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LOAD FORECAST

LOAD GROWTH

The state's largest utilities, Connecticut Light and Power Company (CL&P), The United Illuminating Company (UI), and Connecticut Municipal Electric Energy Cooperative (CMEEC), predict increased load growth throughout the forecast period. As depicted in Figure 1, total energy output requirements for the state are projected to grow from 31,816 gigawatt-hours (GWh) in 2000, at an annual average growth rate of 1.29 percent, to 40,009 GWh in 2020. Both CMEEC and CL&P project annual average growth rates of 1.3 percent through the forecast period with UI projecting a modest 0.7 percent annual average growth rate. The national demand for electricity is expected to grow at 1.8 percent annually for twenty years.

Figure 1: Connecticut Electric Utilities' Projected System Requirements
Figure 1
(Text alternative not included in original report): A stacked bar chart that depicts the projected total system requirements for CL&P, UI, and CMEEC from approximately 32,000 gigawatt hours in 2000 to approximately 40,000 gigawatt hours in 2020.

Connecticut Office of Policy and Management (OPM) projects a 6 percent increase in population from 2000 to 2015. The per capita consumption of electricity is projected to increase from 9,907 kilowatt-hour (kWh) in 2000 to 10,691 kWh in 2015. Connecticut's per capita electric consumption continues to increase due to construction and use of larger homes, an active economy, and a high quality life style that results in increased use of electro-technologies such as air conditioners, electric appliances, and computers.

PEAK LOADS

In 2000, the statewide non-coincident summer peak load was 5,900 MW, a decrease from record setting years in 1997 at 6,019 MW and 1999 at 6,369 MW, as reported by the utilities, due to a cooler summer season. However, annual summer peak loads are expected to grow in the state at an annual average growth rate of 1.3 percent over the forecast period as indicated on Figure 2. If these projections are correct, the total peak load growth would increase by 1,554 MW from the 2000 peak load to 7,454 MW by the year 2020, a 26 percent increase. ISO-New England expects regional peak load to grow at an annual rate of 1.5 percent from 2001 to 2010, also shown on Figure 2. However, if peak loads grow at a rate of greater than 2 percent, as they did in the late 1990s, and OPM's projections for the State's population and per capita electric consumption are accurate, peak loads would be substantially higher than those projected by Connecticut utilities.

Figure 2: Actual and Predicted Peak Load for Connecticut and ISO-New England

Figure 2

(Text alternative not included in original report): A line chart that depicts the historic and projected system peak loads for Connecticut and ISO-New England (summer and winter) from 1990 through 2011. The ISO-New England summer peak load for 1990, 2000, and 2010 is 19,130 MW, 23,150 MW, and 27,075 MW, respectively. The Connecticut peak load for 1990, 2000, and 2010 is 5,348 MW, 5,900 MW, and 6,715 MW, respectively.

Although the purpose of forecasting is to identify the risk associated with the supply and demand of electricity, this year's projections are of concern due to unpredictable weather that can dramatically change demand, a changing economy that optimistically will continue to grow, and consumer trends that may be difficult to predict with any certainty. There is further concern that the separation of generation from distribution companies could, if not carefully monitored, isolate the functions of supply and demand, create deeper load pockets and locked-in generation, constrain the existing transmission system, and reduce accountability to the public.

CONSERVATION AND LOAD MANAGEMENT

At this time, potential savings from all current and previous CL&P Demand Side Management (DSM) sources are forecasted to reduce summer peaks by 456 MW and winter peaks by 339 MW. Total DSM initiatives culminating in the year 2006 will reduce summer peak demand by 620 MW. The most successful DSM programs in 2000, measured in terms of participation and expected energy savings versus budgeted expenditures, were retail lighting; advanced design for new residential, commercial, and industrial construction; energy efficient residential washing machine sales; and custom on-site energy audits for commercial and industrial customers. The least successful programs were residential audits, heat pump water heater sales, and express services targeted to small load commercial and industrial customers for upgrading lighting, motors, and heating/cooling units. While CL&P expects the resources attributed to their current DSM programs to plateau from 2006 to 2010, conserved assets may continue beyond this period with customer participation in new programs sponsored by Public Act 98-28. Consistent with the provisions of Public Act 98-28, an assessment of three mills per kWh will be imposed on electricity sold to each end use customer of an electric distribution company. During the year 2000, CL&P spent $66.6 million on energy efficiency programs for over 300,000 residential and 1,400 commercial/industrial customers who saved about 2,899 GWh and $234 million (lifetime savings). UI's CL&M program expenditures in 2000 was $16.9 million saving approximately 65 GWh which equates to an 11 MW reduction in demand for electricity during peak hours.

RESOURCE FORECAST

SUPPLY RESOURCES

The state's supply resources are anticipated to be adequate to meet demand during the forecast period as long as all active generators committed to the ISO-New England are available for continuing use (see Table 1a and Figure 3a). However, some subregions such as southwest Connecticut, may begin to experience supply deficiencies and voltage instability problems as soon as 2002 due to insufficient transmission and inadequate resources within the region. In the event that the Millstone nuclear units or other large base load units are not available, the state's electric generators and transmission/distribution companies would institute the following plan to avoid capacity deficiencies during peak demand periods:

- operate all available generating units to their reasonable limits;
- purchase power from every available resource, both in and out of Connecticut;
- request all private power producers in the State to generate to their maximum output;
- arrange to temporarily shift load on high load days to substations and transmission facilities outside Connecticut to help relieve the capacity shortage in the State;
- explore additional interruption of service with industrial and commercial customers; and
- maximize use of customer-owned, emergency generators.

Table 1a: Resources status quo vs. Demand (summer).

Table 1a:
(Text alternative not included in original report): A table that depicts Connecticut' s balance of supply resources and demand for electricity in 2001, 2004, 2010, 2015, and 2020. Connecticut' s supply resources for electricity, including transmission import capacity, in 2001, 2004, 2010, 2015, and 2020 is 9,098 MW, 11,740 MW, 11,740 MW, 10,900 MW, and 10,900 MW, respectively. Connecticut' s demand for electricity in 2001, 2004, 2010, 2015, and 2020 is 6,255 MW, 6,469 MW, 6,715 MW, 6,987 MW, and 7,454 MW, respectively.

Figure 3a: Resources status quo vs. Demand (summer).

Figure 3a:
(Text alternative not included in original report): A line chart that depicts Connecticut' s balance of supply resources and demand for electricity in 2001, 2004, 2010, 2015, and 2020. Connecticut' s supply resources for electricity, including transmission import capacity, in 2001, 2004, 2010, 2015, and 2020 is 9,098 MW, 11,740 MW, 11,740 MW, 10,900 MW, and 10,900 MW, respectively. Connecticut' s demand for electricity in 2001, 2004, 2010, 2015, and 2020 is 6,255 MW, 6,469 MW, 6,715 MW, 6,987 MW, and 7,454 MW, respectively.

While this plan has proved to be adequate in the past, it is becoming increasingly important for resources to be strategically located on the grid in order to ensure that electric supply can technically and economically serve pockets of high demand. Furthermore, some of the facilities called upon to generate at their maximum capacity may not be able to do so because of age, constraints on the transmission system, or air emission limitations.

Connecticut and the region benefited from the addition of the Bridgeport Energy facility, completed July 1999, with a total power output of 520 MW. With all planned supply resources in place, Connecticut will have a margin of 2,843 MW to meet 2001 summer peak demand. However, this scenario is speculative and subject to a number of variables, conditions, and expectations that can quickly change.

Recent legislative action to institute emission limits on older oil-fired electric generation by year end of 2004 suggests a scenario that may reduce or eliminate the potential of over 2,700 MW of generation located in Milford, New Haven, Norwalk, Bridgeport, Montville, and Middletown (see Table 1b and Figure 3b). While this loss may be alleviated by 2,642 MW of new gas-fired generation expected to be all on-line by 2004, the loss of generation in Bridgeport and Norwalk will exacerbate transmission capabilities in southwest Connecticut and could overload grid connections between New York and New England. Indeed, ISO-New England predicts a substantial loss of reliability to southwest Connecticut, if these units are prematurely retired before replacement by new additional generation, new transmission capability, or both.

Table 1b: Resources less retirement vs. Demand (summer).

Table 1b:
(Text alternative not included in original report): A table that depicts Connecticut' s balance of supply resources and demand for electricity in 2001, 2004, 2010, 2015, and 2020 with the retirement of 2,722 MW in 2004. Connecticut' s supply resources for electricity, including transmission import capacity, in 2001, 2004, 2010, 2015, and 2020 is 9,098 MW, 9,018 MW, 9,018 MW, 8,178 MW, and 8,178 MW, respectively. Connecticut' s demand for electricity in 2001, 2004, 2010, 2015, and 2020 is 6,255 MW, 6,469 MW, 6,715 MW, 6,987 MW, and 7,454 MW, respectively.

Figure 3b: Resources less retirement vs. Demand (summer).

Figure 3b:
(Text alternative not included in original report): A line chart that depicts Connecticut' s balance of supply resources and demand for electricity in 2001, 2004, 2010, 2015, and 2020 with the retirement of 2,722 MW in 2004. Connecticut' s supply resources for electricity, including transmission import capacity, in 2001, 2004, 2010, 2015, and 2020 is 9,098 MW, 9,018 MW, 9,018 MW, 8,178 MW, and 8,178 MW, respectively. Connecticut' s demand for electricity in 2001, 2004, 2010, 2015, and 2020 is 6,255 MW, 6,469 MW, 6,715 MW, 6,987 MW, and 7,454 MW, respectively.

Ultimately, the State will be reliant on generation from the New England Power Pool (NEPOOL), the success of CL&M programs, and the continued operation of committed resources to meet this summer's peak load. With retirement of older generating facilities, but without increased conservation and/or capacity, by 2010 there will be a need for regional import to avoid local curtailment of electricity during periods of energy supply failure and high peak demand.

EXISTING GENERATION FACILITIES

As depicted in Figure 4, approximately 3,614 MW or 57 percent of the states electric capacity is 20 years old or older. Such older facilities consist of oil fired, nuclear (specifically Millstone 2), and hydroelectric units. Until recently, there has been little investment in new facilities since the mid-1970s, a period of high fuel costs and uncertain supply. A service life of 40 years would result in the retirement of most of these facilities by 2020, with the possible exception of hydroelectric facilities.

There are 109 small power production facilities operating in the State with a total capacity of 1,070 MW, representing 17 percent of the state's current capacity. Of these, eight are cogeneration facilities totaling approximately 319 MW of capacity with units ranging in size from 0.01 MW to 181 MW. Cogeneration facilities use oil, natural gas, landfill methane, wood, or coal to simultaneously produce diversified electricity and thermal energy. Waste fuels, including refuse, waste tires and methane from landfills, are currently used to power generators in the state.

Figure 4: Distribution of Connecticut's Electric Generators by Fuel and Age

Figure 4:
(Text alternative not included in original report): A stacked column chart that depicts the distribution of Connecticut's electric generators by fuel and age. Approximately 2,642 MW of gas-fired generation capacity would be available by 2005; 669 MW of generation capacity was built between 1990 and 1999; 1,921 MW of generation capacity was built between 1980 and 1989; 2,292 MW of generation capacity was built between 1970 and 1979; and 1,322 MW of generation capacity was built prior to 1969.

These waste-fueled facilities are diversified, privately operated, and contribute 191 MW, representing approximately three percent of the State's capacity for electric generation. Also, an additional 137 MW is generated by private entities for on-site use. The installation of additional privately owned generation is expected, but at competitive rates on customer sites with owners seeking to self-generate or to provide electricity to other users under contract. Under a competitive environment, some existing electric purchase agreements may be secured as utility stranded investments.

Reliability has become a key issue to facility operation due to the age of many Connecticut generating plants. Consequently, facility operators, the ISO, and state regulators must continue to assess, test, and confirm individual facility availability. Measures include confirmation of unit ratings, repairs, and operational schedules.

