

**STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL**

<b>Connecticut Siting Council</b>	<b>:</b>	<b>Docket No. F-2007</b>
<b>Review Of The Ten-Year</b>	<b>:</b>	
<b>Forecast of Connecticut Loads</b>	<b>:</b>	<b>July 12, 2007</b>
<b>And Resources</b>	<b>:</b>	

**COMMENTS OF THE  
CONNECTICUT ENERGY ADVISORY BOARD  
on**

**The CSC's Draft Report on the Ten-Year Forecast of Connecticut Loads and Resources**

**I. INTRODUCTION**

In accordance with the procedural schedule established by the Connecticut Siting Council ("CSC" or "Council"), the Connecticut Energy Advisory Board ("CEAB") offers these comments on the CSC's June 6, 2007 Draft Report on the Ten-Year Forecast of Connecticut Loads and Resources ("Draft Report").

The CSC's annual proceeding to review the ten-year forecast of the State's electric loads and resources is an important part of our collective efforts to address the critical needs of the State's electric system. The information in the resultant CSC Forecast Report is directly related to the costs Connecticut consumers may ultimately bear. The Report also serves the essential purpose of compiling and assessing reports, studies and information, which is valuable to the CEAB, state agencies and others throughout the year. The CEAB offers its observations and recommendations on the Draft Report for the Council's consideration as it prepares the 2007 Final Report.

## **II. CEAB SECTION BY SECTION COMMENTS ON THE DRAFT REPORT**

The CEAB offers observations and suggestions on each section of the Draft Report presented consistent with the Draft Report's structure to facilitate review.

### **A. Introduction**

The Final Report should make clear that the CSC (1) has examined the *load* forecast “from the Independent System Operator for New England,” as prepared for the 2006 and 2007 CELT reports; and (2) has reviewed several other ISO-NE reports that address resource requirements in Connecticut.

In addition, the Final Report should note: (1) that ISO-NE has released a report prepared by an independent entity, Benchmark Forecasts, Inc., that examined the methods by which the ISO's load forecasts have been prepared; and (2) that ISO-NE is in the process of implementing recommended changes to its forecast methodology, some of which may have a bearing on the forecast loads under review in this proceeding. (See, Transcript dated June 12, 2007 at pages 48-50).

### **B. Electric Energy Consumption And Load Forecast**

#### *1) Energy Consumption Growth*

In the CEAB's view, the second paragraph in this section could more precisely define forecasting as follows: “Forecasting is a tool used to shed light on the level of generation, transmission, and conservation and load management (“C&LM”) resources that will be necessary in order to meet consumer demands for power.”

The second and third paragraphs in this section appear to be referring to peak load (demand), rather than energy. These paragraphs seem to belong in the Growth in Peak Load section. In this context, it may be appropriate to present the “Growth in Peak Loads” Section followed by energy requirements. Peak loads drive infrastructure requirements to ensure reliability; serving energy requirements raises issues of the relative economics of different types of resources.

Finally, ISO-NE has also provided a forecast of electric energy requirements for the State of Connecticut. (See, ISO-NE’s responses to CEAB 1-1 and 2-1). It may be useful to include that forecast, along with the sum of the utilities’ forecasts, as is done in the “Growth in Peak Loads” Section.

## 2) *Growth In Peak Loads*

Figure 2 of the Draft Report includes the ISO-NE 2006 peak load forecast assuming average summer weather conditions (the weather-normalized “50/50” forecast) and compares that forecast to comparable forecasts from the Connecticut utilities. In addition, this figure includes ISO-NE’s forecast for peak loads based on extreme weather conditions (the “90/10” forecast), which is representative of peak load levels that would be reached, on average, in one year out of ten.

The Draft Report correctly notes that the three state utility forecasts serve different purposes. However, UI suggests that it has modified its forecast “to properly plan for infrastructure modifications and additions to ensure the required capacity is in place to safely and reliably meet the demands” of its customers. (See, UI’s Update of

its Load Forecast and Transmission Plan dated April 30, 2007 at page 3). It may be appropriate for the Final Report to note the new perspective UI is bringing to this important element in resource planning.

Finally, Table 2 reflects a several hundred megawatt discrepancy between the 50/50 forecast provided by ISO-NE and the cumulative “CT Utilities Peak” forecast. Some amount of difference can be expected given that the two forecasts reflect the efforts of different forecasters working with different forecasting models and different input data sets. However, some of the differential likely resides in the fact that the utilities’ forecasts include offsets attributable to capacity savings from their demand-side programs, while the ISO’s forecast does not.<sup>1</sup> The Final Report should make note of this specific difference.

