Out of the Closet: Climate Change as a Driver for Energy Efficiency

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ABSTRACT

This paper takes its cue from the subtitle of the *Energy and Environmental Policy* panel at the 2004 ACEEE Summer Study on Energy Efficiency in Buildings: *Changing the Climate for Energy Efficiency*. The author contends that the climate has indeed changed for energy efficiency: that experience in the Northeast demonstrates that the time has arrived for energy efficiency advocates and practitioners throughout the country to begin putting the issue of climate change at the forefront of their policy arguments for energy efficiency. He begins by describing the broad historical context of energy efficiency policy in the United States and why, as climate change "came on the scene" in the 1990's, the two issues were largely kept segregated. The argument that this segregation should end is supported by citing a range of specific examples of climate change policies and initiatives from across the region, highlighting the prominence of energy efficiency in their promulgation. While this information may not be new to many people in the energy efficiency field; it is hoped that the paper serves a useful function by pulling it together in one place for easier reference and stronger appreciation of its collective magnitude and significance. The author hopes that the prominence and explicit role of climate change as a basis for energy efficiency policies and programs in the Northeast will embolden those in the energy efficiency community and environmental advocates throughout the country to similarly embrace and uphold the issue in their respective arenas as a compelling basis for new and more aggressive energy efficiency policies and programs.

Energy Efficiency: Rebel Without a Cause?

The cause of energy efficiency is the victim of a great irony. Born in the 1970's as a result of the first "energy crisis," the virtues of energy efficiency (economic savings, pollution reduction, enhancement of national security, grid stability) have been promoted by organizations committed entirely to this singular issue, such as the Alliance to Save Energy and American Council for an Energy Efficient Economy, as well as mainstream environmental organizations and others for 30 years or more. It has also become the focus of a significant professional, academic, and commercial sector. In the late 1980's and early '90's, an issue emerged that, on its merits, should have been sufficient to serve as a compelling rationale for making energy efficiency the centerpiece of national economic, environmental, and energy security policy. That issue was global climate change.

In November 1992, some 1700 of the world's most prominent scientists, including a majority of living Nobel Prize winners, released a dire missive entitled, "World Scientist's Warning to Humanity" that opened with the startling statement, "Human beings and the natural world are on a collision course."[1] That same year, the nations of the world had gathered in Rio DeJaniero and created the United Nations Framework Convention on Climate Change (UNFCC), in which they recognized the existence of the problem of human-induced climate change,

[1] http://www.ucsusa.org/ucs/about/page.cfm?pageID=1009

acknowledged at least the *potential* for severe adverse consequences, and committed to voluntary emissions reduction targets. In Kyoto, Japan in 1997, parties to the UNFCC met again, this time for the purpose of adopting binding targets for emissions reductions. It had become apparent that voluntary efforts and pilot programs would not be sufficient to achieve the necessary levels of emissions reduction – however, those efforts had clearly demonstrated that substantial emissions reductions could be achieved without causing undue economic hardship or triggering economic recession.

Unfortunately, that premise was not accepted, let alone embraced, in the United States. Despite the success of voluntary efforts by progressive individual companies such as IBM, DuPont, and Johnson & Johnson, and broad support for and participation in market transformation programs such as EPA's ENERGY STAR®, which demonstrated that there was in fact substantial energy *inefficiency* within the economy waiting to be "squeezed out," a mandatory national target for emissions reductions became publicly equated and has stubbornly remained in many people's minds (including, unfortunately, many high-level political leaders) with draconian restrictions on energy use that could have only negative consequences. Actively fomented by the immense industrial and commercial interests whose sales of energy and energy-consuming products were in jeopardy (in their view), the threat of climate change was subjugated to a widespread conviction that the only way to reduce emissions nationally would be to clamp down on energy use, probably through an energy tax, which would in turn retard economic growth and perhaps even cause a recession. Unfortunately, this macro-presumption of perfect efficiency – embodied in energy demand and macroeconomic models that relied on past experiences of energy price increases driving increases in efficiency – was at the heart of models that extrapolated past experience to the future. Positing the question to these models: "How much would energy prices have to rise in order to reduce energy use and resulting emissions to the levels allowed by the Kyoto Protocol?" yielded answers that were presented to the public in ominous headlines like "*Gas prices could double under Kyoto regime*." With all the economic misfortune associated with the prior experience of the 1970s – inflation, job losses, and recession having been seared into the national consciousness – the political backlash against any discussion of participation in an international regime that required mandatory emissions reductions was fierce and sustained.