As depicted in Figures 5 and 6, the state's fuel mix for electric generation will change dramatically from oil-fired and nuclear units to natural gas units during the next twenty years. This fuel mix scenario is consistent with the Department of Energy's projected fuel consumption for electric generation as depicted in Figure 7. However, without increased diversity of supply resources, the State faces an inherent risk of reduced reliability.

Figures 5 and 6
(Text alternative not included in original report): A pie chart that depicts Connecticut's fuel mix for electric generation in 2001 (Figure 5) and in 2020 (Figure 6). In 2001, the fuel mix for the states electric generating facilities is approximately 43 percent oil/gas, 9 percent coal, 3 percent refuse/tires, 32 percent nuclear, 2 percent hydro, and 11 percent gas/oil. In 2020, the fuel mix for the states electric generating facilities would be approximately 2 percent oil/gas, 10 percent coal, 4 percent refuse/tires, 21 percent nuclear, 3 percent hydro, and 60 percent gas/oil.

Figure 7: Fuel Consumption for Electric Generation within ISO-New England 1996-2020

Figure 7
(Text alternative not included in original report): A line chart that depicts the Connecticut's existing and projected fuel consumption for electric generation within ISO-New England from 1996-2020. The chart depicts an increase for natural gas and renewables, and a decrease for coal, oil, and nuclear.

NUCLEAR POWER GENERATION

Connecticut currently has two operational nuclear electric generating units contributing a total of 2,017 MW (summer rating), approximately 32 percent of the state's capacity. Nuclear capacity, which formerly accounted for 45 percent of the state's operating capacity, has already been reduced by the retirement of the Connecticut Yankee and Millstone Unit 1 facilities in December 1996 and July 1998, respectively. Millstone Unit 2, which was reactivated in the spring of 1999, is scheduled to retire in 2015. As depicted in Figure 6, the contribution by nuclear facilities in the State is projected to be reduced by 840 MW after the retirement of Millstone Unit 2. At that time, the only remaining nuclear generation will be from Millstone Unit 3, contributing 1,146 MW or 21 percent of the state's projected capacity.

Although no additional nuclear power capacity is planned as a new supply option, nuclear power offers unique benefits and constraints that is being reconsidered in the draft national energy policy. By releasing no production-connected sulfur oxides, nitrogen oxides, or carbon dioxide, nuclear power essentially represents a zero-air-emission generation source. If Connecticut were to permanently lose the contribution of its nuclear facilities now operating in Connecticut, the operators would 1) no longer have a surplus of sulfur dioxide allowances granted under the 1990 Clean Air Act Amendments (CAAA), and 2) face the possible loss of future emission allowances under the CAAA. Nonetheless, there remain issues of scheduled and unscheduled outages; nuclear waste storage, transport and disposal; public safety; security; and facility costs.

FOSSIL FUEL POWER GENERATION

Fossil fuels including coal, petroleum, and natural gas represent the largest remaining portion of the state's electric fuel supply mix. Connecticut currently has two coal-fired electric generating facilities contributing 566 MW, approximately nine percent of the state's current capacity. Coal reserves in the United States are expected to last over 240 years based on 1998 consumption levels. Despite this apparent benefit of supply and transport via an existing rail infrastructure, coal is not immediately being considered as a supply-side fuel due largely to the relative high expense of facility installation, and the concern for control of air emissions, including possible future carbon dioxide regulations. However, with draft national energy policy encouraging development of clean-coal technology, and with the United States possessing approximately 24 percent of world's current estimated total recoverable coal, it may be a fuel that will be considered as a future supply option.

Connecticut currently has 46 oil-fired electric generating facilities, some of which can also burn natural gas, contributing a total of 2,706 MW, approximately 43 percent of the state's current capacity. New generation fueled solely on oil has been largely ruled out for future new supply due in part to the historic and potential volatility of the crude oil market. The United States holds an estimated two- percent of the world's known oil reserves excluding reserves in oil shale; a supply expected to last 70 years based on 1998 consumption levels. Approximately 60 percent of the United States' oil is imported, making it potentially vulnerable to market manipulation by foreign nations. Although the current price of oil is low when compared to other fuel types, Connecticut utilities have attempted to diversify their fuel mix away from reliance on crude oil. However, all plans for fuel diversification must include an assessment of fuel availability, cost, and affect on the environment that would result if generating facilities were required to use secondary fuels.

NATURAL GAS GENERATION

Connecticut currently has 53 natural gas-fired electric generating units, some of which can burn oil, contributing a total of 724 MW, approximately eleven percent of the state's current capacity. Natural gas is expected to be the fuel of choice to be used for electric generation to meet sulfur dioxide standards and other limitations set by the CAAA. Natural gas electric generating facilities are currently preferred primarily because of the available technology, high efficiency, cleaner emissions, and the relatively low capital cost per kWh produced (see Table 2). Current United States' reserves are anticipated to last 71 years at 1998 consumption levels. In addition, reserves from Canada have increased supply in New England by more than 50 percent through new pipelines from both western and eastern Canadian provinces. Although, impacts on air quality are substantially less than coal or oil-fired facilities, it is less clear if natural gas generation will be able to economically meet future nitrogen oxide and carbon dioxide emission limits, and how competition will affect the supply of natural gas to electric generating facilities.

Table 2: Cost and Lead Times for New Electric Generation Technologies

Technology	Size (MW)	Leadtime (Yrs)	Cost* (1999 $/kw)
Conventional Pulverized Coal	400	4	1,092
Gas/Oil Combined Cycle	250	3	445
Gas/Oil Cumbustion	160	2	331

Turbine	10	3	2,041
Fuel Cells	50	3	983
Wind	100	4	1,723
Biomass			

* Cost includes contingencies, but exclude interest charges

As depicted in Table 3, the natural gas supply for new generation in New England, based on the current and proposed natural gas supply capacity, the annual average daily consumption (1999), and the average consumption per MW of generation for new combined cycle natural gas-fired facilities, could provide approximately 11,896 MW of power.

Table 3: Natural Gas Capacity and Consumption Rates for New England (million cubic feet per day)

	Existing Capacity Year 2000	Existing Consumption Year 1999		Total Capacity 3,604,009	
Algonquin	1,494,763	Connecticut	359,296	Total Consumption	
Tennessee	1,186,346	Maine	16,586	1,605,559	
Iroquois	206,900	Massachusetts	922,096		
Vermont Gas	49,000	New Hampshire	55,644	Available Capacity	
Granite State	37,000	Rhode Island	229,953	1,998,450	
Portland Natural Gas	230,000	Vermont	21,984		
Maritimes & Northeast	400,000			Average Consumption	
				per MW of Generation 168	
Total Capacity	3,604,009	Existing Consumption	1,605,559		Potential MW Generation in NE 11,896

Notwithstanding new supplies expected from the Sable Island Basin and new pipeline capacity, the use of natural gas for base load facilities, combined with other heating and transportation uses, might result in over-dependence and lack of fuel diversity which may curtail the plans for nearly one-half of the generation being considered for development in New England. Consequently, there is a need to balance future fuel supply and transmission capacity with proposed generation. Consistent with recommendations by ISO-New England's Steady–State Analysis of New England's Interstate Pipeline Delivery Capability 2001-2005, January 2001, the Council supports a process to:

- certify the character and quality of gas transportation infrastructure;
- improve back-up fuel capability;
- promulgate standards for coordination of scheduling for delivery of natural gas to users;
- conduct a regional natural gas flow simulation to dynamically identify availability and supply constraints; and
- support regulatory streamlining for new pipelines.

HYDROELECTRIC POWER GENERATION

Connecticut hydroelectric generation consists of 39 facilities contributing 151 MW, approximately two percent of the state's current capacity. Hydro-power, long considered to be an environmentally acceptable source of power, has recently come under increased scrutiny by both recreational and environmental advocacy groups, whose concerns include the effects of dams on river flow, water quality, fish populations, and wildlife habitats. Presently, the Falls Village, Bulls Bridge, Shepaug, Stevenson, and Rocky River hydro-units, totaling 115 MW of capacity, are undergoing relicensing review with the Federal Energy Regulatory Commission. Consequently, while hydropower may be considered a clean and renewable energy source, renewal of existing licenses or development of any additional large units in Connecticut would likely be limited by these constraints, relative cost, and lack of sites.

IMPORT RESOURCES

Since 1986, Connecticut utilities have held contracts for 479 MWs from a total of 1,500 MWs of import capability from the Hydro-Quebec Phase I and Phase II projects. These contracts and others in New England expire on August 31, 2001, making the 1,500 MWs available for sale to wholesale and retail electric suppliers. Although the Hydro-Quebec interconnection tie may not be counted toward capability, it is expected to continue to provide energy needs to New England on a competitive basis.

DISTRIBUTED GENERATION

Commercial technologies such as reciprocating engines and small combustion turbines are used in a variety of applications for energy, cogeneration, and emergency power. Emerging technologies that appear close to being economically viable for use to generate electricity are microturbines, fuel cells, wind turbines, and photovoltaics (see Table 4).

Table 4: Distributed Generation Technologies

Technology	Size	Efficiency*	Turnkey Cost* ($/kW)
Combustion Turbine	1 MW - 30 MW	21-40%	650-900
Reciprocating Engine	30 kW - 10 MW	30-42%	600-1,000
Microturbine	30 kW - 400 kW	25-30%	600-1,100
Fuel Cell	50 kW - 1 MW	35-54%	`1,900-3,500
Photovoltaics	1 kW +	10-20%	5,000-10,000
Wind	1 kW - 20 kW	12-38%	1,000 - 2,500

*Does not Include Combined Heat and Power

Currently there are three main types of fuel cells being developed for commercial electric generation: phosphoric acid, molten carbonate, and solid oxide. The current prices per kWh of these units limit their appeal for base load applications. However, fuel cells can be considered viable supply resources in distributed and cogeneration applications. Wind turbines would need to be placed in windy areas such as on hilltops or the shores of Long Island Sound. Consequently, the siting of these facilities could potentially compromise the preservation of scenic resources in Connecticut. Solar power generation facilities can take advantage of the large area of industrial and commercial rooftops and south-facing facades to achieve significant output based on current technology, but their price has currently confined them to certain high value niche markets.

Distributed generation applications can be designed to meet a wide variety of service requirements and fulfill the needs of many customers. Such applications provided by distributed generation are combined heat and power, standby power, peak-shaving, grid support, and stand alone generation. Distributed generation has faced obstacles that include lack of technology maturation, cost associated with an economy of scale, and regulatory barriers. Regulatory barriers include interconnection requirements, permitting and siting, and compliance with building and electrical codes. Market forces, technological advances, and industry restructuring will continue to remove obstacles for the strategic development of distributed generation and integration of supply resources within load pockets. In addition, distributed generation has the advantage over large centralized systems of being secure at customers sites and less reliant on transmission infrastructure.

ELECTRIC RESTRUCTURING

Through Public Act 98-28, Connecticut electric consumers will be provided an opportunity to choose their electric generation supplier. In addition to providing choice for electric customers, this law is intended to open electric generation to competition from other generation suppliers to decrease the price of electricity, foster technological innovation, and improve environmental quality through new facilities with lower emission profiles. The Department of Public Utility Control has initiated the process to unbundle generation from other components of the electric utilities; establish non-bypassable service charges to fund energy conservation programs and to fund investments in renewable technologies; and establish a systems benefit charge to fund education programs, public policy programs, and provide assistance to utility workers and municipalities that are impacted by restructuring. While many of the market-based provisions of this Act have already been executed including the divestiture of nuclear and non-nuclear generation and customer choice of electric generation suppliers by 2000, oversight of electric supply markets must continue to ensure efficient management.

