

By Electronic Mail

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RE: Comments on RPS Revisions for Biomass

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I. The Introduction

Clean Air Task Force (CATF) would like to thank the Department of Energy Resources (DOER) for the opportunity to comment on the proposed biomass regulations at 225 CMR 14.00 *et seq.* In general we support and applaud the efforts by DOER on this front. This proposal is a good first step to avoiding the risks of climate change in accordance with the goals of the Global Warming Solutions Act. Further, it is a start to addressing other detrimental impacts related to biomass energy, which could include adverse impacts to ecosystems, watersheds, and species habitat. The suggestions offered herein will strengthen these efforts and improve DOER's ability to regulate biomass energy in a responsible and sustainable manner.

Initially, we would like to address a few general matters. First, we want to highlight an analysis of the Manomet study¹ developed by Mary Booth, PhD, on behalf of CATF, and we incorporate those herein by reference.² Mary Booth's analysis emphasizes that certain assumptions made in the Manomet study lead to conclusions that are conservative as to future biomass emissions relative to traditional energy sources.³ The unfortunate result is that, while the study is correct in concluding net emissions are higher than from coal and astoundingly higher than from natural gas,⁴ it still underestimates the amount of greenhouse gas (GHG) emissions from biomass and in turn underestimates the time it would take for biomass-based power systems

¹ Manomet Center for Conservation Sciences. 2010. Massachusetts Biomass Sustainability and Carbon Policy Study: Report to the Commonwealth of Massachusetts Department of Energy Resources. Walker, T. (Ed.). Natural Capital Initiative Report NCI-2010-03, *available at* <http://www.manomet.org/node/322>.

² M. Booth. Clean Air Task Force, *Review of the Manomet Biomass Sustainability and Carbon Policy Study*, (2010), *available at* <http://www.mass.gov/Eoeea/docs/doer/renewables/biomass/study-comments/booth.pdf>.

³ *Id.* at 2.

⁴ That the emissions from biomass are higher from biomass than natural gas is of particular relevance to Massachusetts as the majority of the Commonwealth's energy is derived from that source.

to begin providing a net decrease in emissions of GHGs.⁵ These same assumptions also led the Manomet Center to underestimate the likely amount of time required for combined heat and power facilities to achieve net emissions reductions. Dr. Booth's key finding – i.e., that it will take longer than the Manomet study concludes to derive any potential climate benefits from biomass – is significant because it clearly shows that DOER should proceed cautiously when regulating biomass emissions as it will take longer than the Manomet study concludes to derive any potential climate benefits from biomass.

In the same vein, DOER needs regulations and infrastructure that are capable of dealing with the complex nature of biomass as a potential energy source. First, because the science of biomass energy and lifecycle analysis (LCA) of GHG emissions is evolving, and methods to calculate emissions from biomass have been based on incorrect assumptions,⁶ DOER must make a commitment to continually assess the latest, most accurate LCA methodology. The regulations should reflect this recognition of constant evolution in the science, making LCA analysis amenable to adjustment as the science progresses. Second, implementation of these regulations will require significant resources from the state so that documentation, tracking, and recording measures of the sources of and emissions from biomass are in place in order to evaluate any emission reductions or increases, regrowth of carbon stocks, and impacts to Massachusetts forests. If it is found that the state resources needed to update this infrastructure are lacking to enforce and monitor effectively, then the state should not attempt to undertake biomass as a renewable energy source until such resources are available and in place. Otherwise, the aim of promoting responsible biomass energy development would be undermined.⁷

⁵ M.Booth, *Review of the Manomet* at 2.

⁶ J. Melilo et al. MIT Joint Program on the Science and Policy of Global Change, *Unintended Environmental Consequences of a Global Biofuels Program*, Abstract (2009) (uncertainty in cellulosic biofuels); T. Searchinger. *Biofuels and the need for additional carbon*, Environmental Research Letters 5 doi: 10.1088/1748-9326/5/4/024007 at 8 & 9 (2010) Stating methods regulators use to quantify ILUC and emissions are correct but still place too much reliance on individual models and much policy and science has developed from the incorrect assumption that plant growth offsets emissions from biofuel combustion so that there is no climate affect.

⁷ D. Timmons et al., *Energy From Forest Biomass: Potential Economic Impacts in Massachusetts*. Massachusetts Sustainable Forest Bioenergy Initiative, 27 (2007) (“Thus, for biomass energy to be successfully developed, Massachusetts citizens and policy makers must support practices and policies that encourage active forest management, Individual landowners must manage their own woodlots, and citizens must support forest management and harvest on public lands. Policy makers must ensure that appropriate regulations are in place to safeguard forest health without precluding appropriate and responsible forest utilization.”), available at <http://www.mass.gov/Eoeea/docs/doer/renewables/biomass/bio-eco-impact-biomass.pdf>

To summarize, all the concerns listed above show that in order to effectively regulate biomass emissions, DOER needs to move forward with caution and constraint. If, for any reason, DOER doubts the ability of these regulations to effectively implement the use of biomass energy and achieve emission reductions, then DOER should not move forward with granting biomass energy status as a renewable energy source.

