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To: MA Dept. of Energy Resources

From: Charlie Cary, BCS Principal

Date: August 7, 2017

Subject: Comments on 225 CMF 16.00 Alternative Portfolio Standard

Thanks for taking the time to read my perspective of the Alternative Portfolio Standards. I know hammering out these standards has been a long and arduous process. I regret that my perspective of the impact of this program on developing needed local markets for low grade wood is not more encouraging.

Available wood in the Commonwealth – wood which is to be cut and removed from the forest or should be cut and removed from the forest for environmental benefit – is being squandered at the expense of both the environment and local economies. Municipalities, utilities, State agencies, land trusts and private land owners all need markets for wood which cannot be made into logs. Government certainly has a role in ensuring good forest management practices and minimum emissions from wood combustion, but many aspects of this APS program go beyond these goals and create unnecessary barriers to local wood finding markets as local heating fuel.

Wood is a decentralized, ubiquitous, renewable resource that is most cost effectively utilized in local markets with minimum processing. Massachusetts policy towards wood heat has heavily favored highly processed pellet fuel. The APS program continues to subsidize more centrally processed wood fuel which both increases its cost and increases the cost of getting into the wood supply business. Why is the State not more supportive of centralized fuel supplies? Cordwood, the lowest cost wood heating opportunity, is not included in this program, and is actually discouraged when it is not included in the definition of wood “residue”.

Our neighbors to the north have been significantly more effective in helping wood fuel penetrate the marketplace by supporting the market with far fewer stipulations. I suggest the following requirements for wood fuel will actually do more harm to the wood heating market, and the environment (when wood isn’t burned) than good.

**Ash content-** Limiting ash content to 1.5% impacts the opportunity to develop available wood market in three ways. First, it effectively stifles innovation with combustion systems which can burn higher ash, clean wood. Second, this ash content will require smaller diameter wood to be debarked which adds significant expense to wood fuel delivery. Third, de-barkers add to the cost getting into the wood fuel supply business and centralizes the supply chain. Shouldn’t the focus be on emissions rather fuel input?

**Particle size -** I see the same unintended consequences by requiring specific particle size chips. The expense of chippers to produce these homogenous chips in one pass, or multiple chippers and screens to meet this specification, limits the opportunity for smaller scale, locally based fuel supply chain infrastructure to develop. The program unnecessarily increases the cost of entry into the wood supply business while increasing the cost of fuel. As importantly, innovation in wood handling systems is needed and APS will limit this needed

innovation by removing any incentive for chip handling innovation. Please let the market sort out lowest cost, dependable fuel delivery.

Please note, I do support standardizing chips so customers know what they are buying but see no role for government supporting one chip format over another. Again, shouldn't government's concern be focused on emissions.

**Moisture Content** –Dry fuels are more efficient than green fuels but good public policy balances costs and benefits. 35% MC will stifle innovation on greener fuels and drive up the cost of delivery since fuels will need to air dry longer.

So long as air quality standards are met what is the marginal cost of allowing higher moisture content fuels? Yes, slightly more fuel will be burned to produce the same heat output but is that really a problem given the amount of available wood being squandered in the State? I would think government would want encourage innovation around burning greener fuels efficiently and worry about incremental efficiency increases when fuel supplies show any sign of tighten.

### **Residue/thinning distinction**

Perspective generated by the Manomet study led to a distinction between thinning and residues. Regrettably, the Manomet study focused on harvesting practices for large scale facilities with large fuel sheds. APS is targeting a very different, more locally based market. The blend of residues to thinning needs to be decided locally not globally. If there is wood locally available that has been harvested, or should be harvested for environmental reasons to the tough Massachusetts harvesting standards, why shouldn't it find local value as fuel and help pay for the harvest? Without markets for this material the Wildlands and Woodlands model for woodland management has no financing mechanism. Once the environmental cutting concerns are met, and it is "available, is there a higher and better use for it than displacing fossil fuel?

### **Hot water vs. steam**

The opportunity to promote wood heating through this program is further narrowed by its support for the ASME stamp for boilers. Why isn't the Commonwealth following its neighboring states to the north by recognizing European safety standards for pressure vessels? ASME certification is a barrier for new, imported, technologies to enter the marketplace. The legacy of Massachusetts older buildings is steam heat which offers a huge potential market for smaller wood heating. Inclusion of ASME requirement in this program is an unnecessary endorsement of bad policy which is a barrier to local wood heat. Boilers are not blowing up in Europe because another standard is used.

### **Automatic ignition:**

Why is automatic ignition required? Again, shouldn't the emphasis be on emissions. There are opportunities for baseload wood systems where an automatic ignition system would be useless.

### **Air emissions:**

Government gets tremendous credit for driving the wood to heat market towards efficiency over the 31 years I have been in the business. One only needs to compare the emission standards in the APS to emission standards of 20 years ago to understand how hard the industry has been pushed to clean up emission. This effort has contributed to an almost 40% decrease in ambient Pm 2.5 particulate matter over the last 15 years in New York and England.

But these efficiency increases have come with financial cost, and cost effectiveness is no longer a criteria for air quality policy decision making. The industry currently has emission standards well ahead of what the market will bear and so it has become dependent on public subsidies to exist. At some point the costs of increasing air emission standards must be balanced with the cost of not having markets for locally available wood, the return

of carbon to the atmosphere from rotting wood, and the environmental and economic cost of burning imported fossil fuel. Until this balance is struck to stop the endlessly higher emission standards, and narrowing of markets through well intended regulations, the potential environmental and economic benefits of heating with locally available fuel will never be realized. I just pray the subsidies don't run out before some balance is struck.

### **Conclusion:**

The State of Massachusetts has an opportunity to support rural communities while creating markets for low grade to support good forest management. Supporting renewable thermal energy is good public policy when it actually helps expand markets. Regrettably, the only way I see this program having a lasting positive impact on the wood heating market is:

- 1) Set aside some percentage (20% ?) of the APS funds for wood heat. Without this set aside the funds will be gone before many wood heating projects come forward.
- 2) Pre-pay the APS credits with strict enforcement regulations. We need to let people start enjoying the savings and benefits from wood heat from day one and not ask them to take on further debt for future savings.

Thanks again for taking the time to read, and hopefully think about, my perspective of the current APS program. I can be reached at 978-697-8223 and would welcome your thoughts on my perspective.