

# Policy Memorandum

**To:** Governor Paul LePage

**From:** Mary Lynch, UMA Policy Scholar

**Topic:** Risk Management for Maine's Increased Exposure to Future Oil Shocks Through Industry-supported Private Sector Initiatives

**Date:** April 1, 2011

## Summary

Americans are not known for sitting out a revolution. The decision is whether to lead or to follow in the economic development now occurring in this country. Maine is poised to pilot and compete in a prosperous revenue generating and job growth industry, even during tough economic times, by seizing the opportunity to insulate Maine's economy from the negative effects of future oil shocks by creating industry-supported private sector initiatives. Currently, Maine is the third most petroleum dependent state in the country<sup>1</sup>, with close to 80% of our energy needs imported. An aging housing stock, inefficient to heat, and a dependence on petroleum for transportation increases the exposure to economic hardship for businesses and families in Maine. Growing population, global demand, international disruptions of supply and decreased world reserves forecasts climbing prices for imported energy needs. The combination of recent international political events, as well as the increased cost spikes for the consumer necessitates an exploration of alternatives. At current prices for heating fuel, Maine spends close to two billion dollars annually to heat its homes and businesses<sup>2</sup>, with the largest share of that revenue leaving the state permanently as estimated by the Department of Energy's EIA division. Rising transportation and food costs are also a drain on Mainer's incomes. This memorandum contains policy recommendations that would encourage private sector growth to transition into a secure energy future while investing in Maine's energy resources.

## Background

Why do we need to undertake risk management to safeguard Maine from increased exposure to future oil shocks? The current cost to heat the average Maine home with fuel oil #2 is \$4,223.00 annually<sup>3</sup>, while according to 2010 Census information, the median household income is \$46,400. Over 12% live below the poverty level and there are 704,578 housing units total<sup>4</sup>.

The most-recent calculations of Census data showed heating oil costs as a percentage of income, if oil reaches \$4.50 a gallon. The analysis found "that the poorest Mainers, roughly one in 10 residents, would spend half their gross income on heating oil. The largest group of residents, roughly six in 10, would spend 13 percent of their income on heating oil. This estimate omits the impact of gasoline. Combining gasoline and heating oil with each priced at \$4 to \$4.50 a gallon, and including electricity, would put a severe strain on a family's total budget, according to calculations in a study this month on offshore wind power for the University of Maine. If the projected prices of fuel hold true this year, a family could spend up to \$10,000 on energy -- more than 20 percent of its gross annual earnings"<sup>5</sup>.

Against this backdrop, renewable energy consumption increased by 5.4 percent in 2009. This follows a 9.6-percent increase between 2007 and 2008. These two increases, coupled with the consecutive year decreases in total energy consumption, boosted renewable energy's share of total consumption from 6.6

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<sup>1</sup> US Energy Information Administration (EIA), Petroleum Consumption Data

<sup>2</sup> US Energy Information Administration (EIA), Consumption, Prices, and Expenditures

<sup>3</sup> Maine Government Data, [www.maine.gov/dep/air/woodsmoke/.../heatcalculatorMEv3\\_1.xls](http://www.maine.gov/dep/air/woodsmoke/.../heatcalculatorMEv3_1.xls)

<sup>4</sup> US Census, <http://quickfacts.census.gov/qfd/states/23000.html>

<sup>5</sup> PPH February 27, 2011, Bill Strauss, Futuremetrics

percent in 2007 to 8.2 percent in 2009. Renewable energy will account for 45% of the growth in electric generation by 2035<sup>6</sup>. Renewable energy installation doubled between 2005 and 2009 in the U.S. according to HIS Emerging Energy Research, while the American Wind Energy Association reported a 12-fold increase over the last few years for domestic production, with about 400 American manufacturing facilities making wind components.