### 3) *Connecticut Energy Efficiency Fund*

The CEAB agrees with the Draft Report’s conclusion that energy efficiency programs are critically important to Connecticut’s energy strategy. In the CEAB’s view, demand response resources are similarly vital to the State of Connecticut. The Final Report should discuss that resource in this section, or in the Supply Resources category as some demand response measures can qualify as capacity in the ISO-NE market. In particular, the ISO-NE demand response programs should be mentioned, by, for example, referring to the Demand Response section of ISO-NE’s 2005 Annual Markets Report.

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<sup>1</sup> ISO New England treats future demand-side programs as resources that would be counted on the same side of the ledger as supply-side facilities in assessing total resources available to address identified loads. (See, Transcript dated June 12, 2007 at page 103.)

## C. Resource Forecast

### 1) Supply Resources

The Draft Report states that the CSC expects supply resources to be adequate to meet demand under normal weather conditions if no retirements occur. It would be helpful for the Final Report to include the assessment supporting this in a table in the form of Table 3 at page 11 and a description of the assumptions used for that assessment.

Referring to the Connecticut Resource Balance presented in Table 3, several adjustments could make the Table a more comprehensive and therefore more accurate picture of resources. The following comments and suggestions illustrate the types of adjustments the CSC could consider in this regard:

- i. The table provides a capacity balance. It would be helpful to make the distinction between the capacity requirements associated with extreme summer peak load levels and the requirements for energy resources throughout the year.
- ii. The analysis in Table 3 is in the form of the ISO-NE Operable Capacity methodology, which is used to assess the reliability requirements for defined load pockets. (See, e.g., Regional System Plan 2006, Section 4.1.2). The Final Report should note that this capacity balance assessment is one of several used for reliability planning at ISO-NE, but does not establish requirements in the ISO's installed capacity market.
- iii. If it is the CSC's intent to replicate ISO-NE's Operable Capacity methodology (as depicted in Table 4.3 in the Regional System Plan 2006), the load forecast used in

Table 3 should be adjusted slightly – by 1 percent or about 90 MW – to correspond to ISO-NE’s capacity requirements forecast for the “Greater Connecticut” load pocket rather than its State of Connecticut forecast. This is because a small portion of load in Connecticut is served by Massachusetts transmission infrastructure and is, therefore, not within the Greater Connecticut load pocket (and thus is not and would not be served by Connecticut resources) as defined by ISO-NE.

- iv. ISO New England’s RSP06 reports in-State capacity for Connecticut’s three load zones (see Table 4-4) as totaling 6,797 MWs, a somewhat lower figure (it appears to exclude the Lake Road capacity) than the existing capacity identified in Table 3. The difference between the two merits an explanation as a note to the table.
- v. The capacity contribution from the Lake Road generating facility continues to be at issue. The CSC requested information during the hearing regarding the status and timing of efforts to enable this capacity to be recognized as available to Connecticut in assessing the in-State contribution toward meeting ISO New England’s reliability standards. Table 3 should reflect the most current information regarding Lake Road’s capacity deliverability.
- vi. Table 3 indicates that the Meriden and Oxford facilities will enter commercial operation during 2010. This may be overly optimistic given their current status.
- vii. Table 3 does not appear to account for capacity resources expected as a result of Public Act 05-01 and more

specifically, the DPUC's Final Decision in Docket No. 05-07-14, Phase I.

- viii. Table 3 does not appear to account for capacity that may result from an accelerated implementation of distributed generation resources. Table 3 might note that Section 108 of Public Act 07-242, *An Act Concerning Electricity and Energy Efficiency*, adopted after the Draft Report was issued, creates a grant program for clean generation projects at state buildings and businesses.

In addition to providing the Table 3 capacity balance assessment, it would be helpful if this section of the Final Report included an additional table that provides a comparable assessment of supply and demand for electrical energy in the State. Each of the generating entities in the State has provided actual, annual energy production for 2006 and the past five years. A table could be developed that would first identify the total energy consumption within the State, and then would present each generating unit and its associated net energy production and percentage contribution to the total. This would provide perspective into which generating resources are relied on to meet the State's power needs on a "day-in, day-out" basis. Such information also could be useful as persons consider the emissions impacts of different Connecticut generators. Further, it would be instructive to compare energy production to total electric energy requirements in the State. Such comparison would shed light on the degree to which Connecticut relies on power generators that are internal to the State to routinely provide electrical energy to its customers.

On a prospective basis, the CEAB suggests the CSC consider introducing additional standard filing requirements to collect

information on capacity, energy and operating reserve capabilities in the State and within each ISO-NE defined load pocket within Connecticut. The specific requirements for operating reserves capacity was identified by ISO-NE in its June 5, 2007 presentation to the Planning Advisory Committee (“PAC”). Operating reserves now can be offered into the ISO’s new Locational Forward Reserve Market (“LFRM”).

