



CLEAN WATER ACTION

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Comments by Roger Smith, Campaign Director, Clean Water Action
on the January 1, 2008 *Draft Integrated Resource Plan for Connecticut*

Clean Water Action is a national environmental non-profit with 11,000 Connecticut members. We have worked on power plant and energy related issues in Connecticut since 1998. Since 2003, Clean Water Action staff have promoted clean energy and energy efficiency at the town and individual level through the 20% by 2010 clean energy initiative.

Summary of Clean Water Action's recommendations to the CEAB:

Overall: Direct Utilities to better address state policy needs in future plans. We were disappointed that this study assumed large new investments in transmission without investigating alternatives, appeared to view renewable energy investments primarily as a way to build more transmission lines, and focused too much attention on expensive and unrealistic coal and nuclear baseload options which the utilities would build, rather than a cleaner, and potentially cheaper, distributed energy and renewable future. The utilities should be charged with developing scenarios consistent with the CT Climate Change Action Plan, and Governor's Energy Vision.

- 1. Immediately implement Recommendation #1 to maximize the use of all cost-effective demand side management and increase funding to levels listed in table D.9**
- 2. Revise Recommendation 2: While cost-of-service agreements could benefit CT ratepayers in certain situations, we do not support additional coal and nuclear generation at ratepayer expense. Both come with significant environmental, construction and siting problems and risks. Instead explore the potential for long-term contracts for Class I renewable energy (both RECs and energy) in the region.**
- 3. Modify Recommendation 3: regarding study of how to best use the RPS Alternate Compliance Payment. Consider new criteria for how ACP funds reverting to the Clean Energy Fund should be spent rather than giving the funds to the utilities**
- 4. Modify Recommendation 4 to reduce natural gas consumption: Recommend immediately ramping-up natural gas efficiency investments to capture all cost-effective efficiency. Focus any additional study on the impacts of expanded natural gas heating efficiency programs, electric efficiency programs, clean distributed generation and renewables on gas consumption, and compare lifetime costs and risks for DSM and renewables versus additional non-gas baseload generation**

Clean Water Action's Recommendations

1. Adopt and immediately implement the Demand Side Focus Scenario

While much of the report requires further study we urge the CEAB not to let that hold up the implementation of Recommendation 1, the demand-side management focus scenario. We support an immediate ramp-up of efficiency investments to levels outlined in table D.9; Investments in 2008 should start at \$116 million and increase to \$352 million by 2014. Funds must be approved now and the long-term direction set to give the utilities and the ECMB time to work out logistical issues related to an increase of this magnitude.

Table D.9: DSM-Focus Level DSM Annual Budgets (Nominal \$ Million)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
UI Total	\$18	\$20	\$26	\$38	\$54	\$70	\$81	\$81	\$82	\$83	\$84	\$85
CL&P Total	\$94	\$96	\$109	\$140	\$182	\$226	\$255	\$270	\$256	\$206	\$153	\$132
Total (UI + CL&P)	\$112	\$116	\$135	\$177	\$236	\$296	\$336	\$352	\$338	\$289	\$236	\$216

Page 26 states that:

In 2018 and 2030, the DSM-Focus resource solution has the lowest costs in every scenario except High Fuel/Growth, in which prices are high enough to induce much natural load reductions, reducing the incremental effectiveness of DSM programs. DSM Focus is a close second in this scenario.

From this we conclude that the demand-side management focus scenario is the only one which meets the requirements of 07-242 and should move forward for implementation.

Page 3 of the Executive Summary states:

*While the need for capacity is several years off in Connecticut, DSM programs are more cost-effective if they are pursued consistently over time, so it is reasonable to begin the ramp-up to more aggressive DSM programs in the near term. The DSM resource investments assumed in this report far exceed the (already aggressive) levels pursued by the Companies to date. **The pace and magnitude of this expansion warrants careful monitoring of resource availability, costs, and operational effectiveness as the programs develop over time.***

We strongly agree with the first part of this statement that the **ramp-up must begin soon and funding must be maintained consistently**. Inconsistent funding leads to disgruntled ratepayers when they learn the program they were waiting for (air conditioner trade-in, home audit, etc) is oversubscribed or no longer exists. We strongly support paying all of the incremental cost for efficiency upgrades and the efficiency programs should be funded to do so.