It must be said that the assumption of perfect efficiency inherent in such models and embodied in the argument that mandatory emissions reductions would savage the economy certainly did not go unchallenged. The organizations mentioned above and many others continued to promote energy efficiency as a sound fiscal policy, an economic driver, a boon to national security, and a "profitable" environmental protection strategy. The national laboratories and other interest groups and think-tanks wrote long reports (The Five Lab Study, the Eleven Lab Study, etc.) enumerating and describing in considerable detail how emissions could be reduced through targeted policies, programs, and economic incentives aimed at "harvesting" the energy efficiency resources (the existing inefficiencies) available in all sectors of the economy. These efforts certainly achieved some, but relatively limited (compared to the potential quantified by the studies) success.

Thus, there has continued to be great hostility to the idea of any regulatory effort to reduce greenhouse gas emissions, with the infamous 97-3 vote in the U.S. Senate on the Byrd-Hagel resolution the starkest example. This hostility has made the Kyoto protocol and even the explicit subject of greenhouse gas emissions reductions practically verboten in the nation's capital and in many other places where high level business and political leaders convene

(Business Roundtables, Chambers of Commerce, etc.). Advocates for energy efficiency concluded that political prudence and practicality required that they consciously omit from their public advocacy the strongest possible rationale for their cause – the threat of global climate change – and henceforth relegated themselves to more "traditional" arguments: economic savings, environmental benefits, energy security benefits. Even the McCain-Leiberman Climate Stewardship Act, which includes no mandatory emissions reduction targets but seeks to establish the inventory and trading system that would be required to implement such a target, fell well short of passage in the Senate last year due to opposition from those who warn it is the "camel's nose under the tent." Rather than being viewed as a means of quantifying and liberating the the energy efficiency resource that is plainly waiting to be harvested in the American economy, the McCain-Leiberman Act is denigrated by a majority of policymakers as a stealth attempt to wreak economic damage on the American economy in the name of greenhouse gas emissions reductions.

The Northeast Experience: Another American Revolution?

In New England in 1999, a few senior and experienced energy policy professionals came to the conclusion that if greenhouse gas emissions were going to be reduced on a large scale in the United States, it would have to be accomplished through a "bottom-up movement." A conference entitled "Climate Change and Civil Society" was organized at Tufts University in 1999, out of which was born a new non-profit organization whose mission is to foment and support such a movement. Clean Air-Cool Planet, a 501(c)(3) organization with offices in Portsmouth, NH and Fairfield County, CT, is singularly devoted to catalyzing and publicizing emissions-reducing actions by businesses, colleges & universities, and municipalities. Its goal is to demonstrate that in fact the *opposite* of the premise causing climate policy gridlock in Washington, DC is true: it is not merely *possible* to reduce greenhouse gas emissions without hurting the economy, in fact, reducing greenhouse gas emissions is a strategy for businesses to increase profitability and competitiveness; for colleges and universities to reduce operating costs and enhance local air quality and other aspects of campus life, and for municipalities to save taxpayer dollars and deliver other benefits to their citizenry, such as improved local air quality and more comfortable, durable schools and municipal buildings.

Fortunately during this same period in the Northeast, the success of the voluntary and relatively small-scale energy efficiency/market transformation programs – most of them administered by the region's electric and gas utilities – was not being entirely lost on top-level policymakers and politicians, and was definitely not lost on the senior governmental staff who administered them or reviewed their effectiveness. These senior staff had the temerity to advance the notion to their Governors, in coordination with their colleagues in state Departments of Environmental Protection/Conservation, that climate change was a serious economic and social threat to the region, but more importantly, that it could be addressed by working from the same premise: that reducing greenhouse gas emissions could help, rather than hurt, their states' and the region's economies.