### Issues

Is there a cost to policy inaction? The business community continues to line up behind renewable energy, as supplier and consumer. The U.S. Department of Environmental Protection reported “the top 50 organizations in its Green Power Partnership program account for 12 billion kWh of renewables, enough to power more than one million homes as of October 2010. “Intel, Kohl’s, Whole Foods, Starbucks, Dell, the US Air Force, and Johnson & Johnson were at the top of the list. Consumers and businesses also are finding it increasingly easy to buy renewable energy directly from their utilities at the retail level. Despite an economic recession and a significant fall in overall energy demand/consumption, the use of renewable fuels grew strongly in 2009. This growth has been supported by Federal and State programs, including federal tax credits, state renewable portfolio standards (RPSs), and a federal renewable fuels standard<sup>7</sup>.

When the private sector is given the ‘cue’ to bring investment into the economy, then technology can be ‘pulled’ into the economy in a cheap and efficient manner without the government subsidizing or owning the industry. In March, the US Department of Energy announced an offering of the Loan Guarantee Program to support Maine wind projects. While the Loan Guarantee Program is an important element for research and development, deployment of these technologies are overwhelmingly from the microeconomic community. Macro-economic uncertainty continues to create debate about the pace of the industry’s growth. State policy has the opportunity to encourage economic development, generate tax revenue, and create job growth through resource management of renewable energy. The additional potential exists for export markets to emerging countries as their energy needs increase. Ironically, the same countries predicted to decrease the oil reserve and cause the continued price spike are the same population that will create the manufacturing market for renewable energy.

### Options

State government has the ability to create a stable and secure business environment for renewable energy. Then the marketplace and consumers will sort out the best technologies and uses in a free market of competition. As business receives the cue from government for viable investment in energy technologies, manufacturing, and distribution, these technologies will be pulled into the economy in Maine as they have in other states where they have demonstrated solid economic development. The solutions at the forefront of this issue include:

- Low barriers to business entry
- Identification of existing resource potential
- Innovative state policies for efficient and effective permitting and land-use
- Information, finance, and manufacturing-based economy development

### Recommendations

The following are recommendations for private sector economic development of renewable energy:

- **Renewable Portfolio Standard (RPSs):** Renewable portfolio standards (RPSs) require utilities to use renewable energy or renewable energy credits (RECs) to account for a certain percentage of their retail electricity sales -- or a certain amount of generating capacity --

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<sup>6</sup> *REW Guide To US Renewable Energy Companies*, 2011

<sup>7</sup> Energy Information Administration, Annual Trends March 31,2011

according to a specified schedule. (Renewable portfolio goals are similar to RPS policies, but renewable portfolio goals are not legally binding.) Most U.S. states have established an RPS. The term “set-aside” or “carve-out” refers to a provision within an RPS that requires utilities to use a specific renewable resource to account for a certain percentage of their retail electricity sales (or a certain amount of generating capacity) according to a set schedule.

