

**Before the  
Maine Legislature's  
Utilities and Commerce Committee**

**COMMENTS OF**



**Union of  
Concerned  
Scientists**

Citizens and Scientists for Environmental Solutions

**On LD 1312:  
The Maine Renewable Resource Portfolio Requirement**

by

**Deborah Donovan, Manager  
New England Clean Energy Campaign**

**April 9, 2003**

**BEFORE THE  
Main Utilities and Energy Committee**

**COMMENTS OF  
THE UNION OF CONCERNED SCIENTISTS**

On LD 1312  
The Maine Renewable Resource Portfolio Requirement

**Introduction & Summary**

Thank you for the opportunity to offer comments on behalf of the Union of Concerned Scientists (UCS) on *LD 1312: The Maine Renewable Resource Portfolio Requirement*. UCS is extremely supportive of efforts to improve Maine's requirement, including many of the provisions in LD 1312.

Established in 1969, UCS is an independent nonprofit alliance of 60,000 committed citizens and leading scientists across the country. We augment rigorous scientific analysis with innovative thinking and committed citizen advocacy to build a cleaner, healthier environment and a safer world. We seek to ensure that all people have clean air, energy, and transportation, as well as food that is produced in a safe and sustainable manner. We strive for a future that is free from the threats of global warming and nuclear war, and a planet that supports a rich diversity of life. Sound science guides our efforts to secure changes in government policy, corporate practices and consumer choices that will protect and improve the health of our environment globally, nationally and in communities throughout the United States.

The UCS Clean Energy Program focuses on developing a sustainable energy system—one that is affordable and non-depletable, and that does not degrade natural systems or public health. The Program analyzes, develops, and promotes innovative technology- and market-based strategies to commercialize renewable energy technologies, and provides information to policymakers, the media, and the public about energy's impact on public health and safety, the environment, and the economy.

UCS has been a leading analyst of and advocate for minimum renewable energy requirements at the state and federal levels. Our most recent publications on the subject include:

- *Clean Energy Blueprint: A Smarter National Energy Policy for Today and the Future*
- *Renewing Where We Live: What a Renewable Energy Standard Means for Your Region*
- *Powering Ahead: A New Standard for Clean Energy and Stable Prices in California.*<sup>1</sup>

---

<sup>1</sup> Steven Clemmer, Deborah Donovan, Alan Noguee, and Jeff Deyette, *Clean Energy Blueprint: A Smarter National Energy Policy for Today and the Future*, Union of Concerned Scientists, Cambridge, Mass., October, 2001. *Renewing Where We Live: What a Renewable Energy Standard Means for Your Region*, Union of Concerned

*Clean Energy Blueprint* analyzes the environmental and economic costs and benefits of adopting a suite of policies to promote energy efficiency and renewable energy development including a national RPS. *Renewing Where We Live* analyzes the economic and environmental impact of a national RPS on specific regions and states. *Powering Ahead* analyzes the costs and benefits of a RPS in California. These studies have shown a strong RPS is affordable to consumers and can provide significant environmental, economic development, and energy diversity benefits. UCS has played an active role in discussions of RPS adoption and implementation before legislatures and commissions in the states where they have been enacted including Arizona, California, Connecticut, Maine, Massachusetts, New Jersey, Nevada, and Wisconsin.

We appreciate efforts to improve the Maine Renewable Requirement and support a strengthened RPS in Maine. If implemented effectively, the “Tier 2” renewable energy target will ensure that there are incentives for the development of new renewable facilities that previously did not exist. UCS believes that is appropriate given Maine’s strong renewable resource base already supported by the existing “Tier 1” requirement and the New England region’s current reliance on coal, nuclear, and natural gas.

Maine is blessed with abundant wind and biomass resources that could theoretically support over 3,800 megawatts of capacity in the state or more than 70 percent of its current electricity needs.<sup>2</sup> The improved Maine RPS will stimulate development of new renewable energy projects in Maine and contribute to a cleaner environment and more secure energy future.

UCS does have some suggestions for improving draft legislation. We discuss our suggestions in detail below and offer suggestions for strengthening Maine’s renewable standard to ensure a more effective and sustainable policy.

### **Eligible Renewable Energy Definitions**

UCS strongly supports the resource eligibility modifications contained in LD 1312. Specifically, the Maine RPS will be significantly improved through the elimination from eligibility of fossil-fueled cogeneration facilities, renewable facilities already receiving above-market rates through PURPA contracts, and large hydroelectric facilities. These changes will ensure that the Maine RPS will provide incentives to those renewable technologies that UCS believes are the most important to encourage. However, UCS has some additional comments on Section 2.B of the bill.