Thus was born the northeast Regional Climate Change Action Plan,[2] adopted in August of 2001 by the Conference of New England Governors and their counterparts, the Premiers of the five eastern Canadian provinces (Quebec, New Brunswick, Nova Scotia, Newfoundland, and

[2] http://www.negc.org/documents/NEG-ECP%20CCAP.PDF

Labrador). The plan articulated the following numerical greenhouse gas emissions reduction goals for the entire region:

- Reduction of emissions to 1990 levels by 2010;
- Reduction of emissions to 10% below 1990 levels by 2020
- Long term reductions sufficient to eliminate any dangerous threat to the climate – explicitly acknowledging that reductions of 75% to 80% below 2003 levels might be required.

It received relatively little notice at the time beyond the environmental community, especially considering that its premise was a fairly radical departure from prevailing top-level governmental policies on climate change at the time. (One of these senior staff points out that it was entirely consistent with previous regional approaches to address acid rain and mercury, and thus didn't "feel" radical at all, more like a natural outgrowth of previous work.) (James 2004). The plan's preamble stated conclusively that "*Improving climate science indicates that aggressive action is needed to reduce greenhouse gas emissions toward the ultimate goals of stabilizing the earth's climate and eliminating the negative impacts of climate change*." It was clear that energy efficiency (or energy conservation) was expected to be a key strategy in achieving its goals; as outlined in three of the nine action items:

- Action Item 2: "The Establishment of a Plan for Reducing GHG Emissions and Conserving Energy;"
- Action Item 4: "State and Provincial Governments to Lead by Example," which included among its specific recommendations the following:
  - Implement, or continue to implement, a public sector energy reduction program . . .
  - Establish policies that all state and provincial expenditures related to energy conservation and efficiency, **having simple payback periods of ten years or less** (emphasis added), will be adopted whenever feasible
  - Establish jurisdictional policies on sustainable building design to be applied to all state/provincial construction and renovation projects . . .
  - Create a regional clearinghouse of "best practices" for the operation and management of public facilities . . .
- Action Item 6: "The Reduction of the Total Energy Demand Through Conservation," which articulated the following:

  Basis for Action

  The rationale for integrating energy efficiency activities into this plan is to capture the benefits, both economic and environmental, that include:
  - a reduction of emissions of greenhouse gases as well as of other environmental pollutants;
  - a direct electricity cost savings for consumers;
  - an increased system reliability for all consumers by reducing energy use during peak demand periods;
  - a reduction in the need for additional transmission lines, distribution wires and transformers, avoiding costs for all consumers;
  - a reduction in operating and maintenance costs and increased productivity for businesses;

- an increase in incentives to grow our regional energy efficiency industries;
- a reduction of emissions from the need to mine and transport fossil fuels.

Goal

By 2025, increase the amount of energy saved through conservation programs (as measured in tons of greenhouse gas emissions) within the region by 20% using programs designed to encourage residential, commercial, industrial and institutional energy conservation.

Although it hardly caused a political earthquake at the time, in retrospect, it should have: The top political leaders of the six New England states and five Eastern Canadian provinces had clearly turned the dominant political argument against climate change action on its head. They had articulated that energy efficiency was a principal strategy by which significant emissions of greenhouse gases could be achieved throughout the region at net benefit to its residents, businesses, and industries. This commitment was affirmed and given programmatic direction with two resolutions at these leaders' next meeting in September 2002 and was sustained and reaffirmed at the NEGC/ECP meeting in September of 2003 despite the fact that five of the six New England governorships had changed hands at the beginning of that year.

However, the New England Governors were not even the first Northeast governors to explicitly recognize the severity of the threat from climate change and to proclaim energy efficiency a principal strategy in addressing it. Several months earlier, on June 10, 2001, New York Governor George Pataki had announced the creation of a Greenhouse Gas Task Force and by Executive Order directed the implementation of energy efficient practices at state buildings, purchase of energy-efficient products through the state procurement process, and the application of "green building" standards for new construction or substantial renovation projects. He proclaimed in a press release, "With this new Executive Order, New York State is setting an example for the rest of the nation by promoting energy conservation and efficiency, reducing demands on our energy grid, and lowering greenhouse gas emissions."

