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Easing the Energy Crisis Investing In a Smarter Energy Future

The Case for Conservation, Energy Efficiency and Renewable Energy and in Rhode Island

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Introduction

In recent years dozens of studies have examined the benefits of increased energy efficiency. This white paper seeks to summarize and highlight the benefits to Rhode Island of investing in ratepayer funded energy efficiency programs, appliance efficiency standards and other state-based programs that improve energy efficiency and conservation in Rhode Island.

This white paper will examine several specific existing and suggested energy policy options. These options are not meant to be an exhaustive list, but rather a starting point for an ongoing dialogue. While the future of energy efficiency, renewable and conservation programs in Rhode Island are uncertain, the benefits associated with these programs are already clear: they are good for consumers, our economy and our environment.

In order to reap the benefits of a wise energy policy Rhode Island must move towards a smarter energy future.

The Approaching Crisis

With a projected 35% increase in natural gas heating costs this winter, and with electricity prices rising, consumers at every income level are spending an increasing proportion of their income to meet basic energy needs.

Skyrocketing energy prices are taking a toll on Rhode Island's families and on our economy, as more of our earnings go to out-of-state oil and gas companies, and less stays in Rhode Island to purchase goods and services and create jobs in Rhode Island.

Why are we in this situation? Clearly, the underlying problem is that domestic and worldwide demand for oil and natural gas has been climbing while supplies are growing harder to come by. Most experts agree that this is

¹ The author would like to thank Tony Dutzik and Rob Sargent of the State PIRG's, and Emily Rochon for their editorial assistance.

a condition that is likely to persist and worsen over time. At the same time, Hurricane Katrina demonstrated dramatically that our energy infrastructure is vulnerable. Moreover, many gas and electric utilities have failed to diversify their energy resources. In addition, policymakers have missed opportunities to invest in energy saving technologies that reduce consumption.

Rhode Island has made some progress in both energy efficiency and renewable energy by creating a strong ratepayer funded electric energy efficiency program, approving legislation in 2005 to create minimum efficiency standards for 13 household and commercial products, and adopting a statewide Renewable Energy Standard (RES) that will require an increasing percentage of energy to come from clean renewable resources.

Despite the progress that Rhode Island has made, this winter's crisis will highlight the need for Rhode Island to redouble its efforts. According to the Northeast Energy Efficiency Partnerships (NEEP), energy efficiency still holds a huge potential for to create savings across New England. Current efficiency programs are projected to target less than 20% of economically achievable improvements.² In addition, NEEP projects that if all of the economically achievable energy efficiency opportunities were tapped, the net benefit to the New England's economy would be between \$13 and \$23.7 billion.³

Now is the time for an all-hands-on-deck effort to adopt both short-term and long-term energy solutions. We can lower heating bills for residents across the state with meaningful programs that will have an impact this year and for many years to come.

We have an opportunity and responsibility to make the serious investments that will provide long-term energy security by maximizing investments in cost-effective energy efficiency measures, increasing public education and continuing to fund programs that will diversify our energy resource portfolios.

The good news is that there is ample experience from around the nation to draw on from the past two decades, and this experience points us to programs that are tried and true and will produce results.

What follows is a description of six steps that Rhode Island policymakers can adopt to invest in a smarter energy future. This is far from a comprehensive plan, but by taking the following steps we can begin to chart a course toward a more affordable and stable energy future.

² http://www.neep.org/files/Updated_Achievable_Potential_2005.pdf p.12

³ Ibid.

1. Give homeowners and businesses the education and incentives they need to reduce their bills

Education: Many individuals and businesses want to become more energy efficient, but are unsure where to begin. Rhode Island should set a goal of ensuring that every homeowner or business that wants to use energy more efficiently has the tools and knowledge to do so. To accomplish that goal Rhode Island should:

- Launch a massive energy efficiency public education effort using press conferences and education through the media, outreach by direct mail, telephone and door-to-door, as well as workshops on energy efficiency for community, civic and business organizations.
- Launch a program specifically targeting low-income and elderly individuals for energy efficiency assistance – including low-cost and free weatherization assistance.
- Acquire, and distribute for free, inexpensive yet effective technologies for reducing home energy consumption including: compact fluorescent light bulbs, low-flow showerheads, pipe wraps and water heater blankets. Distribution could be managed by a combination of utility energy-efficiency programs, local governments, and community organizations.

Case Study: Operation Keep Maine Warm⁴

In October 2005 Governor John Baldacci kicked off the second year of Operation Keep Maine Warm, an initiative to help some of Maine's most vulnerable citizens prepare for the cold winter months. The program is a public-private partnership that matches volunteers with Mainers who have pre-qualified for weatherization assistance.

