

Testimony of Ian Bowles
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Commonwealth of Massachusetts
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Thank you, Chairman Schumer, Vice Chairman Maloney, and members of the committee, for the opportunity to testify today and for your leadership in addressing an issue that is central to the nation's future. We are proud of the progress the Commonwealth of Massachusetts has made toward reducing our dependence on foreign oil, tackling the climate challenge, and especially strengthening our economy, all through energy efficiency. I am glad to share our experience with you, lay out our goals for the future, and make some modest but deeply felt recommendations for state policy.

Massachusetts has long been a national leader in energy efficiency, but the value of investing in energy saving measures is apparent now more than ever. All energy users – homeowners and renters, commercial enterprises, manufacturers, institutions, cities and towns – are feeling the pinch of rising fuel prices, and are struggling to adjust to the stresses created by today's global energy markets. At the same time, all of us are coming to realize the stake we have in tackling the threat of global climate change. For reasons economic as well as environmental, we need to find ways to meet our energy needs while burning less fossil fuel.

This imperative is nothing new to us in Massachusetts. With no oil, coal, or natural gas of our own and located literally at the end of the energy pipeline, Massachusetts has always had high energy costs. It has long made economic sense to use the energy we pay for as efficiently as possible. Our experience over the years has taught us that energy efficiency and conservation are by far the cheapest, as well as cleanest, ways to meet our energy needs, but even we have not taken maximum advantage of that lesson. Now, as we face record high fuel prices, driven by global demand that is more likely to grow than shrink, the time has come to put conservation and efficiency at the heart of our energy policy. We are doing so in Massachusetts, with support across the political spectrum and from business groups as well as environmental advocates.

We are also seizing energy efficiency, along with renewable energy, as an economic opportunity. Clean energy technology – the development and commercialization of innovations ranging from super-efficient lighting and motors to cellulosic biofuels made from non-food crops and plug-in hybrid cars that get 150 miles per gallon of gasoline – is a young but growing industry in Massachusetts, with more than 14,000 employees already and soon to be the 10th largest industry sector in the state. Backed by the intellectual resources of our great private and public universities and the second-highest investment of venture capital in the country, clean energy technology is an industry of the future for Massachusetts. As Governor Patrick often says, if we get this right, the world will be our customer. The same could be said of the United States as a whole.

I. Past Energy Efficiency Programs: Highly Cost-Effective, But Constrained

Massachusetts has a history of success delivering energy efficiency to residential, commercial and industrial customers. Through programs established by both state mandates and the cooperation of the state, utilities, and various stakeholders beginning in the 1980s, we have long had residential energy auditors, insulation contractors, and plumbers fanning out across the state making our aging housing stock more energy efficient. And for decades we have had engineers examining our commercial office buildings, city halls, hospitals, and industrial facilities replacing outdated lighting, motors, refrigeration equipment, and more.

The programs have been built on a basic model, though with many variations:

- get energy use data;
- prioritize high value efficiency opportunities (where the cost of a measure will be offset by significant short and long term bill savings); and
- provide rebates or incentives to encourage energy users to take action to save energy.

The measures covered by the programs have varied over time, but include steps as simple as caulking and weather-stripping leaky doors and windows, and as complex and expensive as switching out a 50-year-old boiler for a brand new energy-efficient one. (In some places we are now piloting super-efficient micro-combined heat and power systems that can provide both electricity and heat.) Often, commercial and industrial customers will get a comprehensive energy audit from experienced engineers that will provide a list of more than a dozen energy efficiency measures that will reduce energy expenses, cut pollution, and improve aging capital.

These programs have been highly cost effective, delivering great benefits to the Commonwealth. These include energy bill savings through direct reductions in energy bills for homes and businesses that have made efficiency upgrades. But the benefits go farther than that. Energy efficiency reduces demand for electricity from the regional electricity grid, which means that all these measures significantly reduce pollution from power plants. Moreover, demand savings are especially valuable in places (like parts of New England) where peak electricity use bumps up against limits of supply. These reductions in capacity are valuable financially, because they reduce wholesale electricity prices and avoid the need for expensive peaking power plants. These and other factors combine to reduce energy costs for all users.

