

FORECAST OF ELECTRIC LOADS & RESOURCES 2006-2015

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March 2006

Connecticut Municipal Electric Energy Cooperative
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Introduction & Background

The Connecticut Municipal Electric Energy Cooperative ("CMEEEC") is a not-for-profit joint-action power supply agency empowered to finance, plan, acquire, construct, operate, repair, extend, or improve electric generation and transmission facilities and sell power to serve the needs of Connecticut municipal utility and other utility systems. CMEEEC sells power at wholesale to several distribution companies.

The CMEEEC Member utilities are (1) Norwalk Third Taxing District Electrical Department ("East Norwalk"), (2) Groton Utilities ("Groton"), (3) Jewett City Department of Public Utilities ("Jewett City"), (4) Norwich Public Utilities ("Norwich"), and (5) South Norwalk Electric & Water ("South Norwalk"). The Wallingford Department of Public Utilities ("Wallingford") is a CMEEEC Participant who along with the Bozrah Power & Light Company ("Bozrah") and the Mohegan Tribal Utility Authority ("MTUA") is a full-requirements wholesale customer of CMEEEC.

The loads of the CMEEEC Members, Wallingford, Bozrah and the MTUA are represented on an integrated, single-system basis for purposes of ISO New England operations.

The joint power supply system established by the Connecticut Municipal Electric Energy Cooperative, or "CMEEEC", is intended to meet the diversified needs of the seven Connecticut community-owned utilities that are its five Members and two Participants. Of necessity and by mandate, CMEEEC's sole purpose is to meet these requirements reliably and at the lowest possible cost over the long term. CMEEEC has met these resource requirements through a combination of member-owned generation, long-term contractual arrangements and short-term market purchases. Today, CMEEEC's portfolio consists of member-owned generation, unit entitlement contracts, long-term system contracts, intermediate and short-term system contracts and market purchases.

The enclosed forecast for 2006-2015 addresses some potential growth for CMEEEC's Members/Participants. The year 2005 showed overall growth in the residential, small and medium general service categories. Some of the increase was attributed to the hot, humid weather during the summer months. There was significant growth in the Residential, Small, Medium Service and Large Firm Categories in Wallingford. Employment growth from the Foxwoods and the Mohegan Sun Casinos continues to impact the Southeastern Connecticut area economy. The largest percentage increase in CMEEEC loads is anticipated in South Norwalk where growth is expected to increase across all sectors throughout the forecast period, especially in the Residential, Small and Large General Service Categories due to the proposed Reed Putnam project.

The long-term forecasts of electric demand and the energy required by each of the CMEEEC utilities, Wallingford, Bozrah and the MTUA are primary tools used to ascertain future CMEEEC power needs. When the primary individual forecasts are combined, the result is a CMEEEC agency forecast filed with the Connecticut Siting Council and used to make power supply decisions responsive to current situations. In 2006, CMEEEC has developed a set of forecasts for Member utilities, which result in the combined projections contained in this submittal. The enclosed forecasts contain the best available information at the time of their development.

Conservation and Load Management

The municipal electric utilities have delivered cost effective CLM programs to its customers for many years. The municipal electric utilities have worked with the members of the Energy Conservation Management Board ("ECMB") pursuant to Public Act 01-05 to develop and implement additional programs to reduce customers' electricity usage, peak demand and Federally Mandated Congestion Charges ("FMCC").

The municipal electric utilities have developed their CLM Plan for 2006 and have submitted this plan with the ECMB. The CLM Plan will measure the overall impact of the electricity plan on usage, peak demand and reduced FMCC at the end of this year.

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The following material and tables are in response to the specific itemized requirements of Sec. 16-50r of the General Statutes and is provided on behalf of CMEEC and its member systems. Items (1) through (8) listed below correspond to the numbers included in that section.

