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Energy Planning Advisory Board
State of New Hampshire Office of Energy and Planning
57 Regional Drive, Suite 3
Concord, NH 03301

Dear Board Members:

Thank you for the opportunity to submit comments on key policy action issues related to high energy prices. As an individual it is difficult for me to take the time off from work duties to testify at the Stakeholder Forum. Nonetheless I feel well positioned to comment on the energy efficiency components in the 2002 New Hampshire Plan and the recommendations in the June 2006 Energy Planning Advisory Board Annual Report.

It is my opinion that energy efficiency in buildings is a "sleeping giant." There is a tremendous potential for cost-effective energy improvements, particularly in New Hampshire where buildings typically endure over 7,000 heating degree-days annually. Cold climate states that can develop cost-effective and practical mechanisms to help their residents, businesses and institutions achieve improved building energy performance will reap economic, environmental, and social rewards. Those states that lag in these efforts will suffer from a weaker business climate and a lower quality of life.

The comments that follow are arranged according to the topics in the 2006 EPAB Annual Report. The opinions expressed within are my own. I have included a short biography at the end of the testimony as background.

Yours sincerely,

Andrew Duncan

I. B. Encourage Energy Efficiency in State Facilities

I applaud the efforts that have been made to date to lead by example with energy performance in State of New Hampshire buildings, particularly Governor Lynch's leadership in adopting a 10% energy reduction goal. My only recommendation here is to use the excellent work in State of New Hampshire facilities as a springboard for educational and technical transfer to local government and business facilities throughout the state.

I. C. Support Cost-Effective Statewide Energy Efficiency Programs

The State of New Hampshire overall is making good use of its System Benefits Charge (SBC) funds. The biggest problem is the limited funds, and the tendency of legislators to want these funds for unintended uses. To legislators convening under SB 389 to consider these programs, my recommendations are the following:

- Increase the rate for the current electricity SBC to 2.0 mills/kWh from the present 1.8 mills/kWh align the SBC with rates neighboring New England states and to pay for both the increased need for low-income fuel assistance (see below) and for a renewable energy program (see below).
- Use benefit/cost analysis as the primary metric for determining how limited System Benefits Charge (SBC) monies are spent. Renewable energy programs such as solar domestic hot water installations should be eligible for SBC-funded programs to the extent the benefits (including societal and environmental benefits) are comparable to the benefits of energy efficiency and fuel assistance programs.

This benefit/cost recommendation needs to be tempered by the acute needs of New Hampshire's lower income residents who have difficulty paying their energy bills, but it should *not* be completely abandoned. Unfortunately individuals are more likely to waste a resource when they are not paying market costs for it, as borne out in fuel bills of comparable housing units- one with tenants paying market energy rates and the other with tenants paying a subsidized rate. I have heard, anecdotally, that at the current pace it will take 20 years for the low-income weatherization programs to install energy efficiency improvements in the current list of fuel-assistance customers. It is relatively easy to determine the energy intensity of a home (annual commercial energy Btus consumed per square foot living space per annual heating-cooling degree days), and I believe efforts can be made to better benchmark energy consumption in fuel assistance households. While there are often misplaced incentives with fuel assistance individuals living in rental housing, I believe individuals receiving fuel assistance (and their landlords) could be better empowered to make their homes more energy efficient in the same manner as welfare recipients are encouraged to increase their wage earning ability.

- Understand the program components that make energy efficiency programs successful or unsuccessful, and compare these components with the implemented features of the New Hampshire energy efficiency programs. Reports about success factors of state energy efficiency programs are readily available, such as from the American Council for Energy-Efficiency Economy. As an example, the MassSAVE residential energy efficiency program of providing free energy audits is probably NOT a model to emulate because a relatively small percentage of homeowners who get a free MassSAVE energy audit actually install significant energy efficiency improvements. On the other hand, the State of New York and other states have shown it is possible to implement a fuel-blind SBC-funded program for non-low income residents that generates substantial benefits for a broad section of residents. A key success feature in New

York and other states is the state-subsidized low-interest financing offered for qualified energy improvement projects.