II. MA Proposed Biomass Regulations

A. Additionality

The concept of additionality is critical when it comes to accounting for biomass emissions, but it is notably absent from the proposed regulation. The concept of additionality, and its application to bioenergy, was recently described in Searchinger (2010). Although the article, which is excerpted in relevant part below, is primarily focused on liquid biofuels, its discussion of additionality is equally applicable to biomass used to generate electricity. Searchinger writes:

Although broadly understood, this key role of plant growth for biofuels is often underappreciated. It means that biofuels do not reduce total emissions from energy combustion but at best only offset them. By definition, an offset means an increase in carbon sinks (even if temporary) or a reduction in other kinds of emissions. In basic concept, using land to grow plants for biofuels to offset energy emissions is no different from using land to offset those emissions by growing forests. Biofuels use the carbon taken up by the plants, the sink, to displace fossil fuels and thereby leave more carbon underground. Forest projects use the carbon uptake to increase sequestered carbon aboveground. Either way, a forest or any other plant cannot provide an offset if it already exists or would grow anyway; only additional plant growth provides an offset.

Energy offsets can also exist if they reduce other sources of emissions, as utilities might comply with emissions limits by paying for methane control at landfills. Bioenergy can reduce non-energy emissions by using otherwise rapidly decomposing timber or crop residues. That reduces emissions of CO₂ from the forest or cropland floor.

Put simply, biofuels can only reduce greenhouse gases if the biomass represents results from ‘additional’ carbon capture. Additional carbon means carbon that would otherwise be in the atmosphere if not incorporated in biomass used for fuel. The carbon must be captured either through additional plant growth or by saving

biomass from being broken down through some other pathway.⁸

This important concept should be in place for certain provisions within the regulations, and as a result will be brought up throughout our comments. Failure to require additionality as a backbone to the regulation will undermine DOER's ability to ensure that carbon stocks sequester more carbon than is released as a result of biomass-based generation.

B. Eligible Biomass

1. Eligible Biomass Woody Fuel¹¹

In general we support the Department's definition for Eligible Biomass Woody Fuel. The constraint shown in the language of the definition is reflective of the need to carefully outline eligible sources in order to prevent overharvesting and depletion of natural resources.¹² CATF supports providing a comprehensive list of what constitutes Eligible Biomass Woody Fuel in order to confine harvesting activities for woody fuels to only those limited categories. Further, it is important that harvesting constraints apply equally, whether the activity is ecological or economic, therefore avoiding incentivizing land clearing for economic purposes in order to obtain woody sources eligible for biomass.

However, despite the otherwise effective constraints in the definition, we are concerned with the fourth category of eligible biomass woody fuel. This provision allows for harvesting of "[o]ther competing woody vegetation that would otherwise interfere with regeneration goals, including but not limited to locally invasive native species and non-native invasive woody vegetation."¹³ Our concern with this provision is the ambiguity of the term "regeneration goals" and the list (or, more accurately, lack thereof) of harvesting that can take place to avoid interference with these "regeneration goals." "Regeneration goal" is not defined and therefore provides no guidance for a biomass harvester and industry as to what may qualify as an activity

⁸ T. Searchinger. *Biofuels and the need for additional carbon*, Environmental Research Letters 5 doi: 10.1088/1748-9326/5/4/024007 at 2 (2010)

¹¹ 225 CMR 14:02

¹² In examining the U.S. Department of Energy's Energy Information Administration estimate on available forest residues this report finds a critical flaw. The estimate included "logging residues such as low-diameter and "cull" tree cut in courts of harvesting, but then the estimate when on to also include standing cull tress and excess small pole trees. Further the definition of forest residues is "congruent with wording ACESA which includes whole trees along with logging residues as 'renewable biomass.'" The result is available forest wood three times greater than the supply of actual logging residues. M. Booth & R. Wiles, Environmental Working Group, *Clearcut Disaster: Carbon Loophole Threatens U.S. Forests*, 14-15 (2010).

¹³ 224 CMR 14:02

to fulfill these goals. Further, the non-exhaustive list of proposed activities that would reach this undefined regeneration goal does little to guide the industry and is open ended, and thus potentially incentivizing over harvesting while creating regulatory uncertainty.