Figure 8: Class I and Class II Renewable Generation Asset Requirements in Connecticut

Figure 8:
(Text alternative not included in original report): A line chart that depicts the State's Class I and Class II renewable generation asset requirementsfrom 2000 through 2009. The Class I and Class II renewable requirements for 2000 is 29 MW and 319 MW, respectively. The Class I and Class II renewable requirements for 2009 is 348 MW and 406 MW, respectively.

At present, most customers are still being served through the standard offer service of CL&P and UI. Few have chosen an alternate electric generation supplier. Market conditions, customer awareness, and availability of viable alternatives, are factors which may affect consumer decisions to choose an electric generation supplier other than the standard offer. This standard offer rate is in place as a transition to competition and will expire 2004. The market will be tested after the expiration of this rate, and the cost of service could change dramatically depending on the availability of competitive supply and demand for energy.

Public Act 98-28 also includes portfolio requirements of Class I and Class II renewable energy sources, applicable to licensed retail suppliers of electricity in Connecticut, effective January 1, 2000. Class I renewable energy sources include solar power, wind power, fuel cells, methane gas from landfills, and biomass facilities. Class II renewable energy sources include trash-to-energy facilities, biomass facilities that do not meet Class I criteria, and certain hydroelectric facilities. Currently there are 8.3 MW of Class I and 1,274.2 MW of Class II renewable generating assets in or attributed to the State. As shown in Figure 8 the required amount of Class I and Class II renewable generating assets in 2009 will be 348 MW and 406 MW, respectively. There appears to be sufficient energy from Class II renewable generating assets to meet the provisions of Public Act 98-28. However, Class I renewable generating assets will need to increase by almost 4,000 percent over the next ten years, which may prove to be difficult.

FACILITY SITING

As a consequence of restructuring legislation, the Council's jurisdiction and statutory decision criteria have been modified to provide uniform treatment between utilities and private power producers so that a full range of environmental and economic effects can be appropriately considered for new generation facilities. Such new generation facilities are expected to be developed in Connecticut at a rapid pace over the next few years. The Council has already approved the following natural gas-fired electric generating facilities:

- 520-MW Bridgeport Energy LLC project in Bridgeport,

- 544-MW PDC-El Paso LLC project in Milford,
- 544-MW PDC-El Paso LLC project in Meriden,
- 792-MW Lake Road Generating Company, L.P. project in Killingly,
- 512-MW Towantic Energy LLC project in Oxford, and
- 250 MW Wallingford, PPL project in Wallingford.

3,162 MW total

While the Bridgeport Energy project is currently in operation, other approved projects in Killingly, Milford, and Wallingford are under construction and are expected to be operational by the end of 2001. Additionally, on September 19, 2000 the Council approved the construction of six 200 kW fuel cells at the Connecticut Juvenile Training Center located on the Connecticut Valley Hospital campus in Middletown (Petition No. 482). This facility would be the largest of its kind in the nation providing heat, cooling, and electrical needs. The PDC-El Paso facility in Meriden has been delayed, but has recently commenced construction with completion anticipated by 2004. The Towantic Energy facility in Oxford is in litigation and is not expected to be operational before 2003. Other projects being discussed for possible development include Norwich (500 MW), South Norwalk (100 MW), Norwalk Harbor (100 and 500 MW), Haddam (900 MW), Milford (40 and 300 MW), Bridgeport (520 MW), New Haven (520 MW), Middletown (750 and 500 MW), and Montville (500 MW). While plans for 5,230 MW of capacity from these facilities are speculative and subject to change, recent activity suggests that at least some of these plants may be developed.

Notwithstanding the need to develop additional facilities for natural gas supply and electric transmission, plans for new capacity in Connecticut by 2005, as proposed to ISO-New England, are reasonably consistent with regional plans to develop up to 29,568 MW of capacity in New England. As shown in Figure 9, Connecticut will have approximately 24 percent of the total New England population based on the projected 2000 Census and approximately 34 percent of the total proposed generation within New England. This disparity between proposed generation and population in Connecticut might be attributed to hypothetical plans for construction of new generation not likely to go forward. Nonetheless, as demonstrated by the change from last year's forecast where Maine was identified as having disproportionate development, plans to develop electric generation continue to change. The development of new facilities will be constrained by electric and natural gas transmission infrastructure throughout New England. Consequently, the siting of future generation and transmission facilities must be considered together and on a regional basis to enable efficient electric dispatch and fuel supply.

Figure 9: Comparison of Percentages for Proposed Generation and Population for States Within ISO-New England

Figure 9:
(Text alternative not included in original report): A 3-D column chart that depicts a comparison of percentages for proposed generation and population for states within ISO-New England. Connecticut, Massachusetts, Rhode Island, Maine, New Hampshire, and Vermont have approximatey 24 percent, 46 percent, 7 percent, 9 percent, 9 percent, and 5 percent of New England's population (Population based on U.S. Census prediction for 2000), respectively. Connecticut, Massachusetts, Rhode Island, Maine, New Hampshire, and

Vermont have approximatey 34 percent, 45 percent, 4 percent, 11 percent, 7 percent, and 0 percent of New England's proposed electric generation (Total Proposed Generation in NEPOOL through 2009), respectively.

TRANSMISSION SYSTEM

Connecticut's high voltage electric transmission system consists of approximately 1,300 circuit miles of 115-kV, 398 circuit miles of 345-kV, 5.8 circuit miles of 138-kV and 104 circuit miles of 69-kV lines. While much of the state's electric transmission infrastructure is already developed, the electric utilities maintain the system and expand it where needed to serve load centers and new generation. As shown in Table 5, many of the transmission line projects being planned consist of the rebuilding or reconductoring of existing lines to increase each line's capacity as needed to meet load growth and/or generation dispatch conditions. In addition, CL&P propose three transmission projects that would enhance system reliability, decrease congestion, and increase import capabilities. These projects are two new 345-kV lines between Bethel and Norwalk and Middletown and Norwalk, a new 300-kV direct current submarine line between Norwalk and Oyster Bay, New York, and the replacement of existing 138-kV submarine lines between Norwalk and Northport, New York. Also, a merchant direct current submarine line is proposed between New Haven and Brookhaven, New York. While many of these transmission projects focus on southwestern Connecticut, the entire state will benefit with connection to other regional systems and access to a more diverse power supply. The utilities continue to monitor electricity usage for transmission and substation upgrading to improve system reliability, promote efficiency, and reduce energy losses.

Table 5: Planned Transmission Lines in Connecticut

Transmission Line	Length (miles)	Voltage (kV)	Planned Date of Completion
Barbour Hill S/S, South Windsor - Rockville S/S, Vernon (upgrade)	4.7	69 to 115	2001
Canton S/S, Canton - Weingart Jct., Harwinton (rebuild)	4.4	115	2002
Glenbrook S/S, Stamford - Rowayton Jct., Norwalk (reconductor)	5.4	115	2002
Glenbrook S/S, Stamford - Ely Avenue, Norwalk (reconductor)	5.4	115	2002
East Shore S/S, New Haven - Brookhaven, N.Y. (new HVDC)	24	150	2002
Norwalk Harbor Station, Norwalk - Northport Station, Northport, N.Y. (replace)	5.8	138	2003
Plumtree S/S, Bethel – Norwalk Harbor S/S, Norwalk (new)	20	345	2003
Manchester S/S, Manchester – Wapping Jct., South Windsor (rebuild)	5.1	115	2004
Norwalk S/S, Norwalk – Shore Road S/S, Oyster Bay N.Y. (new HVDC)	10.8	300	2004
Middletown Station, Middletown - East Devon S/S, Milford (new)	37	345	2006
East Devon Jct., Milford - Norwalk S/S, Norwalk (new)	23	345	2006

Farmington S/S, Farmington - Newington S/S, Newington (rebuild)	3.6	115	2008
Wapping Jct., South Windsor - Barbour Hill S/S, South Windsor (rebuild)	2.4	115	2008

While the generation and transmission infrastructure were under high demand during the hot and dry summer of 1999, most outages were attributed to failure of distribution feeders leaving high voltage substations, and distribution transformers near end use customers. The State's utilities admit that the failures were due to old equipment and have replaced such equipment as necessary.

As depicted in Appendix B, load centers, identified by population density, are located primarily in and around urban areas and in the southwestern portion of Connecticut. Generally, it is prudent to locate generation assets near the load centers because of efficiency in transmission. The locations for new transmission lines and bulk supply substations will be determined based on load centers and new generation in conjunction with ISO-New England.

ISO-New England systematically assesses load requirements, establishes reserve margins across the power pool, and dispatches energy as necessary. In addition, ISO-New England assesses each new electric generation facility requesting connection to the electric grid for transmission system reliability. ISO-New England identified in its Annual Transmission Planning and Evaluation Report, dated April 1, 2001, potentially limiting transmission interfaces, comprised of one or more transmission facilities which gauge the amount of power that can be transferred between various areas before a transmission limitation is reached. These transmission interfaces include three thermal import constraints, and one import voltage/stability constraint that may prevent Connecticut from importing power from the regional grid to meet its need for electricity. The thermal import constraints include a 1,000-1,400 MW transfer limit for the southwest Connecticut region, a 1,600-2,200 MW transfer limit for southern Connecticut, and a 1,500-2,800 MW transfer limit on various 115-kV and 345-kV transmission lines into the State. The voltage/stability import constraint is a 1,600-2,300 MW transfer limit into the State to maintain grid voltage and system operating stability.

The regional importance of these interconnections cannot be understated. While Connecticut undertakes this review as a measure of responsibility and to reduce potential regional disparity, the electric transmission system must be considered a regional facility capable of inter- and intra-region export and import of power. Consequently, Connecticut must continually examine its position in a regional context to import and export capacity. Such examination will likely favor the construction of regional facilities that will strengthen the system grid for overall increased reliability. Some regional interconnections may not be popular to local land use authorities or local residents, but State siting must maintain a regional perspective for maximum integration and efficient dispatch to reduce the cost of uplift to load pockets. Regional interconnections are being considered with possible federal preemption through the Federal Energy Regulatory Commission and oversight by a Regional Transmission Organization (RTO). However, until these entities exist or obtain jurisdiction to coordinate regional facilities, Connecticut and other states will be technically bound to consider regional interests.

As shown in Table 6, as many as five new bulk power substations to reduce high-voltage transmission to lower voltage might be needed in high load areas within the State over the next three years. Specifically, the Council approved a Mohegan Tribal Utility Authority application for the Fort Hill Farms Substation in Montville, Connecticut on April 26, 2001. Even though this substation is designed to service the Mohegan Sun Resort, this substation would also improve local reliability.

Table 6: Planned Bulk Substations in Connecticut

Planned Substation	Date of Completion
Expansion of East Street S/S, Wallingford (CMEEC)	2001
Installation of new Fort Hill Farms S/S (CMEEC)	2002
Installation of new South Norwalk Electric Works S/S (CMEEC)	2002
Installation of new Trumbull S/S, Trumbull (UI)	2004 or later
Installation of new Ash Creek S/S, Fairfield (UI)	2004 or later
Installation of new Beseck Junction 345 kV Switching Station	2006
Installation of new East Devon S/S 345 kV	2006

Because the development of both new transmission and substation facilities might be considered undesirable by local communities, utilities must carefully assess supply locations, load center demands, and the need for new or upgraded facilities far in advance of actual construction. While the importance of regional interconnections must be understood, on-site generation and targeted conservation and load management programs must be continually evaluated as part of new transmission system planning alternatives.

Transmission lines and electric substations have received increased scrutiny by groups concerned about the possible effects of electric and magnetic fields (EMF). In 1999, an international panel of experts issued a final report titled Research on Power-Frequency Fields Completed Under the Energy Policy Act of 1992, National Academy Press, 1999, Washington, D.C. U.S.A. The report stated that the results of their investigation "do not support the contention that the use of electricity poses a major unrecognized public-health danger". Nonetheless, EMF is still a concern, and siting decisions must consider possible links between exposure and health.