It is a sad irony that New Jersey Governor Christine Todd Whitman, during the late 1990s, presided over the development and issuance of the first-in-the nation state "Sustainability Greenhouse Gas Action Plan."[3] and yet was utterly frustrated on this front during her short tenure as EPA Administrator. Her appointment to that post by President George W. Bush was viewed with cautious optimism by environmentalists and ordinary citizens concerned about climate change, who hoped that the New Jersey example would be used as a model for a similar national effort. Of course, that didn't happen. But the state plan remains a pioneering example of "climate action:" one of its principal and publicly articulated goals was achieving a 3.5% reduction below 1990 levels in the state's greenhouse gas emissions by 2005. Energy conservation was one of the five major categories of recommended strategies for achieving that goal, and a strong suite of energy efficiency programs funded by a Societal Benefit Charge and overseen by the NJ Board of Public Utilities was an important element of the plan.

Each of the New England states has since taken the collective NEGC/ECP commitment and run (or at least walked) with it. Rhode Island was the first to embark upon the development of and to complete a climate change action plan. In the fall of 2001, the state Department of Environmental Management and the State Energy Office convened a group of over 30 stakeholders from business, industry, citizen groups, environmental organizations, and other

[3] http://www.state.nj.us/dep/dsr/gcc/gcc.htm

agencies to develop a Greenhouse Gas Action Plan for Rhode Island.[4] The finished product enumerated fifty-two program and policy options, twenty-five of which had to do with increasing energy efficiency in buildings and facilities.

Massachusetts and Connecticut were not far behind in initiating climate action planning processes. Governor John Rowland announced the appointment of a Governor's Steering Committee to develop the plan with the declaration:

> "The State of Connecticut is embarking on one of the most important initiatives in its history, and I hope you will be a part of it. We are committed to developing a comprehensive plan to significantly reduce Connecticut's emissions of greenhouse gases that are contributing to global climate change. Together we can build a cleaner, healthier, and more prosperous Connecticut."

Similar to Rhode Island, the stakeholders dialogue process initiated by that Steering Committee produced a set of fifty-five policy recommendations,[5] nearly half of which focused on increasing energy efficiency in the residential, commercial, and industrial sectors. The Commonwealth of Massachusetts' long-awaited "Climate Protection Plan" was released in early May of 2004. In the cover letter accompanying its release, Governor Mitt Romney declared "The same policies that protect the climate also promote energy efficiency, smart business practices, and improve the environment in which our citizens live and work." The Plan's Executive Summary begins with the statement that the plan is "an initial step in a coordinated effort to reduce emissions of greenhouse gases and improve energy efficiency in the Commonwealth – two inseparably linked goals."

As substantial and impressive as these efforts might sound, it was the iconoclastic state of Maine that in 2003 earned the distinction of being the first state in the nation to enact a law (L.D. 845, entitled *An Act to Provide Leadership in Addressing the Threat of Climate Change*) requiring the state to develop and implement a Climate Action Plan. Its targets were the same as the goals of the Regional Climate Change Action Plan. The state launched a stakeholder process similar to Rhode Island and Connecticut's,[6] in fact facilitated by the same consultant (Raab Associates) as the Rhode Island plan. In November, Governor John Baldacci issued an Executive Order[7] directing that all future new construction, substantial renovations, and even maintenance of existing state buildings be done in accordance with the relevant U.S. Green Building Council LEED® standard. The first premise of the Executive Order read, "WHEREAS, Maine is dedicated to the mutually compatible goals of energy efficiency, environmental protection, and economic growth." In April of 2004 the Connecticut General Assembly passed and Governor Rowland signed into law a virtually identical bill, Raised Bill 595, entitled "An Act Concerning Climate Change."

This premise has also been embraced throughout the Northeast in other sectors of civil society, namely, the business, higher education, and municipal sectors. There are numerous case studies of successful emissions reduction through energy efficiency *driven by concern for climate change* at such companies as Shaw's Supermarkets[8] (the 2nd largest chain in the region),