First, UCS does not believe that the capacity limit of 100 MW generating capacity is necessary and should be removed. Such a limit on capacity will reduce the incentive to develop commercial scale non-hydro renewable facilities in Maine and the region. The significant high-class windy areas in Maine are prime candidates for such facilities.

---

Scientists, Cambridge, Mass., February 2002. Deborah Donovan, Steven Clemmer, Alan Noguee, and Peter Asmus, *Powering Ahead: A New Standard for Clean Energy and Stable Prices in California*, Union of Concerned Scientists, Cambridge, Mass., September, 2001. All publications available on-line at: <http://www.ucsusa.org/energy/>

<sup>2</sup> UCS estimates based on data from the U.S. Department of Energy.

UCS believes that definition of biomass as an eligible renewable resource is too vague and could result in unsustainable and hazardous fuels – such as municipal solid waste, contaminated waste wood, or tires – receiving credits under the renewable resource standard. UCS recommends that the Committee insert a new, separate definition of biomass using the following language to ensure that the RPS is providing incentives to sustainable biomass.

- Wood and wood waste biomass, including:
  - o harvesting and mill residue;
  - o precommercial forest thinnings;
  - o slash;
  - o brush; and
  - o stumps;
- Clean urban wood waste such as uncontaminated construction and demolition debris;
- Landscape or right-of-way- tree trimmings;
- Digester gas, dedicated energy crops;
- Agricultural crops;
- Crop byproducts;
- Biofuels; or
- Livestock residues.

We further urge the Committee to modify LD 1312 to explicitly exclude facilities directly combusting the following materials to generate electricity from eligibility as biomass facilities:

- Standing commercial timber;
- Recyclable post consumer waste paper;
- Painted, treated, or pressurized wood;
- Wood contaminated with plastic or metals; and
- Tires.

With respect to wood and wood waste biomass, UCS strongly supports the sustainable management of forests and encourages forest practices that enable a forest to maintain its delicate ecological balance. Therefore, we propose that to ensure that the source of the biomass fuel is from a sustainably managed forest, Maine’s renewable resource standard limit eligibility to biomass facilities using wood or wood product harvested from forests certified by Forest Stewardship Council (FSC). Alternatively, the biomass facility must show that the original source of biomass fuel comes only from land that is harvested and managed so that it sequesters at least the same amount of carbon than the land in its preharvested condition.

We believe that the forest protection guidelines used to determine eligibility should represent the best practices of all New England states. We believe that our proposed guidelines should be used as the common criteria for forest sustainability in the Maine renewable standard because the biomass energy serving the state’s consumers could come from generators throughout the regional power pool, as well as adjoining areas such as Eastern Canada and New York. Furthermore, we believe that forest protection guidelines such as FSC certification are the most appropriate standards for sustainability.

## **MSW should not be eligible for the Maine Renewable Resource Requirement**

UCS strongly supports the use of renewable energy like wind and solar power. However, the incineration of municipal solid waste is neither a renewable energy source (particularly with its high content of plastics and other non-biological materials) nor is it an environmentally sound or sustainable technology. Waste incinerators are a significant source of both air emissions and toxic wastes containing dioxin, mercury, lead, and other harmful substances that are created or released as waste is burned.

Municipal solid waste incineration is the largest source of dioxin, one of the most toxic substances ever studied, a known carcinogen that adversely affects growth, reproduction, and the immune system at extremely low exposure levels already found in the human food chain.

In addition, incinerators contribute 20% of the nation's mercury emissions. Mercury can cause significant neurological damage and birth defects, resulting in developmental delays and cognitive defects. When released into the environment, mercury ends up in groundwater or surface waterways, where it accumulates to high levels in the fish Americans eat. A study by the National Academy of Sciences estimated that as many as 60,000 babies may be born at risk of neurological damage every year because of their mothers' mercury exposure through fish.

Municipal solid waste incinerators are responsible for environmental releases of a host of other highly toxic pollutants, including PCBs, which can be created when waste is burned even though their production has been banned in the U.S., and lead, which is one of the pollutants most thoroughly studied for its impacts on children's cognitive development. In 1998 alone, incinerators within our country emitted 150,000 pounds of lead. Because many of these pollutants are persistent pollutants, even if air emissions are reduced, the pollutants will contaminate the waste ash from the incinerator, which will ultimately be disposed of in a landfill or other environmental release.