RESOURCE PLANNING

The Council fully endorses and participates in the assessment of resources, modeling, and planning initiatives to maintain electric reliability. These processes include programs for conservation and load management, resource supply, and transmission planning. The complexity and necessary integration of these programs has substantially increased as increased demand has stressed existing resources. In addition, consumer costs, congestion management, targeted demand-side programs, regional transfers, and the difficulty in facility siting has presented issues that have made decision making difficult and not without consequences.

For example, modeling undertaken pursuant to the ISO-New England Regional Transmission Expansion Plan (RTEP01) has identified:

- gross noncompliance with the "loss of load expectation criteria" with the retirement of 14 "high environmental impact" generation facilities, potentially subject to new air emission regulations;
- insufficient transmission that will begin to "lock-in" generation capacity in southeast Massachusetts and Rhode Island;
- transmission line congestion in New England is predicted to cost between $200 and $600 million per year to run "out of economic merit" (uplift) generation facilities to meet demand;
- inadequate transmission in southwest Connecticut to maintain voltage and energy supply during unplanned outage of certain transmission and/or generation facilities; and
- regional transmission constraints to transfer energy from New York, Canada, and other regions.

As shown in Appendix B, the Council continues to assess existing electric transmission, fuel supply, generation, and demand-side resources as well as planning options to maintain and improve reliability. Many design studies have been initiated to correct some of these problems with transmission enhancement. However, multiple scenarios of demand-side planning, new natural gas pipeline siting, new generation siting, and dispatch of existing generation facilities must be considered before final decisions are made by state regulators and the ISO. In Connecticut, enhancement plans for northwest Connecticut, the Norwalk-Stamford area, and southwest Connecticut are expected to be completed by year end 2001. These and other subregional plans are expected to compliment other enhancements throughout the New England electric power system consistent with reliability criteria established by NEPOOL, the Northeast Power Coordinating Council, and the North American Electric Reliability Council. The assessment of these enhancement plans and recommended strategies will be difficult and time consuming, but will allow public participation and community involvement necessary for efficient deployment of facilities.

CONCLUSION

These forecasts have modeled Connecticut's electric energy future for the next 20 years and show improved supply to meet demand. Nonetheless, these forecasts are models that are based on assumptions that are subject to change. The change in the state's fuel mix for electric generation, over-reliance on natural gas as a fuel, transmission constraints, and the separation of electric generation from transmission and distribution raise new concerns for the reliability of Connecticut's electric capacity. This analysis and these models should not be used as a tool to simply predict the future, but to increase learning curves, reduce risk, and to identify effective strategies to obtain desirable goals.

Issues that warrant attention include:

- targeted subregion strategies in load pockets to address transmission constraints, load growth, and generation resources;

- emergency contingency planning to manage electric supply and demand;
- regional siting to improve system efficiency and reduce uplift costs;
- long-term system reliability;
- facility management for reliable operation;
- scheduled maintenance for predictable operations;
- responding to a changing economy that has proven difficult to predict;
- long-term management of volatile fuel supplies;
- efficient load management and conservation investments; and
- maintaining regional transmission systems to accommodate high demand during adverse weather conditions.

Refinement of policy may also be warranted in the following areas as Connecticut's role is better defined by market conditions:

- fuel - encouragement of fuel diversity with sustainable alternative fuel facilities;
- fuel storage - incentives for back-up fuel storage;
- interconnection - encouragement of distributed energy at load centers;
- planning - continued forecast modeling for electric supply, demand, and transmission;
- regulation - streamlined siting for regional generation, electric transmission, and gas pipelines;
- education - continued education on all elements of electric restructuring, supply options, and market-based decisions; and
- conservation - refined policies to provide economic alternatives to reduce energy consumption.

In addition, market mechanisms need to be assessed and applied to planning strategies to determine if there are sufficient incentives to ensure an adequate supply of generation and demand-side resources to provide reliable service.

Appendix A
Existing Connecticut Electric Generation Facilities as of January 2001

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Figure 1: Connecticut Electric Utilities' Projected Total System Requirements

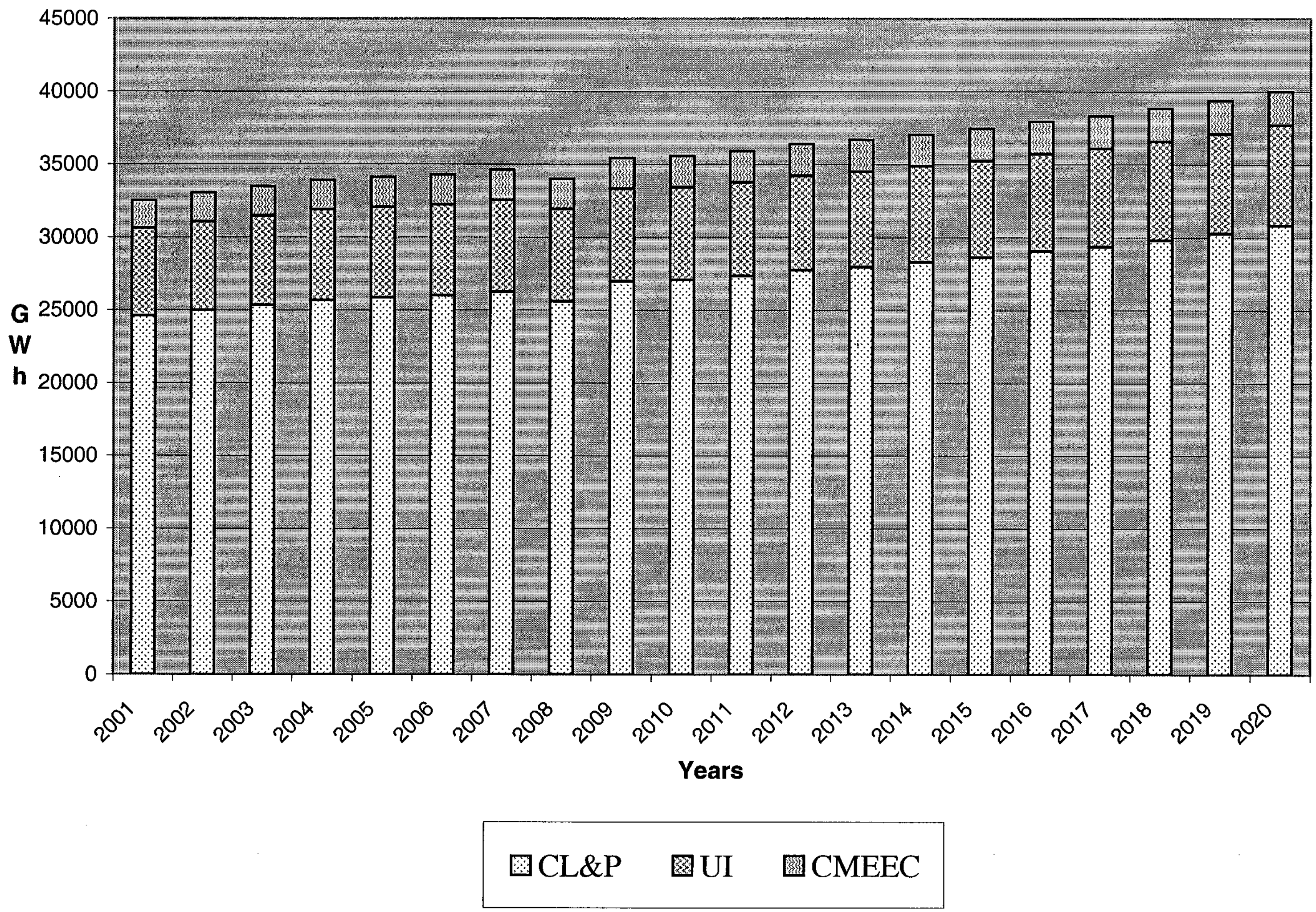
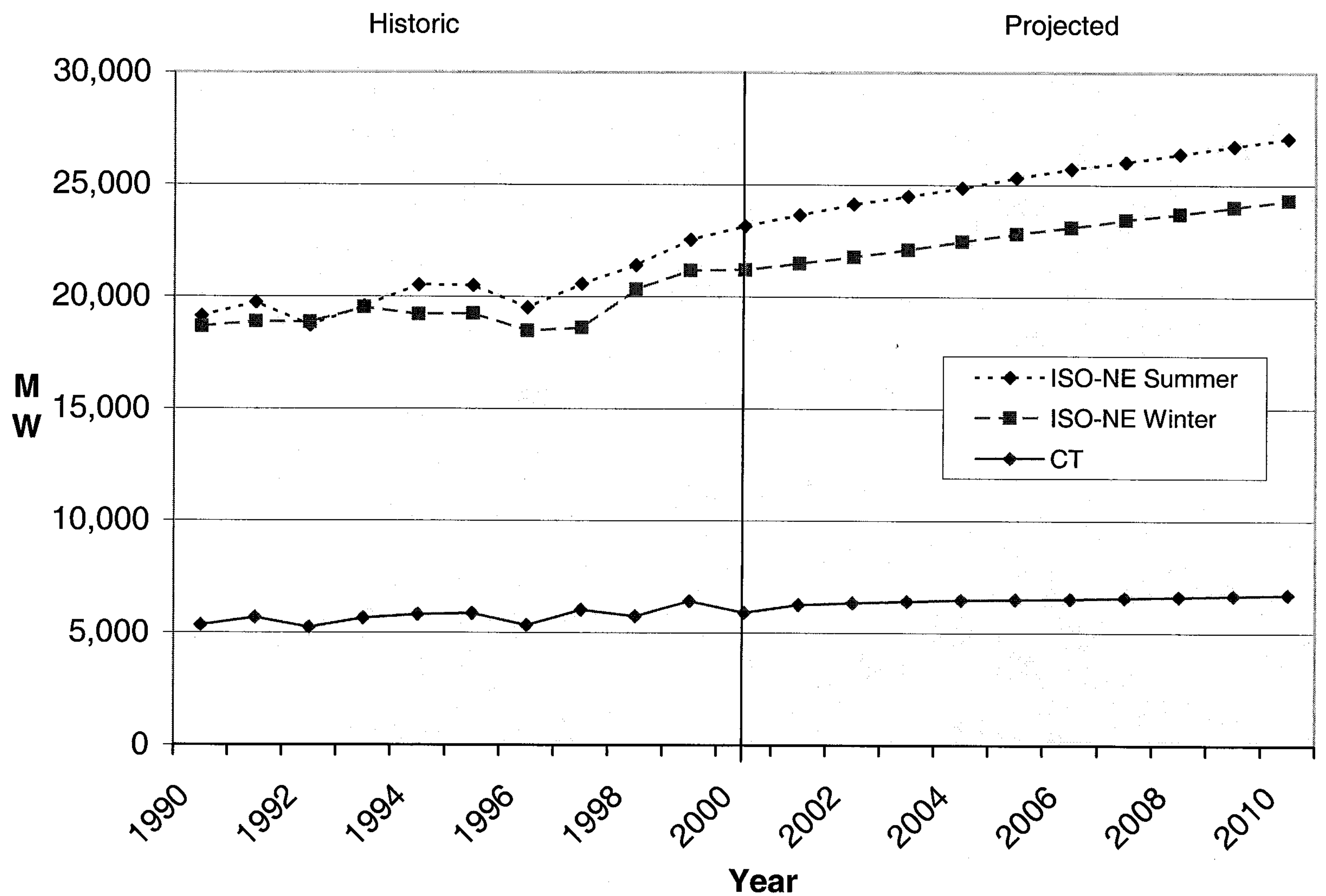