Moreover, energy efficiency programs have local economic development effects. Dollars that consumers and business owners don't spend on energy are available to be spent productively in many other ways. Importantly, the dollars spent on these energy efficiency measures are dollars spent improving Massachusetts homes and businesses, through work done by local contractors, with employees from the Commonwealth and surrounding states, rather than sent out of state to pay for coal, oil, or natural gas.

The tables below summarize the impacts of the Commonwealth's energy efficiency programs. Table 1 describes the impacts of the existing electric energy efficiency programs in the years 2003-2005.

Table 1
Participants and Annual Bill Savings, 2002-2005.
Program Summary 2003-2005

Customer Class	# Participants	Cost	Annual Bill Savings	Lifetime Bill Savings
			(millions)	
Residential	1,520,391	\$168	\$35	\$319
Low Income	420,525	\$48	\$12	\$133
Small Commercial & Industrial	10,075	\$49	\$10	\$132
Medium Commercial & Industrial	6,342	\$96	\$18	\$258
Large Commercial & Industrial	1,913	\$143	\$25	\$387
Total	1,959,246	\$504	\$100	\$1,229

Note: Some customers participate in more than one program but are counted as a new participant each time.

Overall, there were almost 2 million participants in utility energy efficiency programs, the great majority of them residential purchasers of compact fluorescent light bulbs (CFLs). Massachusetts, in cooperation with other New England utilities and major retail outlets, subsidizes compact fluorescents at the wholesale level, bringing the price in stores down to \$1-\$2 per bulb. Customers are not burdened with cumbersome rebate and coupon requirements and have enthusiastically purchased CFLs, making Massachusetts the highest CFL purchaser per capita in the nation.

The largest reservoir of energy savings is found among commercial and industrial customers. Massachusetts energy efficiency programs actively pursue these savings, with programs designed to make participation as easy as possible. Programs have been designed so that business paybacks on their investments in energy efficiency fall within 18 months to two years.

Table 2 below describes the impacts of energy efficiency programs since Massachusetts passed the Electric Utility Restructuring Act in 1997. That act established a System Benefits Charge, initially set at 3 mils for every kilowatt hour sold in the state, currently set at 2.5 mils (\$0.0025). The table shows the savings achieved in each year on both annual and lifetime bases. The expenditures include both the SBC incentives and customer copayments. In addition to energy saved, the programs have also reduced peak demand through investments in air conditioning, commercial lighting, efficient motors and control systems. These investments in demand reductions will grow substantially, as long as they cost less than additional power generation, under the Green Communities Act, further reducing the need to construct additional peak demand generation and saving money for consumers.

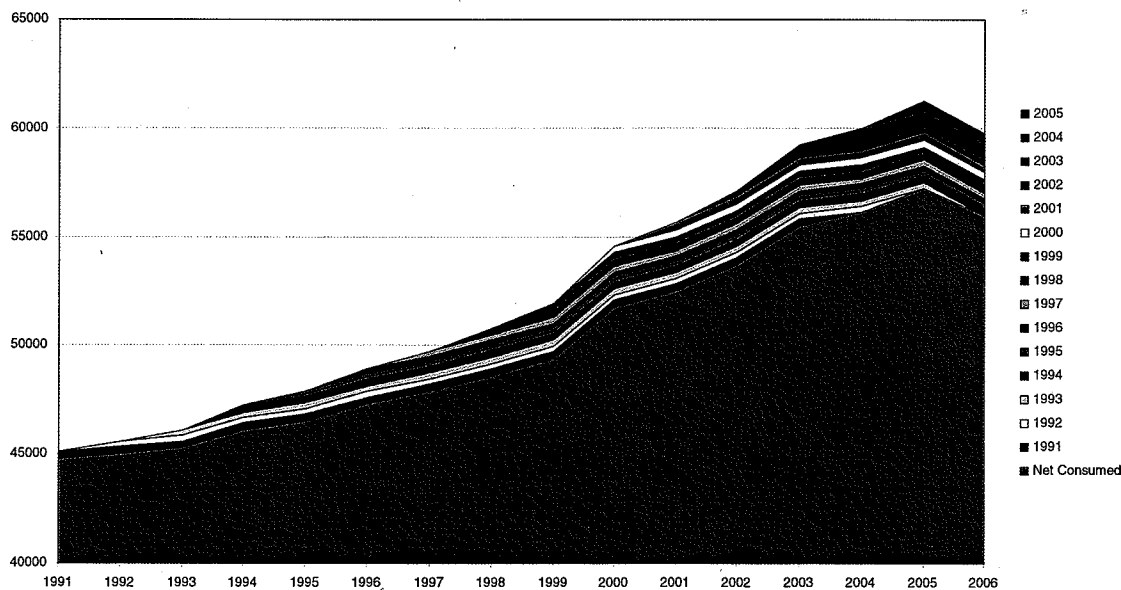
Table 2
Electric Efficiency Programs Since 1997

