

# MASSACHUSETTS FOREST ALLIANCE

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To: Samantha Meserve, MA Dept. of Energy Resources  
From: Massachusetts Forest Alliance  
Date: June 30, 2016  
Subject: 225 CMR 16.00 Alternative Energy Portfolio Standard and “Guideline on Biomass, Biogas, and Biofuels for APS Renewable Thermal Generation Units”

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The Massachusetts Forest Alliance (“MFA”) is a non-profit trade association, based in Marlborough MA. MFA advocates for a viable and sustainable forest economy; we represent a diverse membership base of individual landowners, foresters, loggers, truckers, mills, power generation facilities, fuel suppliers and others. MFA is the state sponsor of the Tree Farm program in Massachusetts. Tree Farm is one of the PEFC certification programs recognized in the draft regulations.

MFA is the grantee organization coordinating the Statewide Wood Energy Team (SWET) under a cooperative agreement with the USDA Forest Service. The SWET program in Massachusetts was funded in part to take advantage of the opportunity afforded by the Alternative Portfolio Standard. The Forest Service provides both financial and technical assistance to the effort to expand and diversify the use of modern wood heating systems in the Commonwealth.

MFA also includes the Massachusetts Forest Trust, a 501(c) (3) educational organization that provides a range of educational opportunities and operates a land trust that holds easements and land in fee.

MFA, its predecessor organizations, and many of our members individually have long been involved in the discussions of renewable energy policy in the Commonwealth. We participated enthusiastically in the process leading to the acceptance of thermal energy into the alternative portfolio standards. If the APS is to succeed, the regulations and accompanying guidelines must be workable, fair, and practical. Our comments follow. We appreciate the effort DOER has put into the initial draft of the regulations and guidelines. We have highlighted several major areas of concern, but have not touched upon every possible issue. While we are as eager as anyone to see the regulations and guidelines finalized, we also urge DOER to take the necessary care to “get it right” and maximize the potential for a thermal

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energy incentive to advance energy diversification, address the challenges posed by greenhouse gas levels, and sustain forests, which provide much to the citizens of the state. We are happy to participate in further discussions among stakeholders and clarify our perspective on any issues we or other commenters have raised. If you wish to follow up with us, please get in touch with executive director Nathan L'Etoile at [nletoile@massforestalliance.org](mailto:nletoile@massforestalliance.org), telephone (413) 896-8786, or board president Charles Thompson at [cthompson@massforestalliance.org](mailto:cthompson@massforestalliance.org) telephone (617)-894-5800.

## **1. Green chip moisture content requirement**

Guideline – 9 – Biomass fuel quality – Table 3. MFA disagrees strongly with the categorical moisture content requirement of less than 30%. This specific moisture content restriction on wood chip fuels is not based on any known complete data set for commercial biomass systems, and specifically excludes the most efficient form of the biomass resource, green chips, which have the lowest overall carbon footprint, lowest total emissions, and highest overall system efficiency of any bulk biomass fuel. Green chip projects often show greater total benefit than projects with dry chips. Emissions from green chip systems at 40-50% moisture content are often lower than emissions from lower moisture content systems, and properly engineered green chip systems would not have an issue meeting emissions requirements.

This limitation would effectively choke off much of the potential for use of biomass fuel under the APS. The guidelines should take account of both the realities of the supply chain, and the range of units available in the marketplace. Excluding green chips entirely loses sight of the complications imposed on the supply chain and the added cost of drying chips. Active offsite drying of fuel, which is typically needed to reach the 30% moisture value, may actually result in greater total emissions and energy use. The chip supply system currently in common use is onsite chipping as part of the forest harvest phase, transporting chips directly to an end user, and depositing chips for use as fuel. Requiring drying doubles the cost of those chips to the generation facility due to the imposed inefficiencies, and makes it unlikely that a significant number of such chip burning facilities will be created. The development of the process to produce, transport, and handle a meaningful supply of semi-dry chips is underway, but needs time to mature. Our fear is

that a green chip prohibition will actually stifle the development of the transition to a different type of chip.

If a moisture content figure must be specified, we suggest using “less than or equal to 50% moisture content”, along with a minimum efficiency value of 65% HHV. This lower efficiency minimum would allow for wood systems to offset fossil fuel used at higher pressure steam applications which have necessarily higher flue gas temperatures (for fossil fuel or biomass systems), and thus lower HHV efficiencies (for both fossil fuel and biomass systems). LHV efficiencies of green chip systems have been shown to be identical to those of systems using lower moisture content fuel.