- Clarify the role of the existing natural gas efficiency incentive programs and implement a line item SBC for residential and commercial natural gas supply in New Hampshire that is comparable to the electric SBC. In my opinion, the natural gas energy efficiency programs have not achieved the same level of societal benefits as the more ambitious and better funded electric utility programs. A dedicated natural gas SBC would allow these utilities to improve the effectiveness of their energy efficiency programs for both residential and commercial customers. The new Northern Utilities residential energy efficiency program with resident-initiated qualified private energy audits subsidized by the utility, and a 50% rebate for cost-effective energy improvements is a step in the right direction, but much more needs to be done.
- Study the feasibility of a SBC or similar funding mechanism for fuel oil, propane, and other non-renewable fuels that currently are exempt from this program. At the same time, invite participation from these industries to develop accredited energy performance contracting as a revenue-enhancing complement to their current host of services.
- Provide more training and recognition to the building trades in specific sub-industries such as framers, foundation contractors, electricians, HVAC contractors, plumbers, insulation contractors, and window contractors to develop a "best practices" pool of qualified contractors.
- Continue to encourage the Energy Star Homes program through the SBC mechanism, with level or increased funding overall. However, Energy Star for Homes funding on a per housing unit basis should be scaled back and better targeted, particularly with multi-unit housing. An enhanced Energy Star+ for Homes should be implemented, with expanded incentives for higher performance new homes. PSNH's enhanced Energy Star for Homes program for geothermal (ground source) heat pumps is a good model, but such a program should be available for all heating and cooling types, particularly passive solar.
- Examine opportunities for widening the pool of qualified energy auditors and energy performance contractors, such as enlisting the State in U.S. EPA/DOE's "Home Performance with Energy Star" program, facilitating Home Energy Rating System (HERS) certification of energy auditors (see recommendations under III. D.), and providing a mechanism for energy performance contractors to achieve nationally recognized training certification such as through the Building Performance Institute.
- Crack down on "bad apples" such as certain replacement window contractors who make poorly substantiated claims of 40% or 50% energy savings from window replacements, or general contractors who blatantly build new homes performing below the State energy code (see additional comments under section II. D.).

II. B. Monitor and Develop Infrastructure for Natural Gas

See notes above under section I. C. It is my opinion that a line-item system benefits charge will substantially improve natural gas utilities' demand reduction programs, particularly for the KeySpan service area and particularly for building envelope improvements. Achieving demand reduction through energy efficiency would be more cost effective and more in the public interest than expanding supply capabilities in existing service territories.

II. D. Strengthen State Energy Codes and Assist with Compliance

I agree with the recommendation that the New Hampshire Public Utilities Commission needs to take a critical look at the as-built energy performance of new homes, not just with paper compliance with the energy code. The simple fact is that the energy code does not have teeth. It is my opinion that the state energy code is only working on a nominal basis at best, and many new homeowners are living in homes that perform below code requirements. Most builders are going through the motions to follow the energy code, but with the exception of Energy Star homes these homes are not being actually tested for their energy performance. Rather than build a new regulatory inspector structure, I believe a system can be developed which relies on accredited energy raters and the interests of homeowners to live in a high performance home. My recommendations include:

- Every new home built in New Hampshire should get a blower door test to measure actual air leakage. And air infiltration reduction should be better emphasized as a significant feature of the New Hampshire energy code. The current language about air sealing is meaningless to most builders, particularly without a blower door test.
- The PUC should develop a mechanism, such as an SBC-funded incentive, to encourage builders and particularly new homeowners to get certified Home Energy Rating System (HERS) ratings for new homes. At the same time, the state should work with the real estate industry to promote disclosure of HERS scores on their Multiple Listing Service (MLS) as a means for homebuyers to compare the energy performance of new or existing homes, much as EPA's mileage stickers allow car buyers to compare the energy performance of cars.
- The state should facilitate mechanisms for the mortgage industry to offer energy efficient mortgages (EEMs) as a means to both encourage ownership of high performance homes, lower homeowners' utility costs, and further spread the acceptance of HERS scores.
- The state should work with builder and contractors (see recommendations in I. C.) to develop the technical skills necessary to build high performance homes, and to encourage builders to earn the new federal \$2,000 tax credit for new homes that achieve ultra high energy performance.

Again, thank you for the opportunity to make these recommendations.

Biography

Andrew Duncan received a Ph.D. in Environmental Behavior and Policy at the University of Michigan, and was a professor of Environmental Science at New England College in Henniker from 1997 to 2003. Since 2003 he has been employed by A+ Energy Services, an energy performance assessment and contracting company. He is a member of the New Hampshire Sustainable Energy Association, the Residential Energy Performance Association of New Hampshire, the Merrimack County UNH Cooperative Extension Advisory Council, and a local coordinator of the annual Green Buildings Open House. Andrew Duncan lives in Concord.