2015 Forecast of Loads and Resources

for the Period 2015-2024

March 2, 2015

List of Acronyms

"ACEEE"	American Council for an Energy Efficiency Economy
"C&LM"	Conservation and Load Management
"CAGR"	Compound Annual Growth Rate
"CAM"	Cost Adjustment Mechanism
"CCEF"	Connecticut Clean Energy Fund
"CCRP"	Central Connecticut Reliability Fund
"CEAB"	Connecticut Energy Advisory Board
"CES"	Comprehensive Energy Strategy
"CSC"	Connecticut Siting Council
"CMEEC"	Connecticut Municipal Electric Energy Cooperative, Inc.
"DEEP"	Department of Energy and Environmental Protection
"DOE"	Department of Energy
"DPUC"	Department of Public Utility Control
"DG"	Distributed Generation
"EEB"	Energy Efficiency Board
"EDC"	Electric Distribution Company
"EIPC"	Eastern Interconnection Planning Collaborative
"EIS"	Environmental Impact Statement
"EPA"	Energy Purchase Agreement
"ERO"	Electric Reliability Organization
"EV"	Electric Vehicles
"FCA"	ISO-NE Forward Capacity Auction
"FCM"	ISO-NE Forward Capacity Market
"FERC"	Federal Energy Regulatory Commission
"FLR"	Forecast of Loads and Resources
"GHCC"	Greater Hartford/Central Connecticut
"IPR"	Intermittent Power Resource
"IRP"	Integrated Resource Plan
"ISD"	In-Service Date
"ISO-NE"	Independent System Operator – New England
"KW"	Kilowatt or 1,000 Watts
"LDC"	Local Distribution Companies
"LREC"	Low Emission Renewable Energy Credits

List of Acronyms, Continued

"MRA"	Market Resource Alternative
"MW"	Megawatt or 1,000,000 Watts
"NEEWS"	New England East – West Solution
"NERC"	North American Electric Reliability Corporation
"NPCC"	Northeast Power Coordinating Council
"NPT"	Northern Pass Transmission Project
"NTA"	Non-Transmission Alternative
"OATT"	Open-Access Transmission Tariff
"PA 05-01"	Public Act 05-01, An Act Concerning Energy Independence
"PA 07-242"	Public Act 07-242, An Act concerning Electricity and Energy Efficiency
"PA 11-80"	Public Act 11-80, An Act Concerning the Establishment of the Department of Energy and Environmental Protection ("DEEP")
"PA 13-298"	Public Act 13-298, An Act Concerning Implementation of Connecticut's Comprehensive Strategy and Various Revision to the Energy Statues
"PAC"	Planning Advisory Committee
"PURA"	Public Utility Regulatory Authority
"REC"	Renewable Energy Certificate
"RGGI"	Regional Greenhouse Gas Initiative
"ROFR"	Federal First Refusal
"RPS"	Renewable Portfolio Standards
"RSP"	ISO-NE's Regional System Plan
"SWCT"	ISO-NE Southwest Connecticut Zone
"SWCT WG"	The Southwest Connecticut Working Group
"TO"	Transmission Owners
"UI"	The United Illuminating Company
"WMECO"	Western Massachusetts Electric Company
"ZREC"	Zero Emission Renewable Energy Credit

Table of Contents

Chapter 1: INTRODUCTION

1.1 Overview of Eversource's 2015 Forecast of Loads and Resources Report

The Connecticut Light & Power Company doing business as Eversource Energy ("Eversource") is a company engaged in electric distribution and transmission services in Connecticut, as defined in Conn. Gen. Stat. §16-1. As such, Eversource has prepared this Ten-Year FLR pursuant to Conn. Gen. Stat. §16-50r. Eversource has provided an annual FLR to the CSC for approximately forty years. This 2015 FLR includes the following information[1]:

1. A tabulation of the peak loads, resources, and margins for each of the next ten years, using CL&P's 50/50 financial forecasting methodology.
2. Data on energy use and peak loads for the five preceding calendar years, including data on the energy savings provided by Eversource's energy efficiency programs during that period.
3. A list of planned transmission lines on which proposed route reviews are being undertaken or for which certificate applications have already been filed.

1.2 Energy and Peak Demand Forecasts

There is uncertainty in any forecast, and weather can especially have a large impact on the realization of any forecast. Eversource's electric energy usage is expected to decrease by a weather- normalized CAGR of 0.1% per year, and peak demand is expected to grow by a weather-normalized CAGR of 0.7% per year over the 10-year forecast period from 2014 through 2024.

While Eversource is providing this forecast which was developed for financial forecasting purposes, Eversource uses ISO-NE's load forecast for transmission planning purposes. Further discussion of Eversource's forecast is provided in Chapter 2.

1.3 Evolving Load and Resource Influences

As part of the state's restructuring of the electric industry, which began in 1998, Eversource sold its generation assets, while remaining a Connecticut electric distribution and transmission company. Since that time, the state has enacted a number of policies and programs which affect the developing wholesale electric market in the region.

State-Mandated Integrated Resource Planning

In 2007, the Connecticut legislature passed PA 07-242, *An Act Concerning Electricity and Energy Efficiency,* directing the annual development of an IRP for Connecticut. In 2011, the Connecticut legislature passed PA 11-80, *An Act Concerning the Establishment of the Department of Energy and Environmental Protection and Planning*

[1] Pursuant to discussions with CSC staff, Eversource has removed the previously provided Table 2-3: Existing Customer Owned Facilities 1 MW and Above Providing Generation to the Eversource System from this filing.

for Connecticut's Energy Future. PA 11-80 calls for DEEP to create an IRP by January 1, 2012 and biennially thereafter, in consultation with CEAB[2] and the EDCs.

On December 11, 2014, DEEP issued its Draft 2014 IRP for Connecticut presenting a comprehensive plan for improving Connecticut's electric energy future, and subsequently held a technical session and public hearing. DEEP is scheduled to issue its Final 2014 IRP on March 11, 2015.

ISO-NE Wholesale Electric Markets

Section 2.2 of this report discusses the results of the most recent forward capacity auction in the ISO-NE wholesale electricity market.

Energy Efficiency Programs

For many years, Eversource has been developing and implementing nationally recognized Energy Efficiency programs for its customers to help them control their energy usage, save money and reduce overall electric consumption in the state. These successful programs are primarily funded by a per kWh energy efficiency charge on customer bills, as well as revenues received from RGGI auctions and revenue from the ISO New England Forward Capacity Market.