In order to remedy this vague language and prevent incentivizing additional clearing, DOER should make the following changes. DOER should list specific activities that would be allowed, such as the removal of invasive species and pests; for example, the final regulations should make it clear that the term “invasive species” is defined according to the Commonwealth’s various lists of invasive species.¹⁴ DOER should also address possible concerns of being too restrictive with regard to potential sources, DOER should insert a provision that would allow stakeholders to petition separately for a material to qualify as eligible biomass woody fuel. Initially these petitions should be done on a case-by-case basis. If DOER later categorically determines that a certain activity qualifies, then the regulations could be amended to incorporate that activity. Given that this is a young industry and these regulations seek to aggressively implement a continually involving science, it will be best if DOER proceeds with caution and limits potential sources initially in order to have biomass truly be a renewable fuel source and reach a point where carbon stock sequesters more than what is emitted.

2. Land use change provisions in the definition of Eligible Biomass Fuel

In light of the fact that carbon stock is necessary to reduce atmospheric GHG levels, CATF is concerned with certain language in the definition of Non-Forest Derived Residues and Dedicated Energy Crops that, as written, effectively incentivize land use changes.¹⁵ Land use changes, whether as a direct or indirect result of biomass harvesting, have the potential to lead to significant amounts of greenhouse gas emissions and thus make biomass fuels no better (or even worse) than traditional fossil fuel sources. To ensure that there are safeguards in place to prevent this from occurring, the recommendations stated below should be incorporated into the final rule.

a) Non-Forest Derived Residues

CATF is concerned with parts two and three of the definition of non-forest derived residues. Our concerns and suggestions are as follows.

Part two of the proposed definition states:

¹⁴ See, e.g., <http://www.invasivespeciesinfo.gov/unitedstates/ma.shtml#thr>

¹⁵ 225 CMR 14:02

Land use change- non agricultural; Growing stock and other timber sources cut or otherwise destroyed in the process of converting forest land to non-forest and non-agricultural uses, principally residential and commercial development. Site development must demonstrate the retention of as much growing stock as feasible in developments that conform to Executive Office's guidance for Open Space Residential Design and Low Impact Development.¹⁶

Our two concerns with this definition relate to the legitimacy of the proposed projects that might qualify under this definition and the clarity regarding the application of the guidance for Open Space Residential Design and Low Impact Development.

To start, this definition currently contains a loophole that would allow for land to be cleared for purported construction of residential and commercial development that may never come to fruition. In other words, it is unclear from this definition exactly what is required of a commercial or residential project in order for timber and growing stock to be collected from it. In order to close this loophole, DOER should insert in this definition the requirement that the supplier of biomass attach to their Biomass Fuel Certificate evidence that construction has already been permitted (e.g. final approval by local zoning board, construction approvals, etc).¹⁷

Additionally, the second part of the definition which states "[s]ite development must demonstrate the retention of as much growing stock as feasible in developments that conform to Executive Office's guidance for Open Space Residential Design and Low Impact Development" requires clarification.¹⁸ We read this part of the provision as requiring that such land use change must conform to guidance for Open Space Residential Design and Low Impact Development, making guidelines that are typically advisory, mandatory for these projects. If this is not the case, and those guidelines remain nonbinding suggestions for these projects, then we strongly suggest that DOER make the guidance for Open Space Residential Design and Low Impact Development mandatory in order for biomass feedstocks to qualify as eligible.

Second, we are concerned with part three of the Non-Forest Derived Residues relating to the conversion of land to agricultural use. This provision states "[I]and use changes-agricultural: Growing stock and other timber sources cut or otherwise destroyed in the process of converting

¹⁶ Id.

¹⁷ 225 CMR 14:05 (8)(a)(1). We note that the regulations confines itself to land conversion that is principally for commercial or residential purposes. However, land could be converted for other purposes, such as parks or public sports amenities or public schools. In the event that land is cleared for such purposes, DOER should require the same showing as it proposes for residential and commercial projects.

¹⁸ Id.

forest land to agricultural usage, either for new or restored farm land. Site development must demonstrate the retention of as much growing stock as feasible.”¹⁹ This definition allows for the use of growing stock and other timber sources that were cut or destroyed in the process of converting forest to farmland, new *or* restored. Again, the vagueness of this definition could incentivize conversion of valuable forest carbon stock to land uses that have less ability to sequester carbon.

CATF sees only one way to avoid incentivizing clearing of forest land for agriculture solely for the use of stock and timber: to completely remove conversion of otherwise productive land to agricultural as an option under eligible non-forest derived residues. The clearing of land to use for agricultural purposes will potentially lead to two outcomes, both of which hinder responsible biomass regulation. First, is that carbon will be released in the process of converting the land and such emissions would then be required to be calculated under the LCA (discussed below). This would result in a net increase in emissions when an important focus of these regulations is to preserve as much sequestration as possible to achieve GHG emission reductions. Second, conversion of this land has the potential to have agricultural land replace valuable land that would have sequestered more carbon. Because of this potential release of additional carbon and the loss of carbon stock, under no circumstances should a forest be cleared for agricultural land and be eligible for credits.