## 2) *Nuclear Powered Generation*

The Draft Report describes the portion of the State’s capacity that is and has been provided by nuclear power. In addition, the Draft Report discusses the potential nuclear uprate by Dominion. It may be best to characterize the timing of Dominion’s decision on a potential 80 MW uprate more conservatively. The CEAB also suggests adding similar information comparing the electric energy requirements of the State to the in-State nuclear energy production.

## 3) *Coal Powered Generation*

The Draft Report provides a general discussion of the pros and cons of coal as a fuel source for power generation. The CEAB believes it would be appropriate for the Final Report to note that coal has relatively high CO<sub>2</sub> emissions levels in relation to other generation fuel supplies and that Connecticut has committed to reduce CO<sub>2</sub> emissions through the Regional Greenhouse Gas Initiative.

The Draft Report states that NRG is considering developing a 630 MW clean coal generating facility in Connecticut. However, at this time, it is not clear that NRG is actively pursuing such facility.

(See, NRG Filing dated April 3, 2007 at page 5; Transcript dated June 12, 2007 at page 181.)

The Draft Report describes the portion of the State's capacity that is and has been provided by coal. The CEAB suggests adding similar information comparing the electric energy requirements of the State to the in-State, coal-based electric energy production.

#### *4) Petroleum Powered Generation*

The Draft Report describes the portion of the State's capacity that is and has been provided by petroleum-based power generation. The CEAB suggests adding similar information comparing the electric energy requirements of the State to the in-State petroleum-based energy production.

The fuel mix data depicted in Figures 4a and 4b shows the portion of the State's capacity that is derived from each fuel type. This does not reflect the actual fuel mix of the State's energy supply. We suggest adding companion charts that depict the fuel mix of the energy production in-State, as well.

#### *5) Natural Gas Powered Generation*

The Draft Report describes the portion of the State's generating capacity that is and has been provided by natural gas-fired facilities. The CEAB suggests adding similar information comparing the electric energy requirements of the State to the in-State natural gas-fired energy production. Additionally, Connecticut's energy production total should include the Lake Road facility as the deliverability issues associated with that facility are related to

capacity at the time of critical system conditions and not to delivery of energy throughout the balance of the year.

6) *Hydroelectric Powered Generation*

The Draft Report describes the portion of the State's capacity that is and has been provided by hydroelectric power. The CEAB suggests adding similar information comparing the electric energy requirements of the State to the in-State hydroelectric energy production.

7) *Solid Waste Powered Generation*

The Draft Report describes the portion of the State's capacity that is and has been provided by solid waste-fired power facilities. The CEAB suggests adding similar information comparing the electric energy requirements of the State to the in-State solid waste-fired energy production.

8) *Miscellaneous Small Generation*

The Final Report should note the financial and other incentive mechanisms Connecticut established in Public Act 05-01 to increase the amount of installed distributed generation and combined heat and power in Connecticut. The Department of Public Utility control has approved numerous grant applications for distributed generation projects, but it is not yet clear how many of these projects will actually be built.

9) *Other Generation Technologies*

The Final Report might note that Section 108 of Public Act 07-242, *An Act Concerning Electricity and Energy Efficiency*, adopted after the Draft Report was issued, creates a grant program for clean generation projects at state buildings and businesses. Up to \$25 million may be made available to support fuel cell installations and up to \$25 million may be made available for other clean distributed generation projects.

10) *Other Resources That Support Connecticut's Demand*

a. *Import Capability*

In future proceedings, the CEAB suggests the CSC consider expanding this section to discuss the import limits into Southwest Connecticut and the Stamford-Norwalk areas. ISO-NE's RSP06 also includes a significant change in the import limit into Southwest Connecticut, once the Phase II Transmission line enters service.

**D. Market Rules Affecting Supply**

The Draft Report addresses the Installed Capacity market. The LFRM has been approved by the FERC and is being implemented. The LFRM focuses specifically on the requirements for operating reserve capability – generating units that can respond within 30 minutes to an outage or load event – within the Southwest Connecticut zone and in Connecticut overall. This market is directly

relevant to the supply of capacity in Connecticut and the Final Report should address it in this section.

*1) Installed Capacity Market*

Since the CSC issued the Draft Report, the FERC has approved the proposed Forward Capacity Market.

**E. Legislation Affecting Electric Supply**

*1) Electric Restructuring*

No comments on this section.

*2) Renewable Portfolio Standards*

The Final Report might note that Public Act 07-242, adopted after the Draft Report was issued, increases Connecticut's renewable portfolio standard during the forecast period.