Municipal solid waste incineration, with its toxic emissions, is not only a step away from a renewable energy economy, but is also a step away from solving solid waste problems. Incineration removes the incentive for waste reduction and recycling by making solid waste seem to disappear, but leaving a toxic legacy in its place. Reducing, reusing, and recycling are more effective way of addressing solid waste problems and preventing pollution at the same time. Therefore, UCS strongly urges the Committee to remove the bill language that designates municipal solid waste as an eligible resource.

## **Eligibility of hydroelectric facilities in the Renewable Resource Requirement**

UCS recommends that the Committee modify the definition of eligible hydropower for Tier 2. Hydropower is a mature technology, as it comprises approximately 10% of our nation's current supply of electricity. It is often the least expensive generation available, and existing hydro facilities generally do not need the support of an RPS to continue operating. In 2000, Maine's hydropower accounted for 29% of current electricity generating capacity and the potential expansion of hydro in the state is highly environmentally sensitive. Further, the potential exists for retail providers in Maine to purchase generation from new hydro facilities outside the state,

thereby swamping Tier 2 of the RPS and significantly limiting the development of new renewable energy sources in the state. Specifically, UCS recommends the hydroelectric facilities should not be eligible for Tier 2.

### **Other Eligibility Issues**

While not specified in the bill language, it is possible that both the Tier 1 and Tier 2 RPS requirements may be satisfied by credits sold or traded to retail suppliers by recipients or sellers of existing or new federal or municipal renewable generation. Therefore, UCS recommends that the Committee modify LD 1312 to eliminate from eligibility renewable energy generation from facilities that are owned by or under contract to utilities that are not required to meet the RPS targets, including municipal utilities, rural electric cooperatives, and public power authorities. However, UCS suggests that the Committee consider adding provisions to the RPS rule allowing such utilities to opt in to the RPS.

### **Treatment of Imported Renewable Energy**

UCS recommends that the bill language regarding requirements for delivery of renewable energy from outside of Maine be clarified. UCS anticipates that there may be problems with the current language in section 2.A. Maine and the other New England states are in a unique set of circumstances because the wholesale electricity market into which potentially eligible renewable energy would be delivered is operated as a regional pool. Because of this, it is likely that documentation regarding the physical delivery of energy to Maine will far more difficult to track than energy deliveries to the New England Power Pool. Based on experience in other states, it is important to avoid confusion about what the criteria are for eligible resources that are importing power, as uncertainty of this type can significantly undermine market confidence. One way to address this issue is to require that generation from eligible renewable energy technologies not located in Maine must be physically delivered to the region's transmission system as documented by the NEPOOL Generator Information System.

### **Renewable Energy Credit Trading Mechanism**

As expressed in our comments to the Maine Public Utility Commission, UCS strongly supports the use of tradable renewable energy credits (RECs) to demonstrate compliance with meet Maine's renewable resource requirement.<sup>3</sup> An RPS with a tradable REC market provides many benefits that can reduce the cost and complexity of implementation, such as

- an easy and efficient system for achieving and tracking compliance
- compliance flexibility
- improved market liquidity by increasing the number of buyers and sellers in a renewable energy market

Several states with RPS programs, including Arizona, Texas, and Wisconsin, currently use credit trading for RPS compliance. The New England states have also implemented a credit-trading

---

<sup>3</sup> See our comments to the ME PUC on Docket 2002-300, June 4, 2002.

system for identifying all generation. The Generation Information System, or GIS, is used in disclosing the fuel mix to customers, complying with emission portfolio laws, as well as serving as the source of RECs for the RPS programs in Massachusetts and Connecticut.<sup>4</sup> In addition, the national RPS that passed the U.S. Senate last year included a REC trading system. REC trading is similar to the Clean Air Act emission cap and allowance trading system, which permits lower-cost, market-based compliance with air pollution regulations.

### **The RPS requirement should apply to each electricity supply product**

The RPS design should require compliance by retail electricity providers at the electric product level as a percentage of energy delivered. Such an approach ensures that utilities supply the same level of renewable energy to all customer classes. The rationale for requiring that a portion of Maine's electricity be generated from renewable energy sources stems from the fact that the use of such energy sources benefits the state and society as a whole rather than merely certain utilities, customer classes or individual customers.