(1) Provide a tabulation of estimated peak loads, resources and margins for each year (of the forecast period):

The required estimates provided in Table I reflect forecasted energy and demand for the period as well as data on summer and winter peak demands. CMEEC is currently in the process of restructuring its power supply portfolio, therefore Tables II and III will not be provided again in this year's forecast report. A portion of CMEEC's supply strategy relies on maintaining an open market position and buying in the ISO New England markets. CMEEC has secured 97% of its energy resources and 100% of its Installed Capability needs for 2006. ISO New England is in the process of finalizing market rules for ICAP which will take effect in December 2006. CMEEC has secured 87% of its energy requirements for 2007 and 39% for 2008. We have not secured our ICAP needs for 2007. Energy balancing and daily optimization will be managed at the short-term and spot markets. CMEEC is in the process of implementing a strategy for meeting its resource needs subsequent to 2007, including investigating options for developing demand and supply resources within the CMEEC Member communities and/or contracting with third parties. ISO New England's market-based system allows NEPOOL Participants to meet in part or whole their Installed Capability, Energy and Ancillary Service needs through a spot-market power exchange.

(2) Provide data on energy use and peak loads for the five preceding calendar years:

Historical energy use and peak loads for the eight-Member CMEEC system, which includes Wallingford, Bozrah and the Mohegan Tribal Utility Authority (MTUA) are provided in Table IV.

(3) Provide a list of existing generating facilities in service:

The current existing generating facilities owned by CMEEC and CMEEC Members and Participants are shown in Table V. The mix of existing generating facilities and system power agreements which serve the total CMEEC system are shown in Table VI. Anticipated retirement dates of CMEEC's Member's current existing generating facilities are shown in Table VIII.

(4) Provide a list of scheduled generating facilities for which property has been acquired, for which certificates have been issued, and for which certificate applications have been filed:

In response to the ISO New England "Requests for Proposals for Southwest Connecticut Emergency Capability" issued December 1, 2003, South Norwalk Electric Works (SNEW) has filed the following petitions now before the Council:

- a) Petition for Declaratory Ruling for a Temporary 22.8 MW generator, filed February 26, 2004.
- b) Petition for Declaratory Ruling for a 50 MW repowering of the SNEW power plant, filed February 27, 2004.

CMEEC applied with the ISO New England on December 13, 2005 for an interconnection study for up to 100 MW of peaking capacity in Wallingford at the site of the Pierce Station.

- (5) **Provide a list of planned generating units at plant locations for which property has been acquired or at plant locations not yet acquired that will be needed to provide estimated additional electric requirements:**

There are no such facilities, other than the Pierce Station repowering mentioned above, currently planned for ownership by CMEEC participants. CMEEC is involved in feasibility studies for other new generation sources; however these investigations are preliminary and confidential and are subject to confidentiality agreements.

- (6) **Provide a list of planned transmission lines on which proposed route reviews are being undertaken or for which certificate applications have already been filed**

The CMEEC/NU Transmission Service Agreement provides CMEEC parity rights to use the NU system, including all transmission additions or modifications. Additionally, CMEEC is a member of the New England Power Pool and is eligible to receive service pursuant to the NEPOOL Open Access Transmission Tariff. CMEEC is a signatory to the Hydro-Quebec Interconnection Agreements -- both of which provide transmission services.

It is CMEEC's position that fair and equitable implementation of the ISO New England RTO must include the right for transmission dependent utilities to acquire ownership interest in proportion to their load of at least all new facilities being developed under the RTO structure. CMEEC therefore is seeking ownership rights in such new facilities.

ISO New England, Northeast Utilities and Groton Utilities are in the process of investigating new and much needed transmission facilities in the Southeast section of Connecticut. The proposed project includes replacing the aging 69 kV, 400 line which is one of three transmission lines that supplies power to Buddington Substation.

- (7) **Provide a description of the steps taken to upgrade existing facilities and to eliminate overhead transmission and distribution lines in accordance with the regulations and standards described in Section 16-50t:**

Several upgrading projects are underway in CMEEC Member service territories and Wallingford.

The feasibility of replacing the 27.6 kV South Norwalk bulk power substation with a new 115 kV substation or the upgrading of the existing feeders from CL&P continues to be explored. The primary objective of this is to serve anticipated load increases arising from economic development projects and to improve power delivery reliability and economy. A two-step program has been developed. Time and details of this project depend on load growth projections, most significantly for the proposed Reed/Putnam project, and on the potential development of a new 50 MW generating facility. The existing 27.6 kV substation would be retired if a new substation is commissioned.

