

**Rescinding the RPS Biomass Fuel Efficiency Regulation
under
Executive Order 562**

In Governor Baker’s Executive Order 562,^{1/} Massachusetts agencies are directed to rescind or streamline regulations that impose “unnecessary cost, burden and complexity” on companies doing business in this state. Selling renewable energy credits to MA retail electricity suppliers certainly constitutes doing business in this state, and advances several important public policy goals such as those found in the Renewable Portfolio Standard, the Global Warming Solutions Act and others.

In reviewing current regulations, the agencies are directed to retain only those regulations which are “mandated by law” or are “essential to the health, safety, environment or welfare of the Commonwealth’s residents.”

The biomass efficiency standard set forth in 225 CMR 14.05(1)(a)(7) (f) (ii), hereafter the “fuel conversion efficiency standard“ or the “efficiency standard,” does not meet the criteria set forth by Order 562^{2/}, for the reasons described below, and should be rescinded by the Department of Energy Resources (DOER) as soon as possible.

In addition, to conform the RPS regulation to the previously described change, the Department should also rescind or appropriately modify the following portions of that regulation: 225 CMR 14.05 (8) (c) (1)-(4) and 225 CMR 14.05 (8) (e) (3).

a. *Is there a “clearly identified need for governmental intervention” that is best addressed by the agency or another governmental body?*

No, there is not a clearly identified need for a fuel conversion efficiency standard to be imposed on biomass fueled power plants by DOER or any other agency.

In a summary of its revisions to the Renewable Portfolio Standard (RPS) regulations (issued in April of 2012), DOER indicated the purpose of fuel conversion efficiency standard was to

^{1/} Baker, Charles; Executive Order 562 To Reduce Unnecessary Regulatory Burden, March 31, 2015; See <http://www.mass.gov/governor/legislationexecorder/execorders/executive-order-no-562.html>

^{2/} Executive Order 562 states: “ ...To find that a regulation meets this standard, an agency must demonstrate, in its review, that:

- a. there is a clearly identified need for governmental intervention that is best addressed by the Agency and not another Agency or governmental body;
- b. the costs of the regulation do not exceed the benefits that would result from the regulation;
- c. the regulation does not exceed federal requirements or duplicate local requirements;
- d. less restrictive and intrusive alternatives have been considered and found less desirable based on a sound evaluation of the alternatives;
- e. the regulation does not unduly and adversely affect Massachusetts citizens and customers of the Commonwealth, or the competitive environment in Massachusetts;
- f. the Agency has established a process and a schedule for measuring the effectiveness of the regulation; and
- g. the regulation is time-limited or provides for regular review...”

“...further increase the energy utilization of our limited sustainable biomass resource.”
Extracting the highest possible amount of energy from a given unit of fuel is a laudable goal. However, the efficiency requirement is not an effective means to achieve that objective, for several reasons.

First, the concern that the woody biomass resource in New England is “limited” is misleading and inaccurate. In fact, a study done in 2014 for the New England Forestry Foundation indicated that usable woody biomass residues are plentiful in New England and growing larger over time. That study found that each year New England currently adds in excess of 3 million green tons of usable, but unutilized woody biomass material.^{3/} In short, there is more than enough biomass material to provide fuel for existing biomass plants, as well as new biomass plants, should any ever be built.

Second, maintaining a fuel conversion efficiency standard will not reduce greenhouse gas emissions or otherwise provide any environmental benefit. Indeed, it is arguable that the efficiency standard will have the unintended effect of increasing GHG emissions. That is because the RPS regulation strictly limits the material from forestry activities that can be used to obtain RPS credits. The regulation defines “Eligible Biomass Woody Fuel” as “forest derived residues,” “thinnings” and “salvage.” The Manomet study and others have shown that use of these materials to generate energy produces a net GHG reduction in a relatively short period of time compared to alternative fates, such as leaving them to decompose in the forest or in landfills. Ironically, imposing a fuel conversion efficiency standard that discourages use of these materials to generate energy has the perverse impact of causing opportunities to reduce GHG emissions to be missed, the opposite of what may have been the regulation’s intended effect.

Third, a fuel conversion efficiency standard, for practical reasons, will not result in more efficient use of biomass fuel than is already occurring in existing plants or arguably than would otherwise occur in new plants. Power plant developers and operators have a pressing need to extract the maximum amount of electrical energy from every unit of fuel they consume. This is dictated by the relatively large influence that the cost of fuel has on a power plant’s overall operating costs and the intense competitive nature of the wholesale generation market. Power plant operators must bid competitive prices in the wholesale generation market for every hour they wish to run. Any inefficiency in converting fuel to usable energy reduces their competitive position and puts their profitability at risk. Thus, they have every incentive to maximize the efficiency with which they convert fuel to energy. Having the government reward them with RPS incentives for what market forces already amply incentivize them to do is wasteful and ineffective. This reality is reflected in the fact that no other state renewable portfolio standard imposes a fuel conversion efficiency standard or anything like it. They know it will not result in any greater efficiency in the utilization of wood resources to produce energy than already exists.