## **2. Cordwood – 16.02 – Forest-derived Residues**

Cordwood offers one of the greatest opportunities for these regulations to engage homeowners and a variety of other users to make environmentally positive choices about their fuel supply and to assist small, distributed rural businesses in their community. Cordwood by its very nature does not travel far, and while it is labor intensive, is minimally processed. Money spent on this non-bagged fuel is kept locally, with most of it going directly into local jobs – jobs managing the forest, cutting the trees, splitting that wood, and delivering it. While bagged fuels are becoming more common, and these regulations provide good provisions to make them eligible, most bagged fuels are sold by intermediaries and transported greater distances in a highly processed form. This adds great convenience, and more customer flexibility for those can afford it, but it is also more expensive and lacks the level of direct connection to the producer and the local forest that comes from cordwood.

The inclusion of the word “cordwood” within the definition of Forest Derived Residues within CMR 16.02 makes it unclear how later provisions affect the way the regulation will operate. Cordwood is sometimes the primary goal for harvesting a particular tree, sometimes the most logical use of a tree cut for other purposes (e.g., storm damage; landscaping; road maintenance; thinning; wildlife enhancements, etc.) and sometimes it is merely a portion of a tree (the top) that has been cut to harvest sawtimber or pulpwood. Inclusion of the term here raises confusion as to whether cordwood is a residue, the primary harvested material that results in residues (and

therefore not itself a residue), or sometimes either and left to the forester to determine. This becomes critical later as we look to the requirements within 16.05: (4) (d) that require Thermal Generation Units to burn at least 50% residues or forest salvage. If cordwood is not firmly established as a qualifying residue, it then leaves the only forest derived source of cordwood as forest salvage, a category with significant limitations on supply.

While there are a number of high efficiency cordwood/firewood systems that modulate in response to loads and incorporate thermal storage, the requirement within CMR 16.05: (1) 6. a. v. for all woody biomass systems to use automatically fed boilers or furnaces precludes many cordwood burning systems. This should be changed to specify automatically-fed systems when these are practically and economically feasible, but not in instances - such as cordwood systems - where they are not. Every attempt should be made within the guidelines not just to allow for, but to embrace the use of cordwood in modern, efficient wood heating systems, especially in residential applications.

The guidelines at present simply reserve space within the air emission limits. EPA has taken actions to make cordwood burning systems (both indoor and outdoor) far cleaner and more efficient, with requirements for 2020 being nearly identical to DOER's proposed rules for chip burning boilers and furnaces. Rules that are ambitious, but achievable, could be implemented for units that burn cordwood. We propose that small residential units complying with EPA requirements would meet that requirement. Additionally, the Biomass Fuel Quality portion of the guidelines is silent on cordwood. If no standards on the product is what is intended, then a short statement to that effect should be made. MFA prefers however that standards be included and that they direct adherence to a fuel quality that meets the manufacturer's recommended moisture level for their wood.

### **3. Licensed Forester Attestation – Guideline – 3 – Biomass Sustainability**

MFA is concerned with the way in which the Forest Guild guidelines are cited as a standard. This publication, which is not peer-reviewed, contains broad statements on ethics and other topics well beyond actual guidelines on biomass harvests. MFA recommends that foresters attest that the fuel was harvested according to generally recognized site management and nutrient

retention guidelines, such as those *within* the Biomass Harvesting and Retention Guidelines for the Northeast (Forest Guild, 2010), or another explicitly identified set of guidelines.

While it is clear that there were simple requirements sought for Massachusetts harvests, the requirements seem to have been bogged down by the need to include provisions for material originating in other states. It would make more sense to divide this paragraph into two sections, one for Massachusetts produced forest-derived fuels, and one for fuels from outside Massachusetts. MFA also strongly suggests that this entire section be rewritten in direct consultation with DCR's Division of Service Forestry to assure that the desired objectives are achieved as simply as possible. MFA understands and takes no issue with there being a presumption of sustainability if the harvest was conducted pursuant to a Forest Cutting Plan approved by DCR; is submitted to DCR (signed) by a licensed forester; and is conducted according to best management practices.

#### **Other concerns:**

General Approach. Does it not make the most sense for DOER and the APS to focus on setting emission standards for wood energy systems and let system users implement systems that meet those emission standards? It is widely recognized that, to meet the DOER-developed emissions requirements, wood energy systems must be efficient. Such an approach would make this rule simpler and allow manufacturers and system owners to meet the emission standard with the most cost effective combination of fuel type and emissions control technology. This approach has been widely and successfully used in Europe to improve combustion and control technologies. It would also simplify and increase fuel supply flexibility. Fuel would be matched to manufacturer requirements for specific biomass units, and tested to verify compliance with emission requirements. For forest-derived fuels, the sustainability requirement would remain.