If DOER decides not to completely remove this feedstock as a potential eligible non-forest derived residues then, at a minimum, the following changes should be made. First, there should be no provision in place that allows for the clearing of forest for new farmland. This has too great of a potential to incentivize land clearing for biomass sources rather than the actual aim of developing farmland. Second, the definition of restored farmland needs a temporal limit so that “restored” does not reach so far back as to authorize the clearing of land that has not been used as farmland for generations. This is especially true in light of the vague use of the term “restored” farmland. In documents and presentations by MA Sustainable Forest Bioenergy Initiative it is noted that large amounts of forest in Massachusetts were once farmland, and that former farmland is now made up of young forest; because of this, the study goes on to

¹⁹ 225 CMR 14:02

“arbitrarily” use percent of land that can be converted from forest to farm.²⁰ This arbitrary choice illustrates that a standard has not been set as to what stands of forest are to be protected. Further, we are unable to find other regulations which mandate a standard for “reconverted” or “restored” farmland. If left undefined, the term “restored farmland” could be interpreted to allow conversion of forestland that is decades if not centuries old. Therefore, it is crucial that DOER temporally restrict this definition.

Dedicated Energy Crops

CATF is concerned with the definition of Dedicated Energy Crops.²¹ In the proposed definition of Dedicated Energy Crops, a fuel qualifies if it is one “purposefully grown for fuel and harvested on lands that were not recently cleared of vegetation that sequestered significant amounts of carbon, such as forest for purpose of growing energy crops, and do not have the economic potential to support production of any other agricultural crop for human consumption.”²² Our two concerns relate to the terms “recently” and “sequestered significant amounts,” which are inherently ambiguous and detrimental to the aim of responsible biomass production. Because of this ambiguity we suggest the following changes be made.

First, the term “recently” should be stricken. This term should be replaced with a specific date that establishes land will only qualify if it has been cleared of vegetation prior to the specified date. This avoids direct land use change down the road and the interpretation of “recently” being any given year. The problem with having many possible interpretations is that this regulation, as written, can be interpreted to allow for land cleared after the effective date of this regulation. Since the final regulation is to be issued December 31st 2010 it might be wise to allow only land to qualify only if it had been cleared 5 to 10 years prior to the date of enactment. These regulations have been anticipated by biomass industry, and it is too risky to ignore the potential that, in light of this anticipation, developers will have cleared land before and after enactment are in place. At the very least, DOER should require that the land have not been cleared on or after the effective date of the regulations.

²⁰ D. Timmons et al., Massachusetts Sustainable Forest Bioenergy Initiative, *Biomass Energy Crops: Massachusetts's Potential*, 16-17 (2008) <http://www.mass.gov/Eoeea/docs/doer/renewables/biomass/bio-ma-potential-crop.pdf>

²¹ 225 CMR 14:02.

²² Id.

Second, the term “sequestered significant amounts of carbon” is vague and subjective. Leaving this term undefined opens the door to disputes between DOER and regulated entities as to what will or will not fall under this category, creating an undue burden for DOER that can be avoided by clarification.

CATF does support the language in the Dedicated Energy Crops definition that requires land used not have the potential to support production of any other agricultural crop for human consumption. Without this provision a possible indirect land use change would be that farmers would harvest crops on other land, possibly clearing forest or grassland (as opposed to using fallow land), to compensate for the conversion of agriculturally viable land to energy crops.²³ This would result in net increase of GHGs in the atmosphere and a loss in carbon stock. While we believe that this restriction is essential, we would urge DOER to err on the side of caution and to define the terms “human consumption” and “economic potential” in the regulations. This would provide regulatory certainty and reduce the administrative burden of implementing these regulations.

Further, while CATF has climate-related concerns about the conversion of forest to farmland, we recognize there are situations where unproductive land may be converted to dedicated energy crops and sequester more carbon. DOER should allow for owners of unproductive land to petition DOER to convert their land to dedicated energy crop if the owner can show that growing these crops will increase carbon sequestration as compared to the land in its current state.²⁴ The conversion of unproductive land to productive land that sequesters more carbon would benefit biomass regulation by creating additional sequestration that did not exist prior to this conversion. Again, this points out the importance of incorporating the principle of additionality into these regulations to ensure that the Commonwealth’s biomass policies encourage net reductions in GHGs.

C. Eligible Liquid Biofuel²⁵

In general we support the definition as to what qualifies as an Eligible Liquid Biofuel. We recommend, however, that DOER make periodic assessments to determine whether the

²³ T. Searchinger, *Biofuels and the need for additional carbon* at 4-5.