Figure 2: Actual and Predicted Peak Load for Connecticut and ISO-New England



CT Balance of Supply and Demand for Electricity - status quo generation scenario

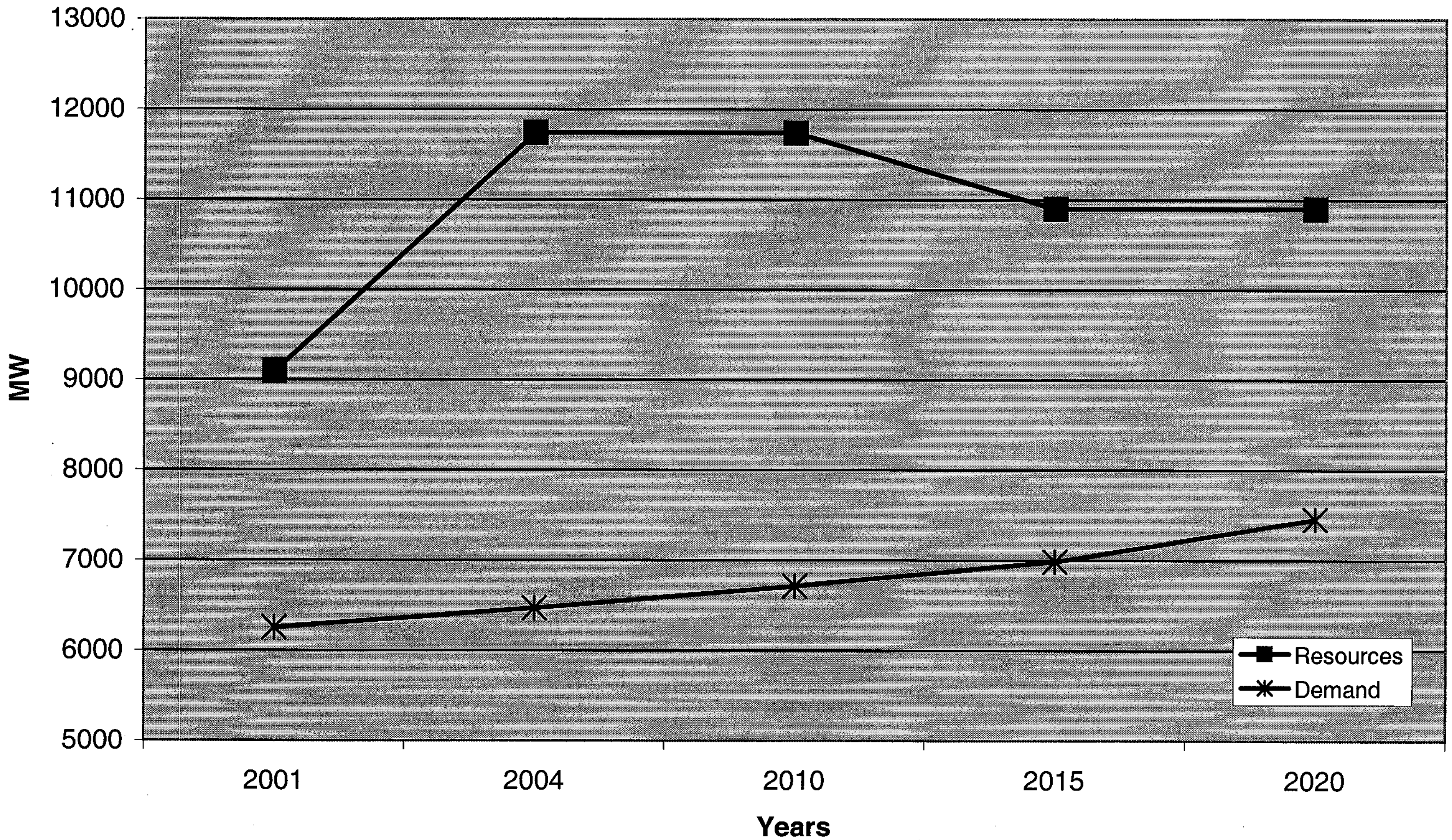
Reported in Megawatts (MW)

	2001	2004	2010	2015	2020
Installed capacity[1]	6336	6336	8978	8978	8138
Capacity additions					
Killingly		792			
Milford		544			
Wallingford		250			
Meriden		544			
Oxford		512			
Transmission Import Capability[2]	2200	2200	2200	2200	2200
Load shift/OP-4 Action	562	562	562	562	562
Millstone II scheduled retirement				-840	
Resources to meet Peak Demand	**9098**	**11740**	**11740**	**10900**	**10900**
Peak Demand[3] - summer	**6255**	**6469**	**6715**	**6987**	**7454**
CT reserves	2843	5271	5025	3913	3446
Reserve/Resources*100%	31%	45%	43%	36%	32%

1 - Summer rating as reported in CSC Review of the Connecticut Electric Utilities' 2001 Twenty-Year Forecasts of Loads and Resources-Appendix A

2 - Average of daily transfer limits during daily peak demand for summers 1997-1999,noting Millstone Units #2 and #3 did not operate in 1997 and Millstone Unit #2 did not operate in 1998.

3 - Projected peak demand as reported by CL&P, UI, and CMEEC forecast filings to the CSC on March 1, 2001.


13000
12000
11000
10000
9000
8000
7000
6000
5000
MW
2001
2004
2010
2015
2020
Years
Resources
Demand

CT Balance of Supply and Demand for Electricity - less retirement generation scenario

Reported in Megawatts (MW)

	2001	2004	2010	2015	2020
Installed capacity[1]	6336	6336	6256	6256	5416
Capacity additions by 2004					
Killingly		792			
Milford		544			
Wallingford		250			
Meriden		544			
Oxford		512			
Transmission Import Capability[2]	2200	2200	2200	2200	2200
Load shift/OP-4 Action	562	562	562	562	562
Less retirement capacity[3]		-2722			
Millstone II scheduled retirement				-840	
Resources to meet Peak Demand	**9098**	**9018**	**9018**	**8178**	**8178**
Peak Demand[4] - summer	**6255**	**6469**	**6715**	**6987**	**7454**
CT reserves	2843	2549	2303	1191	724
Reserves/Resources*100%	31%	28%	26%	15%	9%

1 - Summer rating as reported in CSC Review of the Connecticut Electric Utilities' 2001 Twenty-Year Forecasts of Loads and Resources-Appendix A.

2 - Average of daily transfer limits during daily peak demand for summers 1997-1999, noting Millstone Units #2 and #3 did not operate in 1997 and Millstone Unit #2 did not operate in 1998.

3 - Total of 18 units located in Bridgeport, Middletown, Milford, Montville, New Haven, and Norwalk (seasonal claimed capability - summer rating), referred to as the "sooty six" by the media an

4 - Projected peak demand as reported by CL&P, UI, and CMEEC forecast filings to the CSC on March 1, 2001.

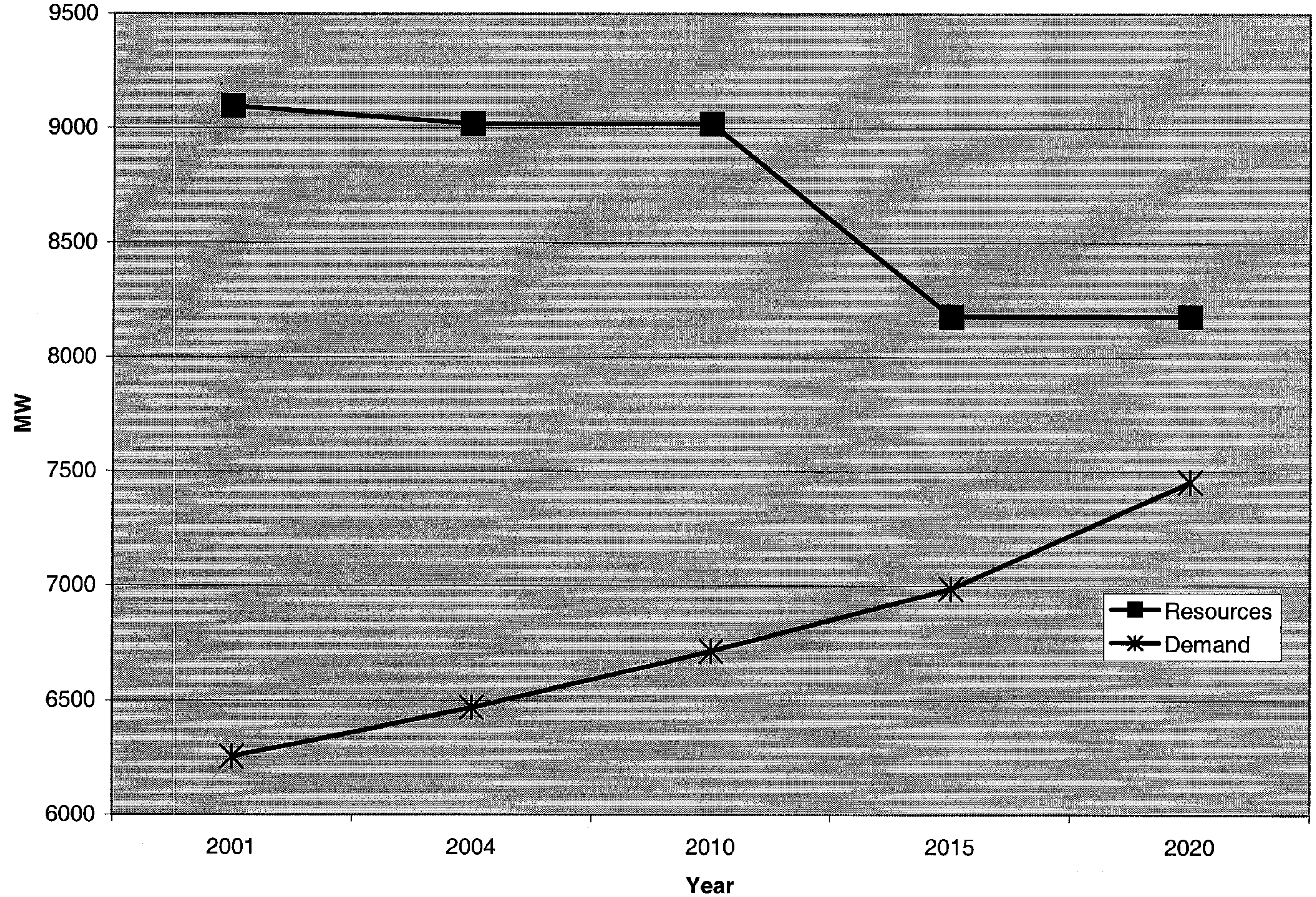
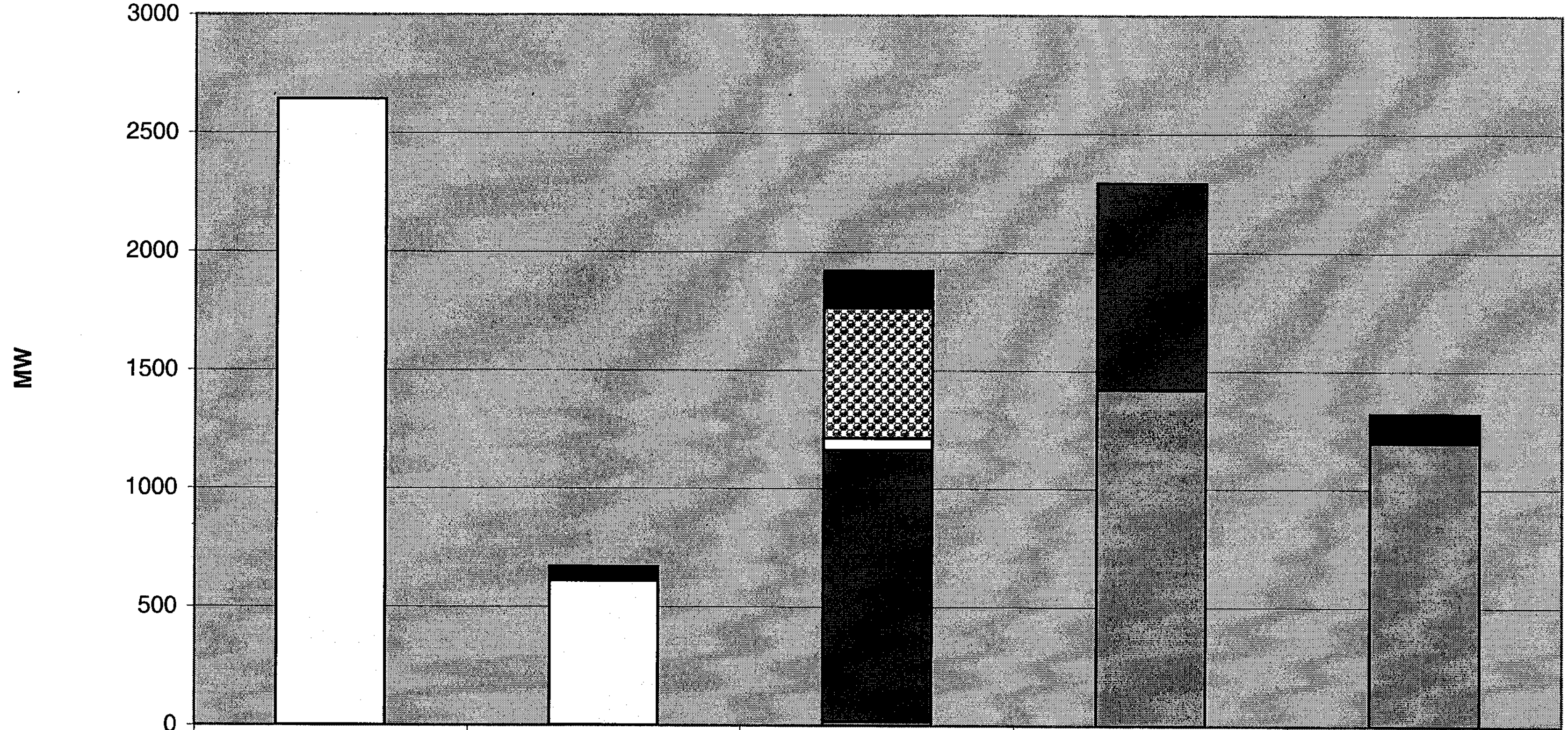