Forest-Derived Fuels. MFA has concerns that the definitions as written are confusing and hard to apply within a standard silvicultural terminology framework. In the case of Residues, "cordwood" should qualify as eligible in most, if not all, operations. The term "locally invasive native species" needs to be clarified. We recommend changing the heading "Forest-Derived Thinnings" to "Forest-Derived Intermediate Treatments". Material from Improvement

Cuttings, which are undertaken to influence species composition and improve stand quality, should be added to the Intermediate Treatment category. There is no mention of Regeneration Cuttings; should it be assumed that these are included within (1) in Residues?

*Independent Certification of Forest Resource.* MFA strongly supports the inclusion of the PEFC North American certification schemes (SFI and Tree Farm). We are concerned, however, with the sentence: “A supplier cannot supply raw material or fuel as certified by one of the approved schemes if it is not itself certified to that scheme.” Does the “it” and the “itself” refer to the raw material/fuel or to the supplier? It is reasonable if this applies to the fuel itself; if it is meant to apply to the supplier, the requirement is unreasonable and will effectively eliminate use of the scheme.

*Chain of Custody.* We are very concerned that the chain of custody language and procedures are both unnecessarily complex and not clear. We have consulted foresters, chip dealers, pellet manufacturing facilities and others. All expressed confusion and a basic lack of understanding of the meaning of the consignment basis reporting requirements. We urge DOER to both simplify and clarify what is proposed. Chain of custody requirements should not and need not place an unnecessary burden on small businesses, some of which operate without the staff or systems to provide extensive documentation of wood flow, supply and sales.

*Biomass Fuel Quality – Guideline.* The pellet standard for moisture is listed as 6%, and the guideline states that compliance with the DOER pellet standard “can be demonstrated through certification against standards such as PFI Premium.” However, PFI Premium requires pellet moisture to be  $\leq 8\%$ . This appears to indicate that even PFI Premium certification would not be enough to meet the DOER standard.

*Dedicated Energy Crops.* MFA understands the conflict that arises between using land that could grow food to grow energy crops. Many of our members are landowners and farmers, some producing agricultural crops other than wood from their properties as well as their forest-based products. The flaws with the language show the obvious difficulty of addressing this situation. The definition as written is so broad in its exclusion as to render the entire category of “Dedicated Energy Crops” as meaningless. There is virtually no area in the Commonwealth that meets the definition of “land [that] does not have the economic potential to support production of any other

agricultural crop grown for human consumption as food.” Once wetlands (for regulatory reasons), forestlands (based on the definition’s other provision), and other developed land have been set aside, greenhouses and other input-intensive forms of agriculture can produce crops on any reasonably sloped land remaining. Of the unreasonably sloped land remaining, animals such as goats and sheep can be grazed on those lands. All land has the economic potential to grow crops for food, especially with the scarcity of land and the high value paid for many of the crops we grow. Additionally, who is to make the determination that such land does or does not have the economic potential to meet the regulations – the licensed forester who likely knows little about food crops? DOER? While we respect the desire of DOER to balance the use of land for crops and fuel, the reality of agriculture in Massachusetts makes this an impractical and unnecessary concern of the regulations. With most acreage that can reasonably be farmed in Massachusetts being farmed, it is unreasonable to expect that energy crops will displace viable agriculture. While there is certainly a policy discussion evolving around the issue, there is no similar requirement that disqualifies solar credits from installations on farm or forest land, an area where this is a much more likely reality. MFA requests that the provisions related to not displacing food crops be removed.

Land Use Change. MFA has concerns with the manner in which the regulation sets up the implication that chips harvested for a land use change are, without further qualification, somehow more beneficial than chips from sustainably managed forests (which require extensive further qualification). While we are supportive of the inclusion of non-forest-derived residues, including those from land use change, we would ask that there be a requirement for something beyond business as usual in the case of land clearing chips to justify the positive impacts on climate change. A variety of options might be considered (standing trees for energy conservation, preserving working forests in the vicinity, etc.)

Wood Waste. MFA also has concerns with the limitations in qualifying “Wood Waste”. It seems that some common types of wood waste have been left out, including Christmas trees, and material commonly produced by residential landscaping, tree pruning, and tree removal activities that go beyond the residential driveway.

Clean Wood. The term “clean wood” is used several times without definition. This term should

be defined to add clarity – does it refer to wood without chemical additives; wood without leaves and bark; or does it refer to wood without foreign debris such as plastic and nails? All three are reasonable in the context used, but without definition, the inclusion of the term significant ambiguity.

*Mass Balance Approach:* This segment of the Guideline is very unclear. It is not readily apparent if this provision allows a fuel supplier to simply show that the proportion of their inputs that meet the requirements is greater than the proportion of their sales that is sold to units claiming credits or if instead it is intended as a way for a supplier to track the percentage of their fuel that comes from each of the eligible categories. It should be the former, and if that is intended, we request further clarification.

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