Through Operation Keep ME Warm, volunteers expect to install energy conservation measures in at least 3,000 homes. The door, window, and pipe insulation and eight compact fluorescent light bulbs that make up the \$60 weatherization kit will provide electricity and heating fuel cost savings of as much as \$200 this year, and will continue to provide savings for many years to come.

Operation Keep ME Warm is open to anyone eligible to receive Low Income Home Energy Assistance Program (LIHEAP) funding. Anyone interested in the installation of the weatherization kits in Operation Keep ME Warm can sign up for the installation when they apply for fuel assistance at their community action agency.

Operation Keep ME Warm relies on state resources, private donations, and volunteers to install weatherization kits in homes that elect to participate. The Maine Commission for Community Service coordinates the volunteer effort.

⁴ <http://www.maine.gov/tools/whatsnew/index.php?topic=Portal+News&id=9002&v=Article-2004>

Incentives: While all consumers benefit from improving energy efficiency, additional financial incentives can spur consumers to take action immediately. Among the tools Rhode Island could use are the following:

- A semi-annual sales tax holidays for consumers to purchase Energy Star-rated appliances and insulation materials.
- Rebates on utility bills for consumers who reduce electricity and natural gas consumption below a specific threshold in a single year. A similar program initiated during the California energy crisis of 2001 provided a 20% rebate for consumers who reduced their energy use by 20% below the summer before.
- A program to provide incentives for heating oil dealers and their customers to dramatically reduce their oil consumption.

Case Study: Georgia's Energy Star Sales Tax Holiday⁵

In March 2005 the Georgia State Legislature passed HB-559 creating a four day state sales tax holiday for Energy Star appliances. Over the summer the Georgia Energy Facilities Authority (GEFA) convened a stakeholder group of utilities, Department of Energy staff, retail associations and non-profit groups to develop a plan to identify and reach target audiences for the sales tax holiday.

Final outreach efforts were conducted by utilities, elected officials and retailers and included Public Service Announcements, a fact sheet about the sales tax holiday designed to answer frequently asked questions, a website, press releases and advertising by retailers.

⁵ <http://www.etax.dor.ga.gov/salestaxholiday/index.shtml>

2: Set Statewide Goals to Reduce Electricity and Natural Gas Consumption

Using the Bully Pulpit

Elected officials in Rhode Island have the ability to set the tone of public debate and focus attention on pressing issues that the public in Rhode Island cares about.

With a true energy crisis in looming in Rhode Island, Governor Carcieri and the Rhode Island General Assembly should use their high profiles to promote appropriate solutions to this winter's energy crisis.

Specifically, elected officials in Rhode Island should:

- Establish short and long-term energy savings targets for the state and create a plan for achieving them. The targets should represent a significant reduction in consumption below last winter's levels. Rhode Island should create an energy savings czar or convene a panel of agency staff to develop and implement plans to meet the goal by examining areas for energy savings including the residential, commercial, industrial and institutional sectors.
- Make an immediate call for voluntary energy conservation and energy efficiency improvements this winter, and enlist the help of businesses, the media, nonprofit organizations and others in implementing and promoting energy conservation practices.
- Issue an "energy conservation challenge" to commercial and institutional energy users, offering to publicly recognize those institutions that make outstanding progress in saving energy this winter by cutting down on consumption.

3. Set efficiency standards for new appliances.

When Ronald Reagan was the Governor of California, his administration adopted the first energy efficiency standards for common household appliances, requiring appliance manufacturers to design appliances to operate on less energy. Since then, appliance standards set at the state and federal levels have been very successful in reducing energy waste, and making energy saving appliances available to all customer classes. By the year 2010, our national electric bill will be 6.5% lower due to appliance standards that are already on the books.⁶

Unfortunately many of the federal standards are outdated. While the federal energy legislation that passed this year did include some appliance standard updates, many products remain covered by an out-of-date standard or none at all. Home furnaces are covered under a standard passed nearly 20 years ago. The Department of Energy is 11 years behind schedule in updating the home furnace efficiency standard as required by federal law. Northeast Energy Efficiency Partnerships has estimated that if Rhode Island adopted a new home furnace standard, the lifetime value of the natural gas savings would be \$42.4 million.

In 2005, the Rhode Island General Assembly took a first step in the right direction by passing the Energy and Consumer Savings Act to adopt minimum energy standards for 13 products creating an expected \$226.5 million in lifetime energy savings. In addition, there are at least 8 additional appliances for which Rhode Island could take the lead in adopting a new efficiency standard in 2006, leading to many more millions in savings.