The 2015 Energy Efficiency Plan comports with PA 11-80, and is projected to deliver an economic benefit to customers of approximately $715 million to Connecticut in 2015. The current Energy Efficiency Plan represents a continuation of integrating the energy efficiency plans for both the EDCs and Natural Gas LDCs, to benefit electric and gas customers and to reduce duplicative efforts. Further discussion of Eversource's energy efficiency program forecast can be found in Chapter 3.

Transmission Planning

Eversource plans, builds and operates transmission infrastructure with a long-term vision to safely and reliably deliver power to its customers under a wide variety of supply and demand conditions. A discussion of Eversource's transmission forecast can be found in Chapter 4. The key topics include:

- Eversource's transmission facilities are part of the New England regional grid and must be designed, operated and maintained to ensure compliance with mandatory NERC reliability standards.
- Eversource is proposing new 345-kV and 115-kV transmission projects to strengthen the Connecticut transmission system.
- The New England transmission system is an important enabler of competitive markets and the region's efforts to meet environmental objectives and mandates.

[2] The CEAB was dissolved as of June 6, 2014. *See* General Statutes § 16a-3, repealed by Public Act 14-94, § 82.

Chapter 2: FORECAST OF LOADS AND RESOURCES

Chapter Highlights

- Electric energy usage is expected to decrease by 0.1% per year over the 10-year forecast period; however, peak demand is expected to increase by 0.7% per year during this time.

- While Eversource uses its own Reference Plan Forecast for financial forecasting, the Company uses ISO-NE's load forecast for transmission planning purposes

2.1 Electric Energy and Peak Demand Forecast

The energy and peak demand forecasts contained in this chapter are based on the Company's budget forecast, which was prepared in August 2014, and are based on Eversource's total franchise area. The base case or 50/50[3] case is also referred to as the Reference Plan Forecast. The forecast excludes wholesale sales for resale and bulk power sales. Eversource's Reference Plan *Energy* Forecast is based on the results of econometric models, adjusted for Eversource's forecasted energy efficiency programs and projected reductions resulting from LREC/ZREC developed in accordance with Public Act 11-80.

The Reference Plan *Peak Demand* Forecast is also based on an econometric model that uses energy as a trend variable which means reductions for energy efficiency and DG are implicitly included. The results of the econometric model are adjusted for projected reductions due to ISO-NE's load response program.

As noted, the Reference Plan Forecast is used for Eversource's financial planning, but it is not used for transmission planning. As ISO-NE is responsible for regional transmission planning and reliability, it independently develops its own forecast which the Company utilizes to plan and construct its transmission system. Section 2.1.3 discusses ISO-NE's forecast in general terms and how it conceptually compares to Eversource's forecast.

The Reference Plan *Energy* Forecast projects a *decrease* in the weather-normalized CAGR for total electrical energy output requirements of 0.1% for CL&P from 2014-2024. Without the Company's energy efficiency programs or LREC/ZREC resources, the forecasted energy growth rate is projected to be an *increase* in the weather-normalized CAGR of 0.3%.

[3] A "50/50 forecast" is a forecast that is developed such that the probability that actual demand is higher than the forecasted amount is 50%, and the probability that actual demand is lower than the forecasted amount is also 50%.

The change in the weather-normalized CAGR for summer peak demand in the Reference Plan *Peak Demand* Forecast is forecasted to increase by 0.7% over the ten-year forecast period. Similarly, if Eversource's Energy Efficiency and LREC/ZREC programs, along with the ISO-NE load response programs were excluded, the increase in the CAGR for forecasted peak demand would be 1.0%.

Table 2-1 provides historic output and summer peaks, actual and normalized for weather, for the 2010-2014 period, and forecast output and peaks for the 2015-2024 periods. The sum of the class sales for each year, adjusted for company use and associated losses, is the annual forecast of system electrical energy requirements or output. This is the amount of energy that must be supplied by generating plants to serve the loads on the distribution system.

The Reference Plan Forecast is a *50/50* forecast that assumes normal weather throughout the year, with normal peak-producing weather episodes in each season. The forecasted 24-hour mean daily temperature for the summer peak day is 82° F and is based on the average peak day temperatures from 1984-2013. The Reference Plan Forecast's summer peak day is assumed to occur in July, since this is the most common month of occurrence historically. It should be noted, however, that the summer peak has occurred in June, August and September in some years.

2.1.1 Uncertainty in the Reference Plan Forecast

There is uncertainty in any long-run forecast, because assumptions that are used in the forecast are selected at a point in time. The particular point of time chosen is generally insignificant, unless the forecast drivers are at a turning point. Outlined below are five major areas of uncertainty that are inherent to this forecast:

- The Economy - The Reference Plan Forecast is based on an economic forecast that was developed in July 2014. Business cycles represent normal economic fluctuations which are typically not reflected in long-run trend forecasts because recovery eventually follows recession, although it is difficult to pinpoint when. So while the level of energy or peak demand that is forecasted for any given year of the forecast may be attained a little earlier or later than projected, the underlying trend is still likely to occur at some point and needs to be planned for.
- LREC/ZREC -This forecast includes explicit reductions to electrical energy output requirements due to renewable energy credits. The LREC/ZREC program was created by the Connecticut General Assembly in 2011 as part of an energy policy reform bill[4].
- Electric Prices - This forecast assumes that total average electric prices will increase in 2015 and then remain fairly stable throughout the remainder of the forecast period.
- EV - This forecast includes explicit additions to electrical energy output requirements due to electric vehicles. It does not include any additions to the peak forecast since it assumed that the majority of the charging will be done off-peak.
- Weather - The Reference Plan Forecast assumes normal weather based on a thirty-year average (1984 - 2013) of heating and cooling degree days. The historical peak day 24- hour mean temperatures range from 74° F to 89° F, with

[4] In Docket No. 11-12-06RE02, PURA is currently in the process of 1) reviewing the contracts entered into in the first three years of the LREC Program and 2) approving the appropriate extension of the LREC program and annual budgets for future years.

deviations from the average peak day temperatures being random, recurring and unpredictable occurrences. For example, the lowest peak day mean temperature occurred in 2000, while the highest occurred in 2011. This variability of peak-producing weather means that over the forecast period, there will be years when the actual peaks will be significantly above or below the forecasted peaks.

Despite the inherent risks outlined above, the Company believes its current forecast to be the best possible, given the information and tools available today.