Expenditures, Energy and Demand Savings 1997-2005					
Year	Expenditure* (Millions)	Energy (MWH x 1,000)		Demand (MW Summer)	
		Annual	Lifetime	Annual	Lifetime
1997	\$109	257	3,682	45	645
1998	\$114	304	4,017	67	891
1999	\$142	318	4,580	63	908
2000	\$164	331	5,066	53	804
2001	\$173	330	4,882	62	922
2002	\$141	232	3,428	48	709
2003	\$166	318	4,421	56	745
2004	\$174	442	5,279	67	859
2005	\$164	455	5,124	58	755
Totals	\$1,346	2,987	40,479	520	7,238

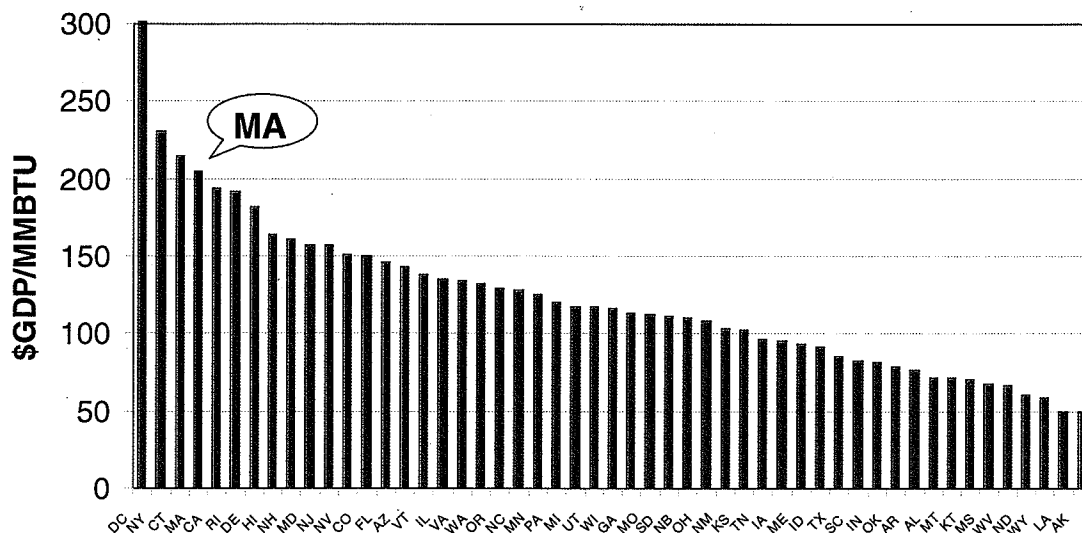
Note: Lifetime savings refer to the savings achieved by measures installed each year over the measure's lifetime. Electric efficiency measures average 13 year lifespan.

* Expenditures include SBC funds plus participant measure cost share.

These savings accumulate dramatically. The chart below shows the “ribbons” of savings derived from each year’s energy efficiency programs and their lasting effect in the electricity system. In 2006, energy efficiency provided approximately 4 million MWh worth of electricity.



Focus on energy efficiency has made Massachusetts one of the most energy-efficient economies in the nation. Our gross domestic product per MMBtu is well above the national average, and behind only two states (each of which also has extensive energy efficiency programs, and one of which is the great state of New York) and the District of Columbia.



All of this shows the tremendous benefits of energy efficiency. But many technical and economic analyses indicate that there is far more potential to save energy than we have realized. We have only been scratching the surface. Since their creation in 1997, our energy efficiency programs have been capped by the amount of funding provided by the System Benefit Charge, no matter how many more savings were available. Program administrators have been allocated a fixed budget each year, and cannot exceed it. In some instances, programs run out of money and close up shop by as early as April, while in others; demand has been carefully managed by waiting lists for services.