Energy Savings and Natural Gas From The Energy and Consumer Savings Act of 2005 (H-5307, S-540)

Summary of Benefits	2012			2020			Environmental Benefits			Economic Benefits
	Annual Energy Savings Electricity	Annual Energy Savings Natural Gas	Summer Peak Capacity Reduction	Annual Energy Savings Electricity	Annual Energy Savings Natural Gas	Summer Peak Capacity Reduction	Annual Carbon	Annual NOx	Annual SO2	Net Present Value of Economic Benefits
	MWh (1)	million Btus (2)	MW	MWh	Million Btus	MW	1000MT	Metric Tons	Metric Tons	\$(Million)
Torchiere Lamps	27,500	NA	9.4	50,000	NA	17	6.0	5.1	22.8	48.8
Low Voltage Transformer	2,400	NA	0.6	10,200	NA	1.4	1.2	1.0	4.6	11.7
Unit Heaters	NA	49,500	NA	NA	121,500	NA	1.8	5.1	0	11.9
Traffic Signals	3,300	NA	0.6	6,000	NA	1	0.7	0.6	2.7	4.2
Exit Signs	1,100	NA	0.2	2,700	NA	0.4	0.3	0.3	1.3	3.3
Large Packaged AC >20 Tons	250	NA	0.3	1,050	NA	1.1	0.1	0.1	0.5	0.8
Commercial Refrigerators/Freezers	2,000	NA	0.5	6,900	NA	1.6	0.9	0.7	3.3	4.3
Commercial Clothes Washers	1,100	16,500	0.6	1,600	24,000	0.8	0.5	0.2	0.7	4.4
Total	37,650	66,000	12.2	78,450	145,500	23.3	11.5	13.1	35.9	89.4

⁶Geller, H., T. Kubo, S. Nadel. 2001. *Overall Savings from Federal Appliance and Equipment Efficiency Standards: Analysis of Electricity and Economic Savings*. Washington, D.C. : American Council for an Energy Efficient Economy.

<i>Summary of Benefits by Product</i>	2012			2020			Environmental Benefits			Economic Benefits
	Annual Energy Savings by 2012 Electric	Annual Energy Savings by 2012 Natural Gas/Oil	Summer Peak Capacity Reduction	Annual Energy Savings by 2020 Electricity	Annual Energy Savings by 2020 Natural Gas	Summer Peak Capacity Reduction	Annual Carbon Reduction by 2020	Annual NOx Reduction by 2020	Annual SO2 Reduction by 2020	Net Present Value of Economic Benefits
	MWh (1)	million Btus (2)	MW	MWh	Million Btus	MW	1000MT	Metric Tons	Metric Tons	\$ (Million)
Pre-Rinse Spray Valves	NA	210,000	NA	NA	210,000	NA	3.1	8.8	0	33.7
External Power Supplies	14,300	NA	2.2	18,200	NA	2.8	2.2	1.9	8.3	17.1
Ice Makers	900	NA	0.2	1,700	NA	0.4	0.2	0.2	0.8	1.4
Mercury Vapor Ballasts	3,300	NA	0.5	8,200	NA	1.1	1.0	0.9	3.7	6.5
Metal Halide Lamp Fixtures	11,700	NA	4.1	31,200	NA	11.3	3.7	3.2	14.2	32.0
Total	30,200	210,000	7.0	59,300	210,000	15.6	10.2	15.0	27.0	90.7
	64,150	66,000	19.6	122,950	145,500	39.0	15.7	16.8	52.0	135.8
	94,350	276,000	26.6	182,250	355,500	54.6	25.9	31.8	79.0	226.5

1. 250,000 megawatt-hours is equivalent to the energy use of about 35,000 New England households. (Source: Department of Energy)
2. 375,000 million btus is equivalent to the energy use of about 4,500 households.

4. Continue Investing In Electricity Efficiency Programs

Since adopting electric restructuring legislation in 1996, Rhode Island energy consumers have funded energy efficiency improvements in the electricity sector through a systems benefit charge (SBC) that appears on consumers' electric bills. Often referred to as demand side management programs (DSM), these programs have been extremely successful at implementing energy saving solutions designed specifically for residential, small commercial and industrial and large commercial and industrial users.

The benefits of an SBC program are three-fold. First, all ratepayers benefit from a reduced need to pay for expensive peak generation and investments in the transmission and distribution system. Second, individual energy consumers can take advantage of efficiency opportunities to significantly reduce their personal energy bills. Third, energy savings also produce social benefits including reduced global warming emissions and air pollution.

In 2004 National Grid's efficiency programs in Rhode Island helped more than 1,000 large and small commercial and industrial users lower their energy bills.⁷ On the residential side, Narragansett Electric's in-home programs served over 9,000 customers while their Energy Star purchasing program served over 80,000 consumers across the state.