2.1.2 Forecast Scenarios

Table 2-1 contains scenarios demonstrating the variability of peak load around the 50/50 peak forecast due to weather. The table shows that weather has a significant impact on the peak load forecast with variability of approximately 15%, or 700 MWs, above and below Eversource's 50/50 forecast, which is based on normal weather. To illustrate, the 2024 summer peak forecast reflecting average peak-producing weather is 5,353 MWs. However, either extremely mild or extremely hot weather could result in a range of potential peak loads from 4,576 MWs to 6,247 MWs. This 1,700 MWs of variation, which is a band of approximately plus or minus 15% around the average, demonstrates the potential impact of weather alone on forecasted summer peak demand.

The Extreme Hot Weather scenario roughly corresponds conceptually to ISO-NE's 90/10 forecast, described in Section 2.1.3.

Table 2-1 Eversource 2014 Reference Plan Forecast

	Net Electrical Energy Output Requirements		Reference Plan (50/50 Case)			Extreme Hot Scenario			Extreme Cool Scenario		
Year	Output GWh (1)	Annual Change (%)	Peak MW	Annual Change (%)	Load Factor (2)	Peak MW	Annual Change (%)	Load Factor (2)	Peak MW	Annual Change (%)	Load Factor (2)
HISTORY											
2010	23931		5345		0.511						
2011	23494	-1.8%	5516	3.2%	0.486						
2012	23235	-1.1%	5280	-4.3%	0.501						
2013	23447	0.9%	5448	3.2%	0.491						
2014	23041	-1.7%	4772	-12.4%	0.551						
Compound Rates of Growth (2010-2014)											
	-0.9%		-2.8%								
HISTORY NORMALIZED FOR WEATHER *											
2010	23484		4994		0.537						
2011	23286	-0.8%	5279	5.7%	0.504						
2012	23200	-0.4%	5039	-4.5%	0.524						
2013	23275	0.3%	5202	3.2%	0.511						
2014	22992	-1.2%	5002	-3.8%	0.525						
Compound Rates of Growth (2010-2014)											
	-0.5%		0.0%								
FORECAST											
2015	23201	0.9%	5127	2.5%	0.517	5847	16.9%	0.453	4499	-10.1%	0.589
2016	23318	0.5%	5165	0.7%	0.514	5904	1.0%	0.450	4520	0.5%	0.587
2017	23342	0.1%	5201	0.7%	0.512	5960	0.9%	0.447	4540	0.4%	0.587
2018	23005	-1.4%	5202	0.0%	0.505	5980	0.3%	0.439	4525	-0.3%	0.580
2019	22701	-1.3%	5210	0.1%	0.497	6007	0.4%	0.431	4515	-0.2%	0.574
2020	22694	0.0%	5234	0.5%	0.494	6051	0.7%	0.427	4523	0.2%	0.571
2021	22630	-0.3%	5263	0.5%	0.491	6099	0.8%	0.424	4535	0.3%	0.570
2022	22650	0.1%	5293	0.6%	0.489	6148	0.8%	0.421	4549	0.3%	0.568
2023	22671	0.1%	5323	0.6%	0.486	6198	0.8%	0.418	4563	0.3%	0.567
2024	22757	0.4%	5353	0.6%	0.484	6247	0.8%	0.415	4576	0.3%	0.566
Compound Rates of Growth (2014-2024)											
	-0.1%		1.2%			2.7%			-0.5%		
Normalized Compound Rates of Growth (2014-2024)											
	-0.1%		0.7%			2.2%			-1.0%		

1. Sales plus losses and company use.
2. Load Factor = Output (MWh) / (8760 Hours X Season Peak (MW)).

Forecasted Reference Plan Peaks are based on normal peak day weather (82º mean daily temperature). Forecasted High Peaks are based on the weather that occurred on the 2011 peak day (89º mean daily temperature). Forecasted Low Peaks are based on the weather that occurred on the 2000 peak day (74º mean daily temperature).

2.1.3 ISO-NE Demand Forecasts

The CSC's <u>2008 Review of the Ten-Year Forecast of Loads and Resources</u> provides a concise description of the ISO-NE's "90/10" forecast used by Eversource for transmission planning purposes. A relevant excerpt is provided below.

> Called the "90/10" forecast, it is separate from the normal weather (50/50) forecasts offered by the Connecticut utilities. However, it is the one used by both ISO-NE and by the Connecticut utilities for utility infrastructure planning, including transmission and generation.

The 90/10 forecast is a plausible worst-case hot weather scenario. It means there is only a 10 percent chance that the projected peak load would be exceeded in a given year, while the odds are 90 percent that it would not be exceeded in a given year. Put another way, the forecast would be exceeded, on average, only once every ten years. While this projection is extremely conservative, it is reasonable for facility planning because of the potentially severe disruptive consequences of inadequate facilities: brownouts, blackouts, damage to equipment, and other failures. State utility planners must be conservative in estimating risk because they cannot afford the alternative.

Just as bank planners should ensure the health of the financial system by maintaining sufficient collateral to meet worst-case liquidity risks, so load forecasters must ensure the reliability of the electric system by maintaining adequate facilities to meet peak loads in worst-case weather conditions. While over-forecasting can have economic penalties due to excessive and/or unnecessary expenditures on infrastructure, the consequences of under-forecasting can be much more serious. Accordingly, the Council will base its analysis in this review on the ISO-NE 90/10 forecast.

As Eversource has reported in the past, there is one other major difference between the Eversource and ISO-NE forecasts, aside from the difference between the 50/50 forecast methodology used by Eversource and the 90/10 forecast methodology used by ISO-NE. The Eversource demand forecasts include explicit reductions in the energy forecast for the Company's C&LM programs and DG resources and explicit reductions in the peak demand forecast for ISO-NE's Load Response program, while the ISO-NE demand forecasts do not include these reductions; instead, ISO-NE considers C&LM, Load Response and DG to be supply resources in their capacity forecast.

Table 2-2 shows Eversource's Reference Plan Forecast with savings from Eversource's C&LM programs, DG and ISO-NE's Load Response program added back in to make it easier to compare Eversource's forecast with ISO-NE's forecast.