In contrast, there has been discussion in recent weeks about solving our energy problems by drilling deeper in the search for oil. Where we should be drilling deeper is energy efficiency. Tapping into more energy saving opportunities in our homes and businesses will be far more productive and far more beneficial to the Commonwealth and the nation than any other energy strategy, and should be our first priority.

In Massachusetts, we chose to remove the caps and break down the barriers for energy efficiency, unleashing conservation as a resource to harness market forces and grow to meet energy demand.

II. The Green Communities Act: Expanding Efficiency and Renewable Energy

On July 2, Governor Deval Patrick signed into law the Green Communities Act, a comprehensive energy reform law developed in close collaboration with House Speaker Sal DiMasi and Senate President Therese Murray (see Appendix for statute summary). The new law dramatically expands energy efficiency's role in the Massachusetts economy, and sets as a goal reduction of energy consumption across the Commonwealth by 10 percent in less than a decade.

Under the new law, the state will make energy efficiency programs compete on price with traditional energy supply. Utility companies (NSTAR, National Grid, Western Mass. Electric, etc.) will be required to purchase all available energy efficiency improvements that cost less than it does to generate power to meet the same energy need, ultimately saving money on consumers' electricity bills. And it will be done not as an add-on to utility bills, but as an integral part of the way utility companies meet their customers' energy needs.

When each electric distribution utility looks at how much electricity it needs to buy from power generators in our competitive wholesale market to meet the demands of its customers, it will be required first to identify all the cost-effective opportunities available to save electricity. That means replacing lighting, air conditioning, and industrial equipment with more efficient models.

Utility companies will offer rebates and other incentives for customers to upgrade lighting, air conditioning, and industrial equipment to more efficient models, whenever those incentives cost less than generating the additional electricity it would take to power their older, less-efficient equipment. Each utility will be required to submit a three-year efficiency investment plan, subject to review by a new Energy Efficiency Advisory Council and approval by the Department of Public Utilities.

Existing efficiency programs have shown savings at 3 cents per kilowatt-hour versus 9 cents for power generation, which leads us to expect that there is much more efficiency to be obtained at a cost lower than generation. Customers who take advantage of these incentives will save money as they reduce how much energy they use and pay for. And all customers will save money from lowering the overall demand for electricity.

Greater energy efficiency overall reduces total electricity system costs because, on the wholesale power market, the price of electricity is set by the highest-cost generator operating at the moment, with peak-hour demand, when the most expensive plants are running, pushing the price to astronomical levels (up to \$1,000/MWh on the hottest day of the year). Energy efficiency lowers overall demand and therefore the clearing price of electricity every hour.

Lower demand peaks also reduce the need for costly new power plants that run only to meet the highest load levels of the year. Recently, ISO-New England, the regional grid

operator, held the first auction in its Forward Capacity Market, which is intended to ensure that the region has enough generating capacity to meet future needs. Two-thirds of awards were won by demand-reduction resources, rather than generating resources.

All this gives us great confidence that there is tremendous potential to save money for residential and business consumers and reduce the use of imported fossil fuels by means of the expanded energy efficiency programs created by the Green Communities Act.

The law also promotes energy efficiency in other ways. It requires the state Board of Building Regulations and Standards to adopt, as its minimum standard, the latest edition of the International Energy Conservation Code as part of the state Building Code. As the IECC is updated every three years, this requirement will keep Massachusetts building standards at the highest levels of energy efficiency.

Finally, the Green Communities Act gives legislative approval to the Commonwealth's participation in the Regional Greenhouse Gas Initiative (RGGI). Substantially all of the emissions allowances issued by Massachusetts under the program will be auctioned – in accordance with the policy announced by Governor Patrick in January 2007 – allowing the proceeds to be spent on a variety of public benefits, with at least 80 percent of the proceeds to be invested in energy conservation and demand reduction. I recently (January 23, 2008) described the rationale and goals of this auction process in testimony before Chairman Markey's Select Committee on Energy Independence and Global Warming.

Renewable energy is another focus of the Green Communities Act, for its environmental and also energy independence benefits: Massachusetts has no fossil fuels of its own, but plenty of wind, solar, and biomass resources.