Existing biomass plants cannot convert their fuel any more efficiently than they already do. These plants currently convert fuel at a rate of about 25% per unit of fuel consumed. Doubling that rate to 50% as the regulation would require is a practical impossibility for existing plants.

^{3/} Kingsley, Eric, Innovative Natural Resource Solutions; “The Potential for Wood To Replace Fossil Fuels in New England” in “New England Forests: The Path To Sustainability”; New England Forestry Foundation; Griffen, Alec B, Editor; June, 2014, p. 15; see http://www.inrslc.com/11_Reduce_Use_of_Foreign_Oil_061314.pdf

The only way this could be accomplished would be to alter the design and operation of the plant so that, in addition to exporting electricity, it also captured and usefully employed the heat generated in the process, what is known as a combined heat and power (CHP) plant. The complicated engineering and large cost of converting an existing electric-only plant to a CHP plant, along with the immense difficulty of securing a nearby host facility to make use of the captured heat, present insurmountable obstacles to retrofitting an existing plant into a CHP plants.

At the same time, no new biomass plants have been or will be designed and built as CHP plants in New England. Indeed, in the three years since the fuel conversion efficiency standard has been codified in the RPS regulations with an effective date of January 2016, not a single new biomass fueled plant that could meet the fuel conversion efficiency standard has been proposed to be built in Massachusetts or elsewhere in the region. This because even a new CHP plant that uses biomass fuel is almost impossible to construct in New England. CHP facilities must be near large, heat-consuming hosts, such as hospitals (which would never want to be near a large industrial facility like a power plant, especially one that receives its fuel delivery by a steady stream of large trucks loaded with wood) or greenhouses (which rarely want to be located in the woods of Maine or New Hampshire requiring long truck trips to bring their produce to market). The additional revenue from the sale of renewable energy credits cannot solve these intractable obstacles to siting biomass-fueled CHP plants. Such plants might be theoretically desirable, but will never be built in New England.

b. Would the costs that result from imposition of this regulation be less than the benefits that might result from it?

No, there would be no practical benefits from imposition of this standard. Instead, the regulation would cause the reduced use or even closure of biomass facilities around the region. The regulation currently requires that, as of January 1, 2016, all biomass fired generating units must achieve the aforementioned 50% fuel conversion rate to qualify for RPS credits, or a 40 % rate if they are designated an “Advancement of Biomass Conversion Generation Unit.” Current technology will make it impossible for both existing and new units to meet this standard. The pending imposition of the regulation has long since caused developers contemplating developing a new plant to abandon any intention of doing so. A May 2011 letter on these regulations, sent to the DOER by the legislature’s Joint Committee on Telecommunications, Utilities, and Energy agreed with this assessment, stating that “existing facilities would likely be disqualified from the RPS.” Put simply, the efficiency requirement would effectively eliminate a resource that has at times provided up to 15% of the energy used by retail electricity suppliers to comply with the RPS.

The withdrawal of biomass support comes as Massachusetts and New England face unprecedented challenges in meeting electricity needs. ISO-NE estimates that by 2017 some 3,300 MWs of current generation, roughly 10% of existing capacity, will shut down, and by 2020 an additional 5,000 MWs are at risk of closure. The recent decision by Entergy Corporation to close the 680 MW Pilgrim nuclear power plant in 2019 will remove an important source of baseload, low carbon power generation from the state’s portfolio. Meanwhile, natural gas has

emerged as a dominant fuel, as its use for annual power generation has increased from 18% in 2000 to 46% in 2013. With constraints on delivery of a sufficient gas supply, the state has seen winter price spikes that are not forecasted to subside. Denying RPS eligibility for biomass power plants would further reduce the diversity of the state's electricity supply, at the same time that lack of fuel diversity is bedeviling the state and region.

c. Is the regulation consistent with federal requirements and policy?

No, the Massachusetts regulation is not consistent with federal regulation and policy. The U.S. EPA, in promulgating its Clean Power Plan (CPP), has determined that biomass fueled plants are not included among the power plants that must achieve compliance with GHG limits. Moreover, the EPA has found that biomass plants, under certain circumstances, may contribute to achieving GHG reductions required by the CPP.