We disagree with the utilities' characterization of Connecticut's efficiency programs as especially aggressive. While the ramp-up considered by this plan are unprecedented in New England, utility-run conservation programs in California have operated for 30 years and continue to find new and innovate ways to reduce electricity consumption, with the result that per-capita energy consumption has remained flat over that period. Connecticut programs are chronically underfunded and oversubscribed which suggests that they are not nearly aggressive as they should be. **New societal objectives, including global warming emissions reductions, require a departure from business as usual- change is the new norm.**

We agree with the statement calling for **careful monitoring and evaluation of the programs** to ensure accountability, and suggest the CEAB provide the following guidance to the Department of Public Utility Control, Energy Conservation Management Board and utilities:

- **Customer satisfaction must be as important as \$/MWh reductions- consider expanding independent evaluation of efficiency programs.** Connecticut is blessed with a significant number of top academic institutions, including business schools. We urge investigation of partnerships with universities where business school professors and students are contracted to analyze current programs, look for opportunities to encourage creative and flexible behavior, support goal-oriented decision-making, increase program customer-focus and satisfaction, flexibility. give outside perspective on ways to reduce bureaucratic snags, and ensure smooth interoperation of overlapping CEAB/ECMB/utility/contractor structures.

The traditional utility role and conservative mindset of a heavily regulated and risk-averse entity may not be best for implementing creative and customer-focused efficiency programs, and outside academic review could provide useful recommendations at reasonable expense.

- **Value creativity-** as we move beyond only investing in the most cost-effective “low-hanging fruit,” and have enough funding to achieve the maximum achievable cost-effective efficiency, there must be space for the utilities to invest in pilot programs and in consumer education.

Pilot programs inherently involve risk, and that risk should be welcomed within efficiency programs that are overall cost-effective. We would focus these efforts on parts of the residential sector where traditional outreach is difficult and expensive. **One way to elicit creative approaches is to encourage contests and competitions with incentives.** The *Summer Energy Savers* program did seem to inspire customers to change behavior. A next step could be programs which encourage mayors to challenge other town mayors to reduce municipal building energy use (with some sort of recognition and rewards) to towns challenging residents to cut their usage through efficiency, or schools challenging schools, and non-profits and faith communities issuing an efficiency challenge to their members.

Goals and incentives can go a long way in promoting efficient behavior, just as the Clean Energy Fund giving solar panels to towns energized citizens signing up their neighbors for clean energy or Governor Rell’s *One Thing CT* campaign offering basketball tickets for personal efficiency suggestions. Leveraging the outreach ability of civil society can not only reach more people at lower cost than traditional mass media methods or bill inserts, but also convince people to participate who wouldn’t respond to passive approaches, and also increase goodwill towards the CT Efficiency Fund programs.

- **Include worker training and green jobs-** energy efficiency could be a significant creator of “green collar” jobs in Connecticut. The efficiency programs

should invest in skills training and modern equipment and facilities at our state colleges, community colleges and vocational institutions. Special attention should be given to training and hiring in minority and disadvantaged communities, and partnerships with faith-based organizations interested in providing training for these communities.

