Exhibit CAC# 45-12

CAC Manitoba: Book of Documents
NFAT Review

Tab	Document
1	The Brattle Group, *Integrated Resource Plan for Connecticut*, January 1, 2010 p. II-26, II-27, II-30

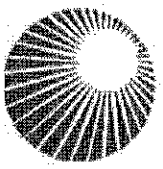
TAB 1

Integrated Resource Plan for Connecticut

January 1, 2010

Prepared by:

The Brattle Group



Connecticut Light & Power

The Northeast Utilities System

The United Illuminating Company

D. Evaluation of Resource Strategies

As discussed in Section B, and in more detail in Section III.1, there is no projected need for new resources in order to meet resource adequacy requirements over the study horizon. However, energy needs must be met (whether through generation or energy efficiency) and renewables mandates must be met (through development of an unprecedented amount of new renewables and enabling transmission and/or paying alternative compliance payments). How these needs are ultimately met will be determined largely by market forces, but also by future state-sponsored procurement and policy initiatives.

The Brattle Group and the Companies developed six potential "resource strategies" for evaluation.[3] These strategies span a range of factors the state and/or utilities may be able to influence through various procurement and policy initiatives: energy efficiency, development of renewable generation and enabling transmission, and development of traditional generation. The six alternative strategies are evaluated, in combination with each of the five scenarios discussed above, in year 2020 using the cost and emissions metrics described in Sections B and C.

Because the evaluation considers only one year, it is only an indicative screening analysis for informing the direction and general magnitude of the effects. Further analysis of strategies and procurement/policy measures that may be required to pursue those strategies will be necessary before taking specific actions.

D.1 Six Alternative Resource Strategies

The six strategies evaluated are:

- ***Reference Strategy:*** This is the strategy embedded in the Base Case described in Section B. It continues current funding for DSM, but no more. It assumes regional development of renewables (primarily wind) and enabling transmission are sufficient to meet regional RPS requirements, as described in Section III.3.

- ***Targeted DSM Expansion:*** This strategy is constructed to achieve zero load growth in five years and a slight reduction thereafter by implementing four specific, high-potential new energy efficiency initiatives: C&I Chiller Retirement, Various High Potential C&I Measures, Residential New Construction "Zero Energy" Homes, and Residential Cooling, as described in Section III.2. The combined effect of these initiatives would be to reduce Connecticut's annual energy requirements relative to the Reference Strategy by 646 GWh (2 percent) and peak loads by 178 MW (2 percent) by 2020.

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[3] A seventh resource strategy for nuclear energy was also developed, but is not discussed in this section because it would not be possible to develop and construct a new nuclear plant in Connecticut in the 10-year scope of this report. However, the nuclear strategy is useful for illustrative reasons and is detailed in Section III.5 (Nuclear Energy).

- ***All Achievable Cost-Effective DSM:*** This strategy assumes implementation of all achievable cost-effective DSM identified in the "Potential Study" commissioned by the ECMB, as described in Section III.2. This reduces Connecticut's energy requirements by 3.4 TWh (10 percent) and peak loads by 561 MW (7.5 percent) relative to the Reference strategy. Retirements are assumed to increase as the capacity market re-equilibrates.

- ***Limited Renewables:*** This strategy reflects limited renewable development and no transmission expansion to integrate remote and offshore wind resources. Renewable supplies are assumed to grow to meet 2013 RPS requirements, but then to remain constant at that level thereafter, falling well short of later RPS requirements. With the shortfall, Connecticut must pay the ACP for most of its 2020 RPS requirement. New combined cycle generation enters the market to take advantage of high energy prices, and retirements commensurately increase.

- ***In-State Renewables:*** This strategy is based on the "Limited Renewables" strategy, but with Connecticut aggressively supporting in-state renewable development to meet its own RPS requirement. Under such a strategy, out-of-market payments are required to support photovoltaics and fuel cells. In addition, to ensure that the in-state resources are dedicated to satisfy the Connecticut's Class I requirement (and not sold to EDCs in other states to satisfy their RPS requirements), the clearing price for all renewables would be close to the region's ACP (which is greater than Connecticut's ACP).