In August of this year, EPA promulgated the final version of the CPP and in it stated that “states’ reliance on...sustainably-derived forest-derived feed stocks may also be an approvable element of their compliance” with Section 111(d). In short, sustainably sourced biomass can be used by states to meet their obligations to reduce CO₂ emissions under the Clean Air Act and the CPP. The Plan noted that wood wastes (like non-forest wood, sawdust, etc.) “...are likely to have minimal or no net atmospheric contributions of biogenic CO₂ emissions, or even reduce such impacts, when compared with an alternate fate of disposal.”^{4/} Moreover, the Plan noted removal of waste material created by forestry activity contributed to achieving the critically important role of “sustainable land management” in “achieving the goals” of the CPP. The Plan pointed out that the alternative fate for biomass, if not used for energy, must be considered in any evaluation of its greenhouse gas emissions. For example, waste sources of biomass, if left in the forest, would decay over time. In those circumstances, the decaying material releases even more potent GHG emissions, such as methane, compared to the CO₂ emitted from combustion.

In a related finding, the National Climate Assessment, published by the Obama Administration May of 2014, noted the valuable role of biomass power generation in keeping forests healthy through thinning and other sustainable forestry practices. Healthy forests serve as a carbon “sink” that capture hundreds of millions of tons of carbon per year.

d. Are there less restrictive and intrusive alternatives that would be more desirable way to accomplish the objective of the regulation?

Yes, there are other means to achieve the highest possible efficiency in the conversion of fuel to energy.

As described above, the competitive pressures of the electricity market will motivate power plants owners and operators to maximize the efficiency with which they convert fuel into

^{4/} Environmental Protection Agency, 40 CFR Part 60; Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units. See <http://www3.epa.gov/airquality/cpp/cpp-final-rule.pdf>

electricity. There is no need for government intervention to establish an efficiency standard. Indeed, as discussed earlier, the standard will not result in more efficient fuel conversion. Rather, it will have the unintended and costly consequence of causing these plants to operate less or even shut down altogether.

e. Would this regulation unduly and adversely affect Massachusetts citizens and customers of the Commonwealth, or the competitive environment in Massachusetts?

Yes, the regulation would unduly and adversely affect electric ratepayers of the Commonwealth because it would deprive retail electricity suppliers from a source of supply of renewable energy that would otherwise be available for their use to comply with the requirements of the state's Renewable Portfolio Standard (RPS). That regulation requires retail suppliers to purchase minimum percentages of renewable power. According to a report from the legislature's Joint Committee on Telecommunications, Utilities, and Energy, power from biomass plants provided 27% of the renewable energy purchased by retail electricity suppliers in Massachusetts in order to comply with 2009 RPS requirements. While biomass would remain eligible, theoretically, to be used to comply with the regulation, it would not be technically feasible to achieve the efficiency standard, for reasons described above. As a result, keeping the efficiency standard in the regulation would effectively deprive suppliers of a legitimate source of renewable energy, potentially increasing costs to comply with the RPS.

To qualify for renewable energy credits, the portions of the regulation currently in effect require these plants to adhere to very specific, sustainable forestry practices to obtain their fuel and the must limit the GHG emissions they can emit to less than half of those from a gas-fired plant. These restrictions are more than adequate to minimize GHG emissions from these plants.

f. Has the Agency been able to measure the effectiveness of the regulation?

The efficiency standard has been included in the RPS regulation for almost two years but its effective date will not be reached until January of 2016. As a result, the future effect of the standard has not been tested in the intervening years. However, anticipation of the requirement has had an effect. Several new biomass fired plants that were under development at the time the rule was enacted were cancelled soon thereafter because even newly designed plants could not be converted to CHP facilities and remain economically viable. Since then, studies have demonstrated that the efficiency standard cannot be met by existing plants and will prevent any new plants from being built.^{5/}

The letter sent to the DOER by the Joint Committee on Telecommunications, Utilities, and Energy in response to the proposed regulation correctly noted that "significant investments...have been made in the biomass industry in reliance of the original RPS framework." Thus, a consequence of the efficiency standard will be to make those investments

^{5/} Woods, Brad, McHale & Associates, Report to the Biomass Power Association; "Biomass Technology Review"; October 2010 Its Executive Summary states its main conclusion: that "... no new existing, financeable, commercially proven technology is available to meet the proposed efficiency standards."

“stranded;” that is, unusable and wasted. Moreover, the Committee warned of the “chilling effects” this rule change would have on investment in and development of biomass plants.

The Committee was right to point to the potentially harmful ramifications of imposing this new requirement on biomass plants. The Commonwealth created a financial incentive like the RPS to induce owners of existing and new biomass plants to make major investments in order to comply. If it then effectively restricts eligibility for that incentive so as to make the incentive unachievable by those very same plants, even after those owners have made the desired investments, plant owners and investors will be right to distrust the reliability of such incentives in the future. They will be discouraged from making a wide range of desired investments otherwise sought by the Commonwealth.