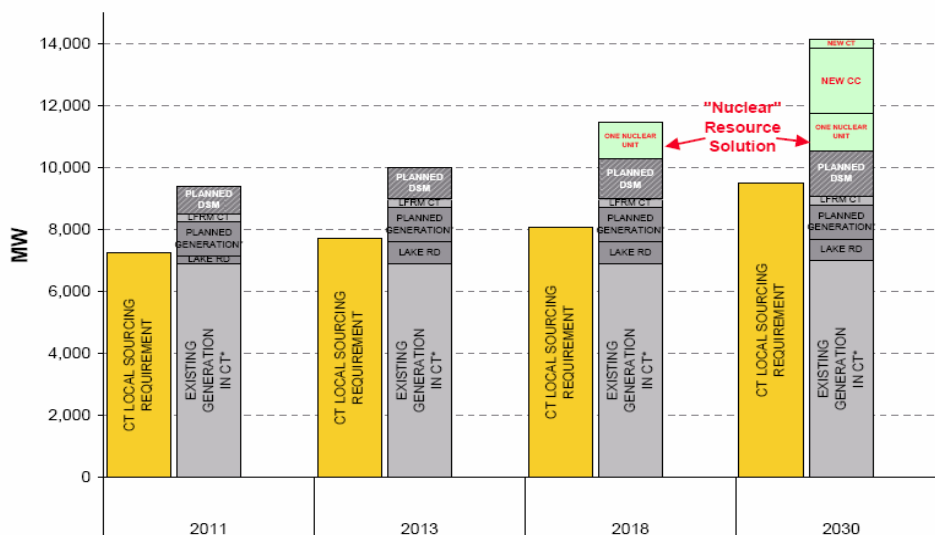
2. Further Study is Needed for Recommendation 2 regarding longer-term cost-of-service contracts. We agree that cost-of-service structures can mitigate market power issues and potentially reduce volatility of energy prices. If there are opportunities to create this type of arrangement with existing facilities in the region we would not oppose it. **However, we will oppose the construction of additional coal and nuclear generation at ratepayer expense.**

Cost-of-service cannot become a path for utilities to increase their profits by increasing their rate base while exposing consumers to significant risks. Nuclear and coal power plants are among the most difficult to build in New England as both are saddled with major environmental drawbacks, high (and rapidly rising) construction costs, in the case of coal significant CO₂ liability, and large siting barriers.

The report offers a hypothetical scenario where all in-state generation were under cost-of-service (30) and shows overall lower customer costs and less variability in prices. However, it also states that “Across scenarios, the energy cost varies much more in the market-based regime reflecting customers’ exposure to gas prices” (31). **Unfortunately, Connecticut is part of a market-based regime and these generating assets are part of a system where natural gas prices set the price. Any estimation of the benefits of cost-of-service must recognize that bringing a small amount of new generation online (relative to Connecticut’s installed capacity) is not likely to keep natural gas generation from setting the price and have much of an effect one way or another while exposing ratepayers to significant risk and high up-front construction costs.**

We do not support building more power plants at public expense to solve market structure issues when it does not appear that any power plants are actually needed under the least-cost efficiency first scenario. As the report states- “the DSM-Focus resource solution actually reduces demand to below current levels by 2018 in the Current Trends scenario, as shown on Figure 2.3” (18, 19). The figure below illustrates CT resource needs met for the years to come.

Figure 2.2: Connecticut Supply-Demand Balance and Nuclear Resource Solution in Current Trends Scenario



*Existing generation is net of sales. Other planned generation includes Waterbury, Klean, Wallingford/Pierce unit, DG Capital Grant Projects, Renewable Energy Contracts, Cos Cob expansion, and Millstone 3 uprate.

Additionally the report states the following regarding the locational sourcing requirement:

⁴ ISO-NE has determined the LSR corresponding to the load forecast that is used in the Current Trends scenario. The LSR corresponding to the other scenarios, with their different load forecasts, was estimated based on the relationship between the LSR and load growth implicit in ISO-NE's requirements for 2010 and 2016: for every megawatt of load growth in Connecticut, the LSR increases by 1.26 MW.

We would like the report to address whether the reverse applies for the projected *decreases* in demand. If so, this should impact what new generation, if any, is needed in Connecticut. Future reports should analyze scenarios allowing the RMR "Sooty Six" units to be retired or rebuilt.