The law promotes renewable energy in a number of ways. It doubles the rate of increase in the Renewable Portfolio Standard, from 0.5 percent per year to 1 percent per year, with no cap. As a result, utilities and other electricity suppliers will be required to obtain renewable power equal to 4 percent of sales in 2009, and rising to 15 percent in 2020, 25 percent in 2030, etc.

The law also requires utility companies to enter into 10- to 15-year contracts with renewable energy developers, which will provide price certainty for wind power in the future and thereby help developers obtain financing for their projects. The agreements will target Massachusetts-based projects.

In addition, the law makes it possible for homeowners, businesses and cities and towns that own wind turbines and solar power installations to sell their excess electricity into the grid ("net-metering") at favorable rates, for installations of up to 2 megawatts (up from 60 kilowatts currently).

The measure authorizes utility companies to own solar electric power they put on their customers' roofs or in freestanding installations – a practice that was previously

prohibited under the electricity restructuring of 1997 – up to 50 MW for each of the state’s four distribution utilities after two years. If utilities take full advantage of this new opportunity, it will help Massachusetts meet Governor Patrick’s goal of installing 250 megawatts of solar power statewide by 2017.

The Green Communities Act also creates a Green Communities program to offer benefits to municipalities that make a commitment to efficiency and renewable energy. The state’s Department of Energy Resources will provide technical and financial assistance to municipalities for energy efficiency and renewable energy efforts, with \$10 million in funding from a variety of sources, including emissions allowance trading programs, utility efficiency charges, alternative compliance payments generated by the Renewable Portfolio Standard, and the Renewable Energy Trust Fund.

III. Other Administration Initiatives: Boosting Efficiency in All Sectors

The Commonwealth under Governor Patrick’s leadership has taken a number of other steps to boost energy efficiency, starting with the creation of the first Cabinet-level agency in the country that combines all energy and environmental policy and regulation. Under the Executive Office of Energy and Environmental Affairs, the six environmental and energy regulatory agencies (including the public utility commission) are able to coordinate their efforts to reduce energy costs and usage, curb greenhouse gas emissions, and tap the economic potential of the rapidly growing clean energy technology sector in Massachusetts.

Our Department of Public Utilities recently issued an order “decoupling” utility revenue from sales volume – a process designed to eliminate the economic incentive for utilities to maximize power consumption and equivocate about conservation. This reform will make the distribution utilities full partners in promoting energy efficiency for their customers, and fulfilling the efficiency promise of the Green Communities Act.

In March, Governor Patrick announced a bold Zero Net Energy goal for buildings in the Commonwealth. The Governor has established a Task Force whose work will enable the state to begin construction of the first state-owned zero net energy building by 2010; point the way toward broad marketability of zero net energy residential and commercial buildings by 2020; and establish standards for statewide adoption of zero net energy buildings for new construction by 2030. Aggressive pursuit of zero net energy buildings will improve application of existing technologies while also spurring development of innovative technologies, as well as design and operating practices, to make buildings super efficient.

Last year, Massachusetts became the first state in the nation to incorporate greenhouse gas emissions into the state environmental review process, a policy that is leading to greater private investment in green buildings. Through the environmental review process, major new real estate projects will be required to analyze how they can maximize energy savings through better design and construction.

The Governor has also issued Executive Order 484, entitled “Leading by Example,” which requires all state agencies to reduce energy use at state-owned buildings 20 percent by 2012 and 35 percent by 2020. The Executive Order also requires all new construction and major renovation projects to meet the Massachusetts LEED Plus standard, which is based on LEED but sets a higher bar for energy efficiency.

IV. Role for Federal Policy

In many instances, achieving substantial energy efficiency improvements must begin from the unique circumstances of each state, taking into account age of building stock, industry concentrations, climate, and other factors. But federal policy can nurture and accelerate these efforts tremendously. A combination of strong state and federal policy can unleash energy efficiency tremendously, offering savings, energy independence, and greenhouse gas emissions reduction across the land – and launching a new and vital industry that is central to our future.

We are already beginning to see glimpses of the new energy opportunities on the horizon, as Massachusetts and California set bold goals to get to Zero Net Energy homes and commercial construction in coming years, and California begins to reshape residential and small commercial heating and cooling industries to be dramatically more efficient.