²⁴ T. Searchinger, *Biofuels and the need for additional carbon*, at 2 “Biofuels use additional carbon, to provide two examples, if biofuel crops are grown by irrigating the desert...or by planting abandoned cropland that would otherwise remain fallow or minimally productive.”

²⁵ 225 CMR 14:02.

industry has the capacity to achieve further reductions beyond 50%. In addition, we emphasize that the LCA should be based on how the current liquid biofuels industry currently operates and should not make optimistic assumptions regarding technological, including efficiency, or agricultural improvements.

D. Lifecycle Greenhouse Gas Emissions

CATF supports the effort by DOER to have a broad and inclusive definition of Lifecycle Greenhouse Gas Emissions.²⁶ This definition is an improvement over the definition in the Energy Independence and Security Act (EISA) of 2007 and federal Renewable Fuel Standards.²⁷ The definition is more explicit than the EISA definition by expressly including temporal changes in forest carbon sequestration and emissions that are essential to proper accounting regarding potential reductions or increases in atmospheric CO₂. At the outset, we note that the LCA methodology used should also be consistent within a year and as applied to the different types of facilities and biomass feedstocks.

That being said, CATF suggests the following so that the regulations will result in an accurate LCA and reflect the necessity that the LCA analysis be performed on a consistent and more frequent basis. Our initial concerns relate to the global warming potential (GWP) assigned to methane and the ambiguity as to how waste wood and eligible fuels are counted in the LCA, and the baseline provided for LCA. Our second concern relates to the need for the regulations to require LCA more frequently and on a more consistent basis.

1. GWP of Methane and Inclusion in Definition

First, a GWP for methane that accurately reflects its short atmospheric lifetime and its heat trapping potential is necessary in order to truly assess GHG emissions and their climate forcing impacts. Massachusetts currently uses the International Panel on Climate Change (IPCC) GWP factors for methane when reporting GHG emissions, as required in the Climate Registry General Reporting Protocol.²⁸ Accordingly, the Commonwealth uses the 100 year GWP of 21

²⁶ Id.

²⁷ 42 U.S.C. §7545(o)(1)(H).

²⁸ 310 CMR 7.71 (2)

CO_{2e}.²⁹ CATF, however, strongly recommends that, instead, the IPCC 20-year GWP of 72 CO_{2e} for methane apply to RPS facilities. The purpose served by this GWP standard is to reflect the fact that methane has a short atmospheric life and has high heat-trapping potency. Ignoring the climate forcing impacts of methane will prevent attainment of significant near-term emission reductions. Anything less reflective of methane's GWP will result in an inaccurate LCA.

Second, CATF suggests that there be clarification in the definition of Lifecycle Greenhouse Gas Emissions.³⁰ Our concern is with the lack of clarity in the definition as it now stands relating to how emissions from "waste wood" and other eligible fuels are treated in the LCA. It should be explicit that direct emissions from the combustion of an eligible fuel are included in the LCA and is *not* treated as having zero emissions. Therefore, an eligible fuel, its emissions from harvesting, transportation, processing, burning, and any other emissions associated with a fuel's lifecycle should be incorporated in the LCA.

Further, as stated in Section I, DOER needs to commit to using the best science available to assess emissions. In using the best available science there would be, for example, recognition by DOER of the difference in methane emissions that occur over years (and decades) if left in the woods to decompose versus methane emissions that occur immediately from burning. It is often argued that land-filling biomass results in high-GWP methane emissions, and that it would be better for the climate to burn the biomass (thereby emitting relatively low-GWP carbon dioxide). However, this argument is not supported by data, which show that methane emissions from land filled wood are lower than had been thought.³¹

2. LCA BASELINE

Our final concern relates to the baseline provided for the LCA analysis in the Statement of Qualification (SQ).³² As it currently reads the provision provides that the required 50% reduction of greenhouse gas emissions per unit is determined relative to:

²⁹ The Climate Registry, General Reporting Protocol Version 1.1 Accurate, transparent, and consistent measurement of greenhouse gases across North America (May 2008)...pp 112 Equation 15d. Accessed at <http://www.theclimateregistry.org/downloads/GRP.pdf>.

³⁰ 225 CMR 14:02

³¹ Comments of the Clean Air Task Force, Conservation Law Foundation, Natural Resources Council of Maine, Natural Resources Defense Council, Sierra Club and Southern Environmental Law Center on the Environmental Protection Agency's Call for Information on Greenhouse Gas Emissions Associated with Bioenergy and Other Biogenic Sources (75 Fed. Reg. 41,173 (July 15, 2010); Docket No. EPA-HQ-OAR-2010-0560), 45-46 (Sep. 13, 2010). Attached as Ex. 1.

