

***Renewable Energy for Rhode Island: Making the Case
for Jobs, Price Stability, Economic Security and
Environmental Protection***

***Kate Canada
RIPIRG
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Introduction

In recent years dozens of studies have examined the benefits that increased use of renewable energy would have on prices, jobs and economic development. This white paper seeks to summarize and highlight the reports most relevant to Rhode Island and New England.

While the reports cited in this white paper examine a range of issues involving renewable energy, one conclusion is crystal clear: renewable energy is good for our economy.

In order to move Rhode Island away from rising natural gas costs, increased energy price volatility, and the public health and environmental costs associated with fossil fuels, we must move towards a cleaner energy future and adopt a Renewable Energy Standard.

Heading in the Wrong Direction

The increasing reliance on natural gas for electricity generation, particularly in New England, is receiving increasingly urgent attention from a variety of economic and energy sector policy makers and observers. Indeed, Alan Greenspan, Chair of the Federal Reserve, recently highlighted this issue as being crucial to our economic security and growth. Rhode Island's electric energy costs have increased as much as 18% in the last year. Clearly a long-term policy to diversify our regions energy sources away from fossil fuels, with their ever increasing costs, is sorely needed.

Untapped Potential

Better energy options are available today for Rhode Island and New England. Currently, only about 2% of Rhode Island's energy comes from clean, renewable sources such as solar, wind, and biomass. New England has a large resource of renewable energy that is currently untapped:

- The region's mountaintops and coasts have enormous potential for wind energy.
- Our forests, if properly managed, can provide energy and natural habitat for generations to come.
- And at the University of Rhode Island, research is underway to harvest the awesome energy of our oceans.

Economic Benefits

Developing renewable energy in New England also has the potential for tremendous economic benefits. Dollars spent on developing New England renewable energy sources means dollars kept in our economy to create construction jobs and further our region's world-renowned intellectual capital. These energy sources have no fuel costs, and so provide a hedge against ever increasing fossil fuel costs that are dictated by a global market. Obtaining more of our energy from regional sources can also help insulate us from the damaging impacts international politics can have on our economy. And renewable energy sources have the additional benefit of being emission free, and can help mitigate the enormous public health and environmental costs of our current energy sources.

Given the many benefits of renewable energy for Rhode Island, a state policy is needed to encourage the orderly development of these sources. At least thirteen states, including Massachusetts and Connecticut, currently have such policies known as a Renewable Energy

Standard, or Renewable Portfolio Standard. The policies require that electricity suppliers obtain a small but growing percentage of their electricity from renewable energy sources. These policies give renewable energy developers the ability to compete in the energy market place. These policies have proven to be highly effective in other states and do not require State expenditure.

Rhode Island should adopt a similar Renewable Energy Standard that would increase the percentage of our energy that comes from renewable sources each year, ultimately reaching 20% by 2020. A renewable energy standard has the potential to lower and stabilize prices, increase jobs, and clean our environment.

Not surprisingly, considerable public support for greater renewable energy exists. In a national study conducted in 2001, 91% of Americans favored greater investment in renewable energy sources.¹ In a survey of Rhode Islanders conducted during February of 2004, 80% of those surveyed would prefer that their electric company choose clean and renewable sources, and indeed 76% of those people were even willing to pay \$10 more per month to receive electricity that came primarily from renewable sources.²

The choice seems clear. A Renewable Energy Standard for Rhode Island brings positive economic and environmental benefits, is proven to work in many other states, and has public support. This white paper highlights the potential and benefits that a Renewable Energy Standard would offer to Rhode Island. Moving us in the direction towards more renewable energy and tapping into renewable energy potential throughout the region will bring us economic benefits such as job creation, price stability, price relief and natural resource protection.

¹ Poll Analysis, November 21, 2001, "Americans Favor Alternative Energy Methods to Solve Shortages," Mark Gillespie

² "Public Attitudes about Clean Energy: A Survey of Rhode Islanders" Impact Strategies, February 2004

Renewable Energy: Job Creation

Job growth is one of the top issues being discussed in Rhode Island. Governor Carcieri has pledged to bring 20,000 new jobs to Rhode Island during his term in office.³ Renewable energy has the potential to create many jobs here in the Rhode Island, and throughout the New England region. A study done by the Tellus Institute found that investment in renewable energy in order to achieve 20% renewable energy by 2020, along with greater energy efficiency, could create 2,100 jobs in Rhode Island by 2010 and 3,900 jobs by 2020.⁴

Currently, Rhode Island has to import all of the fossil fuels consumed in the state. Every dollar spent on importing fuel is a dollar lost by the local economy and a dollar gained somewhere else in the world. Renewable energy is developed locally. Dollars spent on developing renewable energy in Rhode Island and New England will not only remain in the region's economy, but will further economic growth through the multiplier effect.