East Norwalk (Third Taxing District) has installed three (3) 2,000 KW emergency generators as part of the ISO New England Special Southwest Connecticut Gap Generation Program. These generators will operate when called on by the ISO New England at step 12 of Operating Procedure #4 power supply emergencies. The generators will also operate to supply emergency power to an adjacent commercial building on loss of utility service.

Norwich Public Utilities (NPÜ) continues to upgrade its 4.8kV distribution system to 13.8kV to increase efficiency by reducing system losses and to improve reliability through better voltage conditions and newer equipment. Matlack conversion work on Lafayette, Sherman, Sachem, Uncas, Oneco and Williams streets is 100% complete. Taftville upgrades and Circuit 804 conversions in the area of South B and Providence

Streets commenced in 2005 and are planned for completion in 2006. Upon completion, the Matlack and Taftville projects represent a conversion of nearly 5MW, or more than 20%, of Norwich's 4.8kV system load. NPU will continue to make improvements to the underground distribution infrastructure in the Norwich Business Park in 2006, including upgrading several thousand feet of cable down Wisconsin Avenue. All NPU substations, generating stations and several distribution switches are monitored and controlled via Supervisory Control and Data Acquisition (SCADA) system in NPU's control room 24/7. In 2005, NPU petitioned the Connecticut Siting Council for installation of a 2MW Caterpillar diesel generator at the Waster Water Treatment Plant (WWTP). The new WWTP generator officially went into operation on January 15, 2006 to participate in ISO New England's Demand Response Program, as well as, to provide emergency power to improve backup capabilities and reliability of the WWTP operation and to provide NPU and CMEEC with an additional resource for economic dispatch by ISO New England. In 2005, the Occum fish passage went into operation.

Jewett City is continuing the upgrading of its distribution network in an intended development of long-range system expansion. The first phase, a new 7.5 MVA substation was completed and came on-line in February 1994. The second phase, the transferring and upgrading of three distribution lines from the old substation to the new substation is complete. Jewett City installed three banks of capacitors on each of their circuits on their distribution system during May 2005. Jewett City is evaluating and upgrading all existing distribution lines. Jewett City will be adding an additional three (3) banks of capacitors in the spring of 2006 as well as expanding an existing circuit. Jewett City is continuously gathering load data for future consideration and/or expansion.

Groton Utilities continues its aggressive system upgrades. The distribution system upgrades for the Pfizer Loop project are complete. Two new 35 kV dedicated distribution lines (340 and 341 lines) from Trails Corner Substation to Electric Boat have been completed and are in service. A portion of the 306 line on Benham Road was rebuilt and re-conducted. Also, the 304 and 309, 35 kV lines from route #95 south to Poquonnock Substation have been rebuilt and re-conducted. Construction of the two new Electric Boat metal-clad 35 kV substations EB North and EB South has started as well as the third 35 kV feeder (310 line) from Trials Corner Substation to EB North Substation. As part of the Drozdyk Drive housing project a section of the 300 and 305, 35 kV overhead lines were removed and placed underground.

The 8.32 kV distribution pole line on Pleasant Valley Road was re-built and re-conducted. The voltage conversion project is continuing with the southern portion of Groton Utilities distribution territory ready for the conversion. A new preventive maintenance program was created which includes schedules for pole replacements, protective relaying testing, infrared scanning and other critical maintenance procedures. A new 15 kV underground distribution line was installed on Fairview Avenue as part of the State of Connecticut bridge replacement project. Numerous underground residential developments were installed over the last year. As part of the Navy Base Housing project, Dolphin Gardens, Nautilus Park North and Cherry Circle overhead electric distribution facilities have been removed as well as the existing houses demolished. New houses are in the process of being built and the new underground electric distribution infrastructure scheduled for installation this year. Two traffic light fixtures and controllers have been replaced and upgraded. Also, in order to improve distribution system performance, several new 35 kV capacitor banks have been installed and placed into service.

In Bozrah Light and Power's territory, the eight-mile Lebanon line voltage conversion has been completed. Geer Road Substation has been demolished and in the process of being de-commissioned. Also, completed were several housing projects that included the installation of underground distribution facilities. Aging distribution poles are being replaced as part of the preventive maintenance program. Also, two new 15 kV capacitor banks were installed to enhance system performance.