9500
9000
8500
8000
7500
7000
6500
6000
MW
2001
2004
2010
2015
2020
Year
Resources
Demand

Figure 4: Distribution of Connecticut's Electric Generators by Fuel and Age



	Available by 2005	Year built:1990-1999	Year built:1980-1989	Year built:1970-1979	Year built:1969 or before
renewable	0	60	156	0	124
coal	0	0	551	0	0
gas/oil	2642	609	51	0	0
nuclear	0	0	1146	872	0
oil/gas	0	0	17	1420	1198

Figure 5: 2001 Connecticut Electric Generation Fuel Mix

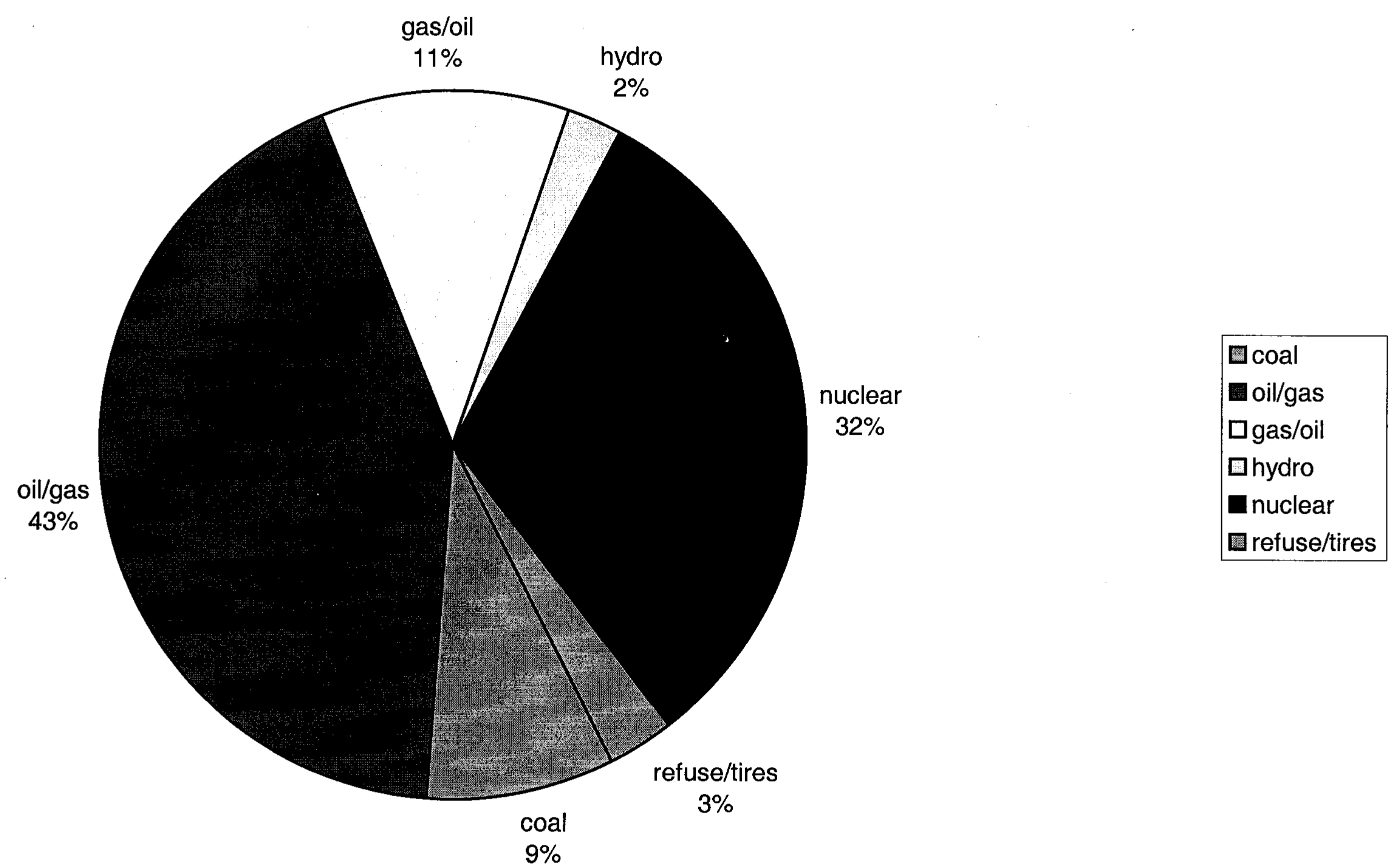


Figure 6: 2020 Connecticut Electric Generation Fuel Mix

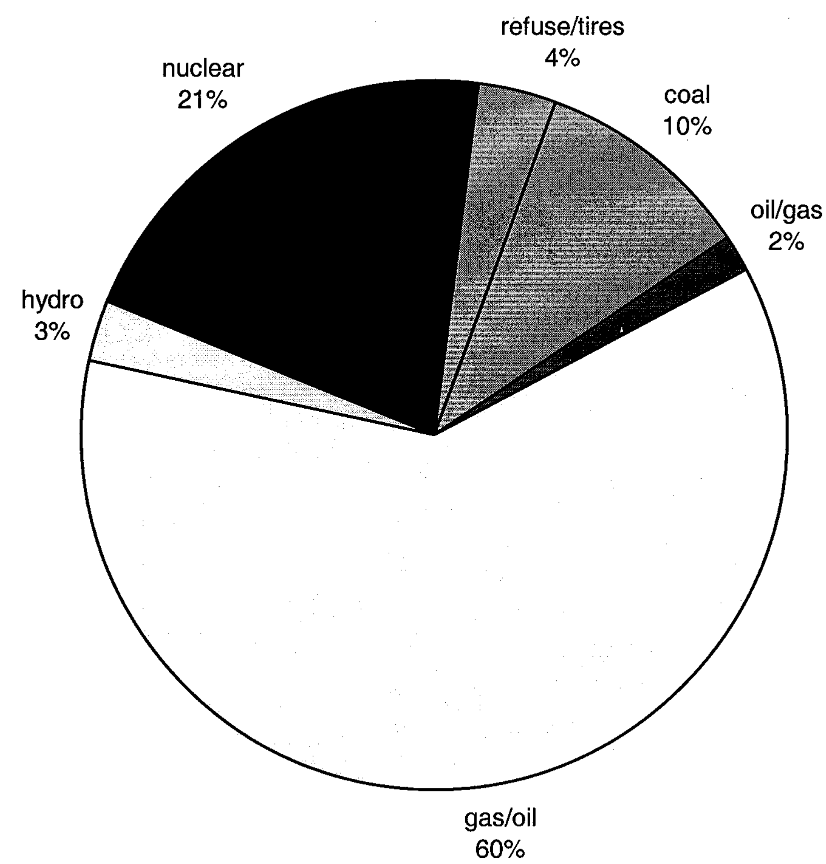


Figure 7: Fuel Consumption For Electric Generation Within ISO-New England 1996-2020