The programs are currently structured to: (1) be as cost-effective as possible; (2) serve a large number and a broad mix of Rhode Island customers; (3) maximize long-term savings; (4) capture potential lost opportunities for efficiency improvement; (5) promote market transformation; (6) support long-term electricity supply and reliability objectives.⁸

Between 1998 and 2004, National Grid's electric efficiency programs have saved Rhode Island consumers nearly \$260,000,000. In addition by 2006, the SBC is projected to save another \$115,000,000. For most years the average cost-benefit ratio of the efficiency improvements has been \$3 saved for every \$1 invested.

The Rhode Island General Assembly should make sure Rhode Island's electric SBC program is fully funded and continues to deliver results for energy consumers. In addition the Assembly should work to direct additional funding towards the SBC to increase the programs overall level of savings.

⁷ [http://www.ripuc.org/eventsactions/docket/3463-NEC-YrEndRept\(5-2-05\).pdf](http://www.ripuc.org/eventsactions/docket/3463-NEC-YrEndRept(5-2-05).pdf) p.7

⁸ [http://www.ripuc.org/eventsactions/docket/3701-Narragansett-DSM\(10-14-05\).pdf](http://www.ripuc.org/eventsactions/docket/3701-Narragansett-DSM(10-14-05).pdf) p.5

5. Create an Energy Efficiency Program for Natural Gas

While Rhode Island has an exemplary electricity energy efficiency program, the state has no comparable program for natural gas. Initiating a natural gas SBC would create an opportunity to significantly reduce the amount of natural gas that is wasted in Rhode Island each year through inefficiencies in homes and businesses.

Natural gas SBC programs for residential customers usually target inefficiencies in space and water heating by funding programs to improve household weatherization, install energy efficient windows, and encourage the purchase of high-efficiency furnaces and boilers and household thermostats.⁹

In addition to targeting space and water heating, commercial and industrial programs also target energy use during the production processes, which can consume an astounding amount of natural gas. Commercial and industrial programs often target boiler and HVAC efficiency as well as control systems.

Case Study: Vermont Gas Energy Efficiency Programs

Vermont Gas is a small utility that provides service to over 35,000 residential and business customers.

Vermont Gas offers a comprehensive range of efficiency options that are designed to overcome the barriers that many energy consumers face before undertaking efficiency improvements.

Specifically Vermont Gas offers a variety of programs designed to:

- Help residential and commercial/industrial consumers identify and evaluate their existing efficiency opportunities.
- Offer assistance to help consumers overcome the financial constraints that may prevent implementation of identified opportunities.
- Provide quality assurance, post-installation verification to address concerns about risk.

The efficiency measures installed by Vermont Gas from 1993 to 2002 are estimated to have saved 382,000 Million Cubic Feet (Mcf) of natural gas annually and reduced peak gas consumption rates by 5%.¹⁰ Vermont consumers have already saved millions of dollars from this efficiency program and they are expected to save at least \$22.5 million more over the lifetime of the improvements that have been installed to date.¹¹ In addition, ongoing efficiency improvements funded by the program will save Vermont Gas consumers even more.

⁹ <http://www.aceee.org/utility/ngbestprac/u035.pdf> p. 19

¹⁰ <http://www.aceee.org/utility/ngbestprac/vgsprtflio.pdf> p. 3

¹¹ Ibid.

6. Continue Investing in Rhode Island's Renewable Energy Fund

Since 2003, the Rhode Island Renewable Energy Fund (RIREF) has been working to bring the economic, public health and environmental benefits of renewable energy to Rhode Island by providing financial support to renewable energy projects. With \$6.5 million already invested in renewable energy projects the RIREF is helping to lower the cost and increase the availability of clean renewable energy.

As the use of natural gas for electricity generation has grown in New England, the issue of energy diversification has become increasingly urgent. As Hurricanes Katrina and Rita have demonstrated, overdependence on natural gas can cause big energy prices spikes impacting consumers and businesses alike.

Greater use of renewable energy can take the pressure off natural gas prices. Using more wind, solar and other renewable energy sources will displace electric power production from natural gas power plants, which then in turn reduces the gas demand and makes gas more readily available at lower prices for other uses. In addition, the cost of renewable energy is the same during peak and off-peak energy usage periods because renewable energy has no fuel costs. Thus renewable energy has the potential to significantly relieve costs during peak generation times such as the hot summer months and the cold winter months.

In order for the statewide Renewable Energy Standard to fulfill its potential, Rhode Island must continue to develop its renewable energy resources through the RIREF. By continuing to restore previous cutbacks and fully funding the RIREF each year, the General Assembly can make sure the Rhode Island sees the benefits of clean, renewable and locally produced energy.

For more information on these solutions and others please contact: Matt Auten, Rhode Island Public Interest Research Group (RIPIRG), (401) 421-6578, mauten@ripirg.org . In addition, you can read more about the policies described below by visiting the following sites:

The American Council for an Energy Efficient Economy: www.aceee.org

The Northeast Energy Efficiency Partnerships, Inc.: www.neep.org