Wind Energy is already creating jobs in Rhode Island

Job creation through renewable energy is not a matter of speculation for Rhode Island. TPI Composites, based in Warren, has a long history of fabricating large composite structures and currently employs over 300 people. TPI Composites currently constructs large wind turbine blades for wind farms across the country. In testimony before the Rhode Island House of Representatives in 2002 and 2003 TPI Composites testified in support of a renewable energy standard stating that:

“Local production of wind turbine blades for nearby wind farms, brought about by a Renewable Portfolio Standard (RPS), will result in significant cost savings from reduced transportation costs.....local production for nearby installation significantly reduces this cost, and must ultimately benefit the consumer...Manufacturing just the turbines for one moderate size wind farm would easily create hundreds of local manufacturing jobs....these jobs, coupled with the significant engineering, project management and ongoing field support requirements, means that the employment opportunities are substantial.”⁵

Jobs will be created in the region throughout the life of renewable energy projects. These jobs range from research and development, “high-tech” engineering and manufacturing, to maintaining projects for the duration of their operation. For example, a 37.5 MW wind farm would create over 356,250 hours of work, or 180 person years.⁶ Renewable energy creates more jobs than fossil fuel plants. A June 2002 study found that building 5,900 MW of renewable energy capacity in California would lead to 28,000 long term construction jobs and 3,000 permanent operations and maintenance jobs. Over 30 years of operation, these plants would

³ <http://www.gov.state.ri.us/vision.shtml>

⁴ “Generating Solutions: How Clean, Renewable Energy is Boosting Local Economies and Saving Consumer Money,” RPIRG Education Fund, April 2003

⁵ “One Industry Perspective in Support of a Rhode Island Renewable Portfolio Standard,” March 20, 2002, TPI Composites, Inc.

⁶ “The Work That Goes Into Renewable Energy,” Virinder Singh and Jeffrey Fehrs, Renewable Energy Policy Project, November 2001, p. 15

create 120,000 person years of employment. This is four times as many person years that would be created by building 5,900 MW of natural gas power plants.⁷

Renewable Energy: Price Stability

Over the past ten years, the United States has been increasingly dependent on natural gas as an energy source. Natural gas consumption has grown by 40% nationwide since 1986 and demand is expected to be 54% greater in 2025 than it was in 2001.⁸ Natural gas price volatility has made national and international headlines for the past three years. Consumers have seen prices spike to excessively high levels and without investments in energy efficiency and renewable energy, these spikes are expected to continue over the long term. Rhode Island has the 11th highest natural gas prices in the country.⁹ Residential customers in Rhode Island paid 25% more for natural gas from 2001-2003 than they did from 1998-2000.

“The oil and gas industry is in painful need of a wake-up call.”

“Over the years, the industry’s wonderful can-do attitude, coupled with an over-cautious mindset that prices will never rise, created an industry-wide blindness to the many energy problems looming over the horizon, and the train wreck about to occur in the energy markets. Too many problems were ignored for too long. It is a sad commentary to have to make, but I fear we are now in the early days of a severe energy crisis that will take at least a decade to fix.”

– Matthew Simmons, consultant to the National Petroleum Council, December 2001¹⁰

Greater use of renewable energy will take the pressure off natural gas prices. Generation by wind, solar and other renewable resources displaces 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 use. We all know that reducing the demand helps to reduce the price. For this reason, a 20% by 2020 Renewable Energy Standard is expected to lower natural gas bills for customers in Rhode Island.¹¹ According to the American Council for an Energy-Efficient Economy, modest increases in renewable generation over the next five years would significantly reduce natural gas prices nationally. In addition, renewable energy policies in New York State are projected to reduce wholesale natural gas prices in New York City by almost 2% in 2008.¹²

Natural gas is currently the most price-volatile fuel source in our energy mix, and without policies to dampen these price swings they will be transmitted throughout our economy in the form of increased costs to businesses and consumers. This instability is problematic to both

⁷ “Generating Solutions: How Clean, Renewable Energy is Boosting Local Economies and Saving Consumer Money,” RIPIRG Education Fund, April 2003, page 5

⁸ “Predictably Unpredictable: Volatility in Future Energy Supply and Price from Over Dependence on Natural Gas,” WashPIRG Foundation, Fall 2003, page 5