[4] http://righg.raabassociates.org/Articles/GHGPlanBody7-19-02FINAL.pdf
[5] http://www.ctclimatechange.com/ct_action_plan.html
[6] http://maineghg.raabassociates.org/events.asp?type=eid&event=48
[7] http://www.maine.gov/governor/baldacci/news/executive-orders/EX_ORDER_11_24_03.doc
[8] http://www.cleanair-coolplanet.org/information/pdf/shaws-supermarkets.pdf

telecommunications giant Verizon Corporation,[9] clothing maker The Timberland Company, and Green Mountain Coffee Roasters. College and University Presidents at such prominent institutions as Tufts University,[10] the University of New Hampshire,[11] Middlebury College,[12] Colby College,[13] Colgate University,[14] Connecticut College,[15] and others have declared their commitment to acting to reduce the greenhouse gas emissions "footprint" of their institutions along with the belief that such reductions could be achieved through measures that would deliver economic savings as well as other socially desirable benefits. Nearly fifty municipal jurisdictions ranging in size from New York City and Boston to Maplewood, NJ and Shutesbury, MA have joined the International Council for Local Environmental Initiatives' Cities for Climate Protection (CCP) campaign.[16] The jurisdictions of Burlington, VT,[17] Cambridge MA,[18] New Haven, CT,[19] Keene, NH,[20] Medford, Arlington, Newton, Brookline, and Somerville, MA,[21] and Brattleboro, VT have all reached Milestone 3 of the five-step CCP Process, which is the development of a municipal climate action plan. Like the state plans, energy efficiency measures are at the heart of these plans.

Climate Change and Energy Efficiency: Time to Unite

Despite the considerable success of state level programs and federal voluntary programs in increasing energy efficiency over the past 15 years, and the emergence of a solid consensus among the world's credentialed scientists that climate change is a serious threat,[22] there remains this conundrum: Usually, the financial savings and more localized ancillary benefits of energy efficiency are more appealing or compelling to top-level decisionmakers (political leaders, CEO/CFOs, University Presidents and Treasurers) than their greenhouse gas emissions reductions. Thus, these have remained the basis upon which energy efficiency and greenhouse gas emissions-reducing policies, programs, and budgetary decisions have been made – with climate change mentioned tangentially if at all. While the first-order results are the same, this has perpetuated the problem articulated at the beginning of this paper: that another highly compelling rationale – the threat of global climate change and its regional and local effects – is still being kept "in the closet" in many quarters. A prominent example is in New England's largest city of Boston, where four-term Mayor Tom Menino, who brought Boston into the Cities for Climate Protection campaign by Executive Order, does not publicly cite the threat of climate change or the need to reduce greenhouse gas emissions as reason for initiatives like his issuance in 2002 of a "10% Municipal Energy Use Reduction Challenge" and his appointment of a high-level Energy Management Board and Green Building Task Force. In a two-page editorial

[9] http://www.cleanair-coolplanet.org/information/pdf/verizon.pdf
[10] http://www.tufts.edu/tie/tci/
[11] http://www.sustainableunh.unh.edu/climate_ed/index.html
[12] http://www.middlebury.edu/offices/enviro/initiatives/carbon.htm
[13] http://www.colby.edu/news/detail/370/
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[20] http://www.ci.keene.nh.us/planning/climateprotection.htm
[21] http://www.ci.somerville.ma.us/departments/publicworks/Climate%20Action%20Plan%20for%20Somerville.pdf
[22] http://www.ucsusa.org/global_environment/global_warming/page.cfm?pageID=1264

published in the weekly "Banker and Tradesman" in January of 2004, Mayor Menino waxed eloquently about the benefits of green building and its importance for numerous reasons to the city's future, but neglected to mention climate change (Menino 2004).[23]

This dichotomy is doing both issues – climate change AND energy efficiency - a disservice. Keeping climate change "in the closet" is shortchanging the political debate and perpetuating the misconception that aggressive policies to reduce greenhouse gas emissions in this country would "too expensive" and a drag on economic growth. While it may be going too far to assert that there should no longer be any distinction between climate change and energy efficiency policies, substantially closing the gulf between the two could advance the prospects of both. The energy efficiency community has admirably compiled an enormous and still growing body of compelling evidence that energy efficiency is, in fact – contrary to Vice President Cheney's infamous assertion – an utterly sound basis for a national energy policy that would enable the United States to responsibly address the problem of global climate change while propelling its economy forward with a new generation of technology. It is high time for energy efficiency advocates and practitioners everywhere to start placing climate change at the forefront of their public arguments for energy efficiency policies and programs. Global climate change is "the most dangerous and intractable of all the environmental problems caused by human activity" (Holdren 2003) and ought to become the primary driver for energy efficiency policy in the 21st century.

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[23] http://www.bankerandtradesman.com/pub/4_108/editorial/