "planned," and "proposed."

**Response:**

Tables 4-1 (Transmission Projects) and 4-2 (Substation Projects) use the following ISO-NE defined terms:

**Under Construction:** The project has received necessary approvals and a significant level of engineering or construction is underway.

**Planned:** The project will include a Transmission upgrade that has been approved by ISO-NE.

**Proposed:** The project will include a regulated transmission solution that has been proposed in response to a specific Needs Assessment on the ISO-NE Regional System Plan and has been evaluated or further defined and developed in a Solutions Study and communicated to the ISO-NE Planning Advisory Committee.

**Concept:** Shall include a transmission project that is being considered by its proponent as a potential solution to meet a need identified by ISO-NE in a Needs Assessment or the ISO-NE Regional System Plan, but for which there is little or no analysis available to support the transmission project.