- **Industry Recruitment/Support:** To promote economic development and the creation of jobs, some states offer financial incentives to recruit or cultivate the manufacturing and development of renewable energy systems and equipment. These incentives commonly take the form of tax credits, tax exemptions and grants. In some cases, the amount of the incentive depends on the quantity of eligible equipment that a company manufactures. Most of these incentives apply to several renewable energy technologies, but a few states target specific technologies, such as wind or solar. These incentives are usually designed as temporary measures to support industries in their early years. They commonly include a sunset provision to encourage the industries to become self-sufficient.
- **Renewable Energy Certificates (RECs):** Government entities, businesses, residents, schools, non-profits and others can play a significant role in supporting renewable energy by buying electricity from renewable resources, or by buying renewable energy credits (RECs). Many state and local governments, as well as the federal government, have committed to buying green power to account for a certain percentage of their electricity consumption. Green power purchases are typically executed through contracts with green power marketers or project developers, through utility green power programs, or through community aggregation.
- **Net Metering:** For electric customers who generate their own electricity, net metering allows for the flow of electricity both to and from the customer – typically through a single, bi-directional meter. When a customer’s generation exceeds the customer’s use, electricity from the customer flows back to the grid, offsetting electricity consumed by the customer at a different time during the same billing cycle. In effect, the customer uses excess generation to offset electricity that the customer otherwise would have to purchase at the utility’s full retail rate. Net metering is required by law in most U.S. states, but these policies vary widely.
- **Solar and Wind Access Laws:** Solar and wind access laws are designed to establish a right to install and operate a solar or wind energy system at a home or other facility. Some solar access laws also ensure a system owner’s access to sunlight. These laws may be implemented at both the state and local levels. In some states, access rights prohibit homeowners associations, neighborhood covenants and local ordinances from restricting a homeowner’s right to use solar energy. Easements, the most common form of solar access law, allow for the rights to existing access to a renewable resource on the part of one property owner to be secured from an owner whose property could be developed in such a way as to restrict that resource. An easement is usually transferred with the property title. At the local level, communities use several policies to protect solar access, including solar access ordinances, development guidelines requiring proper street orientation, zoning ordinances that contain building height restrictions, and solar permits.
- **Feed-In Tariffs:** Performance-based incentives (PBIs), also known as production incentives, provide cash payments based on the number of kilowatt-hours (kWh) or BTUs generated by a renewable energy system. A “feed-in tariff” is an example of a PBI. To ensure project quality, payments based on a system’s actual performance are generally more effective than payments based on a system’s rated capacity.
- **REPPs / EERSs:** Energy efficiency resource standards (EERS) are state policies that require utilities to meet specific targets for energy savings according to a set schedule. EERS policies establish separate reduction targets for electricity sales, peak electric demand and/or natural gas consumption. In most cases, utilities must achieve energy savings by developing demand-

side management (DSM) programs, which typically provide financial incentives to customers to install energy-efficient equipment. An EERS policy is sometimes coupled with a state's renewables portfolio standard (RPS). In these cases, energy efficiency is typically included as a lower-tier resource.

- **Solar and Wind Permitting Standards:** Renewable portfolio standards (RPSs) require utilities to use renewable energy or renewable energy credits (RECs) to account for a certain percentage of their retail electricity sales -- or a certain amount of generating capacity -- according to a specified schedule. (Renewable portfolio goals are similar to RPS policies, but renewable portfolio goals are not legally binding.) Most U.S. states have established an RPS. The term "set-aside" or "carve-out" refers to a provision within an RPS that requires utilities to use a specific renewable resource (usually solar energy) to account for a certain percentage of their retail electricity sales (or a certain amount of generating capacity) according to a set schedule.
- **Corporate tax incentives:** Corporate tax incentives include tax credits, deductions and exemptions. These incentives are available in some states to corporations that purchase and install eligible renewable energy or energy efficiency equipment, or to construct green buildings. In a few cases, the incentive is based on the amount of energy produced by an eligible facility. Some states allow the tax credit only if a corporation has invested a minimum amount in an eligible project. Typically, there is a maximum limit on the dollar amount of the credit or deduction. In recent years, the federal government has offered corporate tax incentives for renewables and energy efficiency.
- **Building Codes:** Building energy codes adopted by states (and some local governments) require commercial and/or residential construction to adhere to certain energy standards. While some government entities have developed their own building energy codes, many use existing codes (sometimes with state-specific amendments), such as the International Energy Conservation Code (IECC), developed and published by the International Code Council (ICC); or ASHRAE 90.1, developed by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). A few local building energy codes require certain commercial facilities to meet green building standards.
- **Building Incentives:** Green buildings are designed and constructed using practices and materials that minimize the impacts of the building on the environment and human health. Many cities and counties offer financial incentives to promote green building. The most common form of incentive is a reduction or waiver of a building permit fee. The U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) is a popular point-based certification program for green buildings.

## **Conclusion**

Managing the risk for Maine's increased exposure to future oil shocks can have the added benefit of creating economic development and private sector viability, while generating increases in employment in addition to much needed tax revenues. Policy initiatives manifest competition in the free market, which will direct the renewable energy solutions of the future.