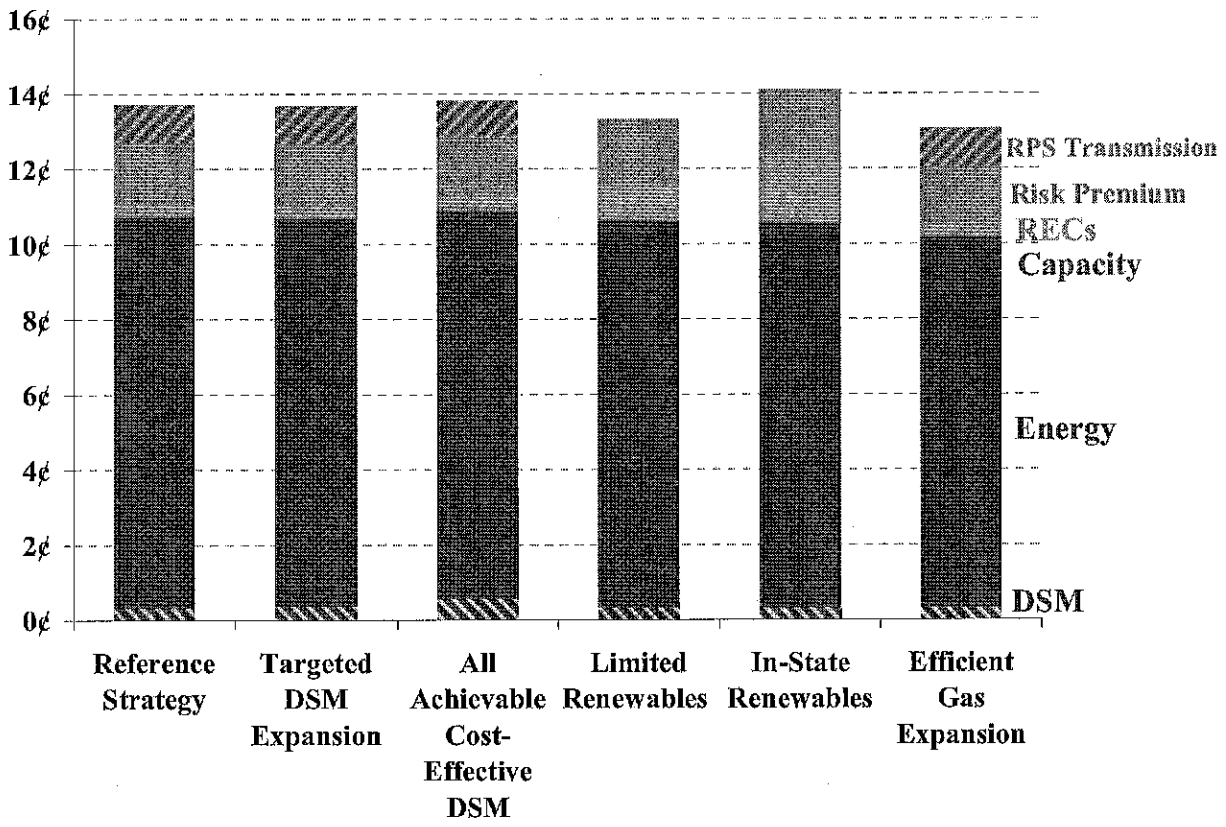
- ***Efficient Gas Expansion:*** This strategy assumes the development of 1,100 MW of new gas-fired combined cycle capacity in Connecticut, backed by power purchase agreements or other mechanisms to support capacity that might not otherwise be developed by the market (three of the scenarios already have 300 MW CCs, so only 800 MW of additional capacity is added under those scenarios). The concept of this strategy was to examine the value to customers of paying the full cost of new conventional generation and, in return, receiving its full value, and doing so before such a resource would have been developed by merchant developers. This could be achieved through long-term contracts that shift the cost responsibility, operational risks, and market risks and rewards to customers. Such an arrangement would allow a lower cost of capital – we assumed a 10.75 percent return on equity, resulting in a 7.1 percent after tax weighted-average cost of capital. It is assumed that capacity prices and retirements will not be affected, partly because of ISO-NE's Alternative Price Rule that addresses out-of-market entry.

Implementing these strategies in the modeling framework described in Sections B and C required adjustments to various other assumptions. In particular, each strategy would affect the amount of capacity and renewable generation needed to satisfy resource adequacy and RPS requirements. Furthermore, each strategy's effects on market prices of energy and capacity would indirectly affect retirement and investment decisions. We used the capacity market model described in Section III.1 to estimate these effects. The resulting supply impacts are summarized in Table 1.18 in Section III.1 (Resource Adequacy).

high-emitting, oil-fired steam generation in response to depressed capacity prices.[4] Capacity prices are depressed by as much as $40/kW-year in the Limited and In-State Renewables strategies because the absence of plentiful regional renewable generation raises energy prices (especially off-peak, when wind output is greatest), which substantially increases the margins new combined cycles can earn. This lowers their net cost of new entry, which reduces current and future capacity prices.

Winter gas use in Connecticut and New England tracks both load and renewable additions. In the cases with lower load (the DSM strategies, as well as the higher-price scenarios), gas use goes down. It goes up in the high-load cases – the low-price, high demand scenarios such as the Low Gas/Low CO_2 scenario, and also under the Limited Renewable and In-State Renewable strategies. However, this reflects the economic use of natural gas, not necessarily reliance on it to meet load (see Section III.8 (Energy Security) for a detailed discussion).

Figure 28
Connecticut Customers' Annual Average Power Supply-Related Costs (2010 ¢/kWh)
All Resource Strategies in the Current Trends Scenario in 2020



[4] Table 1.18 in Section III.1 (Resource Adequacy) documents the differences in retirements among strategies.

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