Table 2-2: Adjustments to Output and Summer Peak Forecasts

Net Electrical Energy Output Requirements

Year	Unadjusted Output GWH	Renewable Energy Credits GWH	Company Sponsored C&LM GWH	ISO-NE Load Response GWH	Adjusted Output GWH	Annual Change (%)
HISTORY NORMALIZED FOR WEATHER						
2014					22,992	
FORECAST						
2015	23,256	(32)	(23)	-	23,201	0.9%
2016	23,519	(123)	(78)	-	23,318	0.5%
2017	23,727	(253)	(132)	-	23,342	0.1%
2018	23,585	(392)	(187)	-	23,005	-1.4%
2019	23,420	(476)	(242)	-	22,701	-1.3%
2020	23,498	(507)	(297)	-	22,694	0.0%
2021	23,489	(507)	(352)	-	22,630	-0.3%
2022	23,563	(507)	(406)	-	22,650	0.1%
2023	23,639	(507)	(461)	-	22,671	0.1%
2024	23,780	(507)	(516)	-	22,757	0.4%
Normalized Compound Rates of Growth (2014-2024)						
	0.3%				-0.1%	

Reference Plan (50/50 Case)

Year	Unadjusted Peak MW	Renewable Energy Credits MW	Company Sponsored C&LM MW	ISO-NE Load Response MW	Adjusted Peak MW	Annual Change (%)
HISTORY NORMALIZED FOR WEATHER						
2014					5,002	
FORECAST						
2015	5,232	(3)	(2)	(100)	5,127	2.5%
2016	5,282	(11)	(7)	(100)	5,165	0.7%
2017	5,334	(22)	(11)	(100)	5,201	0.7%
2018	5,352	(34)	(16)	(100)	5,202	0.0%
2019	5,371	(41)	(21)	(100)	5,210	0.1%
2020	5,403	(43)	(25)	(100)	5,234	0.5%
2021	5,436	(43)	(30)	(100)	5,263	0.5%
2022	5,471	(43)	(35)	(100)	5,293	0.6%
2023	5,506	(43)	(39)	(100)	5,323	0.6%
2024	5,541	(43)	(44)	(100)	5,353	0.6%
Normalized Compound Rates of Growth (2014-2024)						
	1.0%				0.7%	

Extreme Hot Weather Scenario

Year	Unadjusted Peak MW	Renewable Energy Credits MW	Company Sponsored C&LM MW	ISO-NE Load Response MW	Adjusted Peak MW	Annual Change (%)
HISTORY NORMALIZED FOR WEATHER						
2014					5,002	
FORECAST						
2015	5,952	(3)	(2)	(100)	5,847	16.9%
2016	6,022	(11)	(7)	(100)	5,904	1.0%
2017	6,093	(22)	(11)	(100)	5,960	0.9%
2018	6,130	(34)	(16)	(100)	5,980	0.3%
2019	6,169	(41)	(21)	(100)	6,007	0.4%
2020	6,220	(43)	(25)	(100)	6,051	0.7%
2021	6,272	(43)	(30)	(100)	6,099	0.8%
2022	6,327	(43)	(35)	(100)	6,148	0.8%
2023	6,381	(43)	(39)	(100)	6,198	0.8%
2024	6,435	(43)	(44)	(100)	6,247	0.8%
Normalized Compound Rates of Growth (2014-2024)						
	2.6%				2.2%	

2.2 ISO-NE Wholesale Electric Markets

ISO-NE reported the following in regards to its most recent forward capacity auction, FCA9, which took place on February 2, 2015:

"The total level of resources clearing the auction included 30,442 MW of generation, 1,449 MW of imports, and 2,803 MW of demand-side resources, which includes companies that have agreed to reduce their power consumption if needed during times of system stress, and energy-efficiency measures. The total 34,695 MW clearing the auction included 1,427 MW of new resources in New England, including a new 725-MW dual-fuel unit and two 45-MW units in CT, a new 190-MW peaking power plant in SEMA/RI, and 367 MW of new demand-side resources. The higher auction clearing price reflects the cost to build new generation in the region."

Clearing Prices for Connecticut, NEMA/Boston, Rest-of-Pool zones

This year's descending-clock auction opened at a starting price of $17.73/kW-month. The auction concluded system-wide after three rounds of competitive bidding with a clearing price of $9.55/kW-month, at the point on the demand curve where there were still sufficient resources to meet demand. The auction continued for one additional round for New York imports, closing at $7.97/kW-month, and two additional rounds for New Brunswick imports, at a price of $3.94/kW-month.

The $9.55/kW-month clearing price will be paid in 2018-2019 to about 24,447 MW of new and existing capacity resources that cleared this auction in ROP, Connecticut and NEMA/Boston. New York imports totaling 1,028 MW will be paid $7.97/kW-month, and 177 MW of New Brunswick imports will be paid $3.94/kW-month. Another 771 MW of existing resources with multi-year supply obligations will be paid at rates set in previous auctions, while 1,287 MW of self-supply resources will not be paid through the FCM.

Prices for Southeast Massachusetts/Rhode Island zone

Even before the auction started, there were not enough new and existing resources, combined, to provide the capacity needed in the SEMA/RI zone in 2018-2019. In all, there were 7,241 MW (6,888 MW of existing and 353 MW of new resources) that qualified to provide the 7,479 MW needed to meet SEMA/RI local sourcing requirement in 2018-2019. Since all the resources that qualified, including the new resources, will be needed to help meet the local resource requirement in SEMA/RI, auction bidding never opened in that zone.

Administrative pricing rules were triggered because of SEMA/RI's inadequate supply. Under these rules, the 353 MW of new resources in the zone will receive the auction starting price of $17.73/kW-month, while the 6,888 MW of existing resources in the zone will receive $11.08/kW-month, which is based on the net cost to build a new resource. While the SEMA/RI zone is short about 238 MW of the 7,479 MW needed in 2018-2019, such resource shortfalls may be filled through periodic reconfiguration auctions held over the next three years.

The FCM administrative pricing rules balance the interests of consumers paying for capacity by building in price protections under conditions of scarcity, and the interests of resources providing capacity by paying a price that reflects the need to attract new resources and retain existing capacity.

Total wholesale market impact

A preliminary estimate of the total cost of the capacity market in New England in 2018–2019 is about $4 billion.

Chapter 3: ENERGY EFFICIENCY

Chapter Highlights

- Energy savings resulting from Connecticut Energy Efficiency Fund programs are a cost-effective resource available to Connecticut customers by reducing customer bills and helping to mitigate peak energy prices.
- Public Act 13-298 provided for increased energy efficiency funding. As a result, a three-year Conservation and Load Management Plan was approved by DEEP in 2013 which nearly doubled conservation efforts in Connecticut.
- Connecticut Energy Efficiency Fund programs are recognized nationally and provide economic development benefits to the State. The 2015 C&LM Plan is expected to generate $715 million in economic benefit to Connecticut.