In Wallingford, the vast majority of the 13.8kV distribution system has been fully reconstructed over the most recent 10-year period. Today, widespread or prolonged outages are rare. Ongoing work is being performed in aged pole replacements, and reconstruction of old, direct-buried, Underground Residential Distribution (URD) systems. The latter are being replaced with new cable in buried conduit. All new subdivision distribution systems are presently placed in underground conduit.

Wallingford is currently placing line distribution reclosers on a number of its longer distribution circuits for improved circuit protection and reliability. These will be monitored and controlled through Wallingford's existing SCADA systems.

Over the next year, Wallingford is planning to install a number of "SCADA-MATE" motorized line distribution switches which will facilitate switching and load transfer between its three bulk power distribution substations. These switches will also be monitored and controlled through the SCADA system.

- (8) For each private power producer having a facility generating more than one (1) megawatt, and from whom CMEEC has purchased electricity during the preceding calendar year, provide a statement including the name, location, size, and type of generating facility, the fuel consumed by the facility, and the by-product of the consumption:**

Generally, the customers in CMEEC Member service areas who have generating capacity greater than 1 MW retain the power for ongoing internal utilization and/or for peak shaving against utility power purchases. CMEEC does not purchase electricity from private power producers at this time. Therefore, Table VII is not provided in this year's forecast. While neither CMEEC nor its Members have formal arrangements in place to purchase power from most of those facilities on a routine basis at this time, these customers are asked to generate power and/or shed load during emergency conditions as defined in NEPOOL's Operating Procedure #4. CMEEC has been actively involved in the ISO New England Load Response Program. At the present time, CMEEC has enrolled approximately 60 MW of customer emergency generation and load reductions. In addition, the pending Connecticut Department of Environmental Protection Distribution/Generator permit program may provide an opportunity for more local generation purchases.

TABLE I
 CONNECTICUT MUNICIPAL ELECTRIC ENERGY COOPERATIVE
 10-YEAR FORECAST OF RETAIL SALES BY CUSTOMER CLASS, ENERGY REQUIREMENTS AND PEAK DEMAND
 2006-2015

YEAR	Residential Service MWh	Small General Service MWh	Medium General Service MWh	Large General Service MWh	Other Service MWh	Total Sales MWh	Mohegan Tribal Authority MWh	Hydro Gener. MWh	Subtrans. & Distrib. Losses MWh	Systems Energy Requirements Met by CMEEC MWh [1]	CMEEC Summer Coincident Demand MWh [2] [3]	CMEEC Winter Coincident Peak Demand MWh [2] [3]	Load Factor %
1992	424,463	118,862	250,533	707,087	47,619	1,548,564	0	11,292	68,988	1,606,260	267,49	266,51	68.4
1993	441,802	115,140	250,426	711,377	47,119	1,565,864	0	11,372	72,747	1,627,239	286,08	263,33	64.9
1994	450,933	114,205	256,064	697,152	48,728	1,567,082	0	6,524	83,816	1,644,374	296,86	281,06	63.2
1995	448,638	114,746	247,902	710,876	51,182	1,573,344	0	3,845	85,114	1,654,613	311.63	296.47	60.6
1996	477,285	114,580	251,441	784,919	52,647	1,680,872	15,431	3,774	74,266	1,766,855	279.85	279.85	69.3
1997	468,598	113,766	245,795	749,385	53,356	1,630,900	45,138	3,216	78,568	1,751,390	319.54	264.34	62.6
1998	472,381	115,427	249,085	747,566	53,839	1,638,298	48,027	3,524	63,026	1,745,827	309.16	263.73	64.5
1999	492,997	116,139	287,677	682,328	57,565	1,636,706	48,036	2,111	75,553	1,758,184	322.39	286.24	62.3
2000	504,537	119,702	335,887	641,300	59,936	1,661,362	101,918	2,825	67,067	1,787,298	309.16	285.36	65.5
2001	514,722	122,207	337,878	642,227	61,560	1,678,594	101,918	2,118	65,811	1,844,205	351.12	277.51	60.0
2002	527,056	119,644	344,415	640,657	66,843	1,698,615	147,846	2,173	74,769	1,919,057	367.87	299.49	59.6
2003	556,621	122,552	357,194	639,020	68,528	1,743,915	150,594	3,163	64,837	1,956,183	349.93	302.38	63.8
2004	559,744	127,258	362,651	667,581	70,465	1,787,639	151,435	2,315	67,714	2,004,533	345.27	332.36	66.1
2005	578,468	130,690	387,090	667,051	74,283	1,817,621	149,229	689	74,836	2,040,937	372.12	311.67	62.6
2006	589,650	135,615	369,490	673,765	74,572	1,843,093	149,177	3,000	65,495	2,054,765	371.79	328.35	63.1
2007	593,138	136,250	371,795	675,974	75,039	1,852,197	150,026	3,000	65,851	2,065,073	378.87	334.65	62.2
2008	596,568	136,871	374,050	677,735	75,506	1,860,729	152,743	3,000	66,195	2,076,667	385.21	340.16	61.4
2009	599,941	137,483	376,281	679,507	75,971	1,869,183	154,837	3,000	66,535	2,087,555	388.93	343.33	61.3
2010	603,335	138,110	378,536	681,239	76,440	1,877,659	157,301	3,000	66,874	2,098,835	394.79	348.63	60.7
2011	608,435	139,211	382,477	682,544	77,015	1,889,682	159,805	3,000	67,278	2,113,765	399.94	350.62	60.3
2012	611,492	139,744	384,475	683,879	77,434	1,896,954	162,700	3,000	67,600	2,124,254	401.76	352.76	60.2
2013	615,578	141,215	386,481	685,722	78,023	1,907,020	164,934	3,000	68,146	2,137,101	404.06	355.34	60.4
2014	619,993	142,675	388,480	687,846	78,571	1,917,565	167,561	3,000	68,714	2,150,841	407.26	359.30	60.3
2015	624,476	144,172	390,496	690,066	79,130	1,928,340	170,230	3,000	69,295	2,164,865	390.88	339.52	64.9
INCREASE	0.77	0.99	0.62	0.34	0.63	0.59	1.33	-0.77	0.59	0.23	0.86		