Working together, the states and the federal government could put energy efficiency at the heart of our energy policy, enabling us to maximize energy savings at a time of record fuel prices; tackle the challenge of climate change; and become more energy independent. In several areas key to achieving greater energy efficiency – including utility regulations, building codes, and land use and development – the states have particular expertise and/or authority, and the federal government should look for ways to support and encourage state leadership. In several other areas, Congress has the opportunity to establish national policies that will drive significant energy savings – climate policy, vehicle fuel efficiency, national building codes, and appliance standards.

We strongly support aggressive fuel economy standards for vehicles, and are pleased that Congress has recently acted to update the Corporate Average Fuel Economy (CAFE) standards. On the other hand, we are dismayed that the Bush Administration has denied California’s waiver under the Clean Air Act to impose greenhouse gas emissions limits on cars and light trucks, which Massachusetts and several other states are poised to adopt as well. While not an efficiency measure per se, California’s emissions standards would require greater and faster vehicle improvements than CAFE, and our states should be allowed to put these requirements into effect.

We encourage the federal government to quickly adopt more stringent appliance and equipment efficiency standards. When the federal government establishes appliance and equipment standards, they are setting the minimum energy efficiency of the products we buy and use every day. Higher energy efficiency standards save money for energy users,

protect the environment, and boost the economy by driving innovation. They hasten adoption of energy-saving technology in products, often with improved performance. Existing standards have saved more energy than we would have gotten from dozens of power plants, and the potential savings from new, higher standards could do far more.

Massachusetts supports swift and aggressive federal energy standards for small motors, battery chargers, commercial refrigeration and the dozens of other products currently under review by the U.S. Department of Energy. In particular, we call for the federal government to adopt the one-watt standby initiative to require all appliances to consume no more than one watt per hour when not in use. Research from Lawrence Berkley Labs suggests that “vampire” or “phantom” load in homes accounts for 10 percent of residential electricity consumption for no useful purpose.

Carbon policies such as cap and trade mechanisms for particular sectors, as in the case of the Regional Greenhouse Gas Initiative (RGGI), or economy-wide caps adopted or under consideration in a number of states, will also drive major investments in energy efficiency. We support swift adoption of a federal carbon cap designed to reduce all U.S. emissions 80 percent by 2050, as is generally accepted within the scientific community as necessary for avoiding the worst impacts of climate change, with interim targets that can be revised as science dictates. Any federal carbon policy should auction allowances, and direct a major share of the auction toward the state level, where utilities, building codes, and zoning offer the best opportunities to capture energy savings; preserve the right of states to implement more stringent greenhouse gas limits if they so choose; support early acting states or corporations; send clear market signals; and invest in efficiency and renewable energy nationwide.

While we know that the untapped potential for energy efficiency using today’s technologies is enormous, we also know that the future potential can be even larger. Refrigerators today use roughly half of the electricity they used 15 years ago, due to technological developments. Such developments are occurring all the time, due to market forces as well as government energy efficiency policies. In Massachusetts, we believe there is an important role for research and development to push technologies further so as to ensure that efficiency opportunities will continue to expand in the future. The federal government must play a critical role in supporting R&D efforts – leading to benefits that will be enjoyed nationwide.”

There are several other steps the federal government should take that would significantly boost energy efficiency. Establishing a national energy efficiency resource standard, or energy savings targets for electric and gas utilities, would drive significant investment in this sector. Establishing a financing mechanism for energy efficiency improvements, along the lines of the HEAT Loan program we have operated in Massachusetts, would enable middle-income families to take greater advantage of energy savings opportunities, as would extending existing energy efficiency tax incentives. It would also be worth expanding the existing oil heat research program to include energy efficiency for oil-heated homes.

V. Low-Income Households and the Winter 2008-09 Heating Crisis

Energy efficiency must be a crucial component of our short- and long-term energy strategies, and the Commonwealth of Massachusetts is making it the centerpiece of our state's response to the current rise in energy prices. Of particular concern is the anticipated impact of sharply higher fuel prices for home heating this coming winter. At \$4.71 a gallon, the price of home heating oil is now more than double what it was three years ago. An average household that spent \$1,800 to heat its home with oil in the winter of 2005-06 could spend in excess of \$3,750 next winter.