CL&P 2013 - 2015 Conservation and Load Management Plan

Energy efficiency is a cost-effective resource available to policymakers to address rising energy costs, reliability challenges, and greenhouse gas reduction. Efficiency and load response programs in Connecticut reduce the amount of energy homes, businesses and schools consume, helping to decrease demand for energy from power plants, reducing the harmful emissions those power plants produce, and reducing consumer energy bills in all sectors. Energy efficiency programs also provide economic development benefits for Connecticut and help mitigate winter peak energy prices resulting from natural gas pipeline constraint during winter high-use periods.

In 2011, Public Act 11-80, *An Act Concerning the Establishment of the Department of Energy and Environmental Protection and Planning for Connecticut's Energy Future*, was passed which laid the groundwork for pursuing all cost effective energy efficiencies. In 2013, Public Act 13-298, *An Act Concerning Implementation of Connecticut's Comprehensive Strategy and Various Revision to the Energy Statutes*, provided the framework for increased conservation spending in Connecticut for electric and natural gas conservation programs. On October 31, 2013, the DEEP approved the 2013 – 2015 Conservation and Load Management Plan ("Three Year Plan") submitted by the Connecticut electric and gas utility companies on November 1, 2012.[5] The C&LM Plan was based upon input from members of the public, industry groups and private enterprise, and was developed in collaboration with the EEB. The Plan included unprecedented levels of funding for both electric and natural gas energy efficiency programs based on Public Act 13-298.

On December 22, 2015, the 2015 Annual Update of the Three Year Plan was filed with DEEP. The 2015 Annual Update includes approximately an electric budget of approximately $183 million and a natural gas budget of approximately $43 million. The 2015 Annual Update is

[5] DEEP, Public Act 11-80 – Section 33 – 2013-2015 Conservation and Load Management Plan submitted by The Connecticut Light and Power Company, The United Illuminating Company, The Yankee Gas Service Company, Connecticut Natural Gas Corporation, Southern Connecticut Gas Company.

expected to generate approximately 381 annual GWh of electric savings and generate $715 million in resource benefits. The 2015 Update relies upon promotional activities and program enhancements to advance high efficiency technologies and behaviors for residential and business customers and to target measures that will have an impact on winter peak prices.

Funding for C&LM programs currently comes from several sources. Since the passage of the state's restructuring legislation in 1999, a 3 mil electric charge has served as the primary funding source.[6] Public Act 11-80 and the subsequent DEEP approval of the Plan provide an additional 3 mil CAM charge for conservation. In addition, C&LM programs receive funding from other sources including the ISO-NE's FCM and RGGI.

Connecticut is a nationally recognized leader in implementing high-quality energy-efficiency programs. Since 2000, the ACEEE has ranked Connecticut as one of the top states for energy efficiency. In the ACEEE's *2014 State Energy Efficiency Scorecard*, Connecticut ranked sixth in the nation. This ranking reflects the success of Connecticut's energy efficiency programs.

Eversource with guidance from the EEB, maintain their conservation and load management programs' success through an evolving, integrated approach that reaches out to customers in their homes, at their jobs, in schools and in the community. Through seminars, workshops, teacher training, museum partnerships, trade and professional affiliations, retail partnerships and marketing, Eversource is helping to shape a more efficiency-minded consumer that not only participates in award-winning programs, but makes wiser energy choices every day.

3.1 Ten-Year C&LM Forecast

Table 3-1 presents the potential cumulative annualized energy savings and summer and winter peak-load reductions forecasted for C&LM programs implemented in the Eversource service territory for the C&LM Plan base budget. The forecast is based on anticipated savings from the 2015 Annual Update. Forecasted savings beyond 2015 assumes similar programs, budgets and savings as anticipated in 2015. However, savings in years 2016 and beyond reflect anticipated changes in energy efficiency budgets and production costs.

3.2 Forecast Sensitivity

The C&LM programs utilize a complementary mix of lost opportunity, retrofit, and market transformation implementation strategies to achieve savings. The energy savings and peak-load reductions projected in this forecast are sensitive to changes in a number of factors including changes in the electricity marketplace and consumer attitudes.

The most significant variable in determining energy savings is the stability of funding. Projections are based on the continued implementation of a suite of programs similar in nature and focus to the C&LM Plan and expected future funding as described above. Any additional legislative or regulatory changes in geographic and program focus will produce results that may vary from these projections.

[6] Conn. Gen. Stat. § 16-245m.

Table 3-1

Eversource C&LM Programs Annual Energy Savings
and
Peak Load Reduction by Customer Class

Connecticut Light and Power

2015-2024

GWh Sales Saved

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Residential	128	218	305	389	469	546	618	684	745	802
Commercial	143	279	411	537	658	775	884	984	1,076	1,162
Industrial	43	84	123	161	197	232	265	295	323	348
Total	**314**	**581**	**839**	**1,086**	**1,325**	**1,554**	**1,766**	**1,963**	**2,144**	**2,312**

MW Reductions (Passive Resource Summer Impacts)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Residential	21	35	49	63	76	88	100	110	120	129
Commercial (non-Load Response))	20	39	57	75	92	109	124	138	151	163
Industrial (non-Load Response)	6	12	17	23	28	33	37	41	45	49
Total	**47**	**86**	**124**	**160**	**195**	**229**	**260**	**289**	**316**	**341**

MW Reductions (Passive Resource Winter Impacts)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Residential	28	48	67	85	102	119	135	149	163	175
Commercial (non-Load Response))	22	43	63	82	101	119	135	150	165	178
Industrial (non-Load Response)	7	13	19	25	30	36	41	45	49	53
Total	**56**	**103**	**148**	**192**	**233**	**273**	**311**	**345**	**377**	**406**

Notes:

1) This table includes only passive resources. It does not include 95 MW of Load Response demand savings (active resources) which Eversource maintains through the ISO-NE program.
2) Total savings assumes that all measures will continue to provide savings throughout the forecast period.

Chapter 4: TRANSMISSION PLANNING AND SYSTEM NEEDS

4.1 Transmission is planned and built for the long term

Transmission systems enable varying amounts and sources of generation to serve varying load over a long term. The addition of significant amounts of remote renewable generating capacity or the retirement of local generation may increase the need to import or export power to or from Connecticut, and the transmission system may need to be expanded. Transmission system additions are proposed and built to accommodate the future, considering many scenarios.

4.2 Transmission Planning and National Reliability Standards

Eversource's transmission facilities are part of the New England regional grid and must be designed, operated and maintained to ensure compliance with mandatory NERC reliability standards.