Renewable Energy

While regrettably largely absent from this report, **we recommend exploring the potential for bundled long-term capacity, energy and REC contracts for utility-scale Class I renewable energy in the region.** This could be a role where the state Clean Energy Fund could collaborate with sister Funds in other states, and the Clean Energy States Alliance, to take a regional approach to overcoming siting and financial barriers for renewables, especially for off-shore and deep-water wind. Conservation Law Foundation and the Union of Concerned Scientists are other potential expert partners who could help advise Connecticut. Connecticut could play a leadership role in financially supporting the construction of new wind and other renewables projects in the region (including off the coast of Rhode Island) while hedging against rises in fossil fuel prices. This approach would have none of the environmental risks and drawbacks associated with the nuclear and coal scenarios.

We also question the assumptions behind the costs of solar PV in the report. While the report takes into account some future scenarios predictions on costs and policy (i.e increasing RPS requirements, etc.) it doesn't take into account the renewable market transformation currently underway for solar energy. Every time PV has doubled in production, manufacturing costs have dropped approximately 20%. (source: Handleman, Heliotronics). While the study mentions the Federal production tax credit, the currently available solar rebate is not included. With all incentives taken into account, we can see the Levelized Cost of Electricity decrease towards \$170-210 (MWh) with solar reaching grid parity in the decade. As solar production coincides well with peak load, this strategy could have significant benefits. We do not expect any PV subsidy to be necessary for more than 10 years, so solar is an investment in our energy future.

Distributed Generation

From a capacity standpoint we should consider focusing attention on solar photovoltaic and distributed clean combined heat and power which can help meet our climate goals, improve grid reliability, has no siting issues, can reduce overall fossil fuel consumption in line with the Governor's Energy Vision, and lessen or eliminate the need for additional transmission infrastructure (including NEWS). We are disappointed that distributed generation played a minimal role in this report.

Regional Efficiency Investments

As part of the assumptions going into the regional energy needs analysis, "it was assumed that the rest of New England would also develop new DR and EE at half the rate Connecticut develops new DR and EE per megawatt of load" (10).

We question whether that assumption is valid and urge CEAB to request scenarios where our neighboring states do significantly more to reduce electricity use. Rhode Island, Maine and Vermont all have new energy efficiency-first “least-cost procurement” standards to promote efficiency, and Massachusetts is currently considering legislation to achieve this. Most of the states are also considering spending RGGI auction revenue on end-user efficiency. **We would expect dramatic ramp-ups of energy efficiency and demand response throughout the region, and our planning must account for that.**

3. Rethink the premise behind Recommendation 3 regarding the renewable portfolio standard

This statement is incorrect and should be stricken from the report:

Connecticut’s renewable portfolio standard as currently structured, while supporting Connecticut’s renewable goals, may impose additional costs on Connecticut customers without necessarily promoting new renewable generation to displace conventional generation (47).

This statement is misleading:

Hence, there is a significant possibility that Connecticut’s RPS requirements will not be met with renewable electric generation, forcing LSEs increasingly to rely on payments to the state (at \$55/MWh) for shortfalls in obtaining renewable energy certificates (RECs). (ES-3)

The utilities seem to be using these statements to sew confusion about the alternative compliance payment (ACP) and what ACP funds will achieve. Rather than a “payment to the state” which does not necessarily support clean energy, the ACP actually goes directly to the Connecticut Clean Energy Fund, the quasi-public agency charged with the promotion of clean energy in Connecticut.

Further analysis could also examine the potential to fashion regionally-coordinated policies to address possible renewable shortfalls and/or regional projects in transmission and renewable capacity (47).

We caution against using these funds to support transmission projects, or support for transmission in general before real analyses are done to assess whether this is the best use of ratepayer dollars. We do support the regional focus. The ACP cap should also be adjusted for inflation as other states do.

Our recommendation: we support further investigation of ways to achieve the greatest development of renewable energy for each dollar invested by ratepayers. We support providing direction to the Clean Energy Fund for how the ACP dollars should be spent, including:

- Investing this money with a focus on increasing renewable peak capacity. Solar photovoltaic programs have capacity and reliability benefits as they generate at peak times while producing no pollution.
- Investing these funds in a manner to hedge increases in REC and energy costs through long-term contracts. Regional renewable projects, such as wind, could meet a significant amount of New England’s power needs and

CCEF should be directed to make investments with a preference for long-term contracts that bundle RECs and energy together to provide both RPS compliance and price-stability benefits.