We are already working with utility program administrators and regulators to expand home weatherization and insulation programs this summer and fall in order to help as many people as possible stay warm this winter. But state efficiency resources are only one part of the solution for the home heating crisis we see unfolding this winter.

As the governors of all six New England states said in a July 9th letter to House and Senate leadership, never before in modern history has New England faced the prospect of so many residents being unable to heat their homes as it will this winter. We are deeply concerned that many low-income families, especially those with young children and senior citizens in the household, will risk serious illness or even death this winter without a significant increase in funding for the federal Low-Income Home Energy Assistance Program (LIHEAP). Pipes will burst, driving families out of their homes, and desperate people will resort to unsafe alternatives to traditional heating methods, raising concerns about fire safety.

Because of sharp increases in energy costs, the purchasing power of LIHEAP funds, already inadequate, has fallen dramatically. LIHEAP funding for New England states needs to be increased to \$1 billion this year. In addition, the federally funded Weatherization Program is critical to improving the efficiency of heating for low-income households, stretching LIHEAP dollars as far as they can go. Funding for the Weatherization Program should also be significantly increased.

VI. Conclusion

In Massachusetts, as in the nation, we are facing the greatest energy challenge since the discovery of fossil fuels, and it is all about reducing our dependence on those very fuels – for the sake of our economy, and for the sake of our environment, now and for future generations.

President Bush has spoken of our dependence on oil as an “addiction.” If he is right, it now seems that we have hit rock bottom. The high prices of fossil fuels threaten to cripple our nation's economy, and the emissions produced by using them for energy threaten to change our climate irreversibly, with disastrous consequences. It is time for an intervention.

Energy efficiency is that intervention. It promises not only a way to reduce our cravings for fossil fuels, but also an opportunity to harness our country's capacity for innovation and entrepreneurship to create new technologies that solve our energy problems and grow our economy. We in Massachusetts are doing what we can to pursue this path to recovery. I encourage you in Congress to put the nation on this path as well.

Appendix A. Summary of the Green Communities Act

Energy Conference Report – Summary of Major Provisions

DOER Reorganization: Establishes the Department of Energy Resources (DOER) within the Executive Office of Energy and Environmental Affairs. The newly created Department, which replaces the Division of Energy Resources, will have three divisions: Division of Energy Efficiency, Division of Renewable and Alternative Energy Development, and Division of Green Communities.

Green Communities: The Division of Green Communities is directed to establish the “Green Communities” program to provide technical and financial assistance to municipalities to implement energy efficiency and renewable activities. Funding of \$10 million for the Green Communities program is made available through 1) RGGI and NOx allowance trading programs; 2) efficiency funding from the electric utility System Benefit Charge; 3) alternative compliance payments generated through the Renewable Portfolio Standard; and 4) the Massachusetts Renewable Energy Trust Fund. To qualify as a Green Community, a municipality would have to meet various requirements as to siting and permitting of renewable or alternative energy generating facilities and various energy efficiency measures.

Mass. Renewable Energy Trust: Establishes a nine-member governing board (chaired by the Commissioner of DOER) that is charged with creating a detailed five-year strategic plan and annual operating plan for the use of the Massachusetts Renewable Energy Trust Funds. The governing board would include secretaries of energy and environmental affairs, housing and economic development, and administration and finance; one member of the Mass. Technology Collaborative board of directors; and four members with specified expertise appointed by the Governor.

RGGI: Directs DEP and DOER to adopt rules and regulations to establish a carbon dioxide cap and trade program, on the basis of which Massachusetts will participate in the Regional Greenhouse Gas Initiative (RGGI). States that substantially all of the RGGI allowances issued under the program will be auctioned. Bill creates a RGGI Auction Trust Fund to recover the proceeds from the allowance auction under the program. The proceeds from the fund are directed for:

1. Reimbursing a municipality in which the property tax receipts are reduced as a result of RGGI mandates;
2. Funding the Green Communities program;
3. Providing zero interest loans to municipalities for energy efficiency projects; and
4. Promoting energy efficiency, conservation, and demand response.