⁹ http://www.eia.doe.gov/emeu/states/sep_sum/html/pdf/rank_pr_all.pdf#page=3

¹⁰ “Outlook for Natural Gas: Is a Train Wreck Pending?” Matthew Simmons, President, Simmons & Company International, opening address to the U.S. Department of Energy’s Office of Natural Gas and Petroleum Technology Strategic Initiatives Workshop, 12/6/2002

¹¹ <http://righg.raabassociates.org>, Rhode Island Greenhouse Gas Plan, Phase II Report, Chapter X, Recommendations for Design of Rhode Island Renewable Portfolio Standard

¹² “Natural Gas Price Effects of Energy Efficiency and Renewable Energy Practices and Policies,” Executive Summary, American Council for an Energy Efficient Economy, 1/7/2004, p. 10

large electricity users and small residential customers unable to plan for their utility costs. By stabilizing the energy costs through increased renewable energy generation, everyone in Rhode Island will be able to mitigate and better plan for future energy costs.

In addition to the potential cost-savings benefits to renewable energy, a renewable energy standard allows Rhode Island to have more control over our energy supply, ultimately making our energy use less vulnerable to forces outside of Rhode Island and New England. Natural gas, liquefied natural gas, oil and coal all come from outside of this region, and in many cases, outside of this country. Bringing local, renewable generation online in the region would give us more control over our energy future. The more we can do to limit our exposure to the volatile global energy markets, which are often driven by events in unstable areas of the world utterly beyond Rhode Island's control, the more we can stabilize future energy costs.

Renewable Energy: Price Relief

Every new energy technology has started off costing more than existing sources, but then eventually has reduced energy costs as the technology matures and develops. Given that renewable energy has no fuel costs, the potential for renewable energy to drive down energy costs is significant.

“There are currently no examples of RPS significantly increasing electricity bills.”

– Troy Gagliano, Senior Policy Specialist, Energy, National Conference of State Legislators before the Pennsylvania Legislature Environment and Energy Committee 3/10/04

A recent study completed in Colorado found that the most likely outcome from that state's renewable portfolio standard is lower electric bills. The RPS in Colorado is expected to result in savings of about 20 cents per month for the average residential customer over the period 2004-2023.¹³

A 2001 analysis completed by LaCapra Associates demonstrated that the addition of a 400 MW wind farm off Cape Cod would lower the annual clearing price for energy in New England by about \$0.2/MWh in early years and by approximately \$0.5/MWh by 2008. While this is difficult to translate into what the savings would be for customers throughout New England the estimates would be on the order of \$18 million to \$22 million per year.¹⁴

One reason why renewable energy can lower costs is that, even during the peak energy usage periods, renewable energy has no fuel costs. The price of wind does not skyrocket in the winter or summer. It remains constant which gives renewable energy the potential to significantly relieve costs during peak generation times such as the hot months of August.

The ultimate savings resulting from a Renewable Energy Standard is dependent on the costs of natural gas and other fossil fuels. So it is important to ensure that in the near term, a Renewable Energy Standard does not increase energy costs beyond the benefits of future potential savings. Experience in other states with Renewable Energy Standards indicates that this is indeed the

¹³ “The Impact of a Renewable Portfolio Standard on Retail Electric Rates in Colorado,” Ronald J. Binz, 2/2004

¹⁴ LaCapra Associates Memorandum to Dennis Duffy, EMI Energy, 7/22/2001

case. Policy analysts for the National Conference of State Legislators have found no instances of Renewable Energy Standards increasing electricity bills.¹⁵

A renewable energy standard will provide net benefits to the New England region as a whole, including Rhode Island. A 20% renewable energy standard by 2020 could bring cumulative net savings to the New England region of \$300 million.¹⁶ Just as Rhode Island receives benefits from Renewable Energy Standards already in place in Massachusetts and Connecticut, we must take into account the regional benefits of a Rhode Island based renewable energy standard.¹⁷

Renewable Energy: Protecting Natural Resources

According to the Rhode Island Economic Policy Council, “Quality of Place” is Rhode Island’s key competitive advantage in attracting talented people and the companies that follow them. Rhode Island’s quality of life – including public health and the economy – depends directly on the state’s ability to protect its natural resources.

The quality and diversity of Rhode Island’s authentic places have a visceral effect on our sense of well-being. In the increasingly mobile new economy, it is the character of places that attracts knowledge workers. As we develop our vision for Rhode Island in the new economy, we must fiercely protect our natural resources. We must take an environmentally responsible approach to all development...