*3) An Act Concerning Energy Independence*

The Draft Report properly sets forth elements of Public Act 05-01 relevant to Connecticut's loads and resources, such as the long term capacity contracts. The Final Report should also reference Public Act 05-01's program designed to encourage installation of distributed generation resources in Connecticut and the level of customer response to the incentives. The distributed generation program is relevant to the State's resource portfolio. (See, the Internet link in CL&P's Reply to CEAB-004, No. 3.)

In addition, the Final Report should recognize the various programs designed to encourage energy efficiency and increase generation resources in Public Act 07-242, *An Act Concerning Electricity and Energy Efficiency* adopted subsequent to the issuance of the Draft Report.

**F. Council Approved Generation**

*1) New Natural Gas-Fired Generation*

The third paragraph in this section references CEAB's reconstitution and function. This would seem better suited to the section on legislative changes on affecting electric supply. If reference is made to the CEAB, the Report should note a subsequent reconstitution in PA 07-242.

**G. Transmission**

No comments on this section.

**H. New England East-West Solution**

The Draft Report states at page 24 that "it is anticipated that the application(s) for this project will be submitted to the Council approximately January 2008." The Final Report should indicate that CL&P testified that the New England East – West Solution ("NEEWS") application may be submitted to the CSC later in 2008. (See, Transcript dated June 12, 2007 at page 87.)

**I. Electric Transmission in Southwest Connecticut**

No comments on this section.

**J. Electric Transmission in Northeast Connecticut**

*1) Lake Road Generating Facility*

The Draft Report provides a good description of the options being considered to address the current constraints that preclude this generation to meet the requirements as Connecticut installed capacity. In the CEAB's view, the Final Report should underscore the importance of CL&P, ISO-NE and Lake Road expeditiously implementing a cost-effective means to make this facility's capacity available to Connecticut.

**K. Interim Measures To Address Transmission Constraints in SWCT**

No comments on this section.

**L. System Contingencies and Reserve Requirements**

The level of operating reserves Connecticut needs, or the amount of resources Connecticut must have available in the event of a system loss, are important to Connecticut's infrastructure planning efforts. As noted in the Draft Report, ISO-NE projects that up to 540 MW of additional fast-start resources could be needed in Connecticut to meet projected operating reserve requirements (see, e.g., RSP06 at 47). For "Greater

Southwest Connecticut,” 75 to 175 MWs of additional resources may be required (id.).

A more recent analysis by ISO-NE reveals several important facts about the ISO’s projected operating reserve requirements for the State. (See, June 5, 2007 PAC entitled “New England Regional System Plan (RSP07) Representative Future Operating Reserve Requirements in Major New England Import Areas” and the table entitled “Representative Future Operating-Reserve Requirements of Major New England Areas (MW)” at page 21).

First, the ISO’s projections of operating reserve requirements for Connecticut are in flux. For example, the more recent calculation of the summer “Representative Future Locational Forward Market Reserve Requirements” (the LFRM market is designed to secure necessary operating reserves) has dropped to zero for “Greater Southwest Connecticut” for the years 2010 and 2011, after SWCT Reliability Project Phase II enters service. This is a major change from the 75 to 175 MWs in the ISO-NE’s RSP06, at page 46.

Second, the method by which ISO-NE calculates the State’s operating reserve requirements is not entirely clear.

Finally, ISO-NE’s most recent projection of operating reserve requirements extends until 2011, well short of the end of the forecast period the CSC examines on an annual basis.

In light of the above, the CEAB recommends that the Final Report note the State’s ongoing exposure to the need for resource additions to support operating reserve requirements. Further, the Final Report should note that operating reserve requirements will tend to increase as peak loads increase, all else being equal. The CEAB emphasizes that developing effective strategies to address resource needs will require a view of what

those needs will be. While the CEAB appreciates that there are a range of uncertainties that can make need forecasts difficult at times, effective planning requires that uncertainties be identified and placed into an appropriate context. Given the lead times associated with planning and siting generating unit additions, the state would be well-served if participants in the CSC's proceedings endeavored to project the need for operating reserves across the CSC's ten-year planning horizon.

**M. Substations and Switching Stations**

No comments on this section.

**N. Resource Planning**

It would be appropriate for the Final Report to note that Section 51 of Public Act 07-242, adopted after the issuance of the Draft Report, directs that Connecticut adopt an annual comprehensive resource assessment and procurement plan.

**O. Conclusion**

The CEAB suggests that Final Report include in the list of issues that warrant attention the need for clarity, transparency and a longer forecast period in relation to operating reserve requirements.

The CEAB appreciates the Council's consideration of its suggestions in this proceeding.