The Federal Energy Policy Act of 2005 required FERC to designate an entity to provide for a system of mandatory, enforceable reliability standards under FERC's oversight. This action is part of a transition from a voluntary to a mandatory system of reliability standards for the bulk-power system. In July 2006, FERC designated the NERC as the nation's ERO. The ERO seeks to improve the reliability of the bulk-power system by proactively preventing situations that can lead to blackouts, such as that which occurred in August 2003.

The Connecticut transmission system is part of the larger NERC Eastern Interconnection and thus subject to the interdependencies of generation, load and transmission in neighboring electric systems. The pre-ERO NERC recognized that the actual planning and construction of new transmission facilities was becoming more complex when in 1997 it's Planning Standards stated the following:

> *The new competitive electricity environment is fostering an increased demand for transmission service. With this focus on transmission and its ability to support competitive electric power transfers, all users of the interconnected transmission systems must understand the electrical limitations of the transmission systems and the capability of these systems to reliably support a wide variety of transfers.*
>
> *The future challenge will be to plan and operate transmission systems that provide the requested electric power transfers while maintaining overall system reliability. All electric utilities, transmission providers, electricity suppliers, purchasers, marketers, brokers, and society at large benefit from having reliable interconnected bulk electric systems. To ensure that these benefits continue, all industry participants must recognize the importance of planning these systems in a manner that promotes reliability.*[7]

On March 15, 2007, the FERC approved mandatory reliability standards developed by NERC. FERC believes these standards will form the basis to maintain and improve the reliability of the North American bulk power system. These mandatory reliability standards

[7] Planning Standards, North American Electric Reliability Corporation, September 1997

apply to users, owners and operators of the bulk power system, as designated by NERC through its compliance registry procedures. Both monetary and non-monetary penalties may be imposed for violations of the standards. The final rule, "Mandatory Reliability Standards for the Bulk Power System," became effective on June 18, 2007. Since then, many of the standards have undergone revisions and strengthening.

FERC Order 890 amended the regulations and the pro forma open-access transmission tariff adopted in Order 888 and 889 to ensure that transmission services are provided on a basis that is just, reasonable and not unduly discriminatory or preferential. The final rule was designed to: (1) strengthen the pro forma open-access transmission tariff, or OATT to ensure that it achieves its original purpose of remedying undue discrimination: (2) provide greater specificity to reduce opportunities for undue discrimination and facilitate the Commission's enforcement; and (3) increase transparency in the rules applicable to planning and use of the transmission system.

On December 20, 2012 the FERC issued a final rule approving revisions to NERC's "Bulk Electric System" definition. Key revisions to the approved definition remove language allowing for broad discretion across the reliability regions in North America and establish a "bright-line" threshold that includes all facilities operated at or above 100 kilovolts. The revised definition requires that more facilities be covered and be compliant with the NERC Transmission Planning Reliability Standards than under the previous definition. Future transmission planning assessments and studies must be expanded to adhere to this revised definition to comply with the NERC reliability standards.

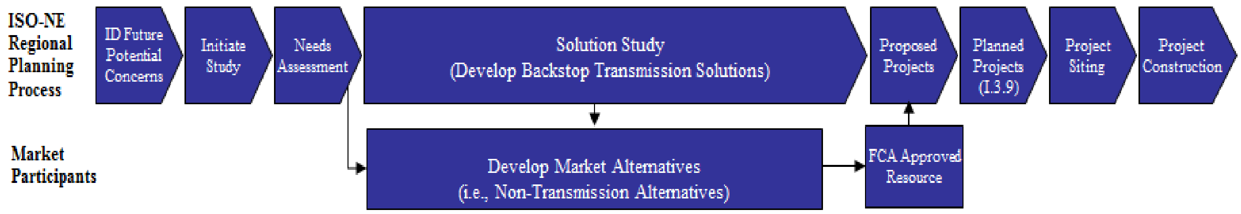
4.3 Transmission Planning Process

Within the ISO-NE regional planning process that strives for compliance with NERC and NPCC planning standards, ISO-NE and TOs perform reliability assessment studies of the New England transmission system. Individual sub-area studies ("Needs Assessments") are performed to identify system needs over a ten-year horizon. When a system reliability problem is identified from a needs assessment, ISO-NE and the TOs develop one or more transmission system options (i.e., backstop transmission solutions) to resolve the transmission reliability needs and ensure that NERC and NPCC reliability standards are met.

The transmission system solution options are then further evaluated to determine their feasibility of construction, potential for environmental impacts, estimated costs, longevity, operational differences, etc. When analysis of the options is complete, the TOs recommend a proposed transmission project to ISO-NE and the PAC. In parallel, market participants can develop and propose market resource alternatives (NTAs) to resolve the identified needs.

These transmission studies, and the transmission solutions, are documented in a Solution Study report, and in aggregate, provide a basis for updating ISO-NE's RSP as depicted in the sequence of the process below:

Transmission Planning Process Figure 1



4.4 Connecticut's Transmission System and Serving Load

Eversource plans, builds and operates transmission infrastructure with a long-term vision to safely and reliably deliver power to its customers, under a wide variety of supply and demand conditions.

- Eversource is responsible to meet reliability standards mandated by the FERC and implemented by NERC and faces severe financial penalties of up to $1 million per day for *each* non-compliance occurrence.
- Connecticut's potential to develop large quantities of renewable and/or low carbon energy resources, like wind and hydroelectric power, is low, but wind and hydroelectric power have greater development prospects in northern New England and Canada.
- The prospect of transporting renewable energy from northern New England and Canada to southern New England is particularly promising. Northern Pass along with Hydro-Quebec, is currently developing a transmission project that will enable imports of up to 1,200 MW of low-carbon power generated in Canada.

4.5 Assessment of Transmission Needs in Connecticut's Sub-areas

Eversource divides its service territory into six areas as described below for the purpose of assessing the reliability of its transmission system. ISO-NE has identified reliability projects within those areas that are needed in Connecticut.

- The SWCT area is the largest load area within Connecticut which comprises fifty-four towns, including all of United Illuminating's service territory. This area includes the towns essentially west of Interstate 91 and south of Interstate 84, and accounts for approximately half of the state's peak electric load demand. An updated needs assessment in the SWCT area was completed and presented to ISO-NE PAC in February 2014. In July of 2014, the Southwest Connecticut 2022 Preferred Solution was presented to ISO-NE PAC. Eversource expects to obtain the no adverse impact designation for the SWCT preferred solution during the first quarter of 2015. There also is a reliability project proposed in the Norwalk Stamford subarea known as the Greenwich Substation and Line project to meet growing needs.
- The Eastern Connecticut Area extends in a westerly direction for about twenty miles from the Rhode Island border and north from Long Island Sound to the Massachusetts border. The area is served by both Eversource and CMEEC. The Eastern Connecticut Needs Assessment was completed in 2013. The Solution Study including alternatives is being developed and is expected to be presented to the PAC sometime late in 2015.