- Investing ACP funds in technologies which reduce electricity usage, including solar hot water heating and on-demand hot water heating.

Recommendation 4: Consider potential ways to mitigate the exposure of Connecticut consumers to the price and availability of natural gas.

The utilities state the following assessment of the problem and then offer to build power plants at ratepayer expense to address the problem.

Non-gas baseload generation (e.g., coal, and nuclear) offers a greater reduction in gas use (particularly in wintertime, when deliverability concerns are highest) than other resource options studied in this report. Although not assessed in this report significant renewable generation could also mitigate gas dependence To the extent that market participants' investment in non-gas-fired baseload generation is deemed insufficient to address these risks, state regulatory authorities should consider allowing contractual or ownership arrangements or other policy options to enable or encourage investment in such baseload capacity. Such options should be considered in concert with efforts to reduce dependence on natural gas use in all sectors (e.g. heating). Both the cost and CO₂ emissions implications of all non-gas options should be considered. (ES-6).

This is an overly narrow way to frame the problem and solutions. We urge the CEAB to follow the intent of PA 07-242 and pursue least-cost strategies to ratepayers which also meet Connecticut's global warming, fossil fuel reliance and air quality goals. **A least-cost strategy to reduce natural gas use should start with energy efficiency for natural gas used for heat, then efficiency to cut natural gas used for electricity.** The potential of pollution-free and no fuel-cost renewable energy to displace gas generation should also be thoroughly explored.

We urge the CEAB to direct the utilities to ramp-up natural gas efficiency programs for homes and businesses to capture all cost-effective efficiency while mitigating against the possibility of future gas shortages. The fact that Connecticut lacks natural gas programs anywhere nearly as robust as for electricity means we have an opportunity to capture huge cost savings for every dollar invested in conservation. As with the electricity DSM-focus scenario, we urge immediate and significant ramp-ups of natural gas ratepayer investments in efficiency.

Utility ownership of non-gas baseload generation involves significant increase in risk to ratepayers.

Under increasingly strict state and then Federal global warming regulations, **a return to coal is likely not cost-effective over life of plant and would make reaching CT global warming reduction goals impossible. For these reasons coal should be a non-starter- it conflicts with the existing policy commitments of the governor and state legislature on climate change.**

The capital costs of coal plants are high and rising, Integrated Gasification Combined-Cycle (IGCC) coal plants are *even more* expensive to build, and pulverized coal plants will be difficult or impossible to permit and site. The supposed benefit of IGCC is cheaper capture and sequestration of carbon dioxide (CCS), but this is unlikely to help in New England as CCS is

estimated to reduce plant efficiency by 30%, and there is no known New England geologic formation where carbon can be permanently stored. Carbon capture and storage will come at significant and unknown added expense to ratepayers. Clearly, this is not a responsible long-term strategy for Connecticut.

Nuclear scenarios risk a return to cost-overruns, safety violations, and poor management which resulted in the closing of CT Yankee and Millstone Unit 1, and years-long shutdowns of Millstone units 2 and 3. Significant siting difficulty for a new plant, unresolved waste storage issues, and the ever-present risk of catastrophic failure all represent tremendous risks to ratepayers and citizens. New reactor construction elsewhere is not going well, with a new Finnish reactor over budget and behind schedule.

Finally, why are these non-gas generation options even being considered when the report indicates that DSM and today's generation appears fully able to meet CT capacity needs and in-state resource requirements for the foreseeable future? Is reducing gas demand reason enough to build new power plants? This makes little sense and again we urge focus on efficiency and renewable energy first.

If these coal and nuclear scenarios are not just left out entirely, they should be modified to add risk and cost assessments over the *entire lifetime of the plants*. Costs should include projected increasing costs of CO₂ for coal and storage of spent nuclear fuel for nuclear, and risks should include possible requirements to prematurely retire coal power plants to achieve future global warming reductions, and the societal costs of a nuclear plant accident or attack.

Thank you for consideration of our comments,

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