Accordingly, the responsibility for implementation and cost of the RPS should be spread fairly and evenly across all regions of the state and be shared by all retail market participants, including retail suppliers and all customer classes served by them. One key component of a fair and equitable distribution of responsibility is to require that the renewable targets apply to each electric supply product.

### **Portfolio Standard Ramp-up**

Research by UCS on the costs and benefits of implementing a national RPS has found that to provide a stable and predictable market for renewable developers and reduce potential price volatility, renewable energy targets should increase gradually and remain in place over a long period.<sup>5</sup> UCS strongly supports the addition of Section 3.B of LD 1312 that would establish targets for new renewable resources under Tier 2. The new renewable target in Tier 2 begins in 2005 at 0.5% of annual retail sales, growing 0.5% a year for 10 years. While UCS believes that supporting the growth of new renewable energy in Tier 2 is laudable, the initial starting point and the ramp-up rate are both quite modest, particularly given Maine's excellent renewable resource potential. UCS recommends that the Tier 2 target start at 1% and increase at 1% increments for 10 years. UCS believes this will put the Maine RPS on par with the strongest of the 12 other state RPS programs around the country.

UCS also recommends adding language that allows for renewable energy generation from Tier 2-eligible facilities to meet the Tier 1 requirement, similar to the provision in the Connecticut RPS program. Such a provision will have the effect of potentially expanding the market for new renewable generation in the unlikely event that there is a shortfall of Tier 1 generation.

---

<sup>4</sup> For more information on the New England Generator Information System, see [www.nepoolgis.com](http://www.nepoolgis.com) and [www.iso-ne.com/committees/generation\\_information\\_systems/](http://www.iso-ne.com/committees/generation_information_systems/)

<sup>5</sup> Steven Clemmer, Alan Noguee, Michael C. Brower, and Paul Jefferiss, *A Powerful Opportunity: Making Renewable Electricity the Standard*, Union of Concerned Scientists, Cambridge, Mass: 1999.

Section 3.B of the bill also specifies that the RPS target will continue after 2014. We strongly support such a provision. At a minimum, the RPS should continue for at least 10 years after the highest target is reached. This approach was adopted in both the Texas RPS rule and national RPS included in the Senate energy bill.

### **Alternative Compliance Mechanism**

The Massachusetts Department of Energy Resources adopted an alternative compliance mechanism to set an upper bound on the costs of RPS compliance and provide further flexibility for retail electricity suppliers in meeting the state's RPS requirements. Under the Massachusetts RPS, retail electricity suppliers can obtain credits by generating electricity from eligible renewable energy sources; trading or purchasing credits from another generator; or purchasing the required credits through an Alternative Compliance Payment (ACP) to a government designated entity.<sup>6</sup> The U.S. Senate passed a national RPS that also includes a similar alternative compliance mechanism. These systems allow retail electricity suppliers to still comply with the RPS requirement in the event that they do not develop new renewable energy sources on their own and credits are unavailable from eligible generators at prices below the ACP rate. UCS supports the inclusion of such a mechanism in the Maine renewable resource portfolio requirement.

In Massachusetts, the cost of the ACP is set at the same level as the penalty for non-compliance, \$50 per MWh (with an annual adjustment for inflation based on the GDP implicit price deflator), and the funds collected are to be used to maximize the commercial development of new renewable energy in the state. UCS recommends that the Committee support the adoption of an alternative compliance mechanism as part of its REC trading program in the final renewable resource standard legislation.

We believe it is appropriate to set the alternative compliance figure for Tier 2 equal to that in place in Massachusetts. While Tier 2 eligibility is not exactly the same as the Massachusetts new renewable RPS eligibility requirement, there is considerable overlap in eligible generation. Setting a different ACP level would likely lead to arbitrage between the states' requirements, potentially leading to compliance in one state and not the other. Setting the ACP values equal would avoid such arbitrage, allowing the market for renewable certificates to better function.