³² 225 CMR 14:05 (1)(a)(7)(f)(iii)

[T]he Lifecycle Greenhouse Gas Emissions from the aggregate use of the operation of a new combined cycle natural gas electric generating facility using the most efficient commercially available technology as of the date of the Statement of Qualification Application for the portion of electricity delivered by the Generation Unit and, if applicable, and [*sic*] the operation of the fossil fuel fired thermal energy unit being displaced, or in the case of new Useful Thermal Energy, a gas-fired thermal energy unit using the most efficient commercially available technology as of the date of the Statement of Qualification Application for the portion of the Useful Thermal Energy delivered by the generation unit.³³

As CATF understands this provision, the baseline to determine the 50% reduction is a new combined cycle natural gas electric generating facility using the most efficient commercially available technology on the date of the SQ, or if a fossil fuel fired thermal energy unit is displaced, the baseline standard will be a natural gas fired thermal energy using the most efficient commercially available technology on the date of the SQ. Either way, the baseline is a facility that uses natural gas and employs the most efficient commercially available technology regardless of the displaced unit's original fuel source. If this is correct, the provision should be rewritten so as to explicitly clarify such baseline standards. One possible revision could be the following:

- iii. An analysis of net Lifecycle Greenhouse Gas Emissions, that demonstrates to the satisfaction of the Department, that such emissions, over a 20 year life cycle yield at least a 50 per cent reduction of greenhouse gas emissions per unit of useful energy relative to the Lifecycle Greenhouse Gas Emissions from the aggregate use of:
1. Operation of a new combined cycle natural gas electric generating facility using the most efficient commercially available technology as of the date of the Statement of Qualification Application for the portion of electricity delivered by the generation unit
 2. If the Generation Unit is displacing the operation of a fossil fuel fired thermal energy unit or is a new Useful Thermal Energy then the 50 percent reduction of greenhouse gas emissions per unit of greenhouse gas emissions per unit of useful energy will be demonstrated relative to a natural gas fired thermal energy unit using the most efficient commercially available technology as of the date of the Statement of Qualification Application for the portion of Useful Thermal Energy delivered by the Generation Unit.

If this is not the case, CATF strongly suggests that the regulations incorporate such a baseline. In Massachusetts the predominant fuel source is natural gas, and in order to assess whether

³³ Id.

emission reductions are being achieved,³⁴ the baseline needs reflect how Massachusetts would operate if biomass energy was not utilized. Further, the baseline needs to incorporate the most efficient commercially available technology for these natural gas sources, again, to make sure emission reductions are actually achieved with the use of biomass in place of natural gas.

3. Frequency and regularity of LCA Reporting

Our second main concern with the LCA provisions is the fact that the proposed regulations do not require LCA for facilities on a more frequent basis in order to assess progress within the industry. CATF has two concerns with LCA as far as its ability to be used effectively. First, is that the only requirement in the regulation for an LCA to be conducted is during a facility's SQ Application.³⁵ We have two suggestions so that this analysis can properly play its crucial role in assessing the success of the biomass industry in reducing GHG emissions.

First, we suggest that within this provision it be explicitly stated that a SQ be provided each time a facility significantly alters the fuel it uses, which in turn will require that a new LCA be conducted. This could be placed in 225 CMR 14.06(5), by explicitly stating that whenever a change in fuel source occurs a new LCA will be required by the facility. Second, because of the importance of this analysis we suggest that the LCA be conducted on a periodic basis for each facility regardless of whether or not there is a change in fuel (possibly biannually or every three years). This will ensure that records on emissions levels and carbon stock sources are accurate, so that progress on atmospheric GHG reduction goals can be monitored. This requirement could be inserted as a required part of 225 CMR 14:09, or if our recommended required verification is incorporated (see section G(2)), such a requirement for additional LCA analysis could be inserted 225 CMR 14:11. If a facility does not meet the 50% reduction requirement in a given year, it should lose its RPS status until it can show pursuant to an LCA that those reduction requirements are being met.

Our second concern is that there should be a commitment by DOER in the regulations to update the LCA methodology periodically, e.g. every three to five years. This provision would reflect the fact that the science behind LCA and biomass is constantly evolving. Should this

³⁴ We appreciate DOER's proposed use of a 20-year time frame over which qualifying facilities must achieve a 50% reduction of GHG emissions as compared to natural gas facilities. 225 CMR 14:05(1)(a)(7)(f)(iii). We believe that this is the longest timeframe over which emissions from fuel sources must achieve emissions reductions, as emissions reductions in the near future are needed to avoid escalation of the potential impacts of climate change.

³⁵ 225 CMR 14:05 (1)(a)(7)(f).

periodic review and update lead to new LCA methodology, CATF strongly suggest that this be applied going forward to both new and existing facilities. Further, the Department should issue draft guidance as to how it will conduct LCA and make this guidance available for public comment. This guidance, after comment, should be issued so that the LCA method is available to industry and general public, educating them on the process and avoiding regulatory uncertainty as to how LCA is performed.