[1] Totals are the sum of kilowatthours rounded to the nearest megawatthour (MWh) less CT Steele Interruptible.

[2] The forecasted CMEEC coincident peak demands were computed by summing the Groton, Norwich (inclusive of the contribution of Norwich's Second Street and Tenth Street hydro units), Jewett City, East Norwich, South Norwich, Wallingford and Bozrah noncoincident peak demands and multiplying by an average historical coincidence factor.

[3] The historical 1994 CMEEC winter and summer peak demand numbers reflect both Wallingford and Bozrah as if they were part of CMEEC at that time. The historical 1995 CMEEC winter and summer peak demand numbers reflect Bozrah as if they were part of CMEEC at that time.

TABLE IV

March 2006

CONNECTICUT MUNICIPAL ELECTRIC ENERGY COOPERATIVE (CMEEC)

**HISTORICAL ENERGY USE AND PEAK LOAD
2001-2005**

<u>Year</u>	<u>CMEEC Coincident Peak Load (MW) [1]</u>	<u>CMEEC Energy (MWh) [1]</u>
2001	351.12	1,844,205
2002	367.87	1,919,057
2003	349.93	1,956,183
2004	345.27	2,004,533
2005	372.12	2,040,997

[1] Reflects CMEEC Member loads inclusive of Wallingford, Bozrah and the Mohegan Tribal Utility Authority (MTUA) for 2001-2005.

TABLE V

CONNECTICUT MUNICIPAL ELECTRIC ENERGY COOPERATIVE (CMEEC)

EXISTING GENERATION FACILITIES OWNED BY
CMEEC AND ITS MEMBERS

As of March 1, 2006

<u>Generating Facility</u>	<u>Winter Rating (MW)</u>	<u>Summer Rating (MW)</u>
Norwich Combustion Turbine (Oil-Fired) [1]	18.800	15.255
Norwich Second Street (Hydro)	0.95	0.95
Norwich Tenth Street (Hydro)	1.12	0.98
Norwich Occum (Hydro)	[2]	[2]

[1] Represents CMEEC current joint-ownership share. The full capability of the Norwich combustion turbine unit is under contract to CMEEC.