- The Manchester - Barbour Hill Area includes towns north and south of Manchester. These include Glastonbury to the south and the Massachusetts border towns of Enfield, Suffield, and Somers to the north.
- The Middletown Area consists of a five- to ten-mile-wide band east and west of the Connecticut River from Hebron to Old Lyme. The westerly section consists of the area included in a triangle that runs from Middletown to Old Saybrook and back to the eastern part of Meriden.
- The Greater Hartford Area includes the towns in the vicinity of the Capitol city and stretches north to the Massachusetts border, west to the Farmington River, and south to the Route 691 interchange with the Berlin Turnpike. It straddles the Connecticut River in the heart of central Connecticut.
- The Northwestern Connecticut Area is the portion of the state bounded north and west by the Massachusetts and New York state borders, easterly toward Route 8 and southerly to the SWCT region.

ISO-NE has recently completed the GHCC studies. The GHCC study area consists of four subareas: Greater Hartford, including the Southington station; Manchester–Barbour Hill; Middletown; and northwestern Connecticut. Each of these subareas is a load pocket with limited generation fed by limited transmission. The study area also includes the Western Connecticut Import interface. The 345 kV CCRP component of NEEWS was designed to increase transfer capacity across this interface, from western to eastern Connecticut. When preliminary results of a reassessment of the need for CCRP indicated that the need for increased transfer capacity had been reduced by changes in resources and forecasted demand, the reassessment was combined with the GHCC study. The objective of this expansion of the scope of the GHCC study was to determine if the load-serving needs in the four GHCC subareas and the western Connecticut import need could be addressed by a single set of integrated 115 kV solutions.

The GHCC needs assessment was completed in February, 2014, and a needs report was published In April, 2014. The preferred solutions for the identified needs were presented to PAC in July, 2014, and a final solution report is in drafting. The preferred solutions consist of transmission improvements in each of the four GHCC subareas, and include elements that will perform a “double duty” of both meeting local load-serving needs and addressing the remaining need for increased Western Connecticut import capacity. Eversource expects to obtain a “no adverse impact” approval of the design of the preferred solutions in the first quarter of 2015. When that approval is issued, CCRP as originally designed will be replaced by the GHCC solutions.

A list of all transmission projects and their components is listed by transmission line and substation in tables 4-1 and 4.2, below. Transmission line reinforcements are identified by entries under the “from” and “to” station headings in Table 4.1. Station reinforcements are identified by single line entries under the “from” station heading in Table 4.2. The term “station” is interchangeable with substation or switching station. The tables include information on the project’s proposed ISD.

Table 4-1: Eversource Proposed Transmission Line Projects in Connecticut

From Station	City or Town	To Station	City or Town	Voltage kV	ISD	Miles	Project Description	Status
Card	Lebanon	Lake Road	Killingly	345	2015	29.3	(NEEWS) - Interstate	Under Construction
Lake Road	Killingly	CT/RI Border	Thompson	345	2015	7.6	(NEEWS) - Interstate	Under Construction
Cos Cob	Greenwich	Greenwich	Greenwich	115	2017	2.4	New Line	Planned
Cos Cob	Greenwich	Greenwich	Greenwich	115	2017	2.4	New Line	Planned
Frost Bridge	Watertown	North Bloomfield	Bloomfield	345	2017	35.4	(NEEWS) - CCRP	Planned (expected to be replaced by GHCC)
Manchester	Manchester	Barbour Hill	South Windsor	115	2017	7.6	(GHCC) - Reconductor	Proposed
Frost Bridge	Watertown	Campville	Harwinton	115	2017	10.4	(GHCC) – New Line	Proposed
Southington	Southington	Lake Ave, Jct	Bristol	115	2017	5.2	(GHCC) – Reconductor Line Section	Proposed
Newington	Newington	Newington Tap	Newington	115	2017	0.01	(GHCC) – Reconductor Line Section	Proposed
Newington	Newington	SW Hartford	Hartford	115	2017	4.0	(GHCC) - New Line	Proposed
West Brookfield	Brookfield	West Brookfield Jct.	Brookfield	115	2017	1.4	(SWCT) – Reconductor Line Section	Proposed
Plumtree	Bethel	Brookfield Jct.	Brookfield	115	2017	3.4	(SWCT) – New Line	Proposed
Wilton	Wilton	Norwalk	Norwalk	115	2017	1.5	(SWCT) – Rebuild Line section	Proposed
Wilton	Wilton	Ridgefield Jct.	Ridgefield	115	2017	5.1	(SWCT) – Reconductor Line Section	Proposed
Peaceable	Redding	Ridgefield Jct.	Ridgefield	115	2017	0.04	(SWCT) – Reconductor Line Section	Proposed
Bunker Hill	Waterbury	Baldwin Jct.	Waterbury	115	2017	3.0	(SWCT) – Reconductor Line section	Proposed
Frost Bridge Thomaston	Watertown Thomaston	Campville Campville	Harwinton Harwinton	115 115	2017	N/A	(GHCC) - Line Separation	Proposed
Southington Southington	Southington Southington	Todd Canal	Wolcott Southington	115 115	2017	N/A	(GHCC) - Replace Line reactors	Proposed
South Meadow	Hartford	Bloomfield	Bloomfield	115	2017	N/A	(GHCC) - Loop in and out of Rood Ave substation	Proposed
Bloomfield Bloomfield Bloomfield	Bloomfield Bloomfield Bloomfield	South Meadow Rood Ave N.Bloomfield	Hartford Windsor Bloomfield	115	2017	N/A	(GHCC) - Line Separation	Proposed
South Meadow	Hartford	SW Hartford	Hartford	115	2017	N/A	(GHCC) - Install a series reactor	Proposed
Bloomfield N.Bloomfield	Bloomfield Bloomfield	N.Bloomfield NW Hartford	Bloomfield Hartford	115	2017	N/A	(GHCC) - Line Separation	Proposed
Branford Branford	Branford Branford	Branford RR North Haven	Branford North Haven	115	2017	N/A	(GHCC) - Line Separation	Proposed
Middletown Middletown	Middletown Middletown	Pratt&Whitney Haddam	Middletown Haddam	115	2017	N/A	(GHCC) - Line Separation	Proposed