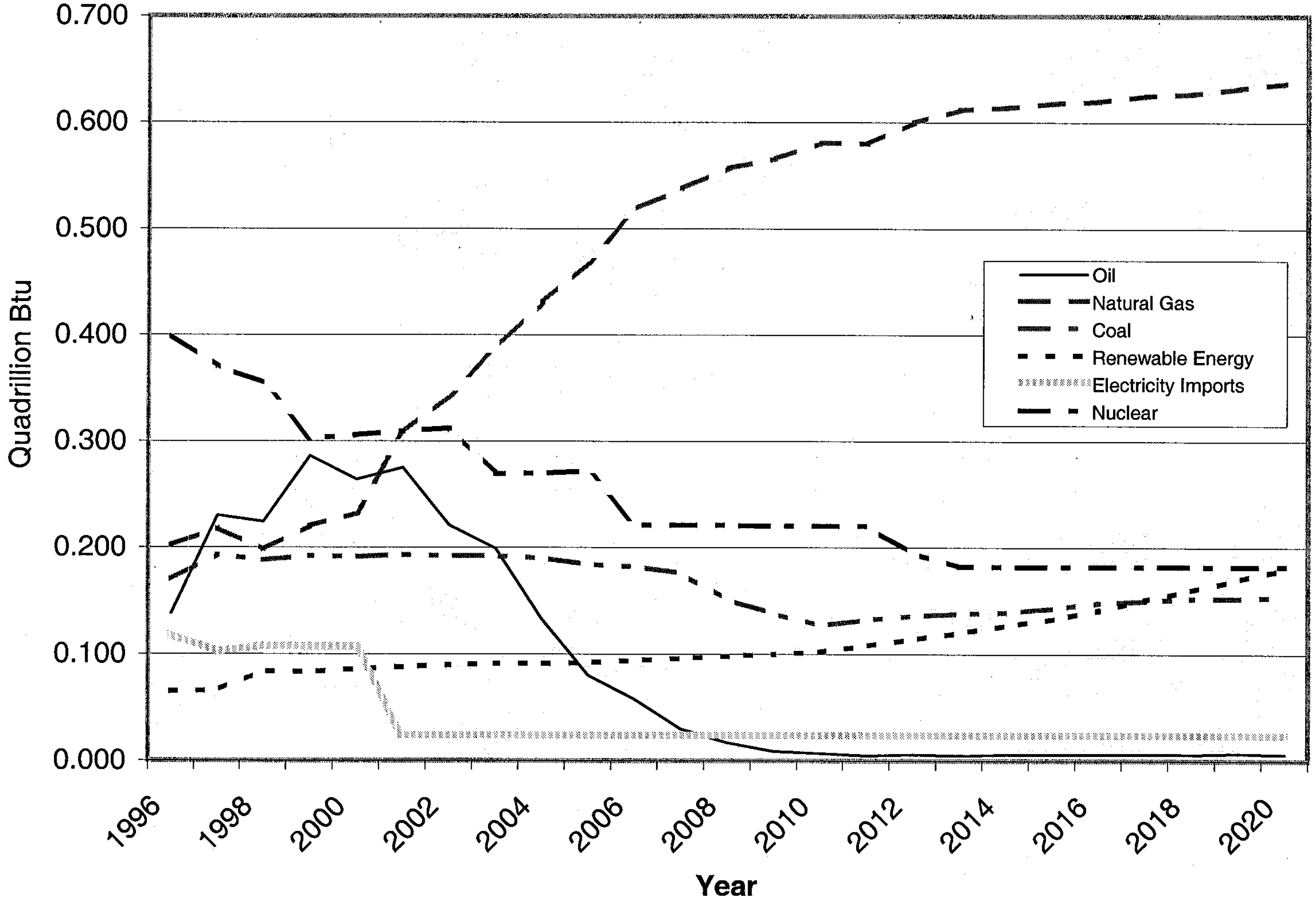
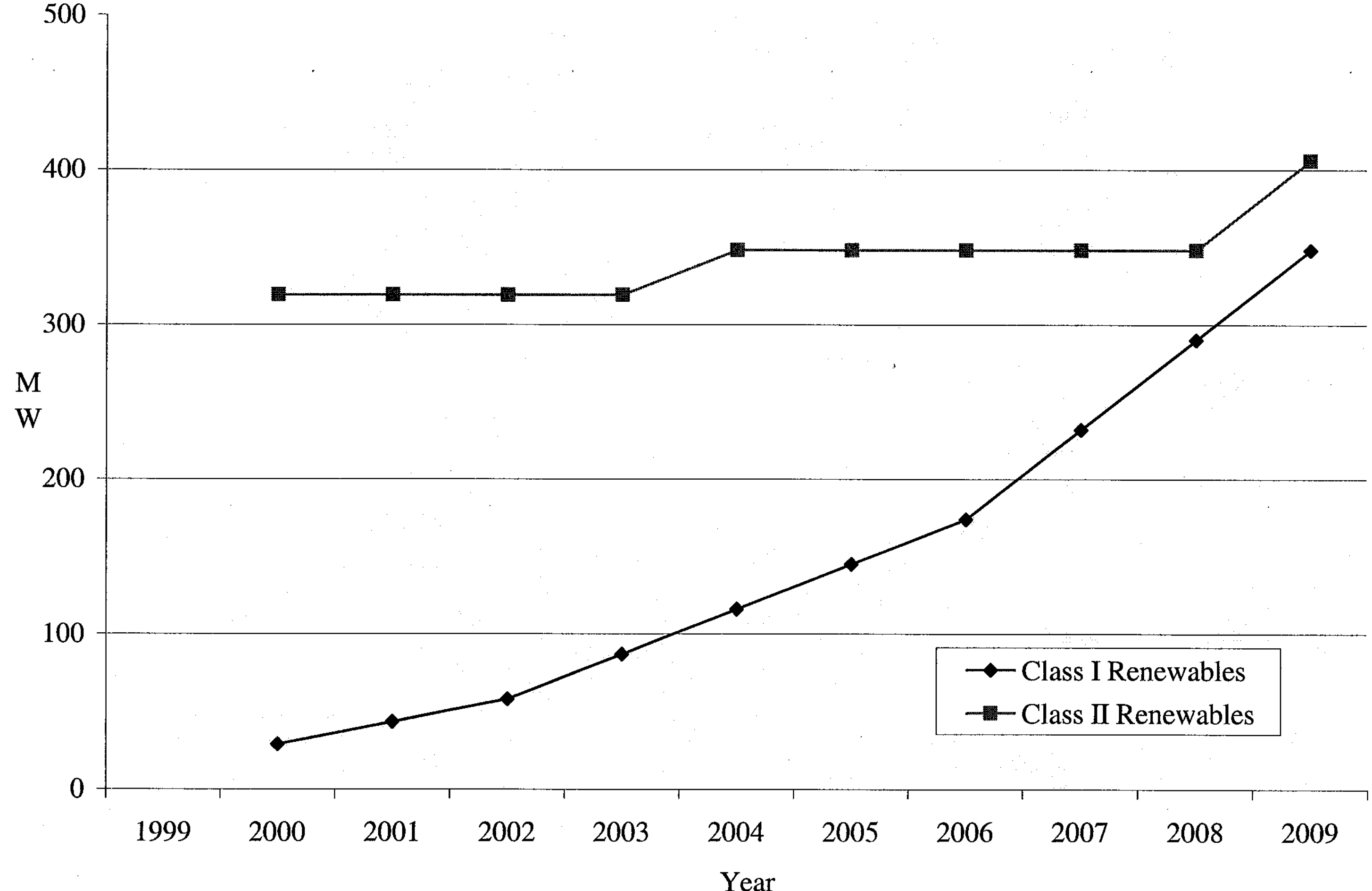
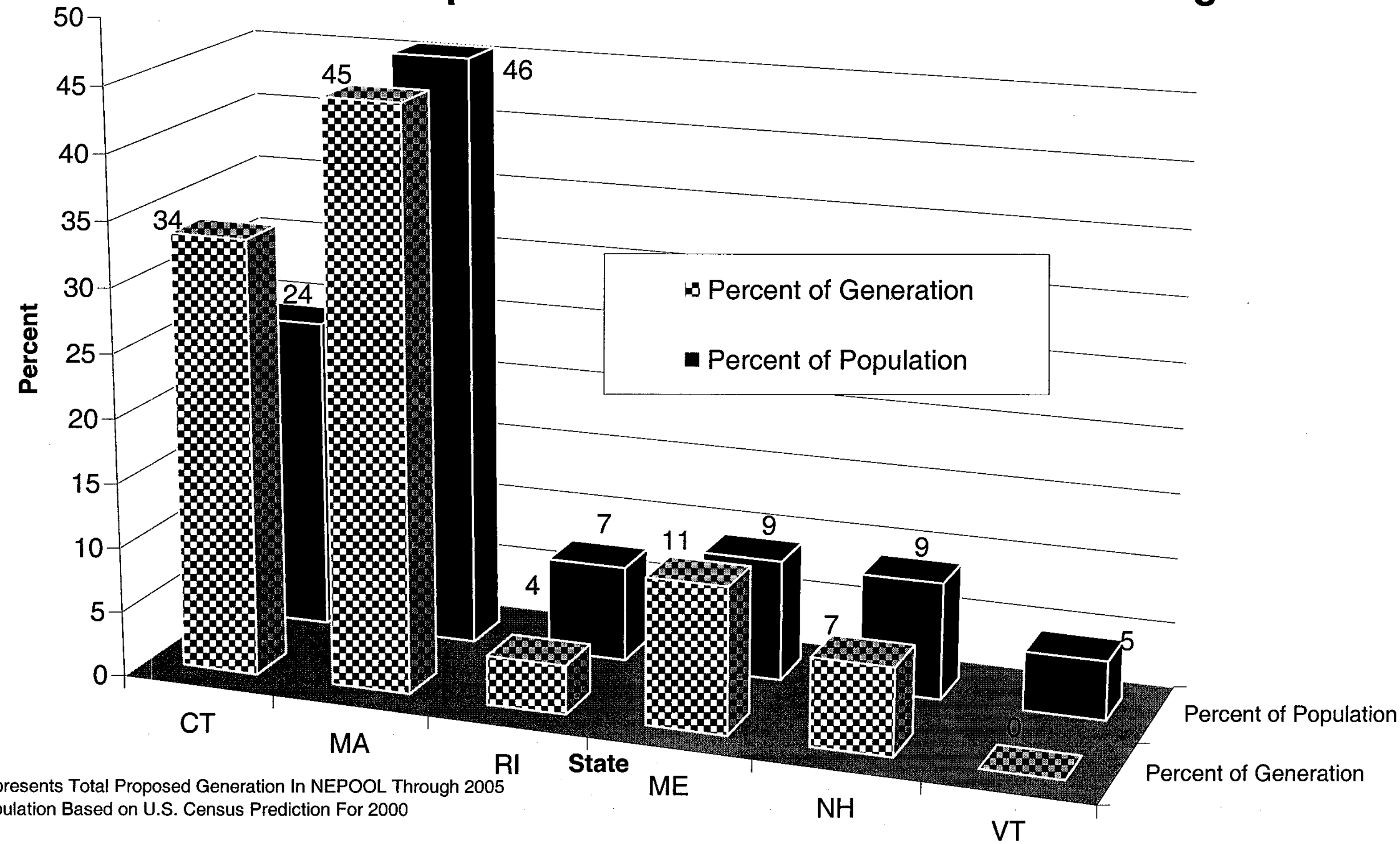


Figure 8: Class I and Class II Renewable Generation Asset Requirements in Connecticut



For purposes of licensing, suppliers need to identify renewable resource capacity in megawatt but would report megawatt

Figure 9: Comparison of Percentages for Proposed Generation and Population for States Within ISO-New England



Represents Total Proposed Generation In NEPOOL Through 2005
Population Based on U.S. Census Prediction For 2000

Appendix A
Existing Electric Generation Facilities
as of January 1, 2001

Facility	Owner	Town	Fuel	Summer Rating (MW)	Winter Rating (MW)
Entities that generate energy for sale.					
Bridgeport Harbor #3	Wisvest-CT, LLC	Bridgeport	Coal	370.39	400.00
AES Thames	AES Thames, Inc.	Montville	Coal/oil	181.00	182.15
G. Fox	Downtown Cogeneration Assoc.	Hartford	Gas	3.00	3.00
Bridgeport Energy	Bridgeport Energy LLC	Bridgeport	Gas	447.88	527.12
Hartford Hospital	Energy Network	Hartford	Gas	2.85	2.85
Aetna Capitol District	Capitol District Energy Ctr.	Hartford	Gas/Oil	47.96	54.04
C. H. Dexter	Alstom	Windsor Locks	Gas/Oil	38.00	39.00
Devon #11	NRG	Milford	Gas/Oil	30.85	40.37
Devon #12	NRG	Milford	Gas/Oil	30.86	40.07
Devon #13	NRG	Milford	Gas/Oil	31.00	40.00
Devon #14	NRG	Milford	Gas/Oil	30.80	41.37
Bulls Bridge #1- #6	NGC	New Milford	Hydro	8.40	8.40
Bantam #1	NGC	Litchfield	Hydro	0.07	0.32
Norwich 10th St.	CMEEC	Norwich	Hydro	0.98	1.17
Falls Village #1- #3	NGC	Canaan	Hydro	9.76	11.00
Robertville #1- #2	NGC	Colebrook	Hydro	0.32	0.62
Stevenson #1- #4	NGC	Monroe	Hydro	28.31	28.90
Scotland #1	NGC	Windham	Hydro	1.69	2.20
Taftville #1- #5	NGC	Norwich	Hydro	2.03	2.03
Tunnel #1- #2	NGC	Preston	Hydro	1.53	2.10
Shepaug #1	NGC	Southbury	Hydro	41.71	43.40
Rainbow Dam	Farmington River Power Co.	Windsor	Hydro	8.20	8.20
Goodwin Dam	MDC	Hartland	Hydro	2.06	2.06
Kinneytown B	Kinneytown Hydro Co.	Seymour	Hydro	0.65	0.65
Putnam	Putnam Hydropower, Inc.	Putnam	Hydro	0.27	0.27
Colebrook	MDC	Colebrook	Hydro	1.37	1.37
Kinneytown A	Kinneytown Hydro Co.	Ansonia	Hydro	0.25	0.25
McCallum Enterprises	McCallum Enterprises	Derby	Hydro	0.28	0.28
Derby Dam	McCallum Enterprises	Shelton	Hydro	7.05	7.05
Rocky Glen	Rocky Glen Hydro LP	Newtown	Hydro	0.04	0.04
Quinebaug	Quinebaug Associates LLC	Killingly	Hydro	0.98	2.81
Willimantic 1	Willimantic Power Corp.	Willimantic	Hydro	0.42	0.42
Willimantic 2	Willimantic Power Corp.	Willimantic	Hydro	0.39	0.39