Efficiency Competes with Supply: Legislation requires that the Commonwealth’s gas and electric needs will be met first through cost-effective energy efficiency and demand reduction resources. Requires that every three years, distribution companies will prepare efficiency investment plans to be approved by the Department of Public Utilities. Each plan shall provide for the acquisition of all available efficiency and demand resources

that are cost effective or less expensive than supply. These plans will be subject to vetting through the Energy Efficiency Advisory Council, a new entity appointed and convened by the DPU and chaired by the Commissioner of the Department of Energy Resources.

Long Term Contracts for Renewables: Creates a renewable energy long term contracts pilot program (capped at 3% of the electric load) for Massachusetts projects. For a period of five years starting in 2008, each electric distribution company must solicit proposals from renewable energy developers twice during the period. If the distribution company receives reasonable, cost-effective proposals for long-term (10 to 15 years) contracts from developers of renewable energy generation facilities, it must enter into such contracts. This provision creates a new financial incentive for renewable energy.

Utility Ownership of Solar Power Generation: Allows electric companies and distribution companies to own or operate generation facilities for solar power up to 25 MW for the first year and 50 MW the second and thereafter. Requires utilities to file with DPU, which must assess the program by 2012, after which the program sunsets.

International Energy Conservation Code: Requires State Board of Building Regulations and Standards to adopt as a minimum standard, within one year of its being updated, the latest edition of the International Energy Conservation Code as part of the State Building Code. (The IECC is updated every three years.)

Net Metering: Encourages small, behind-the-meter wind and solar generation not greater than 2 MW by paying the owners of the renewable generation for the excess electricity they generate at favorable rates; allows for energy credits for generation to be transferred to different electric accounts within the utility's service area, and for "neighborhood" net metering, through which credits for renewable generation are shared among neighboring households.

Renewable Energy Portfolio Standard. Increases the requirement on utilities and other electricity suppliers to procure a certain percentage of power from new renewable sources by an additional 1 percent of sales per year, rising from 4 percent in 2009 to 15 percent in 2020, 25 percent in 2030, etc. In addition, a certain percentage (to be determined by DOER) of renewable energy will have to be obtained from new on-site generation (such as wind turbines, solar installations, biomass generators installed principally to meet the electricity needs of a home, business, or institution) less than 2 MW in size. The legislation also creates a Class II of renewable energy resources subject to minimum mandatory procurement, with the Department of Energy Resources specifying the level of the requirement. Class II includes generating sources that began commercial operation prior to Dec. 31, 1997 from a variety of renewable energy sources, including solar, wind, ocean; fuel cells; landfill gas; small hydroelectric facilities that meet certain standards; waste-to-energy; low-emission biomass; and geothermal. Waste-to-energy facilities are considered Class II renewable sources only if they are located in Massachusetts and operate or contract for recycling programs, with at least 50 per cent of any revenue from Renewable Energy Certificates allocated to recycling.

Alternative Energy Portfolio Standard: Creates a new alternative portfolio standard that includes gasification, flywheel storage, plasma gasification, combined heat and power, any facility that substitutes its fossil fuel source with an equal or greater amount of alternative paper-derived fuel source approved by DEP, energy efficient steam technology, or any other technology approved by DOER. This section requires that coal gasification technology must have the ability to permanently capture and sequester carbon and that DOER shall set emission performance standards and the required procurement level.

Siting Commission: Establishes an Energy Facilities Siting Commission to examine opportunities to maximize the development of clean and renewable generating facilities in the Commonwealth.

Steam: Gives DPU oversight of steam distribution companies. Authorizes the DPU to assess steam distribution companies and requires annual reports by the companies on intrastate operating revenues.

Municipal Light Companies: Allows communities with municipal light departments the option of contributing into and accessing benefits from the Renewable Energy Trust Fund.

State Building Construction: Requires DCAM to mandate that new construction or renovations of over \$25,000 of facilities owned or operated by the Commonwealth utilize energy efficiency, water conservation, or renewable technologies utilizing listed criteria. Also creates a simplified process for state agencies, building authorities, and municipalities to contract for small energy efficiency and solar PV projects.

DPU Utility Oversight: Authorizes the Department of Public Utilities oversight over “holding companies” in sales/mergers – correcting a legal shortcoming that did not provide for state review of the National Grid-Keyspan merger.