E. Manufactured Biomass Fuel

CATF supports the definition of Manufactured Biomass Fuel and the requirement that such fuel meet the standards required of Eligible Biomass Woody Fuel. We understand that the LCA analysis requires emissions associated with production of wood pellets at a fuel processing facility be part of the LCA, as it includes “all stages of fuel and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery of the finished fuel to the ultimate customer.”³⁶ For example, if a wood pellet facility uses coal in its production of pellets, then emissions from the coal combustion of that facility must be included in the LCA. If this is not the case then we recommend that the LCA include emissions resulting from a fuel processing facility.

F. Co-Firing and Blended Fuel Waiver³⁷

The co-firing and blended fuel waiver states in part that such a generation unit “may qualify as RPS Class I Renewable Generation provided the Generation Unit meets the eligibility requirements of 225 CMR 14:05, subject to the limitations in 225 CMR 14:05(3).”³⁸ The provision additionally requires that if a Generation Unit is using a blended fuel, of which a portion is an Eligible Biomass Fuel, or is co-firing an ineligible fuel with an Eligible Biomass Fuel, then the entire generation unit must meet 225 CMR 14:05(1)(a)7.³⁹ CATF interprets this to mean that such a generation unit is required to provide DOER a fuel supply plan, design and operational plan, and LCA data demonstrate that emissions over a 20 year lifecycle yield at least

³⁶ 225 CMR 14:02.

³⁷ 225 CMR 14:05(3).

³⁸ Id.

³⁹ 225 CMR 14:05(3)b.

a 50 percent reduction of GHG emissions per unit of relative energy.⁴⁰ If these elements are not required of this category of Generation Units, then such units should not be eligible for RPS Class 1 Status.

G. Fuel Certification and Verification

1. Fuel Certification⁴¹

In general, CATF supports the process for fuel certification as laid out in the fuel certification provision.⁴² However, when submitting a fuel supply plan it should be required that the facility supply evidence of contractual arrangements for the fuel and assurances that the fuel will be an available source. The fuel supply plan should have commitments and assurances for at least the subsequent year, and ideally assurances for three years out. Again, to reiterate, a new LCA needs to be conducted whenever a facility's fuel source changes materially. The fuel supply plan should also include the sources the facility will turn to if the qualifying fuel source becomes unavailable or it otherwise unable to meet facility demands. If a fuel source is diverted for a very short period of time, then the alternative compliance payments (ACP) provided for in 225 CMR 14:08 (3) could cover such short-term diversion, e.g. three months.⁴³

Importantly, as the regulations currently stand CATF is unaware of any limit as to how many ACPs a Generation Unit is allowed to make. The proposed regulations state only that “[a] Retail Electricity Supplier may discharge its obligations under 225 CMR 14:07, in whole or in part, for any Compliance Year by making an Alternative Compliance Payment...”⁴⁴ CATF recommends that there be a limit to how often these payments can be made before RPS Class I status is lost, and further, that at most ACPs should only be allowed for short periods of time, e.g. three months. For instance, DOER could restrict the use of ACPs to two months over the course of a two years. In the event that a facility during that time period would require the use of additional ACPs, then it should lose its RPS status and be required to submit a new SQ Application.

⁴⁰ These requirements are laid out in 225 CMR 14:05(1)(a)(7)(f).

⁴¹ 225 CMR 14:05(1)(a)(7)(f) & (8)(a)(1).

⁴² 225 CMR 14:05(8)(a)(1).

⁴³ 225 CMR 14:08(3).

⁴⁴ Id.

Further, CATF supports the limit of 15% allowed forest residue to be harvested which states, as currently provided, “the Eligible Forest Residue Tonnage Report shall also include certification from the forester that no more than 15 per cent of the total weight of all forest products harvested from a given forest harvest area was removed for utilization as an Eligible Biomass Woody Fuel.”⁴⁵ However, in order to be truly effective CATF makes the following suggestions.

First, the consequence that such residue will be deemed ineligible if more than 15% of Eligible Biomass Woody Fuel is removed should be left intact. Second, to clarify exactly what forest materials are included in the 15% calculation the term “forest products” should be stricken and replaced with “total material”, otherwise some might construe this provision as referring only to 15% of commercial timber as falling into the 15% category and excluding materials from “thinning”. The result would be overharvesting of forest materials well over the 15% limit.