[2] Winter and summer ratings are based on average river flow conditions. The nameplate rating for the Occum hydro station is 0.80 MW. This hydro unit remains a resource of the Norwich Department of Public Utilities; the generation of this hydro unit is used by Norwich to directly offset Norwich load.

TABLE VI

As of March 1, 2006

MIX OF EXISTING GENERATION - CMEEC RESOURCES

<u>Unit Designation</u>	<u>In-Service Date</u>	<u>Net Winter Capacity (MW)[1]</u>	<u>CMEEC Share (MW)</u>	<u>Net Summer Capacity (MW)[2]</u>	<u>CMEEC Share (MW)</u>	<u>CMEEC Percent of Unit (%)</u>
<u>Long-Term System & Asset Contracts [3]</u>						
Base System Purchase		50.00	50.00	50.00	50.00	
Base System Purchase		15.00	15.00	15.00	15.00	
Base System Purchase		30.00	30.00	30.00	30.00	
Base System Purchase		75.00	75.00	75.00	75.00	
Base Unit Entitlement Purchase		25.00	25.00	25.00	25.00	
On-Peak System Purchase		50.00	50.00	50.00	50.00	
On-Peak System Purchase [6]		---	---	<u>50.00</u>	<u>50.00</u>	
Total System Contracts		245.00	245.00	295.00	295.00	
<u>Municipal Generation</u>						
Norwich Combustion Turbine	1972	18.80	18.80	15.25	15.25	100.0000
Norwich Tenth St. Hydro	1966	1.12	1.12	0.98	0.98	100.0000
Norwich Second St. Hydro	1927	0.95	0.95	0.95	0.95	100.0000
Total Municipal Generation		20.87	20.87	17.18	17.18	
TOTAL CMEEC CAPACITY RESOURCES			265.87		312.18	
<u>Other Energy Resources</u>						
NYPA Hydro (Firm & Peaking) [4]			13.60		13.60	NA
Short-Term Purchases [5]			Varies		Varies	NA

[1] Represents NEPOOL Winter Maximum Claimed Capability.

[2] Represents NEPOOL Summer Maximum Claimed Capability.

[3] System Purchases, Contract Purchases & Unit Entitlement Purchases from several counterparties.

[4] Represents maximum hourly contract deliveries to CMEEC. New York Power Authority (NYPA) hydro purchases began July 1, 1985. Energy contributions from NYPA are considered to be firm contracts and used to reduce electric requirements thereby reducing CMEEC Capability Responsibility in NEPOOL.

[5] The MW amounts shown for Short-Term Purchases vary from month to month from 0 MW to 75 MW through December 2006.

[6] System on-peak energy call for July and August 2006 scheduled for the day-ahead.

Table VII

Connecticut Municipal Electric Energy Cooperative (CMEEC)

COGENERATION & SMALL POWER PRODUCTION FACILITIES
GREATER THAN 1 MW IN TOTAL SIZE [1]

March 2006

<u>Facility Name</u>	<u>Facility Type</u>	<u>Facility Location</u>	<u>No. Of Units</u>	<u>Prime Mover</u>	<u>Type Fuel</u>	<u>Summer & Winter Capacity</u>	<u>Years Installed</u>
Pfizer, Inc.	Cogeneration	Groton CT	5	Steam Turbine	Duel Fuel	32,500 kW	1948, 1950 1993 & 2001
U.S. Naval Sub Base	Cogeneration	Groton CT	3	Steam Turbine	Duel Fuel	13,500 kW	1966, 1978 & 1993
			1	Steam Turbine	Duel Fuel	5,000 kW	1996
			1	Diesel Engine	#2 oil	1,500 [2]	1960 (est.)

[1] The customer retains power from each of these facilities.

[2] This diesel generator is used to provide black start capability.

TABLE VIII

CONNECTICUT MUNICIPAL ELECTRIC ENERGY COOPERATIVE

March 2006

Anticipated Unit Retirement and/or Contract Expiration Dates

	<u>Retirement Date</u>
<u>Conventional Hydro</u>	
Norwich Tenth Street Hydro	01/01/2044
Norwich Second Street Hydro	01/01/2044
<u>Peaking</u>	
Norwich Combustion Turbine	Not Scheduled