From Station	City or Town	To Station	City or Town	Voltage kV	ISD	Miles	Project Description	Status
Beacon Falls	Beacon Falls	Indian Well (UI) Devon	Derby Milford	115	2017	N/A	(SWCT) - Loop in and out of Pootatuck	Proposed
Frost Bridge	Watertown	Baldwin Stevenson	Waterbury Monroe	115	2017	N/A	(SWCT) - Loop line in and out of Bunker Hill	Proposed
Beseck Southington	Wallingford Southington	East Devon Mix Ave (UI) June St (UI)	Milford Hamden Woodbridge	115	2017	N/A	(SWCT) - Line Separation	Proposed
Plumtree	Bethel	Stony Hill Bates Rock	Brookfield Southbury	115	2017	N/A	(SWCT) – Line Reconfiguration	Proposed
West Brookfield	Brookfield	Stony Hill Shepaug	Brookfield Southbury	115	2017	N/A	(SWCT) – Line Reconfiguration	Proposed
South Meadow	Hartford	Bloomfield	Bloomfield	115	2017	N/A	Rebuild Line Section	Proposed

Table 4-2: Eversource Proposed Substation Projects in Connecticut

Substation	City or Town	Voltage kV	ISD	Project Description	Status
Bulls Bridge	New Milford	115/27.6/23	2015	Replace transformer	Proposed
Newtown	Newtown	115	2015	Add a circuit breaker	Under Construction
Montville	Montville	345/115	2015	Replace both autotransformers	Under Construction
Canal	Southington	115/23	2016	Add a distribution transformer	Concept
Tracy	Putnam	115	2016	Add a distribution transformer and a circuit breaker	Concept
Frost Bridge	Watertown	345/115	2017	NEEWS – (CCRP)	Planned (expected to be replaced by GHCC)
Greenwich	Greenwich	115/13.2	2017	Add a new substation	Planned
Beseck	Wallingford	115	2017	Add a second Variable Shunt Reactor	Planned (expected to be replaced by GHCC)
North Bloomfield	Bloomfield	345	2017	NEEWS – (CCRP)	Planned (expected to be replaced by GHCC)
Barbour Hill	South Windsor	345/115	2017	(GHCC) – Add an autotransformer	Proposed
Manchester	Manchester	345	2017	(GHCC) – Add a circuit breaker	Proposed
Campville	Harwinton	115	2017	(GHCC) – Add a circuit breaker	Proposed
Chippen Hill	Bristol	115	2017	(GHCC) – Upgrade terminal equipment	Proposed
Southington	Southington	115	2017	(GHCC) – Replace breaker with series reactor and add a new control house	Proposed
Southington	Southington	345	2017	(GHCC) – Add a circuit breaker	Proposed
Newington	Newington	115	2017	(GHCC) – Reconfigure substation	Proposed
Berlin	Berlin	115	2017	(GHCC) – Reconfigure substation and add two breakers	Proposed
Southwest Hartford	Hartford	115	2017	(GHCC) – Upgrade terminal equipment	Proposed
Rood Ave	Windsor	115	2017	(GHCC) – Reconfigure substation	Proposed
Bloomfield	Bloomfield	115	2017	(GHCC) – Add a circuit breaker	Proposed
North Bloomfield	Bloomfield	115	2017	(GHCC) – Add a circuit breaker	Proposed
Haddam	Haddam	345/115	2017	(GHCC) – Add an autotransformer and Reconfiguration	Proposed
Haddam Neck	Haddam	345	2017	(GHCC) – Upgrade terminal equipment	Proposed
Beseck	Wallingford	345	2017	(GHCC) – Upgrade terminal equipment	Proposed
Dooley	Middletown	115	2017	(GHCC) – Upgrade terminal equipment	Proposed
Portland	Proposed	115	2017	(GHCC) – Upgrade terminal equipment	Proposed
Green Hill	Madison	115	2017	(GHCC) – Reconfigure substation and install a capacitor bank	Proposed
Hopewell	Glastonbury	115	2017	(GHCC) – Install a capacitor bank	Proposed
Westside	Middletown	115	2017	(GHCC) – Install a capacitor bank	Proposed
Branford	Branford	115	2017	(GHCC) – Add a series breaker	Proposed
Newtown	Newtown	115	2017	(SWCT) – Upgrade terminal equipment and replace both distribution transformers	Proposed
Bunker Hill	Waterbury	115	2017	(SWCT) – Rebuild substation	Proposed
Baldwin	Waterbury	115	2017	(SWCT) – Close circuit breaker	Proposed
Stony Hill	Brookfield	115	2017	(SWCT) – Add a Synchronous Condenser & relocate a capacitor bank	Proposed
West Brookfield	Brookfield	115	2017	(SWCT) – Install two capacitor banks	Proposed
Freight	Waterbury	115	2017	(SWCT) – Replace two circuit breakers	Proposed
Plumtree	Bethel	115	2017	(SWCT) - Add a circuit breaker & and relocate a capacitor bank	Proposed
Rocky River	New Milford	115	2017	(SWCT) – Reduce capacitor banks	Proposed
Oxford	Oxford	115	2017	(SWCT) –Install a capacitor bank	Proposed
East Devon	Milford	115	2017	(SWCT) – Add a series breaker	Planned
Cos Cob	Greenwich	115	2017	Add a circuit breaker	Planned
Burrville	Torrington	115	2018	New Substation	Concept

Substation	City or Town	Voltage kV	ISD	Project Description	Status
Scitico	Enfield	115	2018	Add a distribution transformer	Concept

4.6 Incorporation of Renewables through Transmission, including future outlook

Eversource has proposed a high-voltage direct current transmission tie line with Hydro Quebec (NPT) that would provide New England access to competitively priced, non-carbon emitting hydroelectric power.

The NPT project has received FERC approval of a transmission service agreement with Hydro Renewable Energy Inc. (Hydro Quebec). In December 2013, ISO-NE approved the NPT Proposed Plan Application showing that NPT will not have a significant adverse effect upon the New England power system. The Presidential Permit process with the U.S. DOE is underway. The DOE continues to work on the draft EIS for Northern Pass. This includes a review of our proposed route and various alternative routes. We currently expect the DOE to issue the draft EIS in April 2015. We expect to file the state permit application mid 2015 after receipt of the draft EIS. The $1.4 billion project is subject to comprehensive federal and state public permitting processes and is expected to be operational in the second half of 2018.