Also, it is unclear whether the amount of wood that is harvested from land-use change and permanent clearing is subject to the 15% limitation.⁴⁶ This ambiguity raises a concern about additionality. Emissions of biomass sources from land use change and permanent clearing was not critically examined by the Manomet study, and rests on the assumption that this wood decomposes very quickly without truly assessing its current use.⁴⁷ However, the state of Massachusetts clears 5,000 acres of wood each year for development.⁴⁸ Allowing such sources to be “carbon free” and not subject to the 15% limitation could have the biomass industry scrambling for all of this wood, and requiring other potential users to turn to forest products that may have otherwise remained intact without this increased competition. The result could be the burning of all harvested material resulting in emissions that will not be replaced with carbon stock as the clearing would be permanent, and could lead to even more lost carbon stock as competitors for such a source need to turn elsewhere i.e. to more forest clearing, in order to obtain the materials they need. DOER should conduct an analysis of existing market demand for such wood and determine whether the use of such wood in the energy market would impact other markets in ways that result in indirect climate impacts.

⁴⁵225 CMR 14:05(8)(a)(1)c.

⁴⁶ Id.

⁴⁷ M.Booth, *Review of the Manomet* at 22.

⁴⁸ T. Walker et al. (contributors), Manomet Center for Conservation Sciences, *Biomass Sustainability and Carbon Policy Study*, 31 (2010).

Our final concern is that the term “forest harvest area” is not defined. This is a large oversight as it directly impacts the amount of land over which the 15% limit is calculated. It should be made explicit that the 15% limit does not vary depending on how a harvester defines its forest harvest area.

2. Verification⁴⁹

Verification of compliance, including site visits, audits, and document inspections, are critical to the effective implementation of this regulation and this provision needs stronger language and inclusion of required verification. We support the discretion given to the Department in this regulation and the cited regulation, 225 CMR 14.11, so that such inspections may be carried at DOER’s discretion, subject to the requirement that it provide reasonable notice to the facility. This discretion should remain intact.

In addition to the verification discretion afforded to DOER, there should be, however, a commitment by DOER in the regulations to perform mandatory periodic verification of each facility, e.g. on an annual or bi-annual basis. Because the biomass industry is young and the scientific understanding of its environmental impact is evolving, the need for effective monitoring to assess progress and compliance is necessary.

H. Efficiency Level to Receive RECs⁵⁰

CATF supports the efficiency levels required for a Generation Unit to receive RPS Class 1 Renewable Energy Attribute. Further, RPS reporting should be conducted on a quarterly basis. That being said, DOER should conduct periodic reviews that assess whether higher efficiency levels are possible. Such reviews could take place every three to five years. If higher efficiency levels are achievable, the regulation should be amended to raise required efficiency levels needed to obtain RPS Class 1 status. This periodic review will incentivize investment into more efficient technology and fuels. In making the determination of whether higher efficiency levels are achievable, DOER should cast a wide geographic search and include facilities not only in the United States but also in European and other countries.

⁴⁹ 225 CMR 14:05(8)(a)(2).

⁵⁰ 225 CMR 14:05(8)(b)(1)-(3).

I. Treatment of Previously Qualified Biomass Generation Units⁵¹

We strongly support DOER's proposed plan to reassess whether existing biomass generation units should qualify for RECs. We understand that a unit will maintain its SQ through 2014 so long as the facility has certification that their fuel source is an Eligible Biomass Woody Fuel or Manufactured Biomass Fuel, such fuel is accompanied with the required biomass fuel certificate, the facility has submitted a fuel supply plan, and the facility is subject to verification.. We support the total phase out by 2015 but encourage that DOER consider requiring an earlier compliance year. By no means should this phase out be extended to a later date.

J. Conclusion

To summarize CATF applauds the efforts by DOER and strongly urges the Department to continue to proceed with caution and constraint. In moving forward DOER should:

- Have in place the appropriate monitoring and reporting tools to assess progress made by the biomass industry and to assess carbon stock, without such tools DOER should cease efforts to have biomass energy qualify as an RPS
- Adopt the concept of additionality into the regulations in order to reach a level of carbon stock that will truly offset biomass emissions
- Continue to show constraint in sources that are eligible for use to achieve RPS credits and avoid incentivizing land use change
- Use an all encompassing Lifecycle Greenhouse Gas Emissions that includes emissions from all eligible sources under the regulation
- Require that LCA be assessed relative only to natural gas facilities using the most efficient commercially available technology
- Require LCA analysis more frequently and on a more regular basis and commit to updating LCA methodology as the science progresses
- Incorporate proposed changes to Fuel Certification and Verification so biomass sources can effectively be monitored and additionality can be incorporated to achieve the needed carbon stock

⁵¹ 225 CMR 14:05(8)(c).

- Keep intact the phase out of previously qualified biomass generation units.

We look forward to working with DOER to develop effective regulations that will ensure that the Commonwealth's biomass policy indeed results in climate benefits and avoids other potential environmental harms.

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