### **Penalties for Non-Compliance**

As proposed, LD 1312 does not include an explicit penalty mechanism for non-compliance. Though the Maine Public Utilities Commission presumably has the ability to assess general penalties under provisions in Section 3210-A, UCS believes it is important to include a penalty mechanism specifically for the renewable resource standard that is set at an appropriate level to ensure effective compliance with the standard. This would also ensure that renewable energy resources are actually developed and brought on-line, providing the important environmental and economic benefits intended by adopting the rule. We recommend that the final legislation require the Maine Public Utility Commission to adopt a penalty mechanism that is similar to the Texas RPS program. This state has a non-compliance penalty equal to the lesser of \$50 per megawatt

---

<sup>6</sup> For the detailed RPS regulations issued by the Massachusetts DOER, see [www.state.ma.us/doer/rps/225cmr.pdf](http://www.state.ma.us/doer/rps/225cmr.pdf)

hour (MWh) (with an annual adjustment for inflation based on the GDP implicit price deflator) or 200 percent of the average market value of credits for that compliance period.<sup>7</sup>

### **The Need for Long-term Commitments**

While currently not addressed in the proposed legislation, UCS would like to express its strong support for LD 1312 ensuring that renewable energy generation is procured by the state's retail suppliers for a period of at least 10 years. Short-term energy procurement cycles are incompatible with the longer-term contractual commitments necessary for the financial success of renewable-fueled generation. Many renewable-fueled generation technologies have higher capital costs and lower operating costs than traditional generation resources. Because of this cost structure, many renewable technologies require long-term contractual commitments from credit-worthy buyers in order to attract financing. Investors appear to require commitments for renewable attributes, or both attributes and energy, of at least five years for landfill methane generators, and ten years or longer for more capital-intensive resource types such as wind. In recent testimony before the California Public Utilities Commission, the Union of Concerned Scientists requested 15 to 20 year commitments for renewable energy purchases. UCS stated that renewable projects require long-term fixed price contracts in order to be cost-effectively financed. UCS suggested that 20-year contracts will yield the lowest costs and minimize price risk to ratepayers.

Given renewable energy plants' relatively higher upfront capital costs and lower operating costs compared to fossil-fired plants, longer contract terms are a critical driver to reducing renewable energy's average electricity costs. As an example, for a generic wind power project with typical project assumptions, moving from a 20-year contract term to a 10-year contract term increases revenue requirements by 29 percent. Given the substantial impact contract term has on renewable energy's all-in generation costs, policies that support longer contract terms will be a key instrument for effectively and economically meeting state renewable energy targets. As a result, UCS recommended that the CA Commission require contract terms of at least 15 years, but preferably 20 years, for all new renewable energy projects. Similarly, UCS strongly recommends that the Committee include such a provision to LD 1312 for at least a significant portion of the required renewable energy procured by retail suppliers under Tier 2.

### **Maine Renewable Resource Fund**

UCS supports the inclusion of language in LD 1312 that contemplates the disposition of funds collected under the RPS' proposed alternative compliance mechanism (Section 4). We agree with the purpose and intent of the provisions of this section. UCS suggests that to further encourage the development of new renewable facilities in Maine, that the distribution of the Resource Fund to renewable generators be limited to those in-state generators who are eligible for Tier 2 only. This approach will flow resources back to the high priority renewable generators, thus bringing down compliance costs and encouraging additional development, which in turn brings economic development to the state.

---

<sup>7</sup> For more information, see Public Utility Commission of Texas Substantive Rules, section 25.173(o)(2).

## **The Role of the Maine PUC**

LD 1312 designates the Maine PUC to continue administering the renewable resource portfolio program. As such, the Commission performs a number of important duties and oversight responsibilities. These would include collecting and managing alternative compliance payments; ensuring that all retail suppliers comply with the law and file truthful reports; issuing penalties for non-compliance; certifying that potential projects meet established eligibility requirements; and keeping records for tracking the cost and effectiveness of program. UCS recommends that these specific responsibilities be spelled out in the final legislation.

It is of the utmost importance that the rules that will govern the implementation of Maine's revised renewable requirement be developed as quickly as possible – within one year at the latest. Any delay in issuing draft and final rules will cause undue uncertainty regarding the market for renewable energy in Maine and could adversely affect what should be a smooth transition to a revised RPS. LD 1312 should specify the date by which the Maine Public Utility Commission must issue draft and final regulations in order to encourage an orderly transition to the revised program.

## **Conclusion**

UCS appreciates the opportunity to comment on LD 1312 before the Committee. If implemented effectively, Maine's RPS will increase the role of renewable energy as a means to achieve a cleaner, more sustainable energy future. We thank you for the opportunity to comment and encourage the Committee to consider the recommendations proposed above.

Respectfully submitted,

DEBORAH DONOVAN  
Manager, New England Clean Energy Campaign  
Union of Concerned Scientists  
Two Brattle Square  
Cambridge, MA 02238  
Voice: (617) 547-5552  
Fax: (617) 864-9405