Appendix A
Existing Electric Generation Facilities
as of January 1, 2001

Gilman Hydro	Gilman	Bozrah	Hydro	0.18	0.18
Toutant	Toutant Hydro Power, Inc.	Putnam	Hydro	0.16	0.16
Dayville Pond	Summit Hydro Power	Killingly	Hydro	0.05	0.05
Mechanicsville	Saywatt Hydro Associates	Thompson	Hydro	0.10	0.10
Wyre Wynd	Summit Hydro Power	Griswold	Hydro	1.61	1.61
Glen Falls	Summit Hydro Power	Plainfield	Hydro	0.10	0.10
Norwich 2nd St./Greenville Dam	CMEEC	Norwich	Hydro	0.95	0.95
Rocky River	NGC	New Milford	Hydro- pump storage	29.35	30.40
Shelton Landfill	CRRA	Shelton	Methane	0.00	0.62
Hartford Landfill	CRRA	Hartford	Methane	2.85	2.85
New Milford Landfill	Waste Management Co.	New Milford	Methane/Oil	2.99	2.99
Millstone 2	Dominion Nuclear CT, Inc.	Waterford	Nuclear	871.79	872.28
Millstone 3	Dominion Nuclear CT, Inc.	Waterford	Nuclear	1145.62	1159.25
SNEW #2&#4	CMEEC	South Norwalk	Oil	4.74	5.20
SNEW #1	CMEEC	South Norwalk	Oil	3.99	4.95
SNEW #3&#5	CMEEC	South Norwalk	Oil	5.10	5.30
SNEW #6	CMEEC	South Norwalk	Oil	1.05	1.10
Norwalk Harbor #1	NRG	Norwalk	Oil	162.00	164.00
Bridgeport Harbor #2	Wisvest-CT, LLC	Bridgeport	Oil	50.98	166.15
Norwalk Harbor #2	NRG	Norwalk	Oil	168.00	172.00
Middletown #10	NRG	Middletown	Oil	17.20	19.20
Norwalk Harbor 10	NRG	Norwalk	Oil	11.53	16.73
Bridgeport Harbor #4	Wisvest-CT, LLC	Bridgeport	Oil	12.38	16.88
Montville #10	NRG	Montville	Oil	2.70	2.80
Montville #11	NRG	Montville	Oil	2.60	2.70
Torrington Terminal #10	NRG	Torrington	Oil	14.79	19.19
Franklin Drive #10	NRG	Torrington	Oil	16.42	17.47
Branford #10	NRG	Branford	Oil	14.90	18.80
Cos Cob #10	NRG	Greenwich	Oil	15.52	20.97
Cos Cob #11	NRG	Greenwich	Oil	15.52	20.87
Cos Cob #12	NRG	Greenwich	Oil	16.12	22.57
Tunnel #10	NGC	Preston	Oil	15.11	19.98
South Meadow #11	CL&P	Hartford	Oil	36.02	47.16
South Meadow #12	CL&P	Hartford	Oil	33.87	43.87
South Meadow #13	CL&P	Hartford	Oil	37.07	46.67
South Meadow #14	CL&P	Hartford	Oil	37.93	47.93
Montville #6	NRG	Montville	Oil	410.00	409.91

Appendix A
Existing Electric Generation Facilities
as of January 1, 2001

Norwich	CMEEC	Norwich	Oil	15.25	18.80
Middletown #4	NRG	Middletown	Oil	400.00	402.00
Devon #10	NRG	Milford	Oil	17.20	19.20
Montville #5	NRG	Montville	Oil/Gas	81.00	81.59
Devon #7	NRG	Milford	Oil/Gas	107.00	109.00
Devon #8	NRG	Milford	Oil/Gas	106.84	109.00
Middletown #2	NRG	Middletown	Oil/Gas	117.00	120.00
Middletown #3	NRG	Middletown	Oil/Gas	236.00	245.00
New Haven Harbor #1	Wisvest-CT, LLC	New Haven	Oil/Gas	449.56	466.00
Mid-CT RRF	CRRA	Hartford	Refuse	57.10	59.67
Bridgeport RRF	CRRA	Bridgeport	Refuse	59.50	59.65
Lisbon RRF	Riley Energy Systems	Lisbon	Refuse	13.10	13.10
Bristol RRF	Ogden Martin Systems-CT	Bristol	Refuse/Oil	13.20	13.20
Wallingford RRF	CRRA	Wallingford	Refuse/Oil	6.35	6.90
Preston RRF	SCRRRA	Preston	Refuse/Oil	9.88	13.85
Exeter	Oxford Energy, Inc.	Sterling	Tires/Oil	26.00	26.00
Pinchbeck	William Pinchbeck, Inc.	Guilford	Wood	0.01	0.01
	Seasonal Claimed Capability available for dispatch to the electric grid.			6207.63	6640.81
Entities that self generate.					
Yale Univ diesels	Yale University	New Haven	Diesel	4.50	4.50
Agnes Morely Apts	Agnes Morely Apts	Greenwich	Gas	0.03	0.03
Atrium Plaza	Atrium Plaza	New Haven	Gas	0.06	0.06
Bridgeport J City Ctr	Bridgeport J City Ctr	Bridgeport	Gas	0.06	0.06
Bridgeport YMCA	Bridgeport YMCA	Bridgeport	Gas	0.06	0.06
Candid Associates 1&2	Candid Associates	North Haven	Gas	0.12	0.12
Candid Associates 3	Candid Associates	North Haven	Gas	0.18	0.18
Component Technologies	Component Technologies	Newington	Gas	0.30	0.30
Davenport Residence	Davenport Residence	Hamden	Gas	0.06	0.06
Dunbar Residence	Davenport Residence	Hamden	Gas	0.06	0.06
Fairfield YMCA	Fairfield YMCA	Fairfield	Gas	0.03	0.03
First Baptist Housing	First Baptist Housing	Bridgeport	Gas	0.08	0.08
Greenwich YMCA	Greenwich YMCA	Greenwich	Gas	0.06	0.06
Hamilton Standard	UTC	Windsor Locks	Gas	0.20	0.20
Hartford Holiday Inn	Hartford Holiday Inn	Hartford	Gas	0.06	0.06
Hartford YMCA	Hartford YMCA	Hartford	Gas	0.12	0.12
Hartford YWCA	Hartford YWCA	Hartford	Gas	0.06	0.06

Appendix A
Existing Electric Generation Facilities
as of January 1, 2001

Immanuel House	Immanuel House	Hartford	Gas	0.06	0.06
Inter Church	Inter Church	Bridgeport	Gas	0.03	0.03
Laurelwood	Laurelwood	Bridgeport	Gas	0.06	0.06
Loctite	Loctite	Rocky Hill	Gas	1.18	1.18
Longobardi	Longobardi, Ann	North Haven	Gas	0.06	0.06
Maefair Health Care	Maefair Health Care	Trumbull	Gas	0.04	0.04
New Haven JCC	New Haven JCC	Woodbridge	Gas	0.06	0.06
Norconn	Norconn	Meriden	Gas	0.20	0.20
Norwalk Hospital	Norwalk Hospital	Norwalk	Gas	2.36	2.36
Nova Metal Finishing	Nova Metal Finishing	Waterbury	Gas	0.04	0.04
Pitney Bowes	Pitney Bowes	Stamford	Gas	0.75	0.75
Pratt & Whitney	UTC	E. Hartford	Gas	23.80	23.80
Pratt & Whitney	UTC	Middletown	Gas	1.00	1.00
Sheraton	Sheraton	Waterbury	Gas	0.15	0.15
South CT Gas Co.	South Central Gas Co.	Bridgeport	Gas	0.90	0.9
Southern CT Gas Co.	Southern CT Gas Co.	Milford	Gas	0.02	0.02
Sprague Paper Board	Carol Starr	Sprague	Gas	12.00	12.00
Sycamore Place	Sycamore Place	Bridgeport	Gas	0.04	0.037
Town of Winchester	Town of Winchester	Torrington	Gas	0.06	0.06
Vernon Manor	Vernon Manor	Vernon	Gas	0.06	0.06
Washington Heights	Washington Heights	Bridgeport	Gas	0.06	0.06
Westport YMCA	Westport YMCA	Westport	Gas	0.06	0.06
Simkins	Simkins	New Haven	Gas/Oil	0.24	0.24
Yale Univ Unit 1	Yale University	New Haven	Gas/Oil	6.20	6.20
Yale Univ Unit 2	Yale University	New Haven	Gas/Oil	6.20	6.20
Yale Univ Unit 3	Yale University	New Haven	Gas/Oil	6.20	6.20
Bynes Falls	Coventry Hydro	Coventry	Hydro	0.10	0.10
Congdom Dam	Warren Hobbs	Montville	Hydro	0.06	0.06
Lyme Hydro	Lyme Hydro	Lyme	Hydro	0.02	0.02
Mainstream Inc.	Mainstream Inc.	Essex	Hydro	0.02	0.02
Norwich Occum	CMEEC	Norwich	Hydro	0.53	0.53
Putnam #2	Putnam Hydropower, Inc.	Putnam	Hydro	0.25	0.25
Rawson Mfg. Co.	Rawson Mfg. Co.	Thompson	Hydro	0.02	0.02
S CT Reg. Water Auth.	S CT Reg. Water Auth.	North Branford	Hydro	0.30	0.30
McCann Mfg. Co.	McCann Mfg. Co.	Sterling	Hydro	0.06	0.06
Town of Manchester	Town of Manchester	Manchester	Methane	0.13	0.13
Connecticut Valley Hospital	State of Connecticut	Middletown	Oil	2.05	2.05

Appendix A

Existing Electric Generation Facilities

as of January 1, 2001

East Hartford High	East Hartford High	East Hartford	Oil	0.28	0.28
Fairfield Hills Hospital	Fairfield Hills Hospital	Newtown	Oil	3.95	3.95
Fishers Island Elec. Co.	Fishers Island Elec. Co.	Groton	Oil	1.10	1.10
Gottier	Gottier, Nelson	Tolland	Oil	0.01	0.01
Norwich State Hospital	Norwich State Hospital	Norwich	Oil	2.00	2.00
Pfizer	Pfizer	Groton	Oil	25.00	25.00
Travelers	Travelers	Hartford	Oil	2.00	2.00
Groton Sub Base	U.S. Navy	Groton	Oil/Gas	18.50	18.50
Southbury Training School	State of Connecticut	Southbury	Oil/Gas	2.00	2.00
Notre Dame Convalescent	Notre Dame Convalescent	Norwalk	Propane	0.03	0.03
Anne Scott	Anne Scott	Sharon	Solar	0.05	0.05
Gregory Sholz	Gregory Sholz	Simsbury	Solar	0.05	0.05
John Roundtree	John Roundtree	Norwalk	Solar	0.02	0.024
Smurfit-Stone Container Co.	Smurfit-Stone Container Co.	Montville	Waste Heat	2.00	2
Gianninoto Wind Turbine	F. Gianninoto	Redding	Wind	0.02	0.02
Highfield Farm	Sparkmen	Coventry	Wind	0.02	0.02
Dorizzi Wind Turbine	John Dorizzi	Canaan	Wind	0.01	0.01
		Generation retained by facility.		128.43	128.43
		Total MWs of generation in Connecticut.		6336.06	6769.24