– Rhode Island Economic Policy Council, *A Rhode Island Economic Strategy: Ten Ways to Succeed Without Losing Our Soul*¹⁸

Burning fossil fuels is the leading cause of smog-causing nitrogen oxide emissions, acid rain producing sulfur dioxide emissions, mercury emissions and global warming carbon dioxide emissions. These pollutants are already responsible for an increased number of ozone days in Rhode Island, damaging the state’s lakes and forests, contaminating our fish with mercury, and altering our climate. With energy use projected to continue to grow almost four times as fast as population, a great deal more environmental damage and degradation is on the horizon unless appropriate action is taken.

In particular, the continued vitality of Rhode Island’s \$3 billion per year tourism industry is inextricably linked to the protection of our environment and the prevention of global warming. If nothing is done, the climate changes associated with global warming will increasingly harm tourism by spoiling fall foliage, fishing, winter sports, and the enjoyment of the state’s beaches.

¹⁵ Troy Gagliano, Senior Policy Specialist, Energy, National Conference of State Legislators presentation before the Pennsylvania Legislature Environment and Energy Committee 3/10/04

¹⁶ <http://righg.raabassociates.org>, Rhode Island Greenhouse Gas Plan, Phase II Report, Chapter X, Recommendations for Design of Rhode Island Renewable Portfolio Standard

¹⁷ <http://righg.raabassociates.org>, Rhode Island Greenhouse Gas Plan, Phase II Report, Chapter X, Recommendations for Design of Rhode Island Renewable Portfolio Standard

¹⁸ Rhode Island Economic Policy Council, “A Rhode Island Economic Strategy: Ten Ways to Succeed Without Losing Our Soul”, September 30, 2001

Global warming experts predict the seas to rise by as much as 20 inches by 2100.¹⁹ This poses a serious threat to the 400 miles of shoreline, including the beaches of South County. In addition, climate change will bring us more severely hot summers, which will lead to an increasing number of ozone days when the air is unhealthy to breathe and the 100,000 Rhode Islanders with asthma are warned to stay indoors.²⁰ The warmer temperatures can also increase the incidence of insect-borne diseases including Lyme Disease, West Nile Virus, and Eastern Equine Encephalitis.

The state's Greenhouse Gas Stakeholders Process found that one of the most effective ways for the state to reduce greenhouse gas emissions is to require 20% of the state's energy to come from renewable sources by the year 2020. The renewable energy standard will also significantly reduce regional emissions of mercury and the pollutants that cause smog and acid rain.

If "quality of place" is Rhode Island's strength, then it is vitally important that the state take action to protect our environmental resources. Failing to do so would put our competitive advantage at serious risk.

Conclusion: Start Using Renewable Energy Today

The case for a Renewable Energy Standard could not be more compelling. A Renewable Energy Standard will bring jobs, energy cost stability and likely lower energy prices to Rhode Island. These benefits, along with the public health and environmental benefits created by renewable energy; make a Renewable Energy Standard a win-win-win policy.

The time to put a Renewable Energy Standard into place is today. The elegance of the Renewable Energy Standard is that it starts off with very modest percentages of renewable requirements which are expanded over a very a long-term horizon. This approach maximizes the benefits of renewable energy while minimizing possible near-term costs. By starting to use renewable energy immediately, the economic benefits begin to accrue immediately and will continue to grow exponentially over time. The other choice, to continue to postpone greater development of renewable energy, will further limit the options available to future generations attempting to manage a world increasingly fraught with economic, political, and environmental difficulties.

"Delays in the development of renewable energy may impact negatively on a society's objective to have a reliable energy 'mix' and to be more sensitive to the environment in its energy use. Failure to exploit opportunities for indigenous and renewable sources of energy on a modest scale can lead to very costly alternatives that could have been avoided – such as, for example, the construction of a new power plant, or continued dependence on fossil fuels with links to acid rain and ozone."

-Rhode Island State Energy Plan 2002²¹

¹⁹ U.S. Environmental Protection Agency: State Climate Change Facts:

[http://yosemite.epa.gov/oar/globalwarming.nsf/UniqueKeyLookup/SHSU5BVPJZ/\\$File/ri_impct.pdf](http://yosemite.epa.gov/oar/globalwarming.nsf/UniqueKeyLookup/SHSU5BVPJZ/$File/ri_impct.pdf)

²⁰ American Lung Association of Rhode Island, January 2004

²¹ "Rhode Island Energy Plan 2002", Statewide